

The Impact of Recess on Elementary School Academics and Behavior

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by

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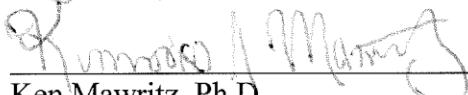
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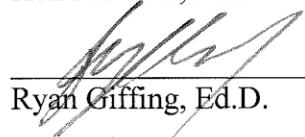
The Impact of Recess on Elementary School Academics and Behavior

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Abstract

The Impact of Removing Recess on Elementary School Academics and Behavior

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This dissertation examines the impact that removing recess has on both academics and behavior of students in the elementary school setting. Through this examination, conclusions will be reached in regards to whether the recent movement of substituting recess with additional time for reading and math instruction is conducive or counter-productive to optimal teaching and learning in an elementary classroom. The classrooms involved in this study include a fourth grade classroom within a K-4 elementary school building, and a fifth grade classroom in a 5-6 grade intermediate school building in the same school district. In the K-4 building, every classroom utilizes a recess period of twenty-minutes daily, whether it is outside on the playground, or in the classroom due to such factors as weather or construction. In the 5-6 grade building, recess has been eliminated in order to provide additional instructional time to students. This study will be conducted through a qualitative case-study design, with data including interviews and surveys completed by teachers, students, and administrators from both participating school buildings utilized by the researcher.

Dedication

For my family, for whom none of this would have ever been possible. The completion of this degree is just as much a reflection of your hard work, sacrifice, and dedication than of any effort I've put in academically. Thank you and I love you all.

Acknowledgements

I would like to take a moment and acknowledge those who made the quest for learning about our world a free and possible venture through their sacrifice and dedication. Specifically, to the men and women of our Armed Forces, from our founding fathers, the Patriots of the Revolutionary War, to our brave brothers and sisters in Operation Enduring Freedom, thank you all. You are very much appreciated, and not forgotten. The land of the free and home of the brave were and will always be maintained through your valor.

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Chapter 1: Introduction

Introduction to the Problem

In order to meet the demands set forth under the No Child Left Behind Act of 2001 (NCLB), school districts are making decisions that affect both programs and students. These decisions are being made in an attempt to increase time available to provide core content instruction in the areas of math and reading, which are two of the main content areas assessed at the state level. Under NCLB, schools must show proficiency levels in the areas of math and reading, and if they do not achieve what is known as “adequate yearly progress” (AYP), they may be sanctioned by state lawmakers and made subject to such repercussions as removal of administrative staffs, and complete takeover by the state educational system (Karp, 2005). However, incorporating additional time for the math and reading instruction comes at a cost to other programs and activities that the school has to offer their students (Lewis, 2008). Some schools choose to remove the supplemental courses that are outside the realm of the core content classes, such as art, music, industrial arts, family and consumer science, and health and physical education. If the supplemental courses are not removed altogether, their funding is reduced, as the limited money in a school’s budget is used for additional math and reading resources (Ashford, 2004). In elementary schools, recess is being reduced or removed altogether in order to accumulate the additional time for math and reading instruction. This practice will be the focus for this research. When it comes to finding justification to either keep or remove recess in schools, Dills, Morgan, and Rotthoff (2011) explain, “On one hand, these active times reduce the school time available for learning academic subjects. On the other hand, they may

improve classroom behavior, increasing young students' comprehension" (p.889). The significance of performing proficiently on state assessments has increased since the inception of NCLB in January, 2002, but educators have been debating the topic of trading recess for additional instruction time long before NCLB. One significant example of recess being removed for additional instruction time occurred in the 1980's, when the Atlanta, Georgia school system eliminated recess in favor of more instructional time in the classroom (Chmelynki, 1998). Through the examination of the Georgia case, Chmelynki found that very soon after recess was removed, teachers began to incorporate down-time in response to the students' exhibited needs of off-task time.

As school administrators continue to make tough decisions in an attempt to increase test scores, the use of recess and a break in general during the school day has been found to be of direct benefit to student academic achievement and behavioral tendencies in the classroom. In an analysis of three studies based on the effects of recess on children's school performance, Barros, Silver, and Stein (2009) found that students were generally more proficient in maintaining their attention on the teacher and the tasks given to them following recess. Fourth grade students in one of the studies demonstrated more fidgeting and less on-task behavior when recess was given to them in a delayed fashion. In the second study, recess was delayed even longer, and the off-task behaviors and fidgeting prior to the recess were increased even more, while in a third study, students showed more attentive behaviors and less fidgeting after a recess period was provided. It was also concluded through these studies that the teacher's rating of classroom behavior (TRCB) for students who received recess or a break of fifteen minutes or more during the day was higher than students who received less than fifteen minutes daily. Positive relationships to academic achievement have also been identified through statistically significant relationships

found between fitness and academic achievement by Chomitz, Slining, McGowan, Mitchell, Dawson, and Hacker (2009), as well as Pellegrini and Bjorkland (1997), who found that performance on repeated cognitive tasks that utilize focused attention decrease over time periods until the student is provided with rest periods. Subsequently, Pellegrini and Bjokland also found that rest periods that are provided in the form of recess increase the performance of these same tasks after the recess has been provided.

While research has provided scientific background on the benefits of exercise on the human brain, (Hung, Chang, Tang, and Shih, 2008; Trudeau and Shephard, 2009; Zoeller, 2010), this research will specifically examine the impact that removing recess has on the academic performance and behavioral incidents of students in an elementary school setting. Specifically, the researcher will be examining whether student academic performance is more optimal in a classroom that utilizes recess as opposed to a classroom that does not, and whether behavioral incidents are fewer in classrooms with recess as opposed to a classroom without recess.

Statement of the Problem

There is a need to explore the impact that removing recess has on elementary students' behaviors and academic performance as a result of providing additional time for math and reading instruction due to required academic performance levels set forth by NCLB.

Purpose and Significance of the Problem

The purpose of this qualitative case study is to examine the impact of recess on student behavior and achievement. To do this, qualitative data will be collected using surveys, interviews, and observations of fourth and fifth grade students and teachers in a single suburban

school district. At the same time, student achievement scores and behavioral reports will be analyzed and compared to the data collected from the interviews, surveys, and observations to help draw conclusions about the impact of removing recess from the elementary school day. The data collected from interviews and surveys at the identified research site can then be utilized to expand the research to additional sites and populations outside of the selected site. Research has been conducted on the effectiveness of school recess during the school day for some time (Pelligrini, Smith, 1993, "The Value of School Recess and Outdoor Play," 2008). NCLB, however, has been responsible for the elimination of recess as schools increased time for math and reading instruction in an attempt to increase AYP scores under the NCLB legislation (Lewis, 2008; Cavanaugh, 2006). An additional theorist that will be referenced will be Piaget. Bickhard (1997), showed how Piaget's theories on such concepts as active cognition and pragmatism are centered around the use of movement and assimilation for the development of learning in children.

This qualitative study will identify the academic and behavioral significance of removing recess within one school district at the elementary level, where fifth grade students are one year removed from having recess as fourth graders. Reducing or removing recess from an elementary student's school day has been done in order to gain additional time during the school day for core content instruction such as math and reading (Dee, Jacob, Hoxby, & Ladd, 2010).

As previously stated, the loss of recess has occurred as schools look for ways to provide additional math and reading time in order to perform more proficiently on state assessments (Chaille, 2001, Simon and Childers, 2006, Lewis, 2008). The use of breaks (including recess) during the school day for students has been associated with improvements in physiological and

psychological health, thereby facilitating a stimulation in brain function, which is utilized in the learning process (Verstraete, Cardon, DeClercq,& De Bourdeaudhulj, 2005, Mahar, 2011).

Furthermore, providing additional time for recess (and physical education) has shown evidence suggesting that this practice does not harm student outcomes in reading (Dills, Morgan, Rotthoff, 2011).

Beyond the direct benefits that breaks/recess have on student learning, there are also physical, mental, and social benefits for students that in-turn, contribute to a positive classroom teaching and learning environment. As an example of a physical benefit, Ryan (2002) has explored a link to student pain and discomfort caused by excessive periods of sitting during the day. Ryan states that by increasing seat time for students in elementary grade levels, they may actually be prone to feelings of pain and discomfort due to their tailbones failing to reach complete hardening until later in their teenage years. Daily periods of recess have also shown a positive effect on student behavior and attention span (Barros, Silver, Stein, 2009, Patte, 2010).

Concurrently, utilizing recess as a strategy for students with behavior problems can facilitate learning for these students and those responsible for their education, in order to experience success in the classroom. On-task behaviors that occur as students are learning are subsequently increased as unwanted behaviors are decreased, with students exposed to more content material during the school day (Nelson, Smith, Colvin, 1995, Mahar, Murphy, Rowe, Golden, Shields, Raedeke, 2006). In a broader sense, while actual instruction time may be lost in order to schedule recess into the day, the amount of quality educational time in the classroom can benefit through fewer behavioral episodes, minimized time spent by teachers to correct behaviors, and higher student-engagement levels on the content instruction.

Research Question

The central question of this study includes:

- What impact does recess have on student achievement and behavior in an elementary school classroom?

Two additional questions will provide support to the central question. These include:

- How would teachers describe the impact of recess on student behaviors and academic achievement?
- How would students describe the impact of recess on their own behavioral and academic experiences?

The Conceptual Framework

The theoretical framework for this study was created through two distinct career experiences by the researcher. First, as a former health and physical education teacher and coach, the researcher has firm beliefs in the use of physical activity as a necessary daily event in the lives of school-aged children. With the emergence of technology in the form of video games, school-aged children are choosing to engage in electronic forms of recreation as opposed to physical forms (Butler, 2008). This is also having an impact on our children as students, and negating their competitiveness in the global economy with countries whose students do not utilize video games at the same rate that American children do (“Buckle up, Indians are Coming: Obama to Americans,” 2009). Physical activity can also be utilized by students of all abilities and skill levels during the school day as a bridge to positive achievement and learning (Beisser, Gillespie, Thacker, 2012). The researcher has utilized active learning during teaching in a positive manner,

and based such teaching on Constructivist Theories as Bruner's "Discovery Learning", and "Social Constructivism", introduced by Bandura and Vygotsky (Chrenka, 2001, Ervin, Wash, Mecca, 2010). Learning through doing in the classroom was found by the researcher to be beneficial to the students' socially, educationally, and physically. The second career experience the researcher has based the framework for this study upon comes from an assistant principal's perspective, particularly at the elementary school level. From my own experiences as an elementary school student, I can distinctly remember receiving two substantial periods of recess during grades K-6, with one period during the morning, and the other coming directly after lunch. Between the two recess periods, there was almost a full hour of the school day devoted to recess/free play. As an administrator in a K-4 school, the researcher works daily with students who are exposed to one single twenty minute period of recess per day, while students at the fifth and sixth grade intermediate school adjacent to the elementary school get zero minutes of recess or free play time. Subsequently, with little or no time for free play and physical activity, the researcher deals directly with frequent behavioral incidents that interrupt the learning process for students and teachers throughout each school week. The lack of minutes available for recess/free play can be attributed in part to the requirements of NCLB, and comes at a time when video games and childhood obesity rates are at an all-time high (Han, Lawlor, Kimm, 2010).

This qualitative research will incorporate a multiple case-study design in order to gather, analyze, and interpret data from two separate field sites. Three distinct themes have presented themselves in a collaborative manner to shape the researcher's methods of data collection and instrument selection. These themes are presented in the following visual representation:



As shown through the diagram, the three streams that have emerged from the central question include the impact of recess on student behaviors, the effect of physical activity on cognition and academic achievement, and the role of NCLB on the reduction and/or elimination of recess in schools. These three streams will be examined further during the review of the literature.

Definition of Terms

AYP—A measure of a school's academic growth measured yearly. A school district must meet the performance level as indicated by the state in the areas of math, reading, science, writing and attendance.

Qualitative Research: Research conducted through the use of such data collection instruments as surveys, interviews, and observations to gain an understanding into a phenomenon related to an individual, organization, or any other functioning collaborative unit. Perceptions and participant point of view is utilized by the researcher to formulate conclusions as opposed to statistical data utilized in quantitative research.

No Child Left Behind—Landmark education reform bill signed into law in January, 2002 by President George W. Bush. This law called for school districts to be accountable for reading, math, science, writing, and attendance levels, with standardized tests utilized to measure student progress in the aforementioned academic areas. Schools that fail to meet the achievement levels

set forth by the law may be subject to sanctions that include removal of school administrators, and state takeover of failing school districts.

Recess—Period of time in a school day where students are free to explore activity in any manner that they choose.

Assumption, Limitations of the Study

If additional time is provided daily for math and reading instruction, standardized test scores will rise, and schools will attain AYP. This assumption provides the basis for removing recess and free play time for students, as it is not a teaching period used for eligible content instruction (Lewis, 2008).

There are two main limitations to this exploration into the impact that removing recess has on elementary students' academics and behaviors. First, this study will be conducted in a condensed time frame. Because the case study will be completed within one school year, only one set of fourth and fifth grade students will be able to provide data on their experiences with recess. Optimally, it would be conducive to check this trend over a span of several years, to see if there is a positive or negative relationship between the data that the students provide. The second limitation is the limited scope of students that will be involved in the study. Having the ability to collect data from multiple school districts as opposed to one would provide more data for the analysis process. However, the data that will be collected for just one set of fourth and fifth grade students will still be vital to the overall research into recess and its impact on learning and behaviors.

Summary

In order to gain additional classroom time for core content instruction in such areas as math and reading in K-12 schools, educational leaders are making decisions that involve removing or reducing programs for students including classes in the arts, technology education, and health and physical education. At the same time, particularly at the elementary level, recess has been an area that has seen its time reduced or eliminated in favor of the additional core content time. The following qualitative exploration will attempt to look further into the impact that removing recess has on two areas of a student's overall school performance level. These two areas include academic performance, and incidents of unwanted behaviors. Therefore, a hypothesis has been established that states that recess during the school day has an impact on both academics and behaviors. In order to test this hypothesis, and gain further knowledge into this research area, a qualitative multiple case-study will be conducted. Results from this exploration can then be utilized to make scheduling decisions to assist students and teachers achieve academic and social success.

Chapter 2: The Literature Review

Introduction of the Problem

This methodological study will incorporate a qualitative multiple-case study design in order to interpret collected data, which will ultimately be utilized to answer the central question. The central question includes:

- What impact does recess have on student achievement and behavior in an elementary school classroom?

Conceptual Framework

Three streams of focus have also emerged from the central question, and will be identified further during the review of the literature. These three areas consist of the impact of recess on student classroom behaviors, the effect of physical activity on cognition and academic achievement, and the role of NCLB on the reduction/elimination of recess in schools.

The impact that recess has on the classroom behaviors of the students that are exposed to recess will be the first stream of focus. Recess provides time for the brain to regroup between complicated cognitive tasks and reduces fidgety, off-task behaviors after student participation (Jarret, Waite-Stupiansky, 2009). With recess as the focal point of the research, one of the sub-topics as indicated through the conceptual framework includes the relationship between recess and student behaviors in a classroom. Specifically during the action research phase, a fourth grade classroom will be featured that utilizes a twenty minute recess period during the school day, while a fifth grade classroom will be featured that has no recess or free-play period of any

kind during the school day. Data analysis will then be conducted with a focus on the comparison between student behaviors at each grade level.

The second stream of focus includes the effects of physical activity on academic achievement, and a specific part of this focus will look at the impact that activity has on cognition. With support from the literature review that provides a foundation for a beneficial relationship between physical activity and learning, student academic achievement results will be compared and analyzed during the action-research phase, comparing the scores of the students who receive recess with the scores of the students who do not receive any daily recess.

The third and final stream of focus includes the role of NCLB on the reduction/elimination of recess in schools. In order to effectively provide understanding as to why school leaders have chosen to eliminate recess time for elementary school students, the role of NCLB and its requirements for students to perform at pre-determined levels in reading and math will be uncovered during the literature review.

A visual schematic of this methodological study, portraying the central question along with the three resulting streams is displayed below.



Figure 1: Visual schematic of conceptual framework

Literature Review

The Impact of Recess on Student Behaviors

The Effects of a Peer-Mediated Self-Evaluation Procedure on the Recess Behavior of Students with Behavior Problems

In the March 1995 edition of the journal Remedial and Special Education, J. Ron Nelson, Deborah J. Smith, and Geoff Colvin spotlight a study that was conducted in order to ascertain the effects of a student self-evaluation process on their own behaviors at recess. Simultaneously, the study was held in conjunction with a peer evaluation component that paired a student who displays at-risk behaviors with a peer partner who provides them with feedback during the recess period on acceptable versus non-acceptable behaviors. The study was conducted due to an increased frequency of incidents on playgrounds that involved poor decision making on the parts of students, and was attributed to a shift in supervision practices. This shift involved the supervision responsibility going from certified, trained staff, to classified staff, with no formal training in supervisory practices. Students had to be explicitly taught what their role would be in the self-evaluation process, tested for accuracy, and externally monitored before the data was collected in the process. The main purposes behind the peer-mediated portion of the program were two-fold. First, the shift in supervisory practices limited the access that students had to adults who could facilitate socialization and proper decision making-skills. Second, the researchers uncovered evidence that using peers rather than adults as mediators had more of an impact on behavior change. At the same time, the researchers also concluded that allowing the disruptive student to self-monitor on their own without any type of assistance from peers or adults (teachers) most often lead to increases in undesirable behavior, further lending credence

for the use of the peer mediator. The participants of the research were second grade Caucasian boys, selected due to their high rates of disciplinary referrals in a rural elementary school in Washington State. Three additional students were selected as peer partners, with the criteria for their selection including teacher recommendation, positive disciplinary records, and their own desire to participate. The researchers began the data collection process by establishing a baseline which involved students participating in recess with normal conditions, and no peer partners. Next, the selected students and their peer partners participated in recess with their adult trainer providing guidance through the process. Finally, the students participated at recess in the student/peer partner configuration without the trainer, but with the recess supervisor on duty as usual. The data analysis completed by the researchers following the experiment showed fewer negative behaviors by the sample student, and in particular, the negative behaviors were very few during the afternoon recess period as compared to the morning period. The researchers did stress, however, that for optimal use of the program, the training of both the peer mediators, as well as the sample students in the self-monitoring process were key components and had to be carried out with fidelity. This study is relevant as a component to the first research stream due to its use of a targeted program of behavioral intervention that is incorporated during the recess period. Without recess, the students in the peer-monitoring program would not have had the opportunity to participate in the intervention, and negative behaviors would continue to impact the student's school day, including the classroom learning and achievement component.

Impact of Recess on Classroom Behavior: Group Effects and Individual Differences

In order to make an argument against abolishing recess during the school day, a group of researchers including Olga Jarret, Darlene Maxwell, Carrie Dickerson, Pamela Hoge, Gwen

Davies, and Amy Yetley published a report in the November/December 1998 issue of The Journal of Educational Research. This report described the results of an educational experiment that involved installing a recess period once per week in an urban elementary school that normally does not utilize any type of recess period during the week. The population and setting included two fourth grade classes in a southern, urban elementary school, and the data analysis compared the behaviors and on-task tendencies of the students on days they received recess to the subsequent days without recess. The experiment was conducted as a means to refute justification by school districts to eliminate recess due to such reasons as increasing classroom instruction time to raise test scores, a perception that recess disrupts the work patterns of students resulting in off-task behaviors, and an increase in aggressive behaviors and anti-social tendencies after recess. Following the action research phase, the researchers utilized a MANOVA (multivariate analysis of variance) for quantitative data analysis, and found that students were more on-task and less fidgety in class on days when recess was utilized, with a five percent increase in on-task behaviors, and a nine percent decrease in fidgety behaviors on days when recess was held as compared to days without recess. When the group looked at individual student data, six students diagnosed with attention deficit-disorder (ADD) each showed positive scores in terms of benefitting from recess, while boys and girls showed relatively equal benefit, without one sex showing a marked improvement from the other. The findings from this report are relevant to this researcher's central question, as it provides a similar study with clear results on the benefit of recess to on-task behaviors, and the reduction of fidgety, off-task behaviors which ultimately contribute to a loss of instructional time in the classroom for both the teacher and students.

Effects of Recess on the Classroom Behavior of Children With and Without Attention-Deficit Hyperactivity Disorder

In the January, 2003 edition of School Psychology Quarterly, Andrea Ridgway, John Northrup, Angie Pellegrin, Robert LaRue, and Anne Hightshoe describe the results of an experiment they conducted in a second grade classroom of a private school in order to measure the behavioral connection of recess on two types of students. The research utilized three eight-year-old male students with a diagnosis of attention-deficit hyperactivity (ADHD) and three other students from the same grade level who did were not previously diagnosed with ADHD in an educational setting that did not feature a recess period as a part of the school day. During the observation phase of the research, students were observed by the researchers throughout the morning in their classroom, and then during a morning recess break which lasted for a period of ten minutes on alternating school days. On the other days, the observers continued their observation in the students' classroom setting when recess was not provided. The researchers utilized interval graphs to record the inappropriate behavior incidents for the students, and compared results between the similar peers (with ADHD), and the ADHD students as compared to the students without ADHD. Data analysis indicated that the ADHD students all showed higher negative behavioral incidents on days without recess as compared to the days where they were provided with a recess period. Students without the ADHD diagnosis also were observed to be engaged in fewer negative behavioral incidents on the days when recess was provided. When compared to each other, the impact on negative behavioral incidents was greater on students with ADHD, yet still significant in the students without the ADHD diagnosis. The results of this report are relevant to this researcher's study due to the nature of the findings ascertained by those who carried out the research. This includes the fact that recess had an impact on students with

ADHD in the elementary school setting, and peers in the same school who did not have ADHD. By decreasing negative behaviors in both sets of students, teachers can focus more on instruction and less on redirection and classroom management through the use of recess during the school day.

Recess: Is It Needed in the 21st Century?

In July of 2004, the Clearinghouse on Early Education and Planning from the University of Illinois at Urbana-Champaign featured a research piece by Rachel Sindelar that explored the debate on keeping recess in schools, or eliminating recess in favor of additional classroom instruction time. Utilizing a variety of completed research in a compilation format, Sindelar examines several key areas of the debate, including those with direct implications on the role of recess on student behaviors. There is also discussion regarding the theories behind the use of recess during the school day. The first theory includes the Surplus Energy Theory. This theory indicates that when children are inactive, or sedentary, for long periods of time, they collect a surplus of energy that leads to fidgeting, loss of concentration, and general off-task behaviors in the classroom. Therefore, recess is strategic in the way that it allows students to release this surplus energy and return to the classroom ready for optimal engagement. Sindelar names fellow researchers Evans and Pellegrini as responsible for originally describing this theory in a 1997 study. The second theory, also credited to Evans and Pellegrini, is identified as The Novelty Theory. This theory states that children lose focus as the classroom work becomes less interesting, and the use of playtime is necessary to re-introduce novelty into the school day. Upon return to the classroom, the students are refocused and ready to fully attend due to a feeling of novelty towards their schoolwork. The third theory includes the Cognitive Maturity

Hypothesis, once again credited to Evans and Pellegrini. This theory is based on the notion that both children and adults benefit from participating in tasks that are spaced out as opposed to clumped closely together. Recess, therefore, is a break that is utilized to separate the learning tasks during a school day, and allows students to fully attend classroom instruction for maximum learning. Beyond these three theories, Sindelar also cites research by Jambor in 1999, that describes the social benefits of active play at recess associated with optimal classroom behaviors including peer sharing, cooperation, open communication, problem solving, respect of rules, conflict resolution, and self-discipline. This collection of research by the author is relevant to this research due to its use of empirical contexts of recess through the use of the association of the theories stated, as well as additional research conducted that is supportive of the first stream of this study's conceptual framework.

Give Me A Break! Can Strategic Recess Scheduling Increase On-Task Behaviour for First Graders?

A study was conducted by Todd Fagerstrom and Kate Mahoney and published in a 2006 edition of The Ontario Action Researcher that investigated the use of strategic recess scheduling during the school day. The researchers' hypothesis was that providing recess directly before or after a core instructional period of the day, as opposed to the end of the school day, would increase the students' on-task behaviors during the independent work periods in the classroom. The site and population of the study included a first grade classroom consisting of nine male students, and seven female students, all Caucasian in race. Recess in this particular classroom was traditionally provided at the end of the school day, and lasted twenty-five minutes in length. The action-research phase of the experiment lasted for three weeks. During the first week, recess

was provided to students shortly after math instruction had concluded. During the second week, recess was provided directly before the math instruction took place. The third week of the experiment alternated, with recess before math on odd days and after math on even days. The researchers utilized a checklist to record data, and included on-task and off-task behaviors as observable areas during data collection. The results of the data analysis indicated that utilizing recess before math instruction resulted in the most on-task behaviors during the experiment, with utilizing recess after mathematics showing the second-most on-task behavior scores. Maintaining recess at the end of the school day resulted in the fewest recorded on-task behaviors during the regular instructional periods. Therefore, the researchers' hypothesis (scheduling recess during strategic time periods of the day would have the highest impact on on-task behaviors in the classroom) was confirmed through the research and data analysis process. The relevance of this report on this researcher's study has several components. First, the results continue to confirm that recess has a positive relationship with on-task behaviors in a classroom, and less unwanted behaviors that have to be addressed by the teacher. Next, the use of scheduling recess strategically during the school day provided the biggest impact in on-task behaviors during math class, which is one of the main areas tested under NCLB legislation.

School Recess and Group Classroom Behavior

In the February, 2009 edition of Pediatrics, Romina Barros, Ellen J. Silver, and Ruth E.K. Stein provide a report of a national research studies that examines the group classroom behavior of students who receive daily recess periods as opposed to the behaviors of students who do not receive daily recess. The authors utilize a public-use data set entitled the "Early Longitudinal Study, Kindergarten Class of 1998-1999, third grade data set" (ECLS-K), which was sponsored

by the US Department of Education, and contains data from a national sample. Teachers provided data through the use of a questionnaire during the 2001-2002 school year with several key findings established through the results of the survey. First, students that were most likely to not receive any type of recess period were from lower income, urban areas, and be black, public school students from the Northeast and South regions of the country. The ratings of student behaviors by teachers were better for students who received some type of recess period as compared to those who did not receive recess. Therefore, a conclusion of the study indicated that for eight to nine year old students, the use of greater or equal than one recess period of more than fifteen minutes had the greatest impact on positive classroom behaviors, and students of this age group should receive recess periods daily. The relevance of this report once again lends support to the problem statement of this research, as well as the first stream of the conceptual framework which explores the impact of recess on student behaviors in the classroom.

