

THE PRIVILEGE OF RECESS AND ITS PLACE IN PUBLIC SCHOOLS

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ABSTRACT

This paper explores the purpose of recess and the activities that occur there with consideration for student safety, violence, and gender differences on the playground. It further investigates the potential affects of recess on the academic performance and the social development of the child. According to the research, urban schools, schools in the southeast, schools with the highest poverty concentration, and schools with the highest proportion of minority students most ostensibly do not have recess. Conversely, schools in rural areas, or suburbs, schools serving middle to upper class populations, and schools serving a lower minority ratio include recess in the daily schedule revealing the possibility that recess is a privilege (Parsad and Lewis, 2006). Research revealed that boys are more active than girls are (Beighele, A., Morgan, C., Le Masurier, G., & Pangrazi, R., 2006; Blatchford, P., Baines, E., & Pellegrini, A., 2003; Blatchford, P., Pellegrini, A., Baines, E., & Kentaro, K., 2002; Lopes, Vassques, Pereira, Maia, and Malina, 2006; Ridgers, Stratton, Fairclough, and Twisk, 2007). The research illustrated a difference in how boys and girls present aggressive behavior; an important consideration for bully prevention programs (Boulton, 1999; Boulton, 2005; Butcher, 1999; Frisen, 2007; Pellegrini and Bartini, 2000; Pellegrini, 1994). Two studies provided evidence that ludic play which, occurs at recess, and provides children with opportunities for learning literacy(Grugeon, 2005; Vadala, Bixler, and James 2007). Further research should determine the optimal amount of time children should spend at recess to find a balance between play and learning, thus eliminating the implied privilege of play, and determine the responsibility of schools to provide equitable time and space for children to play.

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PREFACE

To my friends and family who have supported me throughout my education by believing in me and especially to my parents, I am grateful for the sacrifices you have made. To my faculty, George Freeman, Ph.D., thank you for making the effort and taking the time to help me see the courage in encouragement. To my faculty, Masao Sugiyama, Ph.D., thank you for your guidance through the course of writing this thesis. Finally, thank you to the people of the playground who take the business of play seriously.

CHAPTER ONE: INTRODUCTION

Introduction

What is the purpose of recess and what are its social and cognitive benefits?

Recently, Richard Simmons, the professional exerciser, addressed Congress asking, “What have we done to the kids of the United States of America?” The producer of exercise videos, typically recognized for his bushy hair, short shorts and slightly falsetto voice, drew attention to the seriousness of his cause by wearing a suit. His concern was the obesity of American youths and the cutback in chances for children to engage in physical activity during the school day. His concern was not only that schools were cutting physical education courses from their schedules, but any chances for physical activity including play (Doyle, 2008). While the Council for Physical Education for Children determined that P.E. is not a replacement for recess (NASPE, 2001), Simmons is concerned with the loss of both and he is not alone in this concern.

Statement of Purpose

This paper will explore the purpose of recess and its potential affects on academic performance and the social development of the child as well as the benefit or risk of its elimination from the school schedule. This paper will investigate the activities at recess, student safety and violence, and gender differences on the playground in order to determine the potential affects on academic performance and the social development of the child. An academic movement and stress on accountability drives the decision to eliminate or reduce recess in the United States; this trend has become more apparent with the ramifications and reactions to the No Child Left Behind act of 2001 (Pellegrini, &

Bohn, 2005). Blatchford and Sumpner (1998) blamed poor behavior in schools and the bad reputation of recess in Great Britain for the reduction in time spent at recess there. The point of this paper is not to promote recess, instead, the intention is to explore its potential and explore the decision to remove recess from the public school system in the United States. If the type of play that occurs at recess is valuable or essential, how can a classroom teacher optimize its benefits?

Whether through the means of ideological management, cultural amalgamation, assimilation, domination, or economic opportunity, the purpose of schools determines the most basic function of the school day (Spring, 2008). The school schedule, as the basic function of education, determines the amount of time allotted to each area of academics, mostly determined by state and national standards. Each school district, some in collaboration with a union, determines the amount of time each day staff and students take breaks. Some may question whether schools or parents are responsible for allowing time for the type of play that occurs during recess and if it is the purpose of schools to provide students with recess.

Rationale

If the trend toward the elimination of, or the reduction of, recess is the case, it is imperative to consider what its purpose in education is according to existing research. Much of the literature available builds a case for the preservation of recess. Evident in the case for recess is a fear that children are missing an element of childhood, as children purportedly spend more time indoors and/or alone or increasingly under adult directed activity (Louv, 2005). Another concern is the rise of adolescent obesity (Parsad & Lewis, 2006). Researchers allege that a shift to increased academic time is the cause for the

reduction or elimination of recess (Ohanian, 2002). At the core of the scheduling debate is the quality of education; is recess a necessary element of a quality education?