Recess---It's Indispensable!

In the September 2009 edition of *Young Children*, Olga Jarrett and Sandra Waite-Stupiansky explore a compilation of research on the effects of recess on the cognitive, social-emotional, and physical areas of development in school children. In summarizing a 2002 report by O.S. Jarrett, the behavioral implications of recess on a student's school day are profound. Among the behavioral benefits uncovered by Jarrett are the development of leadership skills by students on the playground during free play, the ability to teach each other new games in a pro-social setting, the development of turn-taking in an appropriate manner, and the acquisition of conflict-resolution skills. From the teacher's perspective, the research indicated that children's behaviors are better in classes where they receive at least fifteen minutes of recess on a daily basis. The

authors conclude the article by encouraging educators to advocate for their schools to implement a system of recess if they do not already utilize it, as the compilation of research indicated the benefits on the cognitive, social-emotional, and physical areas of development in school children. This article was significant because of its use of research to support the advocacy of recess in schools. At the same time, the article provides additional means of support to this research's first stream of the conceptual framework.

Can You Imagine a World Without Recess?

In the fall 2010 edition of Childhood Education, Michael Patte explores the trend of eliminating recess in favor of additional time for classroom-based instruction. In the exploration, research-based implications of eliminating recess from the school day are presented. Several of these implications are directly related to the impact that recess has on student behaviors. First, students are demonstrating underdeveloped social skills as a result of the loss of recess. Violence and outbursts are two results of the underdeveloped social skills that are occurring in classrooms. Next, there are an increasing number of students who have been diagnosed with ADHD, which has a direct effect on student attention and behavior in the classroom. Without recess, these students have no time for energy and stress release, resulting in classroom incidents. Third, students are showing a lack of resiliency and an inability to develop proper social skills, resulting in confrontations. Patte also describes research that was featured previously by Barros, Silver, and Stein that confirms a higher rating of positive classroom behavior scores from having recess as indicated by classroom teachers. The relevance of the findings by Patte once again contribute to confirming a positive connection on the use of recess with fewer negative behavioral

incidents, and provide additional sources of research in a compilation format that can be utilized for further review.

Impact of short bouts of physical activity on attention-to-task in elementary school children

In the January 31, 2011 edition of Preventive Medicine, Matthew T. Mahar describes a study that was conducted that measured the link between attention-to-task behaviors in elementary school children and short bouts of physical activity. This study was conducted for several reasons. First, Mahar found that students were becoming more sedentary as a result of increased time in classrooms to focus on improving standardized test scores. Second, a school is an ideal place for students to be active because they have equipment and facilities already in place, and staff members who could lead the children in the completion of the physical activities. Mahar also cites several other studies within his own exploration, and found through a 2007 study by Lee et al., only 57 percent of elementary schools in the United States require regularly scheduled recess periods. To complete his study, Mahar met with a sample group of classroom teachers to introduce the study, state its purpose, and train them on what role they would be playing in the results. He also gathered data from these teachers to find who utilized recess and for how long, who did not utilize any type of recess during the school day. He found that 71 percent of those polled utilized recess, while 29 percent had very little to no recess. Teachers were also given a classroom behavior ratings form to complete which included a range of rankings from misbehaves and hard to handle to behaves exceptionally well. Mahar also emphasized the importance of properly training observers who are recording the behavior data in order to have credible data. Utilizing recording devices was one method that was recommended to help observers increase their accuracy in collecting valid and credible data. During the action

research, students were provided with physical activity, usually in the form of recess, on some days, while on other days, they did not receive any physical activity. Students demonstrated more attentive-enhancing behaviors and less fidgeting on days they received the physical activity than on days they did not. Following the completion of data collection, as well as reviewing similar studies conducted by other researchers, Mahar concluded that physical activity incorporated into the school day can improve attention-to-task behaviors in students, as data showed a relationship between short periods of physical activity and increases in attention-to-task behaviors in the classroom. This literature is important as it provides additional support through data from completed research and multiple findings that support a positive link between physical activity and improved classroom behaviors.

Instant Recess: A Practical Tool for Increasing Physical Activity During the School Day

In the fall 2011 edition of Progress in Community Health Partnerships: Research, Education, and Action, Melicia C. Whitt-Glover, Sandra A. Ham, and Antronette K. Yancey provide details into a research study they conducted on the effects of increasing physical activity in an elementary school setting during the school day. This study began in an effort to combat overweight/obese students in a particular school district by increasing their activity levels without losing instructional time during the day. The population and setting of the study included students in grades 3-5 throughout eight different school districts in Forsyth County, North Carolina. In these classrooms, the concept of Instant Recess was introduced as a method of stimulating the physical activity levels of students in a manner that is conducive to both healthy lifestyles, and positive behavior choices. Instant Recess is a licensed product and program that helps any type of organization provide ten minute periods of physical activity time in a

structured format as a part of the Center for Disease Control's recommended thirty minutes of physical activity. In North Carolina, a mandate was passed stating that schools must provide a minimum of thirty minutes of daily physical activity for children in grades K-8. The caveat is that this mandated time has to be separate from the time utilized for physical education classes in those same grade levels. The state's school districts then faced the difficult task of implementing this unfunded mandate while trying to satisfy the requirements for AYP in their school assessment scores. The idea of Instant Recess was embraced by the districts in the study due to its projected results, as well as for its method of satisfying the mandated thirty minute activity requirement. The researchers were surprised at the level of endorsement they received from the districts, and immediately began partnerships to incorporate the concepts of the study into an actionable program. The researchers also received generous donations and established partnerships with the likes of research groups, national organizations, and even a college on the opposite end of the country (UCLA). Following the necessary trainings required to implement the Instant Recess programs in these eight school districts, the research began, and data was collected. The mixed-method study utilized both qualitative and quantitative data, and the results they found during the analysis period were encouraging. Instant Recess showed an improvement in student physical activity levels through the course of the program, and most relevant to this research, also showed an improvement in classroom behaviors and time-on-task in classrooms of the participating schools. This study is relevant to the research in a number of ways. First, the sample population is congruent to the population that will be utilized in this research (fourth and fifth grade students). Second, it confirmed yet another example of the positive impact that physical activity in the form of recess has on student behaviors, and ultimately, the classroom environment of those participating.

Organized Recess Prevents Bullying

In the May 2012 edition of Pediatric News, author Jane Anderson describes a study released by Stanford University on the use of an organized method of recess that was utilized in several elementary schools, and compared it to schools that continued to utilize traditional methods of unstructured, unorganized play at recess. The results of the study indicated that the schools who used the structured and organized form of recess reported less bullying, better behavior at recess among the participating students, and less time that was necessary for students to be engaged in the learning process upon return to the classroom. These associations to classroom behaviors are relevant to this research, as the impact of recess on student behaviors has emerged as one of the three components spawned by the central question. This is also the only study that was ascertained that described an organized component to the recess process, which could be an option for schools to utilize in situations of frequent negative behavioral incidents and redirections due to off-task behaviors.

While the previous stream of focus centered around the impact of recess on student behaviors in the classroom, the second stream of focus in the review of the literature will examine the effect of physical activity on cognition and academic achievement.

The Effect of Physical Activity on Cognition and Academic Achievement

The Role of Recess in Children's Cognitive Performance

Anthony D. Pellegrini and David Bjorkland released a study in a 1997 that described the importance of recess to a child throughout multiple areas that combine to assist in the cognitive development of the overall child. One area in which recess helps is cognition, particularly in

younger children. Due to cognitive immaturity, the learning process is facilitated by shorter amounts of direct instruction with frequent breaks. Pellegrini and Bjorkland argue that younger students should be given these breaks during and between learning tasks that are highly focused and meant for cognitive development. Pellegrini and Bjorkland continue by advocating for distributed practice during the school day for learning tasks rather than periods of prolonged bouts of instruction. Recess would then serve as the ideal break between these learning tasks, and minimizes any cognitive interference that may be caused by requiring students to stay focused on a learning task for a prolonged period of time. Additionally, Pellegrini and Bjorkland provide a table that compares elementary schools in the United States with elementary schools in Taiwan and Japan. In both Taiwan and Japan, students have a higher number of school days per year, yet have shorter amounts of time available for instruction each day than U.S. schools for first grade students. Fifth graders in Taiwan do have longer days than the U.S. fifth grade comparison, while Japan is nearly the same. However, both Taiwan and Japan offer more recesses per day (four and sometimes five per day) as opposed to the U.S. school in the study, which only offered two recesses per day. This article is relevant to this research for several reasons. First, it demonstrates the importance of recess for elementary school students through data collection and research. It also provides logic for scheduling recess during strategic times of the school day, where students will gain the most cognitively and academically.

Does physical activity influence academic performance?

Leslee J. Scheuer and Dr. Debby Mitchell (2003) from the University of Central Florida created a study into the effects of physical activity on academic performance based upon data obtained from similar research within the same field. The findings of the research suggest that

academic performance meets and in some cases exceeds previous levels with the addition of physical activity within the school day. Scheurer and Mitchell also point out that the brain shows benefits from the body's involvement in physical activity such as increased cerebral blood flow and higher levels of attention span due to a decrease in inactivity through boredom. There is also data provided regarding a study conducted by the California Department of Education. This study tested three grade levels of students (grades five, seven, and nine), and showed the connection between the state administered academic assessment, and a fitness test known as the "Fitnessgram". This test was comprised of six physical assessments, very similar to the President's Physical Fitness test. The results clearly indicated that there was a distinct connection between student fitness scores and academic achievement scores in each of the grades that were involved in the study. Results were similar in studies that were conducted in Australia and Hong Kong, proving that the relationship between physical activity and academic achievement is a worldwide connection. The findings from this report are relevant as they confirm the positive influence of physical activity on academic achievement. In this study, the physical activity would be in the form of recess which has been removed at the fifth grade level of the sample site.

The Role of Recess in Children's Cognitive Performance and School Adjustment

In the January/February 2005 edition of Educational Researcher, Anthony D. Pellegrini and Catherine M. Bohn provide the argument for maintaining recess in the schools of North America and the United Kingdom (U.K.) in the wake of recess reductions throughout both countries. The researchers base their argument on both theoretic and empirical evidence, and utilize the findings of three surveys as the foundation for evidence of diminished recess time in American and U.K. schools. One difference that they note, however, is that recess is more uniformly implemented in

the U.K., whereas implementation of recess in American schools varies widely. The researchers have also noticed the division that exists in educators on the topic of recess. Some feel strongly about the maximizing of educational time, while others advocate strongly for providing students with breaks in between learning periods. On this debate, the researchers state their intentions to find common ground between the two sides. To support recess, the researchers utilize theories and theorists in their argument. The Cognitive Immaturity Hypothesis is one such theory, supported by the findings of Piaget, and which states that a child's cognitive processing is an imperfect version of more adult processes of thinking. The child's version is an adaption of the adult form, and allows the child to effectively learn vital skills and behaviors. The child may overstate/overestimate their own cognition and social skill set, allowing them to feel successful and acquire complicated learning skills and strategies. This concept is supported by the findings of Bandura in 1997 as referenced by the researchers. It is also stressed that playful, unstructured breaks are utilized during the school day in order to reduce cognitive interference, which occurs after long periods of structured learning and tasks. A second supporting area utilized by the researchers includes proximal measures in the role of recess on cognitive performance. Citing research from East Asia and later followed by research in America, a child's attention to task in a classroom is most optimal when shorter periods of learning are followed by breaks, as opposed to longer periods of tasks. Reading achievement is particularly related to optimal attention to task. During these experiments, the timing of when recess was provided was manipulated in order to collect data on the most optimal time-on-task indicators in the classroom. In each of the experiments, students showed optimal attention in classroom tasks after recess as opposed to before recess, and showed the most benefit when recess was provided between shorter bouts of classroom tasks as opposed to when it was provided between longer periods of instruction. One

experiment also added the variable of recess location, holding recess indoors as opposed to outdoors. This did not affect the outcome, as the students were much more attentive after recess than before it was provided. A final argument of the researchers included the connection between the social behaviors on the kindergarten playground and the students' academic achievement level the following year in first grade. Citing the work of Piaget in 1962, the researchers found that relationships and social skills many times are acquired during social games, and during the research into this concept, it was concluded that the playground social behavior of the kindergarten students was a significant predictor of their academic achievement the following school year in first grade. The findings of this report are significant as a research-supported assertion that physical activity has a positive effect on student achievement, included as the second emergent component of the conceptual framework in this research.

Physical fitness and academic achievement

In a 2006 article in the Journal of Physical Education, Recreation, and Dance, author Donald Siegel, from the Department of Exercise and Sport Studies of Smith College in Northampton, Massachusetts has provided results from a study that was conducted in 2002 that connected the scores from a fitness test called the "Fitnessgram" (comprised of a student's aerobic capacity, body composition score, repetitions of curl-ups and trunk lifts, upper body strength measures, and flexibility scores) to the scores the same student received on the Stanford Achievement Test. This standardized test was given to nearly 900,000 students in California public schools in the fifth, seventh, and ninth grades, along with the Fitnessgram testing. Results indicated a positive relationship between the Fitnessgram scores and math and reading scores on the Stanford Achievement Test. Measurements for variance were applied to the scores, and showed that as the

scores on the fitness test increased, the academic scores on the standardized test also improved in a statistically significantly manner. Siegel does state that causality should not be inferred, and that other variables could also have an impact on the scores, but that it can be stated that increased fitness has an overall positive impact on a student's general health. Data that does appear to be useful towards an exploration into the impact of physical activity and academic achievement in this study includes the positive link between the Fitnessgram and the Stanford Achievement Test were consistent across genders, and for students of varying socio-economic levels.

Physical education, school physical activity, school sports and academic performance

Francois Trudeau and Roy J. Shephard (2008) released a study that attempted to investigate the relationship of academic performance with school-based physical activities, including physical education (PE), free school physical activity (PA) and school sports. The authors collected data samples between 1966 and 2007 for their research, and utilized results from around the world in their findings. One of the first sets of data that was presented came from Quebec sometime between 1970-1977, and used elementary school students as a testing population. Over five hundred total students were provided with five hours of physical education during the school week. This produced higher academic performance indicators than that of their control counterparts who were enrolled in the normal school program for only forty minutes per week. This obviously lead to conclusions that favored additional physical activity for increased academic gains. One area in particular that saw noticeable gains during this study was mathematics. A similar study was conducted in South Australia in 1983. Five hundred ten year old students were provided with 75 minutes of endurance training during the school day in a

physical education setting. The results indicated better math and reading scores, while teacher ratings of student behavior were also favorable. A third sample was taken from British Columbia in 2007. Students in grades four and five in selected schools were provided with 47 minutes of recess time per week with results conclusively positive. One final study took place in Israel in 1994, and examined a group of 358 kindergarten and first grade students who were provided with a school based physical movement program during their educational day. Children in the experimental group showed greater reading skills and arithmetic scores than control groups who remained in their traditional, non-physical movement program. This report is relevant to this research due to its extensive data collection and diversity in the students involved in the research. Because of the conclusions that indicate physical activity has a positive impact on academic achievement, this report serves as an additional resource for confirmation of the second stream of the conceptual framework of this research.

Exercise and Children's Intelligence, Cognition, and Academic Achievement

In the June, 2008 edition of the Educational Psychology Review, Phillip D. Tomporowski, Catherine L. Davis, Patricia H. Miller, and Jack A. Naglieri provide research pertaining to the link between exercise and a child's intelligence, cognition, and/or academic achievement. The first area that the researchers describe involves executive function of the brain, and the influence that exercise has on these processes. While there have been studies that show the relationship between exercise and executive function in adults, the link in the brain of a child with exercise includes the important role exercise plays in the development of their overall neurological development. The development of executive function in children is also particularly important as it is a major foundation for psychological processes and social behaviors. An underdeveloped

executive function can also result in such disorders as attention deficit hyperactivity disorder, and autism. The researchers also describe several others important roles that executive function plays in a developing child's overall cognitive ability including when and how to apply knowledge, inhibit impulsive behavior, develop imagination, exhibit creativity, and use self-evaluation during thoughts and actions. During a review of additional literature, the researchers were able to make conclusions that suggest that executive function is developed with the assistance of exercise in children. Elementary-school aged children, especially, will benefit from such times for exercise as recess, which has been reduced throughout schools over the past decade. Therefore, for optimal cognitive development, students should be exposed to exercise during the school day. This research is beneficial as it provides additional support through a review of previously conducted research, and also details the biological benefit that exercise has on the development of the brain responsible for cognitive processes and academic achievement.

Does Physical Activity Affect Brain Development in Young Children?

In a 2008 edition of the International Journal of Psychophysiology, T.M. Hung, T.C. Chang, H.C. Tang, and H.H. Shih profile an experiment conducted to ascertain the role of physical activity on the brain development of young children. This research was conducted due to the limited knowledge base on the area specific to this age group, as opposed to the elderly population. The older groups have been tested for medical purposes in order to combat such brain diseases as Alzheimer's disease and Parkinson's disease. Two groups of kindergarten children participated in the study, with one group serving as the test group, receiving a specially designed physical activity program over a six-month time frame. The other group then served as the control group, maintaining their normal routine during the school day. Before and following

the trial period, both groups of students had their EEG levels recorded for comparison and data analysis. The group receiving physical activity displayed higher EEG levels throughout the sixteen electrode locations including the frontal, temporal, and central areas of the brain. These areas are all directly related to cognitive functioning. The control group, however, scored better on the physical fitness tests that were administered both before and after the trial period, which caused the researchers to conclude that additional research is needed as a result of this study. This report is relevant as it provides scientifically-backed data on the effect of physical activity on the functioning of the brain utilized in the learning process.

Is There a Relationship Between Physical Fitness and Academic Achievement? Positive Results From Public School Children in the Northeastern United States

A study was released in the January 2009 edition of the Journal of School Health that was done in order to determine any relationship that may exist between fitness levels of students, and their corresponding academic performance levels. During the study, Virginia R. Chomitz, Meghan M. Slining, Robert J. McGowan, Suzanne E. Mitchell, Glen F. Dawson, and Karen A. Hacker utilized a cross-sectional study that involved public school data in Massachusetts to compare data from fitness achievement tests with results the state math and reading assessment taken by the same group of selected students. After the data was collected and analyzed, the researchers found statistically significant relationships between the achievement levels of the math and reading assessment and the fitness levels that students attained on the physical fitness tests. The researchers also found that as students passed subsequent fitness tests during the battery of given fitness tests, the odds that they passed the reading and math tests also increased. During the conclusion of the study, researchers indicated that current research did not indicate

that an increase in time allocated to fitness activities during the school day (physical education, recess) would have a negative impact on academic performance, and may actually be conducive to enhanced student learning. Finally, the researchers are in support of increasing student time for exercise and activity during the school day as a result of their findings during the study between fitness test performance and academic achievement scores. This research is beneficial as it provides a recent data sample and analysis that shows a link between physical activity (which may come in the form of recess) and academic achievement.

Is Recess an Achievement Context? An Application of Expectancy-Value Theory

In the Spring, 2009 edition of The Alberta Journal of Educational Research, Nancy Spencer-Cavaliere, Janice Causgrove Dunn, and E. Jane Watkinson provide details of a study that was conducted on the relationship between choices that students make at recess and success that they have in other settings such as academics and social settings. The researchers conducted this study due in part to a concern that some children do not take part in free-time on school playgrounds. Through their research, it was found that boys in particular acquire as much, and possibly more fitness and motor skill learning during free-time at recess than they do in a physical education class. Children also gain confidence through such activities at recess as throwing and jumping, and this confidence then carries over into other tasks during the school day as indicated through the expectancy-value theory. There are also associated values with such activities that impact a child's development such as the social value that playing with friends entails, the concept of avoiding cost that being excluded from social activities is associated with, or for the simple intrinsic value that participating in an activity they enjoy may have. This study is valuable to the research as it provides results that pertain to multiple benefits that recess has for elementary

school students. In particular, choices that a student makes at recess can be shown as an achievement context.

Associations Between Physical Activity, Fitness, and Academic Achievement

In the December 2009 edition of The Journal of Pediatrics, a group of doctors including Lydia Kwak, Stef Kremers, Patrick Bergman, Jonatan Ruiz, Nico Rizzo, and Michael Sjöström provided an overview of a study they conducted into the association between physical activity and academic achievement. They also set out to discover whether cardiovascular fitness plays any type of role between physical activity and academic achievement. The study took place in Sweden using 232 9th graders, with 52% being female students. This endeavor was done as part of the European Youth Heart Study, which is used to gather data in younger European citizens to predict future rates and trends of heart disease. During the study, the medical team reports that such data as school grades, pubertal phase, skinfold thickness, cardiovascular fitness, and physical activity were all measured on an objective level. At the same time, surveys provided to participants provided such data as the mother's education, family structure, and parent monitoring. Kwak et al disclose that the data that was collected for the study was analyzed using a linear regression analysis. Students in the study were exposed to daily amounts of activity that fell in the light, moderate, and vigorous category. This study is applicable to the exploration into the connection between physical activity and academic achievement due to its methods, instruments, and results uncovered. The children subjected to the study were provided with an instrument known as an accelerometer that they wore while awake during the day. This instrument measured their physical activity rates and subsequently downloaded them into a computer software data warehouse for analysis. The accelerometers were tested and validated for

accuracy, and students were removed from the study if the instrument was not working for a minimum of ten hours per day, and/or not worn for three consecutive days. The subjects' cardiovascular fitness was measured through the use of a bicycle ergometer, with heart rate monitors worn on the chest. Several conditions had to be met for fitness to be considered as a mediator for academic achievement, including correlation of proximal variables to achievement, and correlation of proximal variables with fitness. A final condition required fitness to be associated with academic achievement after proximal variables were controlled. The results of the study indicated that there was a connection between academic achievement and physical activity in the female population that was studied if the activity was vigorous. This report is relevant to this research for several reasons. First, it serves as an additional confirmation as to the relationship between physical activity and academic achievement. Second, for purposes of this study, the component of the connection between the fitness level of the student and academic achievement level is admissible, especially at the fifth-grade sample site where recess is not provided to students during the school day.

Give Me a Break—The Argument for Recess

In the winter 2009-2010 edition of Childhood Education, Barbie Norvell, Nancy Ratcliff, and Gilbert Hunt document their argument for keeping recess as a part of the American school day, even as many schools are eliminating the practice in favor of more instructional time. This increase in instruction time, according to the authors, is occurring as a result of high-stakes testing as schools strive to reach adequate yearly progress (AYP). Through the citation of various research already conducted, the authors state that there is no clear research to support eliminating recess breaks, and also make an argument that recess has a positive association with academic

achievement. Citing both research and theory (Piaget's theory on cognitive development), the authors state that evidence clearly points to a positive connection between play and cognitive development, due to the creation of chemicals in the brain responsible for long-term memory through recess breaks. At the same time, the use of play facilitates peer interactions crucial for cognitive development which do not occur in the same manner as through the interactions between adults and children. A final portion of the report describes a 2006 research project created by B.N. Norvell that intended to ascertain the connection between the timing of a fifteen minute recess period and a literacy task in a first grade setting. A control group continued to receive the recess following the literacy task, while the test group participated in the recess break prior to the task. While the experiment itself was short in its time frame (three weeks), it yielded clear results to confirm that the test group scored better on the literacy task than the control group. This report serves as an additional source of confirmation between the impact of physical activity and academic achievement, and provides subsequent research and theory for use by the researcher.

Exercise and Cognitive Function: Can Working Out Train the Brain, Too?

In the June 30, 2010 edition of the American Journal of Lifestyle Medicine, Robert F. Zoeller, Jr. provides a report of a study conducted to explore the relationship between physical activity, fitness, and cognitive function. For the purposes of this research, there is specific literature in this report on the relationship of exercise and fitness on the cognitive function of children and adolescents. Zoeller utilizes a 2003 research report that studied the relationship between a child's (between the ages of 4 and 18) physical activity level and eight different measures of cognitive function (perceptual skills, IQ measurement, academic achievement, verbal skills, math skills,

memory, academic readiness, and other). During the data analysis, it was confirmed that a positive relationship was found for each of the measures of cognitive function except memory, where a significant association could not be noted. The younger students in the sample group also showed the most benefit within their measures of cognitive function, and both IQ and academic performance were positively influenced by physical activity. Zoeller also cited a 2002 study released by the California Department of Education that confirmed a positive relationship between students who achieved greater scores on a fitness assessment (Cooper Fitnessgram) and their scores on the Stanford Achievement Test (SAT) among students in fifth, seventh, and ninth grades. The relevance of this report on this research is significant due to the relationship of the age of the students involved in the cited research to the similar age group of the students who will comprise the sample population of this research. At the same time, the additional confirmation of the influence of physical activity on cognition and academic achievement is relevant.

The Crucial Role of Recess in Schools

In the November, 2010 edition of the Journal of School Health, Catherine Ramstetter, Robert Murray, and Andrew Garner provide a report of their extensive and comprehensive review of literature specific to the role of recess in schools. To begin the report, the researchers illustrate the recess recommendations of three major national organizations. These include the Center for Disease Control (CDC), the National Association for Sport and Physical Education (NASPE), and the National Association of Early Childhood Specialists in State Departments of Education (NAECSSDE). While the first two organizations make recommendations primarily on the positive physical health implications associated with recess, the NAECSSDE provides

recommendations clearly associated with the cognitive development of children along with impact on academic achievement. The researchers then summarize the findings of the literature in regards to the role of recess in American schools. Of particular interest to this research, one section of the report described the relationship between recess and the benefits to the child as a whole, and on their cognitive and academic development. As illustrated in table two of the report, the research cited by the authors confirms that following recess, children display more attention and a higher level of cognitive performance. At the same time, recess was proven to help school children develop social skills that they would not receive in more structured areas of the school environment. The researchers continue by reporting on the cognitive and academic benefits found through recess. This includes the development of intellectual constructs and higher cognitive development through hands-on learning with manipulatives, which occurs during unstructured play. Additionally cited research in the report indicated that teachers and students benefit mutually from recess due to more attentive students, and a sense of refocus following the completion of a period of unstructured, free play or recess. This report holds relevance to the research once again due to the interrelation between the ages of the students included and the sample population of this research, along with the direct citations to research pertaining to the confirmation of the association between physical activity and academic achievement in elementary school students.

*Fitness, Fatness, Cognition, Behavior, and Academic Achievement Among Overweight Children:
Do Cross-Sectional Associations Correspond to Exercise Trial Outcomes?*

In the January 31, 2011 edition of the journal Preventive Medicine, Catherine Davis and Stephanie Cooper provide background information, data, and results of a study that was

conducted on the association of fitness levels and body fat with cognition, academic achievement, and behavior. Demographic influences remained isolated from the study while the selected study group included overweight and inactive (also called sedentary) 7-11 year olds from the Augusta Georgia area. The study included citations and supporting data from a variety of other scientifically-based explorations into academic/health related connections, and provides several data tables which show such quantitative data as the body features of the sampled children (age, body-mass-index scores, waist measurements, visceral and subcutaneous fat levels, oxygen-intake levels) with cognitive assessment scores (Woodcock-Johnson Test of Achievement III scores, Conner's Teacher Rating Scales, and the Conner's Parent Rating Scale scores). A second table indicates the correlations found between the measured scores for cognition, achievement, behavior, body fat levels, and fitness levels. The link between on-task classroom behavior and activity/body fat/fitness levels was also a theme explored in the study. The authors cited research that indicated obesity has been linked to behavior problems in children, and is found to be more common in children with Attention Deficit Hyperactive Disorder. The results of the study indicated that fitness levels were found to be positively correlated to cognition and achievement, while higher levels of body fat were negatively related to cognition and achievement. The results of this study along with its supporting data and related studies are relevant to this research as an additional affirmation into the link between physical activity and academic achievement.

A reoccurring theme through the first two streams includes the role of the No Child Left Behind law of 2002 on the reduction/elimination of recess in schools. Because of this, this concept will comprise the third stream that has emerged from the central question of this research.

Associations between Health-Related Physical Fitness, Academic Achievement and Selected Academic Behaviors of Elementary and Middle School Students in the State of Mississippi

In the spring/summer 2011 edition of the International Council for Health, Physical Education, Recreation, Sport, and Dance Journal of Research, Lindsey C. Blom, John Alvarez, Lei Zhang, and Jerome Kolbo provide the findings of a study conducted that measured the relationship between fitness levels and academic achievement in public school children. The sample population for the study included nearly 3,000 students in the state of Mississippi between the grades of three and eight, and was primarily composed of white male students between grades three and five (over 50 percent of the student sample were white males). In order to compare the relationship, objective measures of fitness testing were utilized along with data from standardized testing in math and language arts. However, this study was unique in the fact that it explored additional areas of data for connections including attendance records, discipline records, and socio-demographic statistics. The researchers found during their analysis (using Chi-square analysis) of the data that there was in fact a statistically significant positive correlation between fitness scores and standardized math and language arts testing scores, and a statistically significant negative relationship between fitness scores and school absences. Further data analysis also found significant relationships when controlling for gender, race, and socio-economic status. Negative behavioral incidents charted through disciplinary referrals were also found to be higher in students with higher absentee rates and lower levels of fitness as recorded during the fitness testing. The findings within this report are relevant to the research for several reasons. First, the students involved in the study are of a similar age level as the population that has been selected for this study. Second, data from this recent report has provided support for

students to receive daily physical activity in order to increase academic achievement and reduce behavioral incidents.

The Role of No Child Left Behind on the Reduction or Elimination of Recess in Schools

No Child Left Behind: Implications for School Counselors

During previous literature summaries, the role of recess in an elementary student's social and emotional development was documented. As recess is reduced or removed in favor of additional instructional time in the classroom, students are failing to learn these vital social and emotional skills that are developed on playgrounds and during free play, making the role of the school guidance counselor increasingly important. However, NCLB is impacting their role in the school as well, as indicated through an April 2006 research article in Professional School Counseling, and submitted by Colette T. Dollarhide and Matthew E. Lemberger. In the article, the results of a survey that was completed by 210 school counselors from around the country was published. This survey dealt directly with the implications that NCLB has had on the role and school duties of the school counselors since NCLB was implemented in 2002. For the purposes of this research on the impact of recess on student behaviors and achievement, one particular area of the published results was applicative. 74.4 percent of the respondents of the survey reported negative effects of NCLB on the school environment. Specifically, they are reporting teachers under more stress, which then trickles down to the students they teach, resulting in conflicts between teacher and student. Students are then discouraged, and become less interested in their education. Counselors also report that they have additional testing duties as a result of NCLB that take away from their primary counseling roles in the schools. The emotional and social needs of the students are then put off to a later date. In elementary schools that eliminate recess, this

complicates the development of the students' social and emotional growth even further. The relevance of this research provides further support for schools to incorporate recess and free play into the school day in order for students to develop relevant social and cognitive skills needed for academic and social success. This is especially relevant in light of the role change that school counselors have undergone through the incorporation of NCLB.

The Importance of Play in Promoting Healthy Child Development and Maintaining Strong Parent-Child Bonds

In the January, 2007 edition of Pediatrics, Kenneth R. Ginsburg provides a report on the benefits of play in the promotion of an overall healthy child. A strong opening statement by Ginsberg points to the fact that play is held in such high regard in the development of a child, that the United Nations High Commission for Human Rights recognizes it as a right of every child. However, the time afforded to a child to enjoy free play is currently facing a reduction due to several factors, including NCLB. Ginsburg refers to a poll that was taken in 1989 that showed that 96 percent of surveyed schools in America utilized at least one recess period during the school day. However, a similar survey was conducted over a decade later that saw the reported number of schools who utilize at least one recess down to 70 percent. In the report, the current trend at the time was to reduce additional time committed to recess as a direct response to NCLB. The justification for the reduction in recess time was a more focused approach to reading and math instruction. Ginsburg contends that this practice is actually counter-productive to a child's ability to store new information, due to the enhancement of their cognitive capacity through a significant change in activity. However, the change in activity must be one that is unstructured, such as free-play recess. Ginsburg also provides a number of factors that have lead

to changes in the routine of childhood. Among these factors is the increased focus of reading and math in schools due to the requirements set forth in NCLB. These changes have been a source of stress, anxiety, and even depression in children who have less time to develop crucial creative growth and self-reflection skills, as well as the chance to decompress through the use of free-play. This article holds relevance to the research due to its scientific and medically-based support to the concept of recess and its role in the learning and behaviors of a child. At the same time, the additional implications of NCLB and its role in reducing/eliminating recess is found within the literature.

The Importance of Play

In the January 2007 edition of ASCD (Association for Supervision and Curriculum Development), Dan Laitsch provides a compilation of reports and research findings on the benefits of recess and play despite the ongoing NCLB mandate which holds schools accountable for academic performance scores. There is also a significant statement provided regarding the context of NCLB, and its role in reducing/eliminating recess in schools, which holds relevance in this research. Through examining the requirements of the NCLB law, it is noted that significant emphasis is placed on numeracy and literacy. However, there is no support within the law for recess or physical education programs of any kind, despite research that indicates the use of recess and physical activity in schools promote learning and academic achievement in children. Despite research provided by the Center for Education Policy in 2007 that indicated drastic reductions in recess and free play time in elementary schools following the implementation of NCLB, as well as recommendations by the American Academy of Pediatricians to provide a period of play in the school day for optimal development of children, the requirements set forth

in NCLB for schools to attain AYP are directly effecting the time available for recess and free play in elementary schools.

Robbing Elementary Students of Their Childhood: The Perils of No Child Left Behind

In the fall 2007 edition of Education, Joan Henley, Jackie McBride, Julie Milligan, and Joe Nichols provide the results of their research into the impact of No Child Left Behind on the school experiences of students. To begin the report, they describe a hypothetical elementary school that has given up its school play, music, art, and recess. This has occurred due to the mandates set forth in NCLB that require schools to achieve pre-determined academic performance levels on achievement tests, or face sanctions as a result. Of particular interest to this research is the report's findings on NCLB and its impact on recess. The authors state that schools are abandoning recess because they feel the time would be better spent in the classroom on instruction. Other school officials who were interviewed in the report stated that the emphasis on the high-stakes testing was directly responsible for the loss of recess time, despite the protests of parents, principals and teachers who understand and value the role that recess plays in the development of the student. Students have the ability to exercise and release pent-up energy at recess, as well as form social relationships that help them understand their place in the world. The report cites a 2004 research piece by K. Axtman that states experts in the healthcare and psychology fields of children have noticed an increase in sedentary youths who are displaying higher levels of stress and a loss of socialization skills, and is directly adverse to the approach to education that focuses on the whole child. Throughout the nation, the opposition to the removal of recess from schools by parents has lead to collaboration between the National PTA association and the Cartoon Network, as they have established the "Rescuing Recess" program. Supported

by the CDC, the program advocates for the use and importance of recess through television advertising and contests. To conclude this section of the report, the authors cite the work of researcher Charles Corbin, who not only argued against the perception that recess will undermine classroom learning during the times of high-stakes testing, but also advocates for additional research that points to the gains in academics that school children receive directly through exposure to recess. This report holds relevance to the research as it demonstrates support in implicating NCLB as a top cause of the removal or reduction of recess in schools.

Effects of NCLB's Focus on Reading and Math

In the April 2008 edition of The Education Digest, Anne C. Lewis provides a report with relevance to the third stream of the conceptual framework of this research. The report discloses the results of a survey conducted by the Center on Education Policy that was provided to ascertain what subjects in elementary grades are suffering as a result of the emphasis on reading and math instruction due to NCLB. The survey, which included responses from 349 school districts around the country, reported that 62 percent of the schools had added an average of three hours or more a week in math and reading and instruction. Considering that a traditional elementary school day is approximately six hours long, this additional time comprises half of that time frame. Because of this, substantial cuts were reported in the areas of social studies, the arts, science, physical education, and lunch. This data provides relevance to this research due to the role that NCLB directly plays in the restructuring of the school day to accommodate additional math and reading instruction, which comes at the expense of such areas as music, art, and in elementary schools, recess.

Instructional Time in Elementary Schools: A Closer Look at Changes for Specific Subjects

In the July/August 2008 edition of Arts Education Policy Review, a report details the examination of the impact of NCLB mandate, and provides additional analysis that originally was presented in a 2006-2007 study on NCLB by the Center on Education Policy. One of its most prevalent findings was that since NCLB's inception in 2002, a large shift in instructional time was given towards English language arts (ELA) and mathematics instruction, which in turn, created a drastic reduction in several other facets of the school day, particularly at the elementary level. Utilizing the data from the 2007 Center on Education Policy report, several tables illustrate the percentages of instructional time shifts since 2001-2002, as well as the magnitude change in the instructional time shifts since the start of NCLB. For the purposes of this research, the data provided on the change in recess time at the elementary level held the most relevance. Between the 2001-2002 school year and the 2006-2007 school year, recess was held an average of 144 minutes per week in the surveyed schools. However, the average time of recess in these schools before NCLB was initiated was 184 minutes, which represents an increase of forty minutes of additional recess time before NCLB. This was also represented in a percentage, which indicated a fifty percent average decrease in the minutes per week allocated to recess following the start of NCLB. The magnitude of the instructional time shifts was also represented in table form and represented the schools that reported an increase in ELA/math instruction with a simultaneous reduction in one or more of six other areas (social studies, science, art and music, physical education, lunch, and recess). Again, for the purposes of this research, the impact of recess holds relevance. In the area of recess reduction, 39 percent of the schools reported a reduction of less than 25 minutes and up to 49 minutes per week. 61 percent of the schools reported a reduction of recess time of 50 to 149 minutes per week, while less than one percent reported a reduction of 150 minutes or more. Not only does this report hold relevance for this research in terms of

clearly stating the role of NCLB on the reduction/elimination of recess, but it also provides data from a recent and country-wide survey as an additional support.

Impact of No Child Left Behind on Curriculum and Instruction in Rural Schools

In the fall 2009 edition of *The Rural Educator*, Deborah Powell, Heidi J. Higgins, Roberta Aram, and Andrea Freed provide a report of research they conducted on the impact that the NCLB mandate had on rural school in regards to their practices of curriculum and instruction. The participants of the research were 76 teachers from rural schools in the state of Maine, and 101 principals from rural schools in the state of Missouri. The data was collected through interviews conducted by trained interviewers, as well as surveys provided to the principals. For the purposes of this research, one particular area of the report's results that was relevant in its findings included the impact of NCLB on the non-instructional time in rural schools. Under this non-instructional time category, recess is identified and the findings in the report hold relevance. Prior to NCLB, time allotted for recess in the rural schools was almost a half-hour in duration. However, following the NCLB mandate, the time allotted for recess in three separate age categories (K-2, 3-4, 5-6) had all decreased. Grades K-2 reported a decrease of almost five minutes in the school day, while grades 3-4 saw a reduction of nearly four minutes. Additionally, grades 5-6 reported a cut of nearly three minutes from the school day. This data contributes to the support for the third stream of the conceptual framework of this research, which explores the role of NCLB on the reduction and/or elimination of recess in schools.

Recess Makes Kids Smarter

In the Spring 2011 edition of Instructor, Caralee Adams examines the reduction and/or removal of recess in schools, and attempts to find the causes behind the reduction in recess practices. Adams states that the reduction in recess can actually be traced back to the late eighties, yet was taken to a higher level when No Child Left Behind was written into law. School districts that were not performing as required on the achievement tests added maximum amounts of instruction into the school day, much to the disagreement of parents and teachers. A significant component of this report included a survey completed by principals throughout the country which attempted to ascertain the direct reasons why they removed or reduced recess in their schools if they had in fact done so. Respondents stated that 89 percent of the disciplinary-related issues in their schools occurred at recess, which caused the cutback. However, one in five of the principal respondents stated that AYP requirements of NCLB have caused the decrease in the time allotted for recess in schools. In another poll from 2009, 8 out of 10 principals reported that recess has a positive impact on student learning, which leads to belief that the principals are not in favor of or directing the reduction in school recess throughout the nation. This report holds relevance to the central question of this research along with the third stream of the conceptual framework, as it provides both research findings and additional resources to utilize when exploring the impact that NCLB has on the reduction/elimination of recess in schools.

The Impact of State Laws and District Policies on Physical Education and Recess Practices in a Nationally Representative Sample of US Public Elementary Schools

In the April 2012 edition of the Archives of Pediatrics and Adolescent Medicine, Sandy J. Slater, Lisa Nicholson, Jamie Chriqui, Lindsey Turner, and Frank Chaloupka provided the results

of a nationwide study that examined the impact of state level and school-district level policies on the frequency and use of physical education and recess in public elementary schools throughout the U.S.. The data collection period took place between the 2006-2007 and 2008-2009 school years, and included 1761 schools within 47 states, and 690 districts. The study was conducted as a means to check the reliability of schools to follow the Physical Guidelines for Americans recommendation of sixty minutes or more of moderate to vigorous physical exercise for school-aged children between the ages of 6 to 18. Because this age group also spends a majority of their waking hours in school, the study was conducted through the use of surveys throughout the 1761 schools. The results that pertain to the use of recess indicated that approximately 70 percent of schools in the survey sample offered at least 20 minutes of daily recess, but a major barrier to providing time also found in the survey was competing time demands throughout the school day. The current emphasis throughout the country on academic achievement was cited as the biggest barrier to providing additional time for recess and free play. Therefore, the researchers have advocated for states to mandate increased physical activity time throughout the school day in order to help students achieve optimal overall wellness. The results of this study are important as it directly cites the demand for instructional time during the school day as a culprit for reductions in available time for recess and free play. One of the influences of this demand for time includes NCLB, which puts an increased emphasis on student achievement.

Chapter 3: Research Methodology

Introduction

The purpose of this study will be to examine the impact of recess on student behavior and achievement using surveys and interviews of fourth and fifth grade students and teachers. The data collected from interviews and surveys at the identified research site will then be utilized to expand the research to additional sites and populations outside of the selected site. One central research question will be answered, with two additional questions examined in a supportive role.

These include:

- What impact does recess have on student achievement and behavior in an elementary school classroom? (central question)
- How would teachers describe the impact of recess on student behaviors and academic achievement? (supporting question)
- How would students describe the impact of recess on their own behavioral and academic experiences? (supporting question)

In order to explore these questions, a qualitative, multiple case-study design will be utilized by the researcher. Surveys, interviews, and observations will provide qualitative data, while academic achievement scores and behavioral incident figures will be analyzed by the researcher in order to interpret the relationship that recess has on student achievement and behavior. In explaining one of the benefits of a multiple-case design, Yin (2003) states, “The evidence from multiple cases is often considered more compelling, and the overall study is therefore regarded as being more robust” (p.46). Because data will be gathered and analyzed from two separate

schools within this same district, the multiple-case design has been selected as opposed to the single-case study.

Site and Population

Population Description

The population of the study includes 5th grade intermediate school students and 4th grade elementary school students. Teachers from each class will be included, as they will provide vital data from surveys and interviews. The school district that includes the two sample schools is an urban-fringe school, which directly borders a small city. Demographic statistics of the district show a rapidly rising poverty rate among district students, and an increase in enrollments over the past eight school years. According to district demographic figures, nearly 41 percent of the district's students were economically disadvantaged in 2012-2013. This is a 165.18 percent increase over the level of economically disadvantaged students in 2004-2005. The population of Hispanic students enrolled in the district has risen 203.81 percent since 2004-2005, and the overall student population in 2012-2013 increased 12.25 percent from the total enrollment recorded in 2004-2005. The population of white students has seen the sharpest decline, with a 22.56 percent decline in white students in 2012-2013 from the 2004-2005 school year. While the district itself has made AYP each year since 2001-2002, several of the schools are in the warning phase of school improvement, including the elementary school and high school. To clarify, there are several measures of reaching AYP for each school district. These include a 90 percent or better yearly attendance rate for students, an 85 percent or better graduation rate for each district's high school students, a 95 percent or better participation rate for students in eligible testing grades (grades 3-12), and finally, the academic performance measures. For these

academic performance measures, students eligible to take the test must meet proficiency rates in math and reading portions of the academic assessment. These proficiency rates have increased at certain intervals since 2002, with a goal of 100 percent proficiency for all students in reading and math by 2014. If a school fails to meet any of these required measures, they are put on a warning list with an expectation for improvement. If they continue to fail, subsequent penalties may be imposed upon the district, including loss of jobs for teachers and administrators, and a district takeover by the state education system. Before this would take place, the district would have opportunities under school improvement initiatives to make necessary changes for improvement. Districts are also measured in several demographic fashions. There is a whole population score in reading and math, and also proficiency levels that must be met by each subgroup. A subgroup includes the district's special education population, and racially divided subgroups as well, including black and Hispanic students. If any of these groups fail to meet proficiency levels, the district as a whole will fail to meet overall AYP. The students included in the sample groups in the fourth and fifth grade classrooms will be comprised of a mix of ethnic/racial groups, with white and Hispanic as the majority, and academically differentiated, with both regular and special education students included within the same classrooms.

Site Description

Within this school district, there are only four total school buildings that house the entire student population. These include the elementary school (which includes grades K-4), the intermediate school (which includes grades 5-6), the middle school (which includes grades 7-9), and the high school (which includes grades 10-12). This research will occur within the elementary school, and the intermediate school.

In 2008-2009, a new intermediate school was built for fifth and sixth grade students where half of this exploration's case study will take place. Fifth grade classes were previously located within the elementary school building, while sixth grade students were instructed in the middle school building. This new fifth and sixth grade building is considered elementary (classroom teachers are certified in elementary education K-6), but is not scheduled in the same manner that the elementary school had been prior to 2008-2009. In order to provide additional math and reading instruction as a means to improve state assessment scores, fifth and sixth grade students were not provided with any type of recess or free-play period. Fifth grade students, in particular, have the biggest adjustment to their daily schedule, as they received twenty-minutes of recess while they were in the elementary school (as do all students in this particular elementary school), but now receive no recess at the intermediate school level. The other half of this exploration's case study will occur in a fourth grade classroom within the elementary school, where students in grades K-4 attend.

The geographic location of the school district has a major impact on the demographics of the student population, as one of the nation's poorest cities is located directly next to the township affiliated with the school district. As noted earlier, the district has undergone a major population increase since 2004, with many of the newly enrolled students moving into the district directly from the school district associated with the neighboring city school district.

Site Access

A letter of access has been granted to the researcher that allows the research to take place at both school buildings in the selected school district (See Appendix A for a copy of this letter of access). This letter was signed by the assistant superintendent of the school district, who will be

the gatekeeper at the research site. The researcher also has full access to the electronic databases of both school buildings, and clearances to move freely within both buildings. Because of these factors, no known factors exist at this time that may prevent the research from taking place.

Additionally, a critical component of the site access will be the institutional review board process (IRB). According to Creswell (2008), collecting qualitative data “consists of lengthy periods of gathering information directly involving people and recording detailed personal views from individuals” (p. 218). Because of this, the researcher must provide the IRB with a description in as much detail as possible about the nature of the intended research before receiving official approval to begin collecting qualitative data.

In order to fully understand how to navigate through the IRB process successfully, the researcher should be clear in regards to the function of the IRB, and why their approval is mandatory. The US Food and Drug Administration (“Institutional Review Boards Frequently Asked Questions-Information Sheet,” 2011) describes the IRB process by stating:

The purpose of IRB review is to assure, both in advance and by periodic review, that appropriate steps are taken to protect the rights and welfare of humans participating as subjects in the research. To accomplish this purpose, IRBs use a group process to review research protocols and related materials (e.g., informed consent documents and investigator brochures) to ensure protection of the rights and welfare of human subjects of research.

To stay compliant with the IRB, the researcher will follow the protocols associated with maintaining confidentiality of all research participants and data collection sites. Because children will be participants, parents will be notified in advance of the data collection, and permission for

their children to participate will be secured. At the same time, the names of any participants will be altered in order to protect their confidentiality, and any other identifiable information such as school names and locations will be changed.

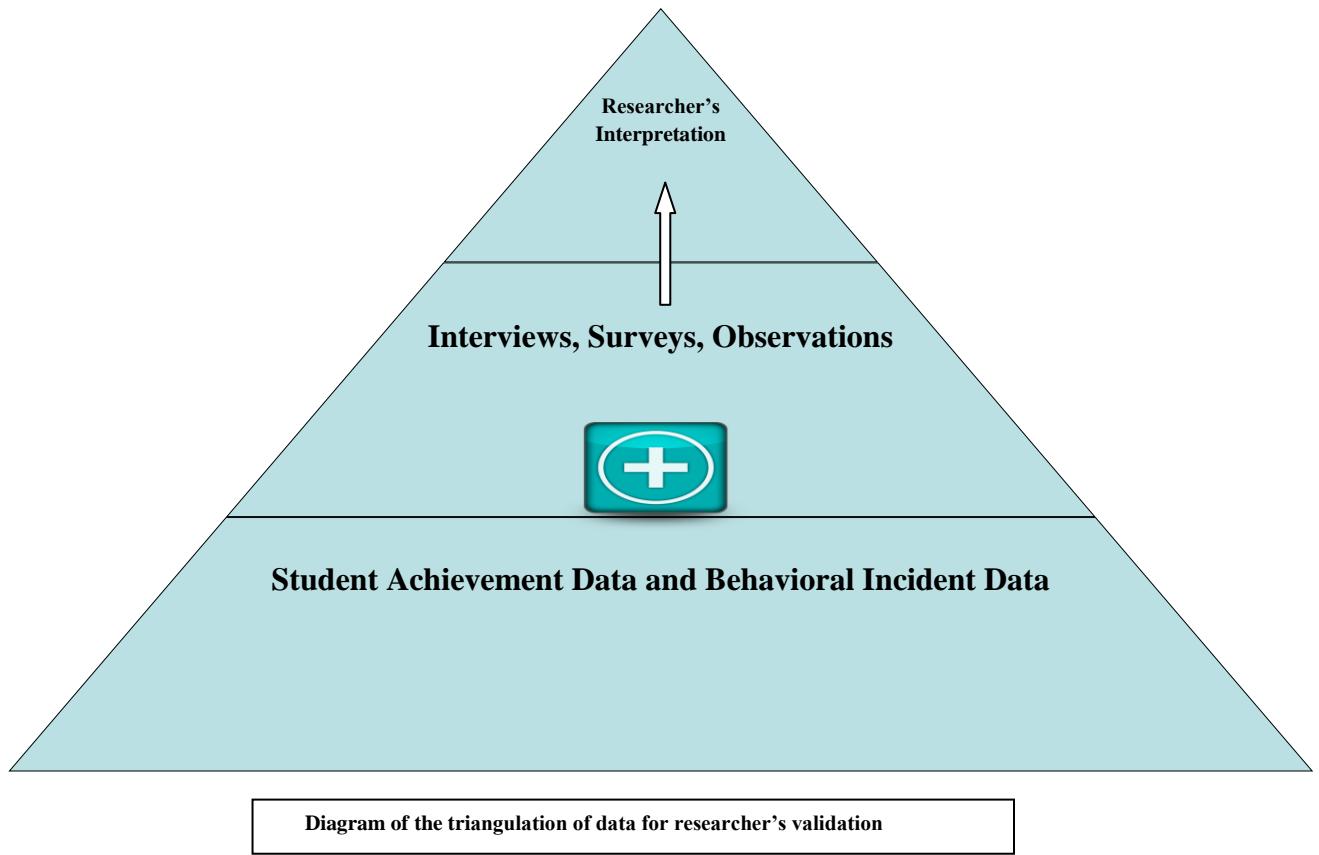
Research Design and Rationale

This study will utilize a qualitative design, with the incorporation of a multiple case study. The researcher has selected a qualitative approach due to the inclusion of interviews and surveys that deal with human perception in regards to a subject area. Specifically, the researcher will be comparing data collected at two sites in order to analyze the impact that school recess has on the academic achievement and classroom behaviors of elementary school students. According to Maxwell (1996), there are five justifications by which qualitative research is suited to a study. The first of these justifications is particularly relevant to this research. Maxwell states that using a qualitative study will provide understanding into “the meaning, for participants in the study, of the events, situations, and actions they are involved with and the accounts they give of their lives and experiences” (p.17). The connection between the research participants and the impact that school recess has on the teaching and learning process during their school day is vital to this research. At the same time, the accounts that they provide through surveys and interviews will be essential qualitative data that is collected and analyzed by the researcher.

The use of the multiple case study has also been selected specifically due to the logistics of the research sites. For this research, data will be collected through surveys, interviews, and observations in a fourth grade classroom in an elementary school building. This data will then be compared to data that is collected subsequently in a fifth grade classroom in an intermediate school, also through the use of surveys, interviews, and observations. Robert K. Yin (2003)

highlights several reasons for utilizing a multiple case study during research. First, a multiple-case design is “used in many situations to contribute to our knowledge of individual, group, organizational, social, political, and related phenomena” (p.1). In this particular case, the case study will provide further knowledge in regards to an organizations differing use of recess between elementary (grades K-4) and intermediate schools (grades 5-6), and the impact this has on the academic achievement and behaviors of the students involved. Yin’s second point is in regards to the logic behind utilizing a multiple-case design, which is “carefully selected so that it either (a) predicts similar results (a literal replication) or (b) predicts contrasting results but for predictive reasons (a theoretical replication)” (p.47). For the purposes of this research, the prediction will compare contrasting results (the perceptions of one classroom that is exposed to recess as opposed to one classroom that is not) between one case site (fourth grade class in elementary school) and another case site (fifth grade class in intermediate school building).

In order to validate the findings of the data, the researcher will implement a triangulation of the data sources (Creswell, 2008). The multiple sources of information that will be triangulated for validity include the interviews, surveys, and field notes taking during observations, along with the student achievement scores and disciplinary records. These sources will then be interpreted by the researcher for the evidence that supports the theme of the impact of recess on the academic achievement and behaviors of elementary school students. Figure 2 represents the triangulation of data that will occur for validation.



Research Methods

List of Methods Used

This research will be conducted through the use of a qualitative design, with a multiple case study utilized for data collection at two separate school buildings. The researcher's relationship with those involved in the study will be that of an observer and neutral collector of information, without influencing the outcome of the interview responses, surveys, or observed behaviors in any manner, in order to maintain validity and ethical considerations.

The population sample of this research will be done through purposeful sampling during the data collection phase, with every student between both classrooms invited to take part in the surveys, and each classroom teacher involved in the interview process. The selection of the actual classes themselves will also be purposeful, and with a specific justification behind their selection. The fourth grade teacher has been selected because they have over ten years of service at the elementary school, and they were there when the school was still K-5 before the 2008-2009 school year. They also have both regular education and special education students included within their classroom environment. The fifth grade teacher was selected because they were at the elementary school when it was still K-5, and then moved to the intermediate school in 2008. Therefore, they have experienced teaching with recess implemented during the school day, and teaching without recess over the past five school years. Like the fourth grade teacher, the fifth grade teacher also has both regular education and special education students within their classroom, as well.

During this qualitative study, the researcher will incorporate the following methods as means of collecting data at the two data collection sites:

- A pilot study will be conducted in order to provide the survey questions to fourth and fifth grade students not involved in the actual data collection process in order to check for clarity of the survey questions.
- Electronic surveys will be completed by students through the use of the online survey tool “Survey Monkey”. Students will be able to complete the survey through classroom computers, while the researcher can utilize the site for expedited survey results and accessibility.

- Semi-structured interviews with each classroom teacher and randomly selected students, which will then be transcribed and coded for analysis.
- Electronic school based data warehouses (e-School Plus, My Ed Insight (On Hand Schools)) which will be utilized by the researcher to study and interpret academic achievement scores and student behavioral data.

Participant Selection

Researcher selection in a non-random method will include the type of participant selection that occurs during this study. The researcher will select one classroom from each school building (fourth grade classroom from the K-4 building, and fifth grade classroom from the 5-6 building) for inclusion in the data collection phase. The participants from the fourth grade classroom will include the teacher (who will have been in the same position for at least 5 years to coincide with the building being in a K-5 setting), and a population of both regular education and learning support students within the classroom. For the fifth grade classroom, a teacher will be selected who previously taught in the elementary school when it was still a K-5 building. This teacher will have experience with recess at the K-5 level, and no recess at the 5-6 grade level. A similar population of regular education and learning support students will be utilized in the fifth grade classroom for participation. To increase validity, each teacher will be included in the interview process, while a random selection process will be utilized to select one regular education and one special education student from each classroom for the interview process. Students from both classrooms will have the option to complete the surveys, with an opt-out available for those who wish not to participate. An agreement by each teacher to participate in both the survey and interview will be secured before the data is collected.

Identification and Invitation

As previously stated, the teacher for the fourth grade classroom will have at least five years of experience in the position, and students of both regular education classification and learning support classification will be selected. The teacher of the fifth grade classroom will have experience at both buildings (5th grade was removed from the elementary school for the 2008-2009 school year and housed permanently in the new 5/6 grade building), and students of both regular education and learning support will be selected. Hard copy invitations will be provided to all participants, with parent permission requested by the researcher before any research takes place.

Stages of Data Collection

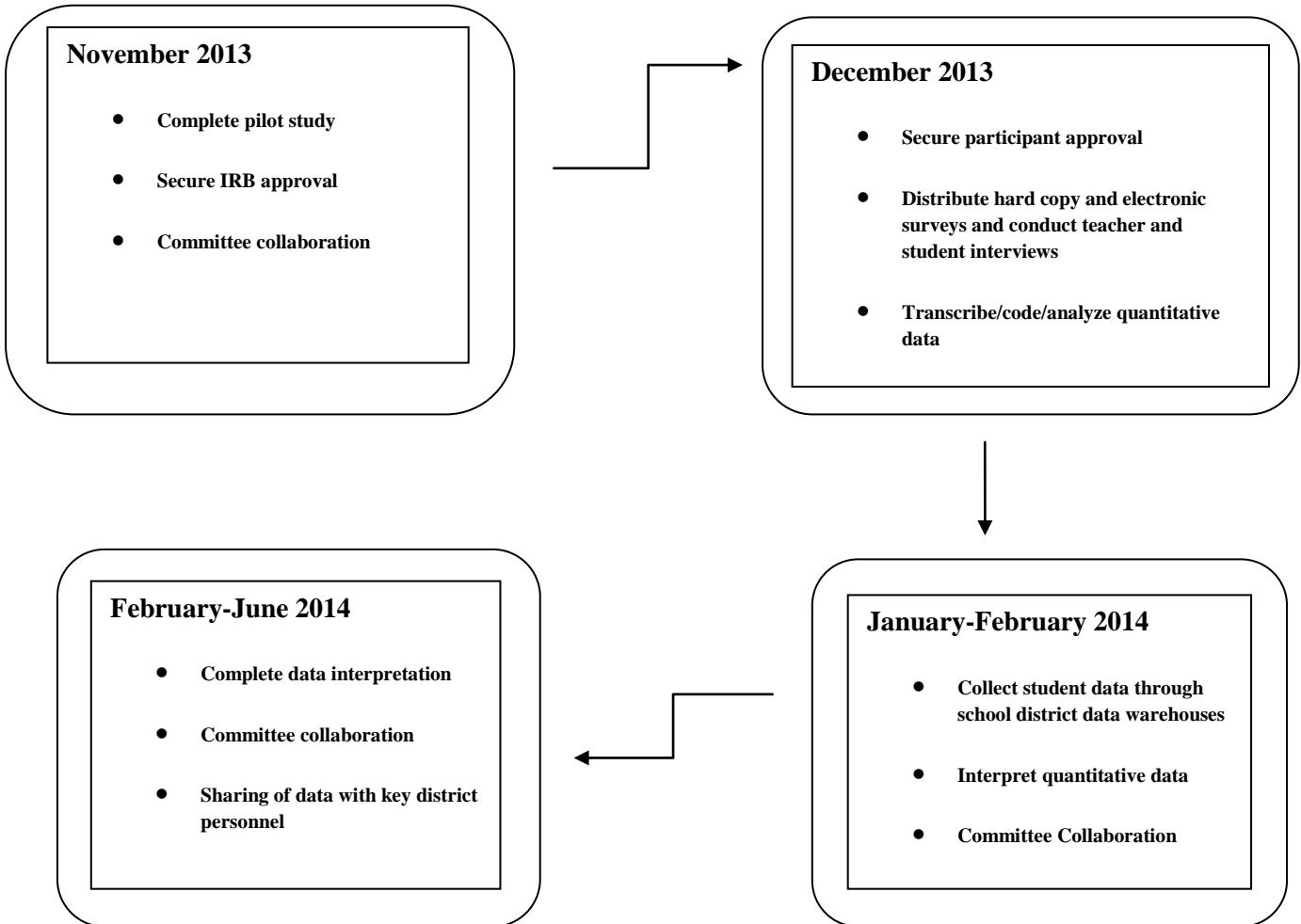
Following the initial selection of the research design process and collaboration with committee members, the pilot study will commence in order to implement surveys and interviews for evaluation by the researcher. Throughout this pilot study, the researcher will remain in contact with committee members in order to keep lines of communication open for reflective and inquiring discussions regarding the data collection process. Following the pilot study, any modifications will be made as necessary to the survey questions, and preparations will be made to conduct the official data collection process. The first site that will be selected for survey and interview conduction will include the fifth grade classroom at the intermediate school. This is due to travel and time arrangements necessary for the researcher to be in the field, conducting the data collection before the end of the school year. Concurrently with the interviews and surveys completed by the fifth grade students and classroom teacher, the researcher will also conduct observations within the classroom, recording field notes to

document the occurrences of pre-selected criteria. Because the surveys will be completed electronically, the collection and analysis of the data provided by students will not be as cumbersome and time-elapsing as it would be in paper form. Following the administration of the surveys and interviews, and completion of the on-site observations, the researcher will compile the data into analytical forms. The surveys will be tallied and marked for frequency of answers, while the interview will be transcribed and coded to look for key-word and theme frequency.

The data collection process that occurred at the fifth grade site will then be duplicated at the fourth grade site. Students will be provided with the surveys through the Survey Monkey website for completion, and the researcher will complete a semi-structured interview with the teacher. During this time, the researcher will also complete another observation, this time in the fourth grade classroom. Field notes will once again be taken in order for the researcher to check for patterns of student tendencies in the classroom according to a specified rubric (which can be found in the Appendix section). The surveys will once again be tallied, and the interview will be transcribed and coded.

The next phase of data collection will include the researcher's exploration into student-specific data related to academic achievement scores, and behavioral incidents. This will be done through access to district online data warehouses including eSchool Plus, and On Hand Schools. The researcher will then be ready to compare the data collected at the fifth grade site with the data from the fourth grade site, and subsequently make another comparison with the academic achievement and behavior data. Triangulation can then occur for validation of data by the researcher.

A proposed data collection timeline is illustrated below.



Instrument Description

The first instrument that will be utilized to collect qualitative data will be surveys. A survey will be provided to students to ascertain their perceptions of recess at each grade level. This survey will be exclusive to each separate grade level, and will be completed electronically through the survey website Survey Monkey. Fourth graders will take a survey from the

perspective of a student who currently has recess, while fifth grade students' perspectives will be measured as students who do not receive any recess or free time during the school day. These surveys will measure the students' self-perception of their classroom behaviors, and ability to concentrate on the teacher's instruction. Again, this perception will be molded through the availability of recess in the fourth grade, and the removal of recess in the fifth grade classroom. Samples of each survey can be found in the Appendix for further review.

Interviews will also include a data collection instrument for qualitative data collection. Each classroom teacher will be interviewed regarding their perceptions of the students' ability to learn as well as the student's tendencies in behaviors. These perceptions will be controlled by the fourth grade teacher's exposure to recess, as well as the fifth grade teacher's instructional day that does not include recess. Samples of each interview can also be found in the Appendix for further review.

Data Collection and Data Analysis

To help illustrate the research methods more clearly, a data collection chart has been created based on Creswell and Plano Clark's (2006) "Designing and Conducting Mixed Methods Research", (p.127).

Study Phase	Methods	Products
Phase One-Qualitative Data Collection	Interviews and surveys with sample population (teachers and students)and on-site observations	Completed interview transcripts, surveys, and field notes

Phase One-Qualitative Data Analysis	Coding of interviews and scoring of surveys and field notes	Completed interview coding and survey and field note scoring
Phase Two-Qualitative Data Collection	Examination of school district resources for student data including those for academic achievement and behavioral statistics	Completed collection of statistical data provided by electronic school district resources
Phase Two-Qualitative Data Validation	Triangulation of surveys/interviews/field notes and academic achievement scores/behavioral incidents with researcher's analysis/interpretation of data	Credible/accurate report and interpretations based on the collected data

Ethical Considerations

This research will include data that comes directly from the participation of elementary school students and elementary school teachers. Because of this, any identifiable information will be changed to ensure anonymity and protection of all participants and locations. Prior to commencement of data collection through the surveys, interviews, and observations, parent contact will be initiated by the researcher in order to secure approval for their child's participation in the research.

Data will be collected and stored on electronic devices that are under the use of the researcher only, and will be maintained in locked areas when not directly utilized by the researcher. No

information will be maintained through online data resources that could be compromised by outside persons not affiliated with the research.

As stated previously, IRB clearance will be necessary before any data collection can occur. The researcher must provide the IRB with a description in as much detail as possible about the nature of the intended research before receiving official approval to begin collecting qualitative data. To receive IRB clearance, the researcher will complete an IRB training course, an IRB protocol that includes information similar to the research proposal, and an IRB application. Following the application, the researcher will wait for the IRB to provide any changes or modifications that must be made, or for official approval that will allow for the commencement of data collection to take place.

Chapter 4: Findings and Results

Findings

The purpose of this study was to determine whether elementary recess has an impact on a student's academic and behavioral progress. The findings and results related to the main question are in this chapter. Student achievement data and behavioral incident data will be discussed during this chapter. This information will then be compared with the information collected in surveys and interviews of both students and teachers to answer the central question of the study:

- What impact does recess have on student achievement and behavior in an elementary school classroom?

Two additional sub-questions were examined to support the central question:

- How would teachers describe the impact of recess on student behaviors and academic achievement?
- How would students describe the impact of recess on their own behavioral and academic experiences?

The site of data collection for this research study includes a K-4 elementary school, as well as an Intermediate School that houses grades 5-6 within the same district. The researcher is utilizing academic achievement data and behavioral scores, results from interviews and surveys, and then drawing conclusions and interpretations based on the comparison of the data in a triangulation method.

Sources for Academic Data

Academic data utilized for this research was collected from two standards-based assessment programs. These include the Study Island math assessment program, and the DIBELS Next reading assessment. Study Island is a web-based program that is designed in connection with the state's assessment and Common Core standards. Fourth and fifth grade students take the official Study Island progress monitoring assessment quarterly throughout the school year, and progress data is electronically stored and utilized to help teachers target students' specific learning needs. The first assessment taken during the year is utilized as a baseline assessment, and the data helps teachers identify where the students current ability levels are as they enter their classroom at the beginning of the school year. Each subsequent test then measures their understanding of the concepts taught up to that point, along with eligible content they may have learned during previous school years. According to the official Study Island website (www.studyisland.com/about-us), "Study Island combines rigorous content that is highly customized to specific state standards in math, reading, writing, science, and social studies with interactive features and games that engage students and reinforce and reward learning achievement. Study Island's programs enable educators to track student performance in real-time to address individual learning gaps, while allowing administrators to monitor student progress and measure teacher effectiveness."

DIBELS Next is a research based reading assessment system created by educators at the University of Oregon. This system assesses students in several critical reading areas, and helps teachers identify and remedy a variety of reading deficiencies in students. This assessment is a revision of the original reading assessment, simply known as DIBELS. Like Study Island, this

assessment is given periodically through the school year. The assessment is research based, and was revised from the original based on data. According to the DIBELS Next Assessment Manual, authors Roland Good III and Ruth Kaminski (2011) state, “DIBELS Next represents a breakthrough revision based on new research conducted over four years on more than 25,000 students in 90 schools throughout the United States, as well as consumer feedback. DIBELS Next retains the best of DIBELS, but has been updated to increase ease of use and accuracy of results.” For this research, the reading comprehension components of 4th and 5th grade DIBELS Next assessments were utilized.

Study Island Math Assessment Scores and Analysis

Study Island scores were collected for students at multiple stages of the school year, with quarterly assessments given to help teachers monitor students’ progress. For this study, the researcher has collected scores from the 1st quarter (baseline assessment), and the 3rd quarter (taken in late winter) to compare the 4th and 5th grade proficiency levels. During the 1st quarter assessment, 4th grade students had a 54% percent proficient/advanced level, while 5th grade had 44% of their students at the proficient/advanced level. Therefore, 4th grade students outperformed the 5th grade students by a margin of 10%. In order to check for consistency, a second assessment was analyzed, with the 3rd Quarter Study Island assessment utilized. During this assessment, 4th grade had 61% of their students proficient or advanced, while 5th grade had 54% proficient/advanced. Again, 4th grade had more students at the proficient/advanced level, outperforming the 5th grade by 7%.

These scores indicate to the researcher that there may be an association in the use of recess at the 4th grade level and academic performance compared to 5th grade, where recess is not

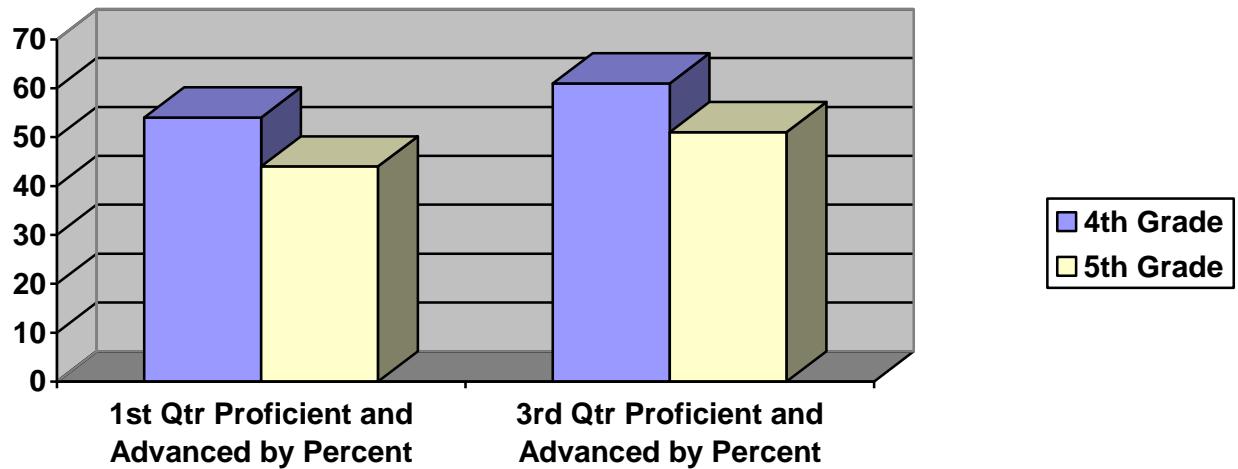
administered on a daily basis. Table 1 below illustrates the Study Island data in a comparative manner for review while Table 2 provides an illustrated comparison of the data.

Table 1

4th Grade Study Island Math Scores vs 5th Grade Study Island Math Scores

Performance Level	1 st Quarter		3 rd Quarter	
	4 th Grade	5 th Grade	4 th Grade	5 th Grade
Advanced	41	23	75	33
Proficient	101	79	93	88
Total Adv./Prof.	142	102	168	121
Percent of Adv/Prof	54%	44%	61%	54%
Total Students	263	232	274	238

Table 2--Bar Graph Comparison of 4th Grade and 5th Grade Study Island Math Scores

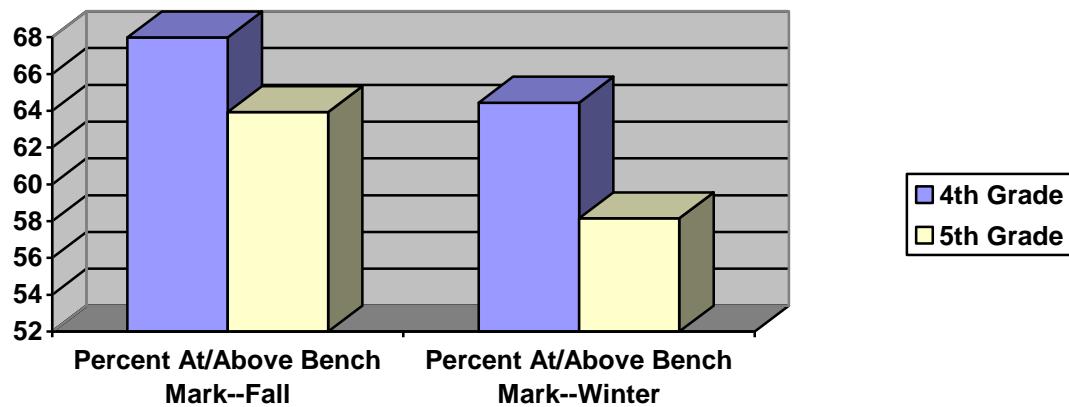


Reading Assessment Scores and Analysis

When looking at the assessment scores from the DIBELS Next assessments, the researcher has noted that 4th grade has performed more proficiently overall than the 5th grade on both the Fall and Winter assessments. For the Fall assessment, the fourth grade had 67.99% of students at or above the bench mark for proficiency, while 5th grade had 63.93% at or above proficiency. These numbers then equate to a 4.06% difference in proficiency rates, with the 4th grade more proficient on the fall assessment. When looking at the Winter assessment, the 4th grade had 64.44% of students at or above the bench mark, while 5th grade had 58.16% students at or above the bench mark. This equals a difference of 6.28% in proficiency rates, with 4th grade once again superior to the 5th grade on the DIBELS Next assessment. Table 3 illustrates the comparative scores, while Table 4 provides a visual representation to further illustrate the differences.

*Table 3**4th Grade DIBELS Next Scores vs 5th Grade DIBELS Next Scores*

Date of Assessment	Fall	Winter		
Grade	4 th Grade	5 th Grade	4 th Grade	5 th Grade
At/Above Bench Mark	189	156	174	139
Percent	67.99	63.93	64.44	58.16
Total Students	278	244	273	239

Table 4-Bar Graph Comparison of 4th Grade and 5th Grade DIBELS Next Scores

Although both grade levels do decline on the Winter assessment, the 4th grade performs with greater proficiency on both assessments. This leads the researcher to conclude that because the 4th grade still receives recess, there may be a positive relationship between recess and reading proficiency.

Summary of Behavioral Data

When looking at the number of behavioral incidents during the current school year, data indicates that there are higher numbers of incidents at the 4th grade level than at the 5th grade level (See Table 5 below). The incidents were also committed by a higher number of students at the 4th grade level than 5th grade students, with fifty-one 4th grade students committing ninety-two incidents, and forty-three 5th grade students committing sixty-six incidents. The researcher has concluded that one of the factors that must be considered with this data is the fact that there are more students per grade level in 4th grade than in 5th grade. Also, the incidents in at both grade levels generally take place during unstructured times of the school day where supervision is not as stringent as it is in the classroom. This includes lunchtime in the cafeteria, transportation on the school bus, and for 4th grade, recess.

Table 5

Grade Level Behavioral Incident Data (As of 5/15/14)

Grade	4	5
Student Offenders	51	43
Total Incidents	92	66

Results of student surveys

During the student interview process, the researcher collected data regarding student perception of recess from only a limited, random population of students. In order to collect additional data from a wider scope of students, the researcher provided a survey through the website “Survey Monkey” for students in each of the classes to complete should they choose, and should they have permission from their parents to do so. For the demographics of the students involved in the survey, please refer to Table 6.

Table 6

Characteristics of Students Surveyed

Category	Characteristic and Number of Students		
Population	N=31		
Gender	Males (16)	Female (15)	
Age	9 Years (15)	10 Years (14)	11 Years (2)
Ethnicity	Asian (3)	Hispanic (12)	White (15) Multi-Racial (1)
Special Education	7		
Socio-Economic	Free Lunch (4)	Reduced Lunch (1)	

Fourth Grade Student Survey

For the fourth grade classroom, nineteen total students completed the survey (See Appendix, page 123, for full list of survey questions). Students answered the survey in the following manner:

There were nineteen student responses to question one. Sixteen students (84.21%) chose choice one (Really look forward to). Three students (15.79%) chose choice two (Look forward to). No students chose responses three or four.

There were nineteen student responses to question two. One student (5.26%) chose choice one (Jittery, and have a hard time paying attention). Two students (10.53%) chose choice two (Not too jittery, but its hard to pay attention). Eight students (42.11%) chose choice three (I feel fine, and I can pay attention a little bit). Eight students (42.11%) chose choice four (I feel fine and can pay full attention to my teachers).

There were nineteen student responses to question three. Fourteen students (73.68%) chose choice one (More relaxed and can pay better attention to my teachers). Three students (15.79%) chose choice two (More relaxed but still have trouble paying attention). Two students (10.53%) chose choice three (Jittery but can pay attention to my teachers). No students selected choice four.

There were nineteen student responses to question four. Ten students (52.63%) chose choice one (Always). Five students (26.32%) chose choice two (Most of the time). Four students (21.05%) chose choice three (Sometimes). No students selected choice four.

There were nineteen student responses to question five. One student (5.26%) chose choice one (Always). Three students (15.79%) chose choice two (Most of the time). Nine students (47.37%) chose choice three (Sometimes). Six students (31.58%) chose choice four (Never).

There were nineteen student responses to question six. Fifteen students (78.95%) chose choice four (Never). Four students (21.05%) chose choice three (Sometimes). No students selected choices one (Always) or two (Most of the time).

There were nineteen student responses to question seven. Eight students (42.11%) chose choice one (Always). Six students (31.58%) chose choice two (Most of the time). Five students (26.31%) chose choice three (Sometimes). No students selected choice four (Never).

There were nineteen student responses to question eight. Four students (21.05%) chose choice one (Always). Three students (15.79%) chose choice two (Most of the time). Nine students (47.37%) selected choice three (Sometimes). Three students (15.79%) chose choice four (Never).

There were nineteen student responses to question nine. Fifteen students (78.95%) chose choice one (Always). Three students (15.79%) chose choice two (Most of the time). No students chose choice three (Sometimes). One student (5.25%) chose choice four (Never).

There were nineteen student responses to question ten. Eleven students (57.89%) chose choice one (Always). Six students (31.58%) chose choice two (Most of the time). Two students (10.53%) chose choice three (Sometimes). No students chose choice four (Never). The entire set of survey results can be found in Table 7 with the most popular answer italicized.

Table 7

4th Grade Survey Responses and Percentages

Question/Prompt	Response	Percentage
1. Recess is a time of day that I:	A. <i>Really look forward to</i> B. Look forward to	A. 84.21 B. 15.79
2. Before I go to recess, I feel:	A. Jittery, hard to pay attention B. Not too jittery, hard to pay attention C. <i>Feel fine, can pay attention a little bit</i> D. <i>Feel fine, can pay full attention to teachers</i>	A. 5.26 B. 10.53 C. 42.11 D. 42.11
3. After recess, I feel:	A. <i>More relaxed, can pay better attention to teachers</i> B. More relaxed, but still have trouble paying attention C. Jittery, but can pay attention to teachers	A. 73.68 B. 15.79 C. 10.53
4. While I'm at recess, I play games that get me moving and running.	A. <i>Always</i> B. Most of the time C. Sometimes	A. 52.63 B. 26.32 C. 21.05
5. While I'm at recess, I stand around and talk but don't play active games.	A. Always B. Most of the time C. <i>Sometimes</i> D. Never	A. 5.26 B. 15.79 C. 47.37 D. 31.58

6. While I'm at recess, I don't play any kinds of games or talk to anyone.	A. <i>Never</i> B. <i>Sometimes</i>	A. 78.95 B. 21.05
7. Besides recess, I get exercise by running around and playing after school.	A. <i>Always</i> B. <i>Most of the time</i> C. <i>Sometimes</i>	A. 42.11 B. 31.58 C. 26.31
8. On days that we have indoor recess, I feel as relaxed and ready to learn afterwards that I do when we go outside for recess.	A. <i>Always</i> B. <i>Most of the time</i> C. <i>Sometimes</i> D. <i>Never</i>	A. 21.05 B. 15.79 C. 47.37 D. 15.79
9. When I look ahead to fifth grade, I am unhappy that I will no longer have recess during the day.	A. <i>Always</i> B. <i>Most of the time</i> C. <i>Never</i>	A. 78.95 B. 15.79 C. 5.25
10. I find it easier to demonstrate good behavior and follow school rules after I participate in school recess.	A. <i>Always</i> B. <i>Most of the time</i> C. <i>Sometimes</i>	A. 57.89 B. 31.58 C. 10.53

Summary of 4th Grade Student Survey Perceptions

In general, 4th grade students seemed to have a positive review of their experiences with recess and its impact on their school day. In looking at the most popular answers provided in the survey, students really look forward to recess, can pay some attention to teachers before recess, feel more relaxed and can pay better attention to teachers after recess, play games at

recess that keep them moving and running, and sometimes stand around and talk without playing active games. This still indicates a social benefit associated with recess. The 4th grade students also indicated that a majority of them never find themselves not engaged in games or socialization, continue to get some exercise after school, only sometimes feel as relaxed and ready to learn on days they have indoor recess, are unhappy about the prospect of not having recess in 5th grade, and find it easier to demonstrate good behavior and follow rules after participating in school recess.

Fifth Grade Student Survey

For the fifth grade classroom, twelve total students completed the survey (See Appendix for full list of survey questions). The survey responses were as follows:

There were twelve student responses to question one. Three students (25%) chose choice one (Easy). Five students (41.67%) chose choice two (Somewhat Easy). Three students (25%) chose choice three (Hard). One student (8.33%) chose choice one (Very Hard).

There were twelve student responses to question two. One student (8.33%) chose choice one (Very Easy). Four students (33.33%) chose choice two (Easy). Seven students (58.33%) chose choice three (A Little Difficult). No students chose choice four (Very difficult).

There were twelve student responses to question three. Six students (50%) chose choice one (Much easier). Four students (33.33%) chose choice two (Easier). Two students (16.67%) chose choice three (Not much easier). No students chose choice four (Harder).

There were twelve student responses to question four. 1 student (8.33%) chose choice one (Much easier). Three students (25%) chose choice two (Easier). Eight students (66.67%) chose choice three (A little harder). No students chose choice four (Much harder).

There were twelve student responses to question five. Six students (50%) chose choice one (Much easier). Five students (41.67%) chose choice two (Easier). One student (8.33%) chose choice three (About the same). No students selected choice four (Harder).

There were twelve student responses to question six. Five students (41.67%) chose choice one (Always). Six students (50%) chose choice two (Most of the time). One student (8.33%) chose choice three (Sometimes). No students chose choice four (Never).

There were twelve student responses to question seven. No students selected choices one (Always), or two (Most of the time). Six students (50%) selected choice three (Sometimes). Six students (50%) selected choice four (Never).

There were twelve student responses to question eight. No students selected choices one (Always) or two (Most of the time). One student (8.33%) selected choice three (Sometimes). Eleven students (91.67%) selected choice four (Never).

There were twelve student responses to question nine. Five students (41.67%) chose choice one (Really miss it). Six students (50%) chose choice two (Miss it). One student (8.33%) chose choice three (Don't really care). No students selected choice four (Am glad I no longer have it).

There were twelve student responses to question ten. Two students (16.67%) chose choice one (Worse student than when I had recess). Seven students (58.33%) chose choice two (Not really a different student than when I had recess). Two students (16.67%) chose choice three

(Same students I was when I had recess). One student (8.33%) chose choice four (Much better student than when I had recess).

For a complete representation of the 5th grade student survey data, see Table 8. Like Table 7, the most popular answer(s) have been italicized.

Table 8

5th Grade Survey Responses and Percentages

Question/Prompt	Response	Percentage
1. Sitting through class every day without recess is:	A. Easy B. <i>Somewhat easy</i> C. Hard D. Very Hard	A. 25 B. 41.67 C. 25 D. 8.33
2. Paying attention to all of the things my teachers say all day long is:	A. Very Easy B. Easy C. <i>A little difficult</i>	A. 8.33 B. 33.33 C. 58.33
3. When I had recess every day in elementary school, learning was:	A. <i>Much easier</i> B. Easier C. Not much easier	A. 50 B. 33.33 C. 16.67
4. Behaving and following school rules now compared to when I was at the elementary school is:	A. Much easier B. Easier C. <i>A little harder</i>	A. 8.33 B. 25 C. 66.67
5. Having some kind of break other than lunch	A. <i>Much easier</i>	A. 50

would help make my school day:	B. Easier C. About the same	B. 41.67 C. 8.33
6. When I was in elementary school, I ran around and played games each day at recess.	A. Always <i>B. Most of the time</i> C. Sometimes	A. 41.67 <i>B. 50</i> C. 8.33
7. When I was in elementary school, I stood around and talked to friends, but did not play active games.	A. <i>Sometimes</i> B. <i>Never</i>	A. 50 B. 50
8. When I was in elementary school, I did not play any kind of games and did not talk to anyone while I was at recess.	A. Sometimes <i>B. Never</i>	A. 8.33 <i>B. 91.67</i>
9. When I look back to recess in elementary school, I:	A. Really miss it <i>B. Miss it</i> C. Don't really care	A. 41.67 <i>B. 50</i> C. 8.33
10. Without recess, I feel I am a:	A. Worse student than when I had recess <i>B. Not really a different student than when I had recess</i> C. Same student I was when I had recess D. Much better student than when I had recess	A. 16.67 <i>B. 58.33</i> C. 16.67 D. 8.33

Summary of 5th Grade Student Survey Perceptions

In general, 5th grade students seemed to have a positive review of their experiences with recess during their time in the elementary school. Through the assessment of the most popular answers provided, 5th grade students indicated that sitting through class each day without recess was only somewhat easy, paying attention to teachers all day long is a little difficult, learning was much easier when they participated in daily recess, behaving and following school rules in 5th grade compared to 4th is a little harder, and having some kind of break in the day other than lunch would make their school day much easier. They also indicated that they ran around and played games at recess most of the time, were split evenly on whether they stood around and talked at recess without playing games (sometimes and never both garnered 50 percent of the responses), never found themselves either not playing or not socializing at recess, miss recess when looking back on their elementary years, and do not feel they are really a different student now in 5th grade than when they had recess in 4th grade.

Comparison of Student Attendance Data

In order to be as thorough in comparing the two classrooms utilized in the study as possible, the researcher gathered attendance data for each class for purposes of comparison. When looking at total absences (See Table 4 for complete totals), both classrooms were relatively similar in the number of absences. 4th Grade Classroom A had sixty-four excused absences and thirty unexcused absences for a total of ninety-four absences among twenty-six total students. 5th Grade Classroom B had fifty-one unexcused absences and forty-five excused absences for a total of ninety-six absences among twenty-four students. These numbers were not significantly different. Tardies, however, were significantly higher for 4th grade students. However, because

parents are primarily responsible for students getting to school who do not ride the school bus, the researcher has concluded that this is not an issue within the students' ability to control. Therefore, in summary, no significant difference was noted among the attendance data. Table 9 illustrates the attendance data for both 4th Grade Classroom A and 5th Grade Classroom B through May 9 of the 2013-2014 school year.

Table 9

Classroom Attendance Data (As of 5/9/14)

Classroom	Tardies	Unexcused Absences	Excused Absences	Total Students
4 th Grade Classroom A	116	64	30	26
5 th Grade Classroom B	41	51	45	24

Results of student interviews

To gain a better understanding of the students' perception of school recess and its impact on their school day, six students from each of the classrooms (six from 4th grade in the elementary school, and six from 5th grade in the intermediate school) were chosen to participate in an interview with the researcher. The method for choosing the six students was stratified sampling, with names of male students and female students put in separate hats. From there, three names were selected from each hat to ensure that an equal representation of male and female students occurred. Each of the students met individually with the researcher, who asked a series of six

total questions. Demographics of students selected for the interview process are found in Table 10.

Table 10

Characteristics of Students Interviewed

Category	Characteristic and Number of Students		
Population	N=12		
Gender	Males (6)	Female (6)	
Age	9 Years (4)	10 Years (7)	11 Years (1)
Ethnicity	Asian (2)	Hispanic (3)	White (7)
Special Education	2		
Socio-Economic	Free Lunch (2)	Reduced Lunch (1)	

4th Grade Student Responses

The fourth grade interviews were done with the researcher's knowledge that the students would be answering from the point of view of a child who has always had recess in their school day since day one of their kindergarten year. They also do not fully comprehend going through a school day without recess, because they are not yet in the intermediate school. Throughout the interview process, the students were eager to answer questions, and felt special because they "won" the chance to participate in the interview with the researcher, who is also their assistant principal. In reality, their names were chosen out of a hat for participation in the interview

process. Students were asked a protocol of questions that included specific questions about recess and its role on their learning and behavior during the school day.

Student A participated in the interview first, and had several responses to the questions that were relevant to the research. First, they look forward to recess because of the opportunity to talk to their friends, run around, and also because “I get all these jitters out.” This was interesting to the researcher due to the fact that a question specifically about feeling jittery during the school day would be asked during a subsequent question. Student A specifically identified the word “jitter” four times during the course of the interview. Student A also stated that they do not look forward to recess when it is inside, that they feel more focused when the “jitters are out” and that they sometimes do feel jittery during the school day, and would prefer more recess time during the school day to help alleviate the jittery feelings. To Student A, recess means having fun, talking to friends, getting all the jitters out, and having the opportunity to play. The researcher identified that Student A feels jittery during the school day and alleviates those feelings at recess, and appreciates the opportunity to be social during their recess period.

Student B was second to participate in the interview, and answered the same interview protocol provided by the researcher. Student B also identified that talking to their friends and the opportunity to play were important to them early on in the interview. By stating, “I can talk to my friends, I can play around, and like, I can just do whatever I want”, they joined Student A in stating their preference for social time with peers and free choice in play activities to begin the formation of themes that the researcher could identify through their responses. Also, while they did not specifically state the word “jitters”, they did state that they feel good after recess is over because “I just had all my energy out”, and that learning is harder when they are feeling

restless/jittery. This was also consistent in the researcher's identification of students feeling restless during the school day. While not a major theme, the researcher also found the student's statement regarding the use of recess as a punitive measure to be intriguing. When asked about an aspect of recess that they would change, the student responded, "I would say that people who have to like sit or something shouldn't have that at recess, like, they should have that in the classroom because they need to get all their energy out and if they don't, that'll just make them worse and worse." This was relevant to the researcher because it indicated that the student identified that recess has the ability to allow students to release energy and improve behavior in the classroom.

Student C was the third student to take part in the interview. This student felt that recess was a great opportunity for them to "let their problems go". These problems included bullying and issues at home with siblings. This student also did not feel they were proficient academically. However, they did respond that they felt that learning was easier after they returned from recess which was another indicator to the researcher that learning is facilitated through the break that recess provides. Student C also indicated that they also feel jittery during the school day, and would prefer to have two recess periods as opposed to the one single period they have now. They also feel that recess provides an opportunity to let their problems go and have fun. This student in particular was an example that showed that recess could be an escape for a student who is having problems outside of school.

Student D was fourth in line for the interview with the researcher. In similar fashion to the preceding students, this student also identified fun as a part of recess they look forward to. They also responded that learning is easier after recess because of the opportunity to expend their

energy. In their words, after recess “I’m not as excited so I’m calmed down and more ready to learn.” This feeling was also consistent with the statements of the preceding students who were interviewed. During the interview, Student D also stated that they would prefer if recess was longer because it is fun and they can run, yell, and talk, which they cannot do in class.

Student E was the fifth of the six students from the 4th grade classroom to take part in the interview. Once again, the word fun was utilized, as the student stated “ I look forward to recess because it’s really fun”. One new concept that was broached by this student included the motivational influence of recess. They stated that it is “easier” to learn before recess because they want to finish their work in order to go out and enjoy recess. Therefore, the researcher feels that while the physical act of recess itself does not seem to impact this student’s learning, the enjoyment of recess has motivated the student to complete their academic responsibilities efficiently. This student also reported feeling more relaxed following recess, would prefer a longer recess period, and feels that recess is a time to go outside, play with friends, and relax.

Student F was the final 4th grade student to participate in the interview. This student also identified a social need that recess meets, stating that they “like hanging with my friends and playing kickball.” Student F also identified a connection between recess and learning, as they feel it is easier to learn after recess because of the break time it provides. This student would also like to see recess extended in time, like other students who participated in the interview. To Student F, recess means having fun, hanging with friends, and doing anything they want.

5th Grade Student Responses

In identical fashion to the 4th grade classroom, six students were randomly selected from the 5th grade classroom for participation in the interview with the researcher. The researcher was also interested in the impact that recess had on this population of students. However, it was from the point of view of a student who has been removed from having recess in their school schedule for nearly one whole calendar year. Questions were asked that were intended to elicit reflection from the student on their experiences with recess and its impact on their school day compared to their current school day, where recess is not provided.

5th Grade Student A was the first to participate in the interview. They stated that they felt upset when they realized they would no longer have recess. Hanging out with their friends was particularly one of the benefits that recess had for this student. In terms of behavior, they did state that they have found themselves in more trouble as a 5th grade student than when they were in the 4th grade. This was noted by the researcher because of its significance in answering the central question. They also stated that their grades were more proficient in 4th grade compared to their grades as a 5th grade student. Again, this was significant to the researcher in terms of its connection to the central question. This student also stated that they would in fact include recess in their school day if they had the choice, and that 5th grade has been harder for them than 4th grade because they do not get free time.

5th Grade Student B participated next in the interview process. This student had responses that were noticeably different than the previous student's responses. Student B felt that not having recess is better for them because when they did have recess, they found it difficult to focus afterwards. They also feel that they get in less trouble now in 5th grade than they did in 4th grade,

with recess contributing to some of their troubles because of “talking fights” they got in on the playground. They did report feeling jittery more as a 5th grader however, and attributed this to the fact that they can no longer move around as much as they could in 4th grade. Academically, they feel there is no difference in their grades now than when they were in 4th grade. This student would also include recess in their school day if given the choice, because it is hard to “try and focus on the teacher” without having recess during the school day.

5th Grade Student C was next to be interviewed by the researcher. Like 5th Grade Student A, Student C expressed that they were upset upon realizing recess would no longer be a part of their school day, due to the social opportunities that recess presented in elementary school. Student C reported that they have in fact felt jittery during the school day as a 5th grader, and the only chance to release any energy comes during physical education class, which occurs only twice during a six day cycle period. They also report no significant difference in their academics between 4th and 5th grade, which was noted specifically by the researcher for its connection to the central question. This student would also include recess in their school day because they would get to see their friends, run around, and play on things.

5th Grade Student D was the next student to be interviewed by the researcher. In similar fashion to Students A and C, Student D “really missed” recess when they no longer had it, and wanted it back in their school day. Similar to many of the other students in both 4th and 5th grade, the social aspect of recess was one of the main factors in Student D’s affinity for having recess. This student also did not have any difference in behavioral incidents between 4th and 5th grade, and no difference in academics as well. Again, this was noted by the researcher for its link to the central question. Student D did report feeling jittery during the school day as a 5th grade student,

and they find themselves talking to their friends around them in class more because they do not get to go outside and expel their energy. The researcher connects the statement about talking in class to an increased chance for behavioral incidents and loss of academic gains for this student during subsequent school years. Student D would include recess in their school day because it is fun for the student, but also fun for the teachers because they get to watch their students play. Student D does enjoy “Fun Friday” activities, where they get to play football or kickball for earning merit points through the week, which shows another example of the students’ desire for fun and free play.

5th Grade Student E was next in the interview process, and began the interview in a similar fashion to students A, C, and D. Student E stated they “felt pretty down” upon realizing that recess would not be a part of their 5th grade school day. They particularly enjoyed running around and wasting energy during recess in elementary school. This student also reported no difference in either behavioral incidents or academics between their fourth and fifth grade school years, once again providing the researcher with data that is connected to the central question. Student E did report feeling jittery during their school day because they have so much energy and cannot expel it during the school day. The word “fun” is mentioned again during the interview process by Student E, another indication that students desire fun and free time during the school day. When asked if they would include recess in their school day, Student E stated, “Yes I would, because it’s so fun”. Student E concluded the interview by expressing their preference for their 4th grade school year over their 5th grade school year, simply because they participated in recess in 4th grade, while in 5th grade, they do not.

5th Grade Student F was the final student participant in the interview process. Unlike the majority of the other respondents, Student F was not distraught over losing recess because they still got to play during “Fun Friday” activities. This indicated to the researcher that the loss of recess could be offset for some students through alternate activities where they still get to participate in active free time. This student also provided a similar answer when asked about behaviors and academics, and stated that there was no difference in their academic performance or behavioral incidents as a fifth grade student compared to fourth grade. This student did not report any feelings of restlessness during the school day, and did not particularly care for recess during cold weather. They did, however, find recess to be acceptable during optimal weather situations. If they had a choice in keeping recess or eliminating it from the school schedule, Student F stated that they would include it from 2:30 to 3:00 p.m. daily, which would allow adequate time needed for learning.

Results and Interpretations of Student Interview Data

After scanning the interview transcriptions for both 4th grade and 5th grade students, several themes emerged from the coding of the dictations and analysis of the student responses.

4th grade results and interpretations

In response to question one, all six students answered favorably to whether they look forward to having recess. Reasoning for their responses included that they get to “talk to my friends, play kickball and get these jitters out”, “talk to friends and play, let their problems go, run around and exercise while having fun, have fun, and hang with friends and play kickball. This indicates to the researcher that recess is a valued, positive influence on the students’ school day and provides an opportunity for students to be social and active.

In response to question two, one student felt it was easier to learn before recess, while four students felt learning was more difficult before recess. One student provided a neutral answer to the question. Because the majority of the students (4 out of 6) responded that learning was more difficult before recess, the researcher has ascertained that recess plays a role in facilitating the learning process for these students following its implementation during their school day. One impacting statement made to help solidify this rationale came from 4th grade Student A, who stated, “It’s easier for me (to learn after recess) because, um, I’m kinda focused when I do that stuff (physical activity), and sometimes if I’m too jittery, um, I kind of bounce a little bit and that is why I sometimes like recess. Cause I get all that stuff out.” This was a clear indication that physical activity assists in this student’s process of calming themselves down to a point of being able to focus on learning following recess, when their “jitters” were out.

In response to question three, students had several different responses to how they felt after recess was over, and if it impacted their learning. Responses included that they felt more focused with their jitters out, felt good with their energy out, felt more relaxed and confident in their school work, felt calmed down and ready to learn, felt relaxed, and felt sad because they still wanted to play with friends yet felt good physically. This indicates to the researcher that recess prepares the student for more optimal classroom learning episodes through getting them focused and relaxed. To reinforce this indication, the researcher has selected a passage from 4th grade Student C’s interview. When asked about how they feel following recess, Student C replied, “I, after recess, I actually fell much relaxed and it does actually affect because it makes me more confident in my work.” The use of the phrase “confident in my work” was very impacting to the researcher, and indicates a positive outcome that recess has provided for this student.

In response to question four, four students responded affirmatively that they felt jittery/restless during the school day, while two students responded that they did not feel this way during the school day. This indicates to the researcher that students have a need for the release of energy during the school day, which recess does in fact provide an opportunity for students to be active and alleviate excess energy. 4th Grade Student D confirms this indication when asked if they ever feel jittery/restless by stating, “I do before recess but more of the time I don’t feel like that after recess.”

In response to question five, students responded in a variety of ways to how they would change the current configuration of their recess period. Responses included adding more time (four of the six students provided this response), the removal of making students stand/sit at recess as a consequence for missing homework, and adding a second recess period during the school day. This indicated to the researcher that students view recess in a positive manner and desire more recess time during the school day. Examples stated during student interviews include 4th Grade Student A’s response that, “I think we should have a little more recess time so we can get more, um, all our jitters out.” 4th Grade Student C goes a step further, stating, “I think that it would be that we would have two recesses, two recesses, and they would, they would last for two...like twenty minutes.”

In response to question six, students responded that recess means a variety of things to them. Responses included that it was a time for fun, friends, and getting jitters out, free time to be themselves, a time to let problems go and have fun, a fun time where you can talk, yell, and run around, a time to play with friends and relax, and a time for fun where you can hang with your friends. This indicated a need for social time and a need for the release of energy during the

school day for students. 4th Grade Student C makes a powerful statement regarding their affinity for school recess and its role in helping them deal with everyday situations in life, by stating, “Well, school recess means to me, a lot, a lot of opportunity to let, to let all my problems go and have fun.” The researcher feels that the student’s ability to make the connection between recess and its ability to allow them to be a child and forgot about life’s problems is impactful, and certainly validates the positive association between school recess and a healthy, optimal childhood experience.

Table 11 summarizes the interview questions and common student responses, along with the affected domain that corresponds to each response.

Table 11

Common Interview Responses and Affected Domains—4th Grade Students

Interview Question	Student Responses/Affected Domains
<p>1. Explain why you either look forward to recess or do not look forward to recess on a daily basis.</p>	<ul style="list-style-type: none"> • Talk to/hang with friends (social) • Get jitters out/let problems go (physical/emotional) • Run/ play around, do what they want (physical) • Fun (emotional)
<p>2. When you think about your learning, describe whether you think it is easier or harder to learn before you have your recess period.</p>	<ul style="list-style-type: none"> • Easier after through fewer jitters/restlessness, burned energy, break in learning (physical) • Harder before, easier after (physical) • Easier before because of wanting to

	complete work to enjoy recess (emotional)
3. How do you feel after recess is over, and does that affect how you learn in any way?	<ul style="list-style-type: none"> Focused more with less jitters, calmed and ready to learn (physical/emotional) Feel good with energy burned (physical) More relaxed and confident (physical/emotional) Sad because time with friends is over (social/emotional)
4. Do you ever feel jittery or restless during the school day?	<ul style="list-style-type: none"> Sometimes yes, sometimes no (physical) Sometimes (physical) Yes, in both morning and afternoon (physical) Yes before recess, but not after (physical) No, not at all (physical)
5. If you could change something about your daily recess period, what would it be?	<ul style="list-style-type: none"> More recess time/longer period of recess (varied) Two recess periods as opposed to one (varied) Recess should not be used as punishment with students sitting (emotional)
6. In no more than two minutes, describe what school recess means to you.	<ul style="list-style-type: none"> Fun (emotional) Play (physical) Time with friends (social) Get the jitters/problems out (physical) Talk without consequences (social)

Themes Established Through Coding—4th Grade Interviews

Following the analysis of the 4th grade student interview transcriptions, several key themes emerged from the data. First, the students identified a major social need that recess is able to provide. The ability to be able to talk and be with peers was identified several times during the interviews. Next, students in this particular group felt that it was harder to learn before recess. With sixty-seven percent of the student population in this group answering that learning was harder before recess, the indication exists that recess plays a role in facilitating the learning process. Next, students indicated on several occasions that recess provided them with an opportunity to release energy, or as they put it, “get their jitters out”. This is significant in that it demonstrated the benefit of recess on the physical body of the student and its positive influence in their ability to learn. In addition, sixty-seven percent of the responders indicated that they do in fact feel jittery/restless during the school day. The next theme that emerged from the interviews includes the students’ desire to participate in additional recess time during the school day. In fact, five of the six student respondents included the desire for more recess time in their school day. The researcher did not observe any mention of this desire for more recess to be associated with the students’ attempt to substitute the recess time for classroom/learning time. Finally, the last theme that emerged from the 4th grade student interviews included the concepts of play, free time, and fun, and the students’ preference for them. Sixty-seven percent of the students responded with the word fun in their answer to question six. This indicates that recess provides students with an opportunity to be themselves as children, and have time away from the rigors of being a student in today’s test-heavy educational system.

5th grade results and interpretations

In response to question one, sixty-seven percent of the students responded that their reaction to losing recess was negative. In fact, two of the six students utilized the word “upset” in their response. However, two of the students provided answers in a manner that reflected an attitude of indifference towards the loss of recess. Fifth grade Student B indicated that no recess was better for them because “after recess um I would keep thinking about like playing outside and talking to my friends and then like couldn’t focus during class.” The other student proclaimed that the loss of recess is offset by the Fun Friday activity that they can achieve each week for positive behavior. This does seem to prove through these responses, that some students feel they can succeed in the intermediate school without the use of recess in their school day but not through a feeling of indifference or negativity towards their recess experiences.

In response to question two, sixty-seven percent of the responders (4 out of 6) stated that they do not get in any more or any less trouble than when they were in elementary school. At the same time, one student stated they get in more trouble in 4th grade, with 5th grade Student B finding trouble through things like “talking fights.” One other student stated that they get in more trouble in 5th grade, but declined to specify a cause or their perception on the matter. This did not indicate to the researcher that the behaviors of this particular group were significantly impacted by recess.

In response to question three, sixty-seven percent of the responders (4 out of 6) stated that they feel jittery during the day in 5th grade. One student in particular, 5th grade Student D made a connection between being jittery and increased talking in the classroom because of an excess of energy. 5th grade Student D stated, “Yeah I do feel jittery. I talk to my friends around me a lot

more because I don't get to go outside and use all my energy." The other two responders stated that they do not feel jittery during the school day. This indicates to the researcher that students would benefit from some type of outlet during the school day for them to expel energy through physical activity.

In response to question four, five out of six responders (83 %) indicated that they have not noticed a significant difference in their grades between 5th and 4th grade. 5th grade Student A did report having better grades as a 4th grader compared to their current academic performance in 5th grade. When prompted by the researcher to decide between 4th and 5th grade as the better academic year, 5th grade Student A simply stated, "Um, fourth." Due to the majority of student answers indicating no difference in grades, the researcher must assume that removing recess has not had a significant impact on this sample population.

In response to question five, students provided a variety of reasons why they would include recess in their school day. These included the chance to exercise, help focus and release energy, see friends, run around and play, and have fun (the word fun appeared multiple times between the student responders, with three of the six students including it in their response). 5th grade Student C stated that they would include recess in the day because "I think it would make the students act better because they would like get to see their friends and run around and play and things." 5th grade Student D even felt that their teacher gets a positive experience from their recess, because "the teachers get to watch their kids in their class play." One student also reasoned that they would in fact add recess to the day, but would do so at the very end of the day in order to keep a priority on the learning process during the majority of the school day. In their own words, this student, 5th grade Student F stated that they would add recess at the end of the

day “so you can learn more.” No student responded that they would keep school recess off of their schedule. These responses indicated to the researcher that the students’ overall opinion of recess is favorable, and like 4th grade students, the need for social interaction and fun, along with the chance to release energy are priorities for 5th grade students.

In response to question six, students described a variety of their experiences as 5th grade students in comparison to their time as 4th grade students. These included not having free time in 5th grade, a desire to move about during the day, a more negative experience due to the loss of recess, joyful experiences during Fun Friday time, a better experience in 4th grade due to recess and the ability to move about, and flashbacks of negative feelings towards recess in 4th grade during cold weather days (warm weather days were favorable for participating in recess, however). 5th grade Student E made a clear connection between their preference for 4th grade and the role recess played by stating, “the experience at fourth grade was a little better than fifth grade because at fourth grade you would be able to get recess and at fifth grade you don’t.”

Table 12 summarizes the interview questions and common student responses, along with the affected domain that corresponds to each response.

*Table 12**Common Interview Responses and Affected Domains—5th Grade Students*

Interview Question	Student Responses/Affected Domains
1. As a fifth grade student, you have not had recess during the school day like you did in fourth grade. What were your thoughts when you realized that you would not have recess anymore?	<ul style="list-style-type: none"> • Upset (emotional) • Indifferent (emotional) • Emotion of loss offset by Fun Friday (emotional)
2. Has there been any difference in the number of times you have been in trouble in fifth grade compared to when you were in fourth grade; and if so, why do you think that is?	<ul style="list-style-type: none"> • No more/no less (N/A) • More in 4th (N/A) • More in 5th (N/A)
3. Have you felt jittery during the school day this year, and if so, why do you think you have felt this way?	<ul style="list-style-type: none"> • Yes—hard to sit all day, cannot run around, cannot burn energy (physical) • No—concentrate on school work (physical)
4. Has there been a difference in your grades between fourth grade and fifth grade?	<ul style="list-style-type: none"> • No significant difference (academically related) • Yes (one student only)—academically related)
5. Explain why or why not you would include recess in your school day if you could create your own school schedule.	<ul style="list-style-type: none"> • Opportunity for exercise (physical) • Increase focus/release energy(physical) • Social interactions/friends (social) • Fun (emotional)
6. In no more than two minutes, describe your experiences as a fifth grade student at School B compared to your experiences as a fourth grade student at elementary school A.	<ul style="list-style-type: none"> • No free time (emotional) • Desire for movement (physical) • More negative experience (emotional) • Positive with Fun

	Friday(social/physical/emotional)
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Themes Established Through Coding—5th Grade Interviews

Following the analysis of the 5th grade student interview transcriptions, several key themes emerged from the data. First, students were generally upset when they realized that recess would no longer be a part of their school day. Two of the six students directly used the word “upset”, while a third student used the word “down” to express their feelings upon learning recess would not be included in their day. Next, 5th grade students still express a strong need for fun and socialization in their school day. In speaking about both their thoughts when they realized they would no longer have recess and why they would include recess in their school day, students made several mentions of having fun while participating in recess at elementary school, and having an opportunity to see and “hang out” with friends. Students also identified “Fun Friday” several times during interviews. “Fun Friday” is an incentive program used by the 5th grade teachers at this intermediate school as a behavioral incentive program. If students earn enough incentive points throughout the week, they have the privilege of attending the “Fun Friday” events. These events most closely resemble recess activities from the elementary school, as they may include such games as kickball and/or football, and offer the students the chance for social interactions with their peers. Because the social aspect was identified in both 4th and 5th grade interviews, it is the findings of the researcher that the social importance of recess has emerged as a major theme of this research. An additional theme that emerged from the interviews includes the majority of students identifying a feeling of restlessness, or “jittery” during the school day. This is also consistent with fourth graders assessment of the same question (in fact, both sets of

students had a sixty-seven percent confirmation rate). The researcher has interpreted this statistical symmetry as a confirmation that elementary students would benefit from a break in the form of physical activity during the school day. The next two key themes that emerged from the interview data include the fact that neither academics nor behaviors seem to be factors that students feel are impacted by the loss of recess. When responding to whether there was a difference in the number of times they got in trouble in 5th versus 4th grade, one student answered that they got in more behavioral incidents in 5th grade, while one student identified 4th grade as the year in which they got in more trouble. The remaining four students (67%) stated that stated that there was no difference in their behavioral incidents between 4th and 5th grade. This indicates to the researcher that behaviors for this particular group of students were not impacted by the loss of recess. Simultaneously, students did not indicate a significant difference in academic performance between 4th and 5th grade. One student noted that there was a difference, while the remaining five students in the group indicated no change in performance. This data is particularly of interest to the researcher, as the underlying theme of the research explores the link between recess and academic performance and student behavior.

Teacher Interviews—Demographics, Results, Interpretations

Because one classroom was selected for participation in the K-4 building, and one was selected from the 5-6 building, each classroom teacher was also included in the interview process. The following demographics in Table 13 represent each of the teachers included in this research study:

*Table 13**Classroom Teacher Demographics*

	Teacher A (4 th Grade)	Teacher B (5 th Grade)
Years of Service	14	16
Years in Current Role	14	6
Years Involved with Recess	14	10
Years without Recess	0	6
Type of Educator	Regular Education	Regular Education
Gender	Male	Male

Results of teacher interviews

The perceptions and insight of each of the classroom teachers was also critical in helping the researcher answer the central and supporting questions of the study. Therefore, each of the teachers also took part in an interview with the researcher in order to gain a better understanding of their perceptions of recess and its impact on the classroom environment in which they teach (See Appendix for full teacher interview protocol). Questions were specifically asked regarding recess and its relationship with classroom behavior and academic achievement

4th Grade Classroom Teacher Responses

4th Grade Teacher A has seen a change in the way recess is administered over the past 14 school years. In the past, restrictions on recess were not as tight in terms of scheduling and available time, while activities such as dodge ball have been phased out for safety reasons. Teacher A stated that they do not provide students with expectations for what activities they can participate in, but is reconsidering after reflecting upon their answer during this interview. The teacher does try and participate with their students as much as possible in games like kickball to ensure that students fully participate. Teacher A has also utilized recess after lunch for most of their career. However, for this current school year, they utilize recess right after lunch for two days of the six day cycle. These days happen to be the days when the class takes part in physical education. During the other four days of the cycle, the teacher takes the students to recess right before their lunch period. From their experiences, Teacher A does not feel that there is any particular benefit in offering recess either before or after lunch. They feel that the most important thing is to offer recess anytime during the middle of the day in order to provide students with a much needed break. Teacher A emphasized that this is particularly important because of “all the testing and different things that we do with the kids”. In terms of behavioral impact in the classroom, Teacher A feels that there is a decrease in behaviors prior to recess. They state that as the day goes on, the students tend to lose focus and negative behaviors then arise following the end of recess. Teacher A reflected on the number of incidents that have occurred as a result of something happening between students at recess, and feels that students tend to hold grudges about what happens on the recess playground. They feel that this is due, in part, to the naturally competitive nature of students. Teacher A does spend time with their students emphasizing fun as opposed to winning, and opts for recess outdoors as much as possible. Teacher A will take

their students outside even when it is very cold outside. Rain and snow are usually the only conditions that will deter Teacher A from taking their class out to recess, and students are provided with notification that is sent home to their parents about the teacher's tendency for outdoor recess, and the importance of the students having adequate clothing as a result. One aspect of Teacher A's school day that was of interest to the researcher was the use of physical activity by the teacher during the learning process of the students in their classroom. For example, during teaching centers, Teacher A will set up stations for students to perform exercises as they complete academic work. Teacher A will also model the exercises for the students, and has received positive feedback from parents regarding this practiced. Teacher A does feel that the use of recess tends to help the students attend better to instruction, and feel it is especially useful due to prolonged periods of standards-based testing and whole-class instruction where students may lose focus for periods of time. They feel that the more active the students are, the more focused and on-task they tend to be. In terms of time to devote to recess, Teacher A feels that thirty minutes would be an optimal amount of time, and this time could even be split into two separate periods, which could be divided into a morning and afternoon session. Like the students, Teacher A feels that the social component of recess is very important, and may be just as important as the physical implications. Without the opportunity to be social at recess, students tend to use class time or collaborative learning to be social in a non-academically conducive manner. Teacher A feels that recess allows time for students to get this social need out of their system in a way that does not interfere with their academic progress.

5th Grade Classroom Teacher Responses

5th Grade Teacher B has spent the past five plus school years in the intermediate school setting without recess or any officially built-in breaks during the school day for their students, other than lunch. Questions were asked in a manner that reflected the significance of not having recess during the school day, and its impact on academics and behaviors of students. Teacher B also has the unique experience of teaching at the elementary school and having recess before the intermediate school was built, and 5th grade was moved permanently out of the elementary school. Teacher B stated that it is a big adjustment for students as they enter 5th grade without recess. Students are used to the break that recess provided during the school day, but must now “keep going and going” throughout the day without a break. If given the choice, Teacher B would incorporate recess immediately following lunch if it were brought back into their school. Teacher B feels that immediately following lunch is ideal because it provides a good transition between lunch, where they get wound up, and the classroom. Teacher B does give students approximately 3-5 minutes following lunch to stand about the classroom and talk, and then provides a reminder to them to return to a normal, “indoor” voice. Teacher B does not feel that eliminating recess has provided a significant increase in instructional time, as was intended when the original intermediate school schedule was developed. Teacher B has also conferred with other teachers at the 5th grade level and has found that they all can sense when students need a break from class work, and will provide unplanned, 3-5 minute breaks sporadically through the day as a result. Teacher B felt that even as adults, we need breaks from long periods of work, and students can only handle so much time on task before they have to “step back from working a bit”. In terms of the more educationally conducive learning environment, Teacher B cannot truly identify which stands out over the other (Teacher B has relevant experience in both school

buildings). However, they are certain that the kids need a set break during the school day, and feel that the kids would look forward to this break in a positive manner. When examining behaviors of the students during the day, Teacher B feels that there are fewer negative behaviors prior to lunch. This confirms their belief that recess would be beneficial immediately following lunch. In their experience as a 5th grade teacher, they have “definitely” observed more negative behaviors occurring after the students’ lunch period. While Teacher B does not incorporate any type of formal break into their school day, they do fully take part in “Fun Friday” with their grade level. “Fun Friday” is an unstructured period of fifteen minutes for students who accumulate the required merit points through the week, and can be used for a variety of activities of their choice. This period is the closest that students can get to recess at this level, and Teacher B feels it is very motivating for the students to earn the necessary merit points to participate. Teacher B does allow for 3-5 minute break periods through the day when warranted, and students are free to choose from various activities including free reading and/or socializing with peers. Teacher B does feel that they empower the students more in the intermediate setting than when they were in the elementary school. Teacher B will also involve the students in making classroom decisions, because they feel they will have more classroom buy-in to rules and procedures through the full class involvement. If given the opportunity, 5th Grade Teacher B would definitely incorporate recess into the school day, and even makes mention of this affinity to their current students. Teacher B feels that students in the 5th grade age range still need time to get outside, be with their friends, not think about academics, and “just be kids”.

*Results and Interpretations of Teacher Interview Data**4th grade teacher results and interpretations*

In response to question one, 4th grade teacher A identified concepts related to the word change on several occasions, with the actual word change being stated twice. The teacher feels that in their time as a 4th grade teacher, recess had undergone differences in the restrictions that they must adhere to while supervising recess, when they could schedule their recess period during the day, and the types of activities they can allow their students to participate in while at recess. These responses to question one indicate to the researcher that recess may be moving towards a less “free play” type of environment for students, due to restrictions placed on teachers by school administrations for reasons that include litigation, and the need for more academic time during the school day.

In response to question two, 4th grade teacher A realizes that they do not currently relay any expectations towards their students for recess, but may be better served in doing so, and also explained to the researcher that they take part in recess themselves as a means of keeping students as active as possible. These responses to the question indicate to the researcher that the teacher has identified a need to set parameters for students, even during unstructured periods.

In response to question three, teacher A identifies the fact that they utilize recess on some days before lunch, and some days after. This indicates to the researcher that teacher A does not have a set preference in the time they administer their recess period, and therefore, has no bias against scheduling recess during either the pre-lunch or post-lunch periods of the school day.

In response to question four, teacher A indicated that they do not necessarily see a difference in when they offer recess to their students. They feel as though as long as students get a break somewhere towards the middle of the day, it will be of benefit. They do not feel that a break at the beginning or end of the day would be as beneficial. This indicates to the researcher that the teacher is using past experiences to deduce the fact that students need a set break in the middle of their school day, and recess provides that set break.

In response to questions five and six, Teacher A responded that they notice more negative behaviors after recess, and that many times, the behaviors that are encountered are a result of students being competitive during recess. This indicates to the researcher that the overall recess environment would benefit from clear rules/structure provided by the teacher prior to recess taking place. Reducing the opportunity for conflicts to arise while continuing to provide students with time for physical activity during the school day would be an optimal structuring of the recess period.

In response to question seven, Teacher A declined to give an in-depth answer regarding indoor recess because they will go outside unless it is absolutely not possible because of inclement weather. Teacher A informs parents of this practice, and encourages them to provide their children with adequate clothing in order for them to be exposed to fresh air and physical activity. Teacher A does incorporate calisthenics into instructional time as well, and receives positive feedback from parent regarding this practice. The response to question seven indicates to the researcher that Teacher A values the impact of outdoor recess and physical activity on their classroom, and has fourteen years in their current role to base their decision upon.

In response to question eight, Teacher A feels that the use of recess is effective in keeping students focused and attentive while in the classroom. This response provided further reinforcement to the researcher that Teacher A has drawn from fourteen years of relevant experience in the classroom to base this positive reflection of recess from.

In response to question nine, Teacher A states that their opinion of an optimal duration of time for recess would be thirty minutes. They are currently allotted a time of twenty minutes for recess. Teacher A utilized the word “social” four times during the course of this response in an effort to emphasize the students’ needs for social interaction during the school day. They feel that because they are instructed not to discuss social topics with one another during instructional time, the longer period of recess would allow for this socialization to occur in a non-prohibited environment. This response indicates to the researcher that Teacher A has consistent attitudes about the importance of social development and opportunity for students as the students themselves do in their responses.

In response to question ten, Teacher A feels that if it would be possible, splitting a thirty minute recess period into two equal fifteen minute recess periods during the school day would be beneficial. Teacher A acknowledged in their response that the school day is long, and breaking up the day for the students will help to keep them focused and active. This response indicates to the researcher that Teacher A has identified the need for students to experience breaks during the school day, and as referenced earlier, has credible experiences as a fourth grade teacher to base these responses from.

Themes were interpreted by the researcher for the interview with 4th grade Teacher A in the same manner that themes were uncovered from the 4th grade student interviews. These themes

included the concept of change and its impact on the current form of recess, the teacher's opinion that students need to be active during the school day, the teacher's opinion that students receive a break during the school day, the teacher's opinion that recess helps students regain focus in the classroom, and that students have a need to be social during the school day.

5th grade teacher results and interpretations

In response to question one, 5th grade Teacher B feels that eliminating recess does make the scheduling of the day easier, but is a big adjustment for the students as they are no longer afforded a break during the school day. This response indicates to the researcher that the teacher has identified the adjustment period for the 5th grade students, and stated that this is especially valid early in the 5th grade year.

In response to question two, 5th grade Teacher B feels that if recess could be reinstated into the school day, directly after lunch would be the most optimal time to do so. Teacher B stated that students are “wound up” following lunch, and often times need reminders to calm themselves and quiet their voices when returning the classroom. This response indicates to the researcher that students may in fact benefit at this grade level from a break in the school day in order to dissolve excess energy and refocus on academic and behavioral expectations.

In response to question three, Teacher B feels that the elimination of recess has not truly increased instructional time. Teacher B explained that it is a common practice across their grade level to build in breaks of 3-5 minutes during the school day when they sense that the students have reached the point that they truly need a break from instruction. Teacher B also rationalized that this is a natural need the also occurs in adults, and students can only handle so much

consistent instruction before a break is needed. This response indicates to the researcher that Teacher B has identified the need for 5th grade students to have breaks during the school day, and these breaks are not available at this grade level in the form of recess. Therefore, unplanned breaks are built in to their schedule on an as-needed basis.

In response to question four, Teacher B feels that students need a set break during the school day, but has no definitive data that shows whether the fourth grade or fifth grade academic environments are more conducive (Teacher B has experience at both the elementary school, and intermediate school). This response indicates to the researcher that a collection of data has not been implemented by School District A on the impact that removing recess has had on the academic and behavioral progress of students from 5th grade moving forward.

In response to questions five and six (Teacher B answered both questions simultaneously), Teacher B indicated that in their experiences, fewer negative behaviors by students occur before lunch, and more negative behaviors “definitely” have occurred after lunch. This indicates to the researcher that students would benefit from a set break during the afternoon, following lunch, and this break may in fact reduce unwanted behaviors in the classroom.

In response to question seven, Teacher B indicated that they are not able to provide students with a break during every school day. They do incorporate an incentive program called “Fun Friday” where students can earn a break period on Friday afternoons where they can choose from a variety of activities, but students must meet the criteria before they can attend. Therefore, not all students receive this break. Teacher B also reiterated an earlier point when they stated that on an as-needed basis, they will provide students with a brief break period when they sense the students have reached a frustration level. This indicates to the researcher that at this grade level,

the school day may dictate whether students can receive any type of break rather than those responsible for creating the academic schedule.

In response to question eight, Teacher B indicated a concept that was broached earlier when they stated that they do allow for several 3-5 minute, unstructured breaks during some school days. Students may choose to do such things as read, talk to a friend, and draw. This indicates to the researcher that Teacher B has identified a need in their students to receive breaks during the school day to help refocus their efforts and provide them with unstructured time to use as they see fit.

In response to question nine, Teacher B stated that one of the major differences that they have noticed between teaching 4th and 5th grade students is that they tend to make their 5th grade students more responsible and independent for things than they could with their 4th grade classes. This is relevant to the researcher as it indicates that these 5th grade students may be able to participate in regular, unstructured recess time in a responsible manner, with little guidance needed from the teacher. On the other hand, 4th grade students may still benefit from the teacher's intervention and guidance into the recess process.

In response to question ten, Teacher B states that they would "absolutely" incorporate recess into the school day if they could create their current school schedule. Teacher B feels that 10-11 year old students still need time to go outside and socialize while getting away from the rigors of academics, and have the chance to "just be kids". This is relevant to the researcher because Teacher B has experience at both the 4th grade level at the elementary center, and their current placement as a 5th grade teacher. Therefore, they have relevant and substantiated experiences to draw from for their response to this question.

Several themes were identified by the researcher following the interview with 5th Grade Teacher B. First and foremost, 5th Grade Teacher B identified the word break on multiple occasions. Teacher B feels that students at this grade level still need breaks throughout the school day, and incorporates unofficial breaks for their students whenever they identify the need. A second theme was the fact that Teacher B stated that they “definitely” notice more negative behaviors after lunch, with no recess available for students to release energy. Finally, like 4th Grade Teacher A, 5th Grade Teacher B has noted the students’ need for socialization, which they must get during special events like “Fun Friday” without recess there to provide the time for social opportunities.

To summarize the perceptions of each of the teachers interviewed, Table 14 below lists main points of emphasis from each teacher individually, or points that were in common for both teachers.

Table 14

Classroom Teacher Perceptions

Point of Emphasis	Teacher	Affected Domain
<ul style="list-style-type: none"> • Structuring of recess has changed due to increased need for testing 	4 th Grade Teacher A	Physical/Emotional/Social

<ul style="list-style-type: none"> Negative behaviors can be seen after recess if incidents occur on the playground 	4 th Grade Teacher A	Social
<ul style="list-style-type: none"> Increase in attention and focus is attributed to the break that recess provides 	4 th Grade Teacher A	Physical
<ul style="list-style-type: none"> Students have a need for social interaction that recess can provide 	Both Teachers	Social
<ul style="list-style-type: none"> Students have a need for a break during the school day 	Both Teachers	Physical, Emotional, Social
<ul style="list-style-type: none"> No significant increase in instructional time seen from elimination of recess 	5 th Grade Teacher B	Academic Relationship

In Table 15, the researcher has compiled a collection of the themes that have emerged from each of the research questions through the influence of student and teacher input via the interviews and surveys.

Table 15

Emergent Themes

Research Question	Themes
A. What impact does recess have on student achievement and behavior in an elementary school classroom?	<ul style="list-style-type: none"> • 4th Grade performed more proficiently on both DIBELS Next and Study Island during each of the data samples collected. • No significant impact (student perception, which differs from data) • More negative behaviors following lunch period (5th Grade Teacher B stated)
B1. How would teachers describe the impact of removing recess on student behaviors and academic achievement?	<ul style="list-style-type: none"> • Students need a break during the school day (stated by both teachers) • More negative behaviors after lunch without recess (5th grade teacher response) • Students have a need for socialization (stated by both teachers)

	<ul style="list-style-type: none"> ● No significant increase in instructional time has been observed through the removal of recess, negating any positive academic influence (5th Grade teacher response)
B2. How would students describe the impact of recess on their own behavioral and academic experiences?	<ul style="list-style-type: none"> ● Need for socialization (both grade levels stated) ● Desire for fun (both grade levels stated this) ● Feel restless/jittery during school day (both grade levels stated this) ● No significant impact on academics (both grade levels stated this) ● Every 5th grade student interviewed would reinstate recess in their school day if given the choice. This includes students who shared indifferent or negative viewpoints regarding their experiences in recess.

Summary

Chapter 4 of this qualitative study examined the results of the surveys and interviews conducted with a fourth grade classroom and their teacher in an elementary school, as well as a fifth grade classroom and their teacher in an intermediate school located within the same school district. Because the main theme of the study includes the impact that recess has on academics and behaviors of elementary school students, these instruments provided the researcher with the

perceptions and feelings of those most directly impacted by either having recess (4th grade population) and not having recess (5th grade population). While each student in each respective class was asked the same set of questions in both the survey and interview, answers were found to have slight variations, but overall common themes. While two students at the 5th grade level indicated that the loss of recess was not a negative event for them (one of which indicated they would still include recess if they could create their own school schedule), the overwhelming perception of recess was positive. Students indicated that recess was a time to be social, release energy, play games, and have fun. 4th grade students also indicated that learning was harder before recess, and that they felt more relaxed and ready to learn following recess. The researcher was also able to ascertain that these two particular groups of students had a common theme towards making the research questions clear. Both sets felt that are jittery during the school day, which could have an impact on behaviors and academics if this restlessness lead to loss of concentration and focus. However, the 5th grade students had a majority of students who were interviewed (5 out of 6) state that they have not experienced a difference in their grades from when they were in 4th grade, which indicates that this particular group experienced no academic impact from the removal of recess. Also, the majority of this interview group (4 out of 6) reported that they have not seen a difference in the amount of behavioral incidents they have had between 4th and 5th grade. One student reported that they had more incidents as a 4th grade student, and one other student did indicate more incidents as a 5th grade student.

Each teacher also provided the researcher with viewpoints and opinions based on their experiences with recess, with individual opinions present, along with shared opinions and viewpoints common to both teachers. 4th grade teacher A has seen a gradual change in the way recess is administered due to an increase in academic testing and liability. 5th grade teacher B has

not noticed an increase in instructional time through the removal of recess. Both teachers were common in their assessment that a break is needed for students during the school day, and that elementary students exhibit a profound need for socialization during the school day.

The collective dearth of data collected between the surveys and interviews have provided the researcher with the necessary information needed for conclusions and recommendations on the use of recess at the elementary school level. These will be discussed in the final chapter of this research study.

Chapter 5: Conclusions and Recommendations

Introduction

The purpose of this chapter will be to summarize the findings from the qualitative research study that included a triangulation of data (Merriam, 2009) from surveys and interviews, academic and behavioral achievement data, and the researcher's own interpretations that were in part formed from a review of literature, and part from their own experiences in the field. Final interpretations, conclusions, and recommendations for moving forward will be presented during Chapter Five.

Overview of the study

This qualitative research study was intended to examine the impact of recess on elementary school academics and behaviors. The researcher chose this topic due to experiences in his current educational setting where recess is offered to students in grades K-4, but is then removed from the school day in subsequent grades including the intermediate school (grades 5-6). This method of scheduling the school day without recess was due in part to the need to provide additional math and reading time in order to perform more proficiently on state assessments (Chaille, 2001, Simon and Childers, 2006, Lewis, 2008). In order to gain an understanding into the actual impact that recess has on school students and their teachers, one fourth grade classroom and one fifth grade classroom were chosen from the same school district for participation in data collection intended to help the researcher explore the main question of this research, along with two supporting questions. The main or central question of this research asks:

- What impact does recess have on student achievement and behavior in an elementary school classroom?

Two supporting questions also were created by the researcher to help explore the impact that recess has on elementary school learning and behaviors. These questions include:

- How would teachers describe the impact of recess on student behaviors and academic achievement?
- How would students describe the impact of recess on their own behavioral and academic experiences?

A triangulation of data would then be observed by the researcher once the interview and survey data was complete. This data would be compared with academic and behavioral data from the current 4th and 5th grades to help the researcher draw conclusions based on the central and supporting questions.

Interpretations of Findings

The researcher utilized three key sources of data in order to draw conclusions later in the study. First, the review of the literature coupled with the researcher's own past experiences helped to frame recess and physical activity in general in a vital manner in regards to the education of students. During the review of the literature, research-based studies were able to show the positive association between recess and academic achievement (Spencer-Cavaliere, Causgrove-Dunn, and Watkinson, 2009), as well as physical activity and academic achievement (Kwak et al., 2009; Zoeller, 2010). This literary and research-based confirmation to the benefit of recess on student achievement was coupled with the researcher's experiences as a health and physical education teacher and assistant principal to confirm the positive link between recess (or

at least a break in the students' school day) and academic achievement and behavior in the classroom.

Student surveys were the second source of data utilized by the researcher. Students from each sample classroom were invited to participate in the survey, which was available on the website "Survey Monkey.com", and included nineteen participants in the 4th grade classroom, and twelve participants in the 5th grade classroom.

Students in 4th grade selected answers that revealed several obvious associations between their current participation in recess and how it impacts their school day. First, they really look forward to having recess each day (84% surveyed look forward). Second, the majority of the surveyed students (74%) stated that after recess, they feel more relaxed and can pay better attention to their teachers. Fifteen of the nineteen surveyed revealed that they play games that keep them active and engaged at recess most to all of the allotted time during their recess period, while the same number said that they never refrain from either playing or involving themselves socially during their recess period. Fourteen of the nineteen students do get exercise outside of school, but the researcher feels that the 5 students who only "sometimes" play after school is significant. If five students in every classroom around the country get minimal free play and exercise outside of the school day, the time that they get to spend during the school day engaged in play and exercise is vital to their health and well-being as both children and students. Another point of interest revealed during the 4th grade survey included the fact that twelve out of the nineteen responders did not report feeling as relaxed and ready to learn on days where they have indoor recess. This is significant in that the environment in which a break or recess is conducted is instrumental in the effectiveness in which the students receive a cognitive/behavioral benefit.

Finally, eighteen of the nineteen responders stated that they are unhappy to think of having a school day without recess in 5th grade all to most of the time, and seventeen of the nineteen students found it easier to behave after recess most of the time to always. This statistic has an obvious impact on the second of the supporting research questions, as it indicates a relationship between positive behavior and time spent engaged in recess.

For the 5th grade survey, the researcher was able to identify several significant factors regarding the impact that not having recess during the school day has on a student. First, eight of the twelve responders reported that they felt it was easy to somewhat easy to sit through the school day without recess. However, during the next question, seven out of twelve students stated that they found paying attention all day without a break to be a little difficult. Therefore, while students may find that they have the ability to sit all day without recess, the majority also indicated that paying attention without a break is impacted in a negative manner. On a subsequent question, ten of the twelve responders also indicated that they found it either easier or much easier to learn in elementary school when they had a break. The researcher notes that attention and learning have been identified by the 5th grade students thus far as being impacted because of a lack of recess or a break in their school day. Next, eight of the twelve responders stated that the ability to behave or follow school rules was a little harder without recess in their school day, which had significant impact on the researcher's conclusion in interpreting the corresponding secondary research question. Next, eleven of the twelve responders stated that they felt some type of break would make the school day easier to much easier to handle, as they currently get no scheduled break during the day other than a thirty minute lunch period. As the students reflected on their past use of recess, eleven out of twelve responders stated that they ran around and played at recess always to most of the time, while six of the twelve stated that they

never stood around and only talked during recess. The students had an overwhelming response in regards to whether they missed having recess in their school day, with eleven of the twelve responders stating they either missed or really missed recess.

The interviews were an additional data source that assisted the researcher in drawing conclusions to the stated research questions. Both students and teachers were included in the interview process, with students selected randomly to participate.

The 4th grade interview protocol was administered to six students, with three males and three females randomly selected to answer six questions. During the course of the interview, several themes emerged from the students' responses. First, students have a major need to be social, and cannot always get this during classroom time due to instruction. Next, students identified that learning is more complicated prior to recess. This will be revisited during the conclusions, as this fact is significant in the scheduling of recess during the school day. The researcher next found that students communicated a feeling of restlessness (also described as feeling "jittery") in their responses. This restlessness may then impact the learning and behaviors that are exhibited by students in the classroom, which is significant towards answering the research questions. Next, students indicated a desire for more recess time. The researcher interpreted this finding to be significant in that the allotted time of twenty minutes currently available for students may not be enough.

The 5th grade interview protocol was also administered to six randomly selected students, with three male and three female students selected. These students were also asked six questions during the interview, and the researcher was able to interpret themes significant to the research questions. First, much like the 4th grade students, the 5th grade students identified a need for

socialization, and recess had been one source of talking to and being with their friends in the past that was no longer available. Students did identify “Fun Friday” as one area where they can socialize and interact with friends, which also then has a behavioral component associated with it since “Fun Friday” is earned through incentives tied to positive behaviors and actions through the school week. Next, 5th grade students showed another similarity to the 4th grade responses when they identified feeling restless or “jittery” during the school day. Unlike 4th grade, however, the 5th grade has no scheduled break during the day in the form of recess. This could then have a significant impact in the school day for both students and teachers, as behavioral incidents and quality of instruction could both be effected by students who are unable to fully attend to instruction.

Neither 4th nor 5th grade students identified a significant link between recess and their academic performance. The researcher feels that students may not be aware of the scientifically based research that connects learning with physical activity, and did not want to influence the students’ answers by educating them during the interview process. The researcher also feels that the students place a higher value and priority on the concepts they identified during the interviews including socialization and an opportunity for free play and release of energy or “jitters” during their school day than any type of benefit that recess has on their academic performance.

Each of the classroom teachers were also asked a series of ten questions by the researcher. Like the students, the teachers did not reveal any significant impact on academic scores during the interview protocols. However, both teachers identified behavioral components that have direct implications on the effectiveness of teaching and learning that takes place within their

classroom. While both teachers pointed out that negative behaviors occur more frequently after lunch, 4th Grade Teacher A described a unique cause of the behaviors that they have noticed in their classroom. This cause includes recess itself, and therefore, the researcher has interpreted a need for structure and clear guidelines for classroom teachers to implement in order to keep recess both safe and of optimal benefit to the teaching and learning process. Both teachers were also clear in their belief that students must get a break during the school day, with the middle of the day described as an ideal time to incorporate a break for their students. For 4th Grade Teacher A, this break would come in the form of recess.

Conclusions

During this methodological study, a central question and two supporting questions were created by the researcher to explore the use of recess in elementary schools.

While the literature review provided a research-based foundation for the central question, the surveys and interview protocols helped to directly answer the support questions, while also reinforcing the literature review as well. After observing the triangulation of the data sources, the researcher has reached conclusions pertaining to the central and supporting questions.

First, students have a need to be social with one another and develop these skills during this part of their development. Recess provides a crucial opportunity for students to have socialization time during a non-academic time of the school day. Students from both grade levels identified a need for the opportunity to socialize with one another during a time that is permissible and not during instructional time, and also identified a clear need for “fun” activities to be a part of their elementary school day. Playing with friends was clearly identified by

students as a way they attain emotional fulfillment or “fun” during their school day. 4th grade students see recess as an ideal opportunity to socialize, while 5th grade students have identified this void in their school day.

Next, prolonged periods of sitting through the school day create a feeling of restlessness in elementary school students which may impact their ability to attend to academic instruction. 4th graders report that recess allows them to release the built up energy, while 5th grade students profess a need for an outlet for their restlessness. Teachers have identified the need for students at this level to receive a break during the school day as well. 4th Grade Teacher A gets to provide their students with a break through recess, but 5th Grade Teacher B does not get a formal opportunity to do this. What is significant is that Teacher B provides informal breaks throughout any given school day to alleviate focus and attention issues, along with behavioral issues that arise most notably after lunch. While it is admirable for administrations to look to maximize instructional time in the classroom for students, they must do so with research-based information to help them optimally schedule this time. In this particular sample setting, 5th Grade Teacher B stated that they have not noticed a true benefit of eliminating recess in favor of more instructional time due to the managerial issues as a result of behaviors that are caused by students not receiving a break during the school day. While no real academic impact was specifically noted by either teacher, the impact of not having recess on an increase in unwanted student behaviors indicates a clear behavioral impact.

Finally, research conducted during the literature review (Blom, Alvarez, Zhang, Kolbo, 2011; Davis, Cooper, 2011; Ramstetter, Murray, Garner, 2010;) shows a sharp contrast to the results of the student surveys and interviews. It is the opinion of the researcher that a larger sampling of

students would indicate results more consistent with themes from the literature review. The researcher also feels that students may not directly understand the impact that recess/physical activity has on their learning due to their age and preference for fun activities and socialization. Therefore, using quantitative measures as opposed to qualitative may show a stronger association between activity and academic progress.

Final Conclusions Based on Research Questions

1. What impact does recess have on student achievement and behavior in an elementary school classroom?

The answer to this question was dependent upon the source that was providing information to the researcher. During the literature review, it was clear that there is a direct link between physical activity and student achievement. (Dills, Morgan, Rotthoff, 2011). Specific to this research, a link was made between recess and achievement, with recess serving as a critical break in the day for students between learning tasks (Pellegrini, Bjorkland, 1997). Citing schools in Taiwan and Japan who offer up to five recess periods a day, an argument is made that these breaks are ideal for increasing academic achievement by preparing the student to re-enter the classroom ready to learn following the break period. An additional study conducted at the University of Central Florida (Scheuer, Mitchell, 2003), was able to identify an increase in school academics and performance in a study group when they were exposed to additional physical activity within their school day.

In similar fashion to the review of literature, the data collection process that was conducted with the two elementary classroom teachers revealed a positive relationship between recess and

the ability to perform in the classroom. Both teachers cited the students' need for a break within the school day, and stated that they found students more relaxed and attentive after breaks. 4th Grade Teacher A stated that the more active the students are at recess, the more attentive they tend to be back in the classroom. Both teachers also praised the social benefit that recess provides. 5th grade teacher B specifically stated that during break times, students are able to talk and be social, deterring them from talking and interrupting subsequent instructional periods. Neither teacher, however, made specific dialogue regarding academic achievement. Teacher responses tended to be more about behaviors and the ability that recess has to allow students to be social and more attentive in class. The researcher deduces, however, that an increase in attention by students would ultimately lead to higher academic performance in the classroom.

The data collection process conducted with the students indicated results that were in conflict with the literature review and the teachers' interview responses. Specific to this research, students in the 5th grade classroom reported that there was no significant difference in their academics and/or behaviors between their 4th grade and 5th grade school years.

A. How would teachers describe the impact of recess on student behaviors and academic achievement?

Both 4th Grade Teacher A and 5th Grade Teacher B spoke about recess in a positive manner during the interview process. 4th Grade Teacher A cited a specific need for students to receive a break during the middle of the school day, and purposefully schedules recess during this time period for the greatest classroom impact on the students. 5th Grade Teacher B was also very specific in their belief that students need a break during their school day, and will schedule small breaks intermittently on an almost-daily basis. Both teacher felt that recess is conducive to

assisting students attend better to instruction, but neither made specific mention of how they have seen academics improved through recess. Both teachers also cited the social needs of students at their grade level, and how recess is an optimal stage for this socialization to take place. 4th Grade Teacher A did make a statement regarding behaviors that the researcher felt was significant. This statement involved recess being the cause of subsequent negative behaviors back in the classroom due to issues that arise during the recess period that were caused by competitiveness of students. 4th Grade Teacher A was also frank in their revealing that no real structuring of recess takes place before students participate. The researcher feels that teachers making clear expectations and even structuring the period in a manner that may organize/facilitate recess may reduce some of the “free choice” that students have, but may also reduce personality conflicts that arise between students. This would then reduce/eliminate behaviors that affect learning in the subsequent instructional periods after recess.

B. How would students describe the impact of recess on their own behavioral and academic experiences?

Students made one point emphatically clear during both the survey and interview process. This includes the fact that they desire time with friends in an unstructured environment that is not directly related to their academic day. The researcher even took note that students did not respond as favorably to having indoor recess during inclement weather days. It is speculated that this is due to the fact that indoor recess takes place in their classroom, where the bulk of their instructional day also takes place, and students need a clear separation between “business and pleasure”. At this point, the students were not able to correlate recess with greater academic potential. They did however indicate clear feelings of restlessness or “the jitters” during their

day, and professed a need for a break during their day. 4th grade students indicated they would enjoy a longer recess period, while 5th grade students made an indication that any type of break, especially in the form of recess would be welcomed.

Recommendations

Based on information gathered in the literature review along with data obtained during student surveys and student and teacher interviews, it is the recommendation of the researcher that elementary students in grades K-6 receive a scheduled break during their school day. Ideally, this break would be in the form of a period where physical activity would be possible, most often scheduled as “recess” during the traditional school day. While the recess period should allow for students to have free play, it is also recommended by the researcher that there should be clear expectations and structuring put in place to optimize the benefit to the teaching and learning process and minimize behavioral incidents that could interrupt the instructional environment of the classroom. Not only is there a clear link between cognitive function and physical activity indicated through the literature review, but no definitive justification exists to eliminate recess in favor of additional academic instructional time. In fact, 5th Grade Teacher B, who has relevant experience teaching students both with and without recess, stated during the interview that they have noticed no significant increase in instructional time during the six years that they have been without recess in the intermediate school, but has noticed a clear increase in unwanted negative student behaviors (most notably after lunch). Both teachers and students also made it clear that there would be a benefit associated with a break period during their school day. While students felt more inclined to have a break for purposes of socialization and free play, teachers identified a loss of attention and increase in both restlessness of students and behavioral incidents in the

latter part of the school day. For these reasons, it is recommended that School District A conduct further research on the possibility of reinstating a break period of recess in grades 5-6, and maintaining recess with clear behavioral expectations in grades K-4.

Moving forward, the researcher feels that further exploration of the link between recess and academic achievement would be of benefit, with a wider range of sample populations surveyed and interviewed about their scheduling of the school day. Because play is such an integral part of the recess process as identified in the student interview process, the researcher feels that exploring the impact of play on elementary students would also be conducive to positive school achievement and behavior. Further research may help those responsible for making school schedules aware of the benefits of recess and free play on the behavioral and social domains of the student day, as indicated in this research, which could subsequently connect in a positive manner on the overall classroom learning environment and student achievement. With expectations for achievement remaining high as a result of No Child Left Behind, and current initiatives including the incorporation of a statewide Common Core curriculum adaptation, these decision makers would be wise to explore every possible avenue to facilitate the learning process in their schools. As this research has indicated, recess in the K-6 levels would certainly be included as one of those avenues.

Appendix A

Letter of Access (All names and locations have been hidden for confidentiality purposes)

October 26, 2012

Timothy Moyer
Ed.D. Candidate: Drexel University
4415 Kutztown Rd.
Temple, PA 19560

RE: Request for Access to Conduct Dissertation Research at: XXXX School District (XXXX Elementary Center and XXXX Intermediate School)

Dear Timothy Moyer:

This letter is to inform you that the Assistant Superintendent of the XXXX School District has reviewed and supports your research study titled, "The Impact of Removing Recess on Behaviors and Academic Achievement in Elementary School Students." It is our understanding the project will begin during the winter/spring of 2013.

We are very interested in Timothy Moyer's efforts that may help improve our understanding of "The Impact of Removing Recess on Behaviors and Academic Achievement in Elementary School Students."

If you have any questions or need further assistance, please contact me at (XXX) 555-5555.

Sincerely,

Dr. Jane Doe

Assistant Superintendent

XXXX School District

Anywhere, PA 10000

Appendix B

4th Grade Student Survey—School Recess Perceptions

Available via www.surveymonkey.com

1. Recess is a time of day that I:

- Really look forward to
- Look forward to
- Don't really care about
- Don't look forward to at all

2. Before I go to recess, I feel:

- Jittery, and have a hard time paying attention
- Not too jittery, but its hard to pay attention
- I feel fine, and I can pay attention a little bit
- I feel fine and can pay full attention to my teachers

3. After recess, I feel:

- More relaxed and can pay better attention to my teachers
- More relaxed but still have trouble paying attention
- Jittery but can pay attention to my teachers
- Jittery and can't pay attention to my teachers

4. While I'm at recess, I play games that get me moving and running.

- Always
- Most of the time

- Sometimes
- Never

5. While I'm at recess, I stand around and talk but don't play active games.

- Always
- Most of the time
- Sometimes
- Never

6. While I'm at recess, I don't play any kinds of games or talk to anyone.

- Always
- Most of the time
- Sometimes
- Never

7. Besides recess, I get exercise by running around and playing after school.

- Always
- Most of the time
- Sometimes
- Never

8. On days that we have indoor recess, I feel as relaxed and ready to learn afterwards that I do when we go outside for recess.

- Always
- Most of the time
- Sometimes
- Never

9. When I look ahead to fifth grade, I am unhappy that I will no longer have recess during the day.

- Always
- Most of the time
- Sometimes
- Never

10. I find it easier to demonstrate good behavior and follow school rules after I participate in recess.

- Always
- Most of the time
- Sometimes
- Never

Appendix C

5th Grade Student Survey—School Recess Perceptions

Available via www.surveymonkey.com

1. Sitting through class everyday without recess is:

- Easy
- Somewhat Easy
- Hard
- Very Hard

2. Paying attention to all of the things my teachers say all day long is:

- Very Easy
- Easy
- A Little Difficult
- Very Difficult

3. When I had recess every day in elementary school, learning was:

- Much easier
- Easier
- Not much easier
- Harder

4. Behaving and following school rules now compared to when I was at the elementary school is:

- Much easier
- Easier
- A little harder
- Much harder

5. Having some kind of break other than lunch would help make my school day:

- Much easier
- Easier
- About the same
- Harder

6. When I was in elementary school, I ran around and played games each day at recess.

- Always
- Most of the time
- Sometimes
- Never

7. When I was in elementary school, I stood around and talked to friends, but did not play active games.

- Always
- Most of the time
- Sometimes
- Never

8. When I was in elementary school, I did not play any kind of games and did not talk to anyone while I was at recess.

- Always
- Most of the time
- Sometimes
- Never

9. When I look back to recess in elementary school, I:

- Really miss it
- Miss it

- Don't really care
- Am glad I no longer have it

10. Without recess, I feel I am a:

- Worse student than when I had recess
- Not really a different student than when I had recess
- Same student I was when I had recess
- Much better student than when I had recess

Appendix D

Interview Protocol for Qualitative Data Collection—The Effect of Physical Activity on Academic Achievement—4th Grade Teacher Interview

1. In your time as a 4th grade teacher, how has recess changed in terms of how its used compared to its current form?
2. Do you relay any expectations to your kids at recess? For example, is any emphasis placed on how active the students remain during their allotted time?
3. Do you utilize recess before or after lunch?
4. Do you see a benefit in offering recess before lunch as opposed to after lunch?
5. Do you notice an increase or decrease in negative behaviors prior to recess?
6. Do you notice an increase or decrease in negative behaviors following recess?

7. Do students exhibit any noticeable behaviors on days indoor recess is utilized compared to outdoor recess days?
8. What effect do you see in student learning because of the use of recess?
9. What would the optimal amount of time allotted for recess be in a day?
10. What impact have you seen in the use of recess since the enactment of No Child Left Behind?

Appendix E

Interview Protocol for Qualitative Data Collection—The Effect of Physical Activity on Academic Achievement-5th Grade Teacher Interview

1. In your time as a 5th grade teacher, how has not having recess impacted the continuity of the school day?
2. How has No Child Left Behind changed your instructional methods since its inception in 2002?
3. Has the elimination of recess from the school day truly increased instructional time?
4. When comparing successful learning between your time in elementary school and your time in the intermediate school, which setting, if any, has proven to be more conducive to academic achievement?

5. Do you notice an increase or decrease in negative behaviors prior to lunch?
6. Do you notice an increase or decrease in negative behaviors following lunch?
7. Do you incorporate any type of break or free time to students during the school day?
8. If you do incorporate free time, how long does it last, and what do students generally do during that time frame? If no free time is provided, please explain why.
9. When comparing your time at the elementary school to the intermediate school, what are the similarities and differences in the classroom environment?
10. If you had control of scheduling your school day, would you incorporate recess into the day and why?

Appendix F

4th Grade Student Interview Protocol

1. Explain why you either look forward to recess or do not look forward to recess on a daily basis.
2. When you think about your learning, describe whether you think it is easier or harder to learn before you have your recess period.
3. How do you feel after recess is over, and does that affect how you learn in any way?
4. Do you ever feel jittery or restless during the school day?
5. If you could change something about your daily recess period, what would it be?

6. In no more than two minutes, describe what school recess means to you.

Appendix G

5th Grade Student Interview Protocol

1. As a fifth grade student, you have not had recess during the school day like you did in fourth grade. What were your thoughts when you realized that you would not have recess anymore?
2. Has there been any difference in the number of times you have been in trouble in fifth grade compared to when you were in fourth grade, and if so, why do you think that is?
3. Have you felt jittery during the school day this year, and if so, why do you think you have felt this way?
4. Has there been a difference in your grades between fourth grade and fifth grade?
5. Explain why or why not you would include recess in your school day if you could create your own school schedule.
6. In no more than two minutes, describe your experiences as a fifth grade student at school B compared to your experiences as a fourth grade student at elementary school A.

Appendix H

Complete Transcription of Student and Teacher Interviews

Fifth Grade Student Interviews

T: The following interviews were conducted on Monday December the sixteenth two thousand and thirteen at school B in school district A. The fifth grade. Our first interview with fifth grade is with student A. Student A as a fifth grade student you have not had recess during the school day like you did in fourth grade. What were your thoughts when you realized that you would not have recess anymore?

Student A: Umm, a little upset. because I used to love, um, recess. Hanging out with my friends and [yeah].

T: So you loved hanging out with your friends so you were upset when you didn't have recess? Okay. Question two has there been any difference in the number of times you've been in trouble in fifth grade compared to when you were in fourth grade and if so why do you think that is?

Student A: Umm, yes because I don't really [sigh]...

T: You don't know, you think you got in trouble more this year than you did last year though? Alright, question number three. Have you felt jittery during the school day this year and if so why do you think you've felt this way? Jittery just means like you can't sit still okay?

Student A: Umm, I don't think so.

T: You don't think so? Think you've been just the same as you were in fourth grade? Okay.

Question number four. Has there been a difference in your grades between fourth grade and fifth grade?

Student A: Yeah...

T: Which, which year was better?

Student A: Um, fourth.

T: Fourth grade was better.

Student A: Yeah.

T: [Okay], Alright, question number five. Explain why or why not you would include recess in your school day if you could create your own school schedule.

Student A: I would because it gives the kids a chance to get some exercise [besides gym] and they can do like, whatever they want. [because they don't do that...]

T: Awesome. Okay last question. Number six. in no more than two minutes describe your experiences as a fifth grade student compared to your experiences as a fourth grade student in elementary school.

Student A: [umm]

T: Has school been fun, has it been easier, has it been harder?

Student A: I think a little harder because [we don't get to spend, we don't get to get, like the[...]

T: and you think free time is pretty important? Alright well thank you very much for your answers, that concludes the interview with student A. Fifth grade.

T: Okay this will be interview number two at school B, fifth grade and this is Student B. Student B as a fifth grade student you have not had recess during the school day like you did in fourth grade. What were your thoughts when you realized you would not have recess anymore?

Student B: My thoughts were it was kind of better for me that we didn't have recess because in recess I would not like be focused after recess um I would keep thinking about like playing outside and talking to my friends and then like couldn't focus during class.

T: Okay. Question number two. Has there been any difference in the number of times you've been in trouble in fifth grade compared to when you were in fourth grade, and if so, why do you think that is?

Student B: Um, there is a difference in fourth grade, um, we, sometimes you [...] friends would get in fights and stuff like that, like just talking fights and I would get in trouble more often but in fifth grade now I haven't gotten in trouble as much.

T: Alright. Question three. Have you felt jittery during the school day this year, this year, and if so, why do you think you've felt that way?

Student B: I have felt jittery because it's kind of hard sitting during class still in your seat and not like getting up and moving but it's kind of better for me.

T: Okay. Question four. Has there been a difference in your grades between fourth grade and fifth grade?

Student B: Um, not really, um in fifth grade, yeah, I get better grades but pretty much the same grades.

T: Okay. Question five. Explain why or why not you would create recess in your school day if you could create your own school schedule.

Student B: I would include recess um because during the day its kind of hard sitting there and focus, try to focus on the teacher and stuff like that and if you have recess you can get up, let your energy out and then you can get back in class and focus.

T: Okay, last question. Question number six. In no more than two minutes describe your experiences as a fifth grade student compared to your experiences as a fourth grade student at the elementary school.

Student B: Um, I like CE Cole, um I think it is kind of better for kids to not have recess, but we still need to, to move but I can focus more without recess.

T: Okay, thank you very much.

T: This is interview number three at school B, Fifth grade, with Student C. Student C, as a fifth grade student you have not had recess during the school day like you did in fourth grade. What were your thoughts when you realized that you would not have recess anymore?

Student C: I was upset because when I was in elementary school I liked having recess because we got to see our friends from other classes.

T: Okay. Question number two. Has there been any difference in the number of times you've been in trouble in fifth grade compared to when you were in fourth grade and if so why do you think that is?

Student C: No.

T: No, no difference. [...] Question three. Have you felt jittery during the school day this year and if so why do you think you've felt that way?

Student C: Yes, because when we were in elementary school we got to be outside and now we only get to go to gym and that's the only time we get to run around and stuff.

T: Okay. Question number four. Has there been a difference in your grades between fourth grade and fifth grade?

Student C: No.

T: No difference. All good grades. Okay, question number five. Explain why or why not you would include recess in your school day if you could create your own school schedule.

Student C: I would because I think it would make the students act better because they would get to like see their friends and run around and play and things.

T: Okay. Question number six. In no more than two minutes describe your experiences as a fifth grade student compared to your experiences as a fourth grade student at the elementary school.

Student C: In fifth grade.. we...it's just really the same except no recess.

T: Okay, is that better or worse?

Student C: Um, actually worse because we [...]

T: Alright. Well thank you very much for your answers.

Student C: [Yeah/you're welcome]

T: This will be our fourth interview, uh this is student D from school B, fifth grade. Student D, as a fifth grade student you have not had recess during the school day like you did in fourth grade.

What were your thoughts when you realized you would not have recess anymore?

Student D: I really missed it. Um, I really want it back.

T: Alright, is there any reason why you, you missed it or want it back?

Student D: Um cause I [...] with my friends.

T: Okay. Question number two. Has there been any difference in the number of times you've been in trouble in fifth grade compared to when you were in fourth grade, and if so why do you think that is?

Student D: No.

T: No difference.

Student D: Yeah.

T: Okay. Number three. Have you felt jittery during the school day this year, and if so why do you think you've felt that way?

Student D: Yeah I do feel jittery. I talk to my friends around me a lot more because I don't get to go outside and use all my energy.

T: Okay. Ahh, number, question number four. Has there been a difference in your grades between fourth grade and fifth grade?

Student D: No.

T: No. All the same? Okay. Question number five. Explain why or why not you would include recess in your school day if you could create your own school schedule?

Student D: I would include it in the school day because um, it's like, it's fun for the kids and us and the teachers get to watch their kids in their class play.

T: Okay. Question number six. In no more than two minutes describe your experiences as a fifth grade student compared to your experiences as a fourth grade student at the elementary school.

Student D: Can you say [that] again?

T: Okay.[..] In no more than two minutes describe your experiences as a fifth grade student this year compared to your experiences as a fourth grade student last year in elementary school.

Student D: There are differences in fifth grade, um,

T: Like is it more fun, is it more hard is it...

Student D: Um, it's, it's been more fun because we get Fun Fridays. And we get to go outside and read and play football [outside] with friends. And in fourth grade we weren't allowed to play football but I just played kickball instead.

T: Okay. So fun Friday is like a time where students that earn a certain amount of good merit points get to go outside then on a Friday, right?

Student D: Yeah.

T: Okay, other than that you guys don't get recess here this year? Okay, that's it. Thank you very much for your answers.

T: Our fifth interview is with Student E at school B, fifth grade. Student E, as a fifth grade student you have not had recess during the school day like you did in fourth grade. What were your thoughts when you realized you would not have recess anymore?

Student E: Uh, they were pretty down because I love recess.

T: And why do you love recess so much?

Student E: Because you get to run around and release your energy.

T: Okay, good. Question two. Has there been any difference in the number of times you've been in trouble in fifth grade compared to when you were in fourth grade, and if so why do you think that is?

Student E: I don't think so because at fourth grade I would hardly get in trouble and at fifth grade I would hardly get in trouble.

T: Alright, good. Question three. Have you felt jittery during the school day this year and if so why do you think you felt that way?

Student E: Umm, I, wait what does jittery mean?

T: Jittery just means like you can't sit still, like you have to kinda bounce around, you can't sit good in your seat...

Student E: Oh, yeah sometimes because um because I have so much energy and I can't get it out because we don't have recess.

T: Okay, question number four. Has there been a difference in your grades between fourth grade and fifth grade?

Student E: No.

T: No, all good grades?

Student E: Yup

T: Alright. Question five. Explain why or why not you would include recess in your school day if you could create your own school schedule.

Student E: Uh, yes I would, because it's so fun.

T: Okay, well what's, what's so fun about it? Give me a couple of [...]

Student E: You get to play with your friends, you get to do whatever you want at recess. You could play kickball, you could play sports, you could play tag, you could play on the park or something or like just play.

T: Okay. Final question, number six. In no more than two minutes, describe your experiences as a fifth grade student compared to your experiences as a fourth grade student at the elementary school last year.

Student E: Um, mmm, I, it was actually the experience at fourth grade was a little better [at] fifth grade because at fourth grade you would be able to get recess and at fifth grade you don't. You get at fourth grade uh, you would like to get uh, watch when you're good you might be able to watch movies at fifth grade you rarely have time to watch movies, uh, and um, you get to at the afternoon you uh, we have to sit in our seats and at fourth grade we get to sit in, we don't have to sit in our seats.

T: Okay. Thank you very much for your answers.

T: This is interview number six. This is student F from school B, fifth grade. Student F, as a fifth grade student you have not had recess during the school day like you did in fourth grade. What were your thoughts when you realized you would not have recess anymore?

Student F: Um, I, feeling better from doing it because we don't get outside anymore, but at least we have more time inside and doing fun stuff[inside], it's just like recess.

T: Okay, so you are saying...were you happy or sad when you realized that you wouldn't have recess anymore?

Student F: Happy.

T: You were happy?

Student F: Yeah, cause we still have Fun Friday.

T: Okay. Has there been any difference in the number of times you've been in trouble in fifth grade compared to when you were in fourth grade and if so why do you think that is?

Student F: Um, I never got in trouble in fourth grade or in fifth grade or any other grade.

T: Alright, that's awesome. Okay, question number three. Have you felt jittery which means like you can't sit still in your seat during the school day this year, and if so why do you think you felt that way?

Student F: Um, I've never been jittery, I'm just doing my school work as I was. Um, it's better because you get to learn more than going outside more.

T: Okay, question number four. Has there been a difference in your grades between fourth grade and fifth grade?

Student F: Nope.

T: All good?

Student F: Mmm,hmm.

T: Alright.

Student F: I'm still getting nineties and [a/one] hundreds.

T: That's awesome. Okay, question five. Explain why or why not you would include recess in your school day if you could create your own school schedule.

Student F: Um, my schedule would be recess at 2:30 to 3:00 so you can more, learn more about um [stuff that we're doing in school].

T: Okay, so you would put recess in your school day, just at the end of the day?

Student F: Mmm, hmm.

T: Okay. Number six. In no more than two minutes, describe your experiences as a fifth grade student compared to your experiences as a fourth grade student at the elementary school last year.

Student F: Uh, recess was more um, [likely/lively] because everyone wanted to get outside right away. Um, in fourth grade I really never wanted to go outside because of how cold it was.

T: Mmm, not a cold weather fan?

Student F: Mmm, mmm

T: What about like the fall, or the, when it's close to summer time?

Student F: Ah, summer would be good, cause I like to go out more then.

T: Okay. Alright. Thank you very much for your answers. That concludes our interview.

Fourth Grade Student Interviews

T: The following interviews took place on Monday, December the sixteenth two thousand thirteen. We are at school A in school district A. This is a K to four building and we are with fourth grade students. First up is student A. Student A, explain why you either look forward to recess or do not look forward to recess on a daily basis.

Student A: The stuff that I look for when I go to recess is I get to talk to my friends, I get to run around, I get to play kickball, I get all these [jitters] out. And the stuff sometimes I don't like about recess is if it snows then I can't go on the playground and wait and it might be too cold out so I can't go out we have to have indoor recess.

T: Okay. Question two. When you think about your learning, describe whether you think it's easier or harder to learn before you have had your recess period.

Student A: It's easier for me because um, I'm kinda focused when I do that stuff and sometimes if I'm too jittery um, I kind of bounce a little bit and that is why I sometimes like recess. Cause I get all that stuff out.

T: Okay. Question three. How do you feel after recess is over and does that effect how you learn in any way?

Student A: May I have that question again?

T: Sure. How do you feel after recess is over and does that effect how you learn in any way?

Student A: No, it does not affect me because since I got all my jit- jitters out um, it helps me focus more.

T: Question four, you kinda mentioned this already. Do you ever feel jittery or restless during the school day?

Student A: Some-Sometimes I do, but sometimes I don't.

T: Okay. Five. If you could change something about your daily recess period, what would it be?

Student A: I think we should have a little more recess time so we can get more um, all our jitters out.

T: Okay. Final Question. Question six. In no more than two minutes describe what school recess means to you.

Student A: It means having fun, talking to your friends, it means like you can get all your jitters out, you can play, you can run around, you can play all different kinds of games and if you are having recess you can play board games, checkers, on the computer. Um, talk, draw, that's it.

T: Okay, thank you very much for your answers.

T: This is interview number two, at school A, fourth grade. This is student B. Student B, explain why you either look forward to recess or do not look forward to recess on a daily basis.

Student B: Uhh, I look forward to recess because I get, I can talk to my friends, I can play around, and like, I can just do whatever I want.

T: Okay. Question number two. When you think about your learning, describe whether you think it's easier or harder to learn before you've had your recess period.

Student B: I think, um, well, it's sorta like the same for after and before so um, I, I, learn a little harder it be a little harder before.

T: So you think, do you think it's easier to learn before you have recess?

Student B: No.

T: You think it's easier to learn after you have recess? Okay. Alright, question three. How do you feel after recess is over and does that effect how you learn in any way?

Student B: Uhh, I feel good like I just had all my energy out. And it doesn't really affect me.

T: Okay, question four. Do you ever feel jittery or restless during the school day?

Student B: Uh, sometimes.

T: Okay. And that just means like you, you are sitting in your seat and you can't sit still and stuff. Alright, do you find that makes it harder to learn when you're, when you're like that?

Student B: yeah

T: Is it harder to pay attention to the teacher when you're jittery?

Student B: yes

T: Okay, question five. If you could change something about your daily recess period what would it be?

Student B: I would say that people who have to like sit [still/stand?] or something they shouldn't have that at recess like they should [...] have that in the classroom because they need to get all their energy out and if they don't that'll just make them worse and worse.

T: Okay. And then you are referring to the fact that sometimes kids have to sit because they didn't do part of their work or they got in trouble? Okay. Number six. In no more than two minutes describe what school recess means to you.

Student B: Uh, it means like just a free time....and not really, you know, trying to think about if you are doing something wrong or right, you can just be yourself.

T: Alright, and is that important to you?

Student B: Yes

T: That's an important time for you. Okay. Well I thank you very much for your answers.

T: Interview number three at school A, k-four building, this is student C, fourth grade. Student C, explain why you either look forward to recess or do not look forward to recess on a daily basis.

Student C: I really look forward to recess because it gives me a chance to let all my problems go.

T: What kind of problems?

Student C: Well, kinda like, well when I have something stressful like somebody's bullying me or like I have, like I had a problem [back at home with my siblings]

T: Alright, then you can get all your energy out, is that what you are saying?

Student C: Yeah

T: That's good. Okay, question two. When you think about your learning, describe whether you think it is easier or harder to learn before you've had your recess period.

Student C: I, I would say kinda in the middle, because with me I'm not, I'm not, I'm not that good at my school work so I think yeah, I'm actually in the middle of that.

T: Okay, so like when you, when you come back from recess do you think it's easier to learn, or harder?

Student C: Easier.

T: It's easier when you come back from recess. Okay. Number three, that kind of goes into our next question. How do you feel after recess is over, and does that effect how you learn in any way?

Student C: I, after recess I actually feel much relaxed and it does actually effect cause it makes me more confident in my work.

T: Alright. Question number four. Do you ever feel jittery, which means like "oh man, I can't sit still or restless during the school day?

Student C: Yes

T: You do? Okay. When do you think that is? Is it all day, is it in the morning, is it in the afternoon?

Student C: I think it is in the morning and in the afternoon.

T: Okay. If you could change something, this is question five, if you could change something about your daily recess period what would it be?

Student C: I think that it would be that we would have two recesses, two recesses, and they would, they would last for two... like twenty minutes.

T: Okay. Alright, question number six. In no more than two minutes, describe what school recess means to you.

Student C: Well, school recess means to me, a lot, a lot of opportunity to let, to let all my problems go and have fun.

T: Alright, well thank you very much for your answers.

T: This is interview number four, this is student D, in school A, fourth grade. Student D, make sure you talk nice and loud. Question number one, explain why you either look forward to recess or do not look forward to recess on a daily basis.

Student D: I look forward to recess because I can just run around and exercise and it's just fun.

T: Alright, question number two. When you think about your learning, describe whether you think it is easier or harder to learn before you've had your recess period.

Student D: I think it's easier to learn because I [brought out/burned out] all my energy by running around.

T: So you are saying its easier after recess?

Student D: Yeah.

T: Okay. Question number three. How do you feel after recess is over, and does that effect how you learn in any way?

Student D: I feel like [what] before I go to recess I feel like I don't know like excited, and after recess I'm not as excited so I'm calmed down and more ready to learn.

T: Okay. Number four. Do you ever feel jittery or restless during the school day?

Student D: I do before recess but more of the time I don't feel like that after recess.

T: Alright. Question number five. If you could change something about your daily recess period what would it be?

Student D: um, I would probably have to say make it longer, cause, it's like fun and we like to win, so.

T: Alright. okay, Last question, number six. In no more than two minutes describe what school recess means to you.

Student D: School recess, is, it means to me like, it's a time to have fun and talk because in class we can't talk but when we're outside we can just yell and run around and stuff.

T: Alright, thank you for your answers.

T: This is interview number five, at school A, K to four. This is student E and we are ah, in fourth grade. Question number one. Student E, explain why you either look forward to recess or do not look forward to recess on a daily basis.

Student E: Um, I look forward to recess because it's really fun and you can [...]

T: Okay, question two. When you think about your learning, describe whether you think it's easier or harder to learn before you've gone out to recess.

Student E: Um, I think it's easier because I want to get done quicker.

T: So you think it's easier before recess?

Student E: Yeah

T: Because you want to get done so you can go out to recess?

Student E: Yeah

T: Okay, I got ya. Alright so then, think about this, for question number three. After recess is over, how do you feel and does that effect how you learn in any way?

Student E: No, it just like relaxes me and stuff.

T: So you feel more relaxed after recess.

Student E: Yeah

T: Okay. Question four. Do you ever feel jittery or restless during the school day?

Student E: Um, no not really

T: No?

Student E: No.

T: Okay. Question five. If you could change something about your daily recess period, what would it be?

Student E: Um, it would be, it can be longer.

T: Okay. So right now you guys get about twenty minutes of recess?

Student E: Yes

T: Okay. Question number six. In no more than two minutes describe what school recess means to you.

Student E: Um, I guess it means like going outside, playing with my friends, playing kickball, you know relaxing, [...]

T: Okay. Thank you for your answers.

T: Interview number six. This is school A, K to four building, this is student F, fourth grade.

Student F, explain why you either look forward to recess or do not look forward to recess on a daily basis.

Student F: I look forward to recess because I like hanging with my friends and playing kickball.

T: Okay. Question number two. When you think about your learning, describe whether you think it is easier or harder to learn before you've had your recess period.

Student F: I think it's easier because I've had a little break and, um, it's easier to learn.

T: So you are saying it's easier after you've come back from recess?

Student F: Yeah.

T: Okay. Question number three. How you feel after recess is over and does that effect how you learn in any way?

Student F: No it doesn't because it helps me learn better.

T: It helps you learn better after recess?

Student F: Yeah

T: How do you feel after recess is over?

Student F: Uh, I feel kind of sad because I still want to play with my friends and hang.

T: How does your body feel though?

Student F: Uh, it feels good.

T: It feels good, okay. Number four. Do you ever feel jittery or restless during the school day?

Student F: No, not at all.

T: Nope, okay. Question five. If you could change something about your daily recess period what would it be?

Student F: Umm, I think it would be to make it longer.

T: Make it longer? Okay, cause right now it's about twenty minutes, what do you think would be a good amount of time for recess?

Student F: Uh, twenty, twenty-five.

T: Twenty-five minutes.

Student F: Yeah.

T: Okay. Alright question number six. In no more than two minutes describe what school recess means to you.

Student F: It kinda means fun, hanging, do anything you want.

T: Okay, so is that time that you like or don't like?

Student F: Like.

T: You like. Okay. Alright, thanks buddy, and thanks for your answers.

Teacher Interview A

T: The following interview took place on Wednesday, December the eighteenth two thousand thirteen with fourth grade teacher A from school A in District A. Question one. In your time as a fourth grade teacher how has recess changed in terms of how it was used in the past compared to its current form?

Teacher A: Uh, recess has changed a little bit, um, I think in the past when I first started teaching here we didn't have restrictions on when we could have recess as per say morning or afternoon. Um, now with scheduling conflicts we do have uh, a limited time that we can have our recess. Um, but in terms of actual what kids can do at recess has also has changed. I think we've been, I don't want to say overly protective of kids today, but we can't play games such as dodge ball anymore and um tag. Things that kids used to play um all the time, even when we were growing up uh, that we can't do anymore.

T: Alright, question two. Do you relay any expectations to your kids at recess. For example, is any emphasis placed on how active the students remain during their allotted time?

Teacher A: No, um I actually don't have any expectations, um and now that I've read this question, it's probably something I should include in my class, um, but I try to keep my class as active as possible cause I try to participate with them. So we do try to play a lot of kick ball um and most of my students do participate. There are a few who don't, um participate, but I think as a whole a lot of the kids are fairly active um during their recess time, but I think I should have expectations for them that I would like to actually implement in the future.

T: Alright, question three. Do you utilize recess before or after lunch?

Teacher A: In the past it was always after lunch, um, but this year I had a schedule change, um, with my, um my specials so actually I utilize both of them um, on two of the six day cycles we have it um, after lunch which is days that we have gym. On days we don't have gym I utilize it right before lunch.

T: Alright. Do you... uh, question four. Do you see a benefit in offering recess before lunch as opposed to after lunch?

Teacher A: Uhm, not necessarily. I think it's just important for the kids at some point in the day to go outside. The nice thing about either right before or after lunch with [] it's pretty much in the middle of the day, and I think that is a benefit um cause of all the testing and different things that we do with the kids, it's a good break in the middle of the day for them. Uh, I definitely think having recess early in the day or at the end of the day isn't, is not as beneficial as in the middle of the day.

T: Alright. Um, question five. Do you notice an increase or a decrease in negative behaviors prior to recess?

Teacher A: I think a decrease, Um, most kids in the morning are usually pretty active as the day goes on they tend to start to get a little antsy and so forth so I would definitely think um, the negative behaviors are after, after recess.

T: And that kinda went with ah question six. Question six was do you notice an increase or decrease in negative behaviors following recess.

Teacher A: Uh, yeah, yeah it actually depends too. I find a lot of times that the negative behaviors after recess sometimes are a result of something that did happen at recess. It's pretty hard for the kids sometimes to move on um kids are very competitive. Um, I try to stress to them that it's not always about winning, but, you know, it's easy to say. Um, but yeah, a lot of the conflicts after recess are things that occurred during recess.

T: Okay, uh, question seven. On days that, that the weather isn't, isn't too nice or is too cold, we have to have, ah, indoor recess. So, do students exhibit any noticeable behaviors on days that indoor recess is utilized compared to outdoor recess days?

Teacher A: Uh, I'll be honest I truly can't, can't give you a great answer for that Tim because I'm, I'm one that I go out all the time. Unless it's raining we go out. Um, we're gonna go out today. We were the only class out yesterday when it's 24 degrees. But you know, I send notes home to the parents about the kids dressing warm. Um, I think it's just good for them to get fresh air and get out. Um, so I don't know if there's an increase with indoor recess or not. Um, one thing I do do, and I just, we just did it before I came in here. Um, I, I do exercises with 'em. Like today we did wall squats. Um, so I've been trying to teach them like different life skills that they can do. Um, we do chair dips, we do lunges, we do push ups. I do all that stuff with them, so they like it. I've gotten e-mails from parents about they like it I'm doing that with them. So it's kind of like an extra recess sometimes, we'll take five, ten minutes some of our center work when I'm doing reading like after they read a chapter and they answer the questions they have to come up to the rug and do um, 40 scissor kicks with their legs you know they work on their core and then we'll do five lunges, just different stuff throughout the thing. They like it.

T: That's awesome. Uh, question eight. What effect do you see in student learning because of the use of recess?

Teacher A: Uh, I think it keeps their attention better. I really do, uh, like I said, I, I think we do a lot of testing, um, and I personally, I'm guilty, I do a lot of um whole class stuff where I like to teach and I think a lot of times I talk more than I need to um and kids tend to zone out a little bit. But I think the more active they are with the exercises and stuff they tend to be more focused and on task.

T: Alright, question nine. What would the optimal amount of time allotted for recess be in a day?

Teacher A: I personally think kids should be outside for a half an hour, I really do. um, I'm not sure what our allotted time is supposed to be here, I think maybe ten to fifteen minutes, which I tend to go over. Um, but I think it's important for kids to go out and it's their chance to be social, not only active, but be social cause in school we're not really wanting them to be social. Um we're having them work with partners we don't want them talking about social things when I'm doing school work. Um, so I think the longer they're out it gets that stuff out of their system. Um I think it's important for them. But uh, I would recommend thirty minutes.

T: And our final question, number ten. Would there be an advantage in splitting recess into two parts and offering one half in the morning and one half in the afternoon?

Teacher A: I do, uh, [...] if, if you have the allotted thirty minutes. I think if you still only had that ten or fifteen minutes it would be foolish to have two separate because 'til you go in and come out your time outside would be very limited. Um, 'til they get started in a game and everything else you'd have no time to um, to engage in any activities so I think if you could have a half hour where you could split up into two fifteen minute periods that would be definitely beneficial without a doubt. Um, like I said, the school day is pretty long and the more you can break that up for them, you know, to keep them focused and active I think the better off you're gonna be.

T: Alright, thank you very much for your time and your answers.

Teacher Interview B

T: The following interview took place on Thursday, December twelfth, two thousand thirteen. With teacher A from the fifth grade at school B, in district A. Okay you were formerly in, in the elementary school when it was k to five, uh, and had recess, uh when you were in that building. Now you are in the intermediate school uh so, in the intermediate school there is no recess. So in your time as a fifth grade teacher, how has not having recess impacted the continuity of the school day.

Teacher B: Uh, edu...uh, scheduling wise I think it makes it [...] a little easier as far as what we are doing, I think as far as the kids go uh especially early in the year when they come to this building [...] without the recess. I think it's a big adjustment for them because they are used to that, that part of the day where they get a little bit of a break and we don't really have that here we just kind of, our schedule just keeps going and going and going throughout the day.

T: If you were able to re...reinstitute recess into your schedule when would the most optimal time of day be to incorporate it?

Teacher B: For me I would think immediately following lunch. I think it would be a good transition from lunch where they're kind of wound up when they are in lunch, and then we give them a little bit of time even just to stand outside to talk, walk, run around a little bit cause I know when we come back from lunch that's when we have to remind them that lunch is finished you know we need to get back to more of a normal, indoor voice type of thing, so I think that would be best for them.

T: Has the elimination of recess from the school day truly increased instructional time?

Teacher B: Uh, I don't think so. Cause I know that for myself, and talking to other teachers as well. I know that people build in some three to five minute breaks here and there when kids show that they are working hard and when you, you just sense that they need that uh, break, and I know as adults we need breaks from time to time, so kids, they can only handle so much uh, as

much as we throw at them anymore they're only gonna be able to handle so much and then they have to step back from it just a little bit.

T: Comparing successful learning between your time in the elementary school and your time in the intermediate school which setting, if any, has proven to be more conducive to academic achievement?

Teacher B: I don't know if one would be more so than the other, I mean, I, I definitely believe, I don't have any stats or anything to prove it, but I definitely think the kids need a break, a set break, during the course of the day. I think they would look forward to it, uh, maybe know that after that break, they would, a set break, they would have so much more of a day to look forward to until they would be done. Uh, but, I don't have anything to prove either way.

T: Do you notice an increase or decrease in negative behaviors prior to lunch?

Teacher B: I, I don't think, I think there's probably, if we compared the morning to the afternoon, I think there'd be fewer negative behaviors prior to lunch in my opinion, uh than after lunch. And I guess I answered your next question, getting ahead of myself, I think there would be more negative behaviors, after, following lunch. I think kids, like I said, I think optimal, for me, scheduling wise in my building would be like a recess or a break immediately following lunch. Uh, time to unwind, [...] my experience being here more negative behaviors definitely occurred after lunch.

T: Okay, just for reference, uh, question six is do you notice an increase or decrease in negative behaviors following lunch. Question seven. Do you incorporate any type of break or free time to students during the school day?

Teacher B: Not every day. Uh, we do a fun Friday type of incentive which we just kinda started last year. The kids who, uh, have completed all their work, uh, so on and so forth, behaved correctly during that week. We give them maybe fifteen, twenty minutes on Friday where we do, in nice weather go outside or [things that we], game time inside, or whatever, otherwise it's not structured. If they, during the course of the day, like I said if they feel like they need a break, we take a maybe three to five minute break, uh, but there's nothing that's set every day that they know, at ten thirty we're gonna take a break or at one o'clock we're gonna take a break.

T: Okay, I think we kinda touched upon this a little bit too, um, if you do incorporate free time how long does it last and what do students generally do during that time frame? Uh, if no free time is provided please explain why.

Teacher B: Generally, like I said, the three to five minute breaks, they're kinda, I let them just kinda do whatever they want. If they want to sit at their seat and read, if they want to go talk to a friend across the room, if they wanna draw, uh, it's kinda, it's just free time. Kinda them get out of their seats, talk to somebody, stretch their legs. You know. On the fun Friday days when we do those, we'll go outside, might play games inside, we might watch part of a movie. Uh, it's just, it's varied depending on the time of the year and the weather really.

T: When comparing your time at the elementary school to the intermediate school what are the similarities and differences in the classroom environment?

Teacher B: Uh, in environment, uh, over here it's different I think in a sense where kids obviously are more mature and a little bit older so they have their [...] I give them a little bit more freedom in here so the environment, they have more of a role in the environment in this, in this setting, in the intermediate school than really I think I had with them when I taught fourth grade in the elementary school because I feel like they can handle it, as far as like jobs and

things, decisions, I include them in the decisions cause they are a little bit older and more mature. But with fourth grade, only a year back, I didn't do as much of that with those kids.

T: If you had control of scheduling your school day, would you incorporate recess into the day and why?

Teacher B: Definitely. Absolutely, I even tell the kids that, maybe I shouldn't but, I think they need at this age, 10-11 year kids still need time where they can get outside, get with their friends, not think about anything academic or work related, where they can run around, throw a ball, just be kids, and not have to focus on so much of what we put upon them during the course of the day. So I would absolutely incorporate recess if I had the chance.

T: Alright, that concludes my set of questions, so thank you very much.

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