Definitions

In order to understand the purpose of recess it is necessary to look at what it is and what occurs there. Recess is a scheduled break in the school day, referred to as breaktime in the United Kingdom (Pellegrini & Smith, 1993). Districts determine the amount of time students will spend in recess, and schools determine the scheduling of recess as well as which grades will attend each recess (Jarrett, Maxwell, Dickerson, Hoge, Davies, & Yetley, 2000). Consequently, it is common to find multiple grades at one recess.

Recess generally occurs on a playground, also referred to as a playscape, with a climbing area, swings, and a field. However, the playground design is also determined by the district, and in some cases, the Parent Teacher Organization or Association (Jarrett & Maxwell, 2000). During recess, teachers, teachers' aides, or volunteers provide supervision according to district policy (Pellegrini & Smith). In some cases, the activities at recess are adult directed; however, a common characteristic of recess is that students have free choice and they engage in free play. This free play is sometimes termed as ludic behavior. Recess is the only period during the school day when children are free from adult directed activities (King, 1987).

Description of Controversies

Pardsad and Lewis reported in a survey of sample schools, for the U.S. Department of Education that the duration of recess varies by school (2006). They alleged that the size of the school, the economic concentration of the community and the

location of the school (urban/rural) affected the number of minutes of recess per day. Beighle, Morgan, Le Masurier and Pangrazi (2006) claimed that recess is one of three opportunities for students to be active during the school day; they named P.E. and before and after school as the other opportunities. They determined that recess was a significant source of activity. In addition Beighle, et al (2006) and Ridgers, Stratton, Fairclough, and Twisk, (2007) established that boys are generally more active than girls are during recess.

In order to explore the value of recess, this paper will examine the types of play that occur on the playground. However foremost, Opie and Opie (1959) claimed that schoolchildren are in a self-contained community along with their own customs, lore, language and traditions. Opie and Opie collected examples of lore and language from 5000 schoolchildren attending 70 different schools in England, Scotland and Wales (including one school in Dublin and a bilingual school where Welsh was the home language). In their survey of the language and lore of schoolchildren, they also found what they called the Code of Oral Legislation, asseverations, tests of truthfulness, and pledges, which children have been using for several generations. Opie (1993) claimed that the people of the playground referred to themselves as people, never as kids or children. She implied that the short period of recess produced a quality of speed in games, giving students little time to argue, and producing the position of a boss, a student perceived as a leader who often directs the order of play.

Pellegrini, Kentaro, Blatchford, and Baines (2002) expressed the importance of distinguishing play from games (both of which occur on the playground); both are rule bound. The distinction, “The rules governing games are a priori and codified while the rules governing play are flexible, negotiated by players in different ways, and not set in

advance”(p.992). Piaget (1962) claimed that the stage of play he named, Games With Rules, seldom arose before age four and belonged to the stage of concrete operation. Vygotsky (1978) suggested that there was no such thing as play without rules. King (1987) observed that the freedom from supervision produced spontaneous play during recess and students engaged in games such as tag, soccer, races, hopscotch, finger play, jacks and chatting. Given the nature of free time at recess, with minimal supervision, the only factors determining student choice in activity might be the environment of the playground and availability of play equipment.

More than the environment or the equipment, researchers found that types of play at recess were also dependant on the child’s gender. Blatchford, Baines, and Pellegrini (2003) found that boys were more likely to play ball games while girls were more likely to engage in conversation, sedentary play, jump rope, skipping, or verbal games. Pellegrini, Kato, Blatchford, and Baines (2002), confirmed in their study that boys engaged in more ball games and chase, while girls engaged in more verbal games, furthermore, boys demonstrated a more diverse repertoire of games than girls did. Gurian (2005) clarified the gender disparity on the playground when he explained that because girls have higher levels of estrogen and oxytocin, and boys have higher levels of testosterone and vasopressin, the former is inclined to verbal activities while the latter is driven to action-response and aggression. Gurian also pointed out that boys were more physically inclined because they have more fluid in their brain stem making them primed to move

Next to gender, the second factor determining how children play at recess is the age of the child; it may seem axiomatic that younger children play more than older

children do. Parsad and Lewis (2006) determined that younger students had an average of four more minutes of recess than their older counterparts did. Blatchford and Baines (2005) confirmed that breaks for students in the United Kingdom decreased with the age of the child. However, Beighle, Morgan, Le Masurier and Pangrazi (2006) found no significant change in amount of activity over grade level. Pellegrini, Kato, Blatchford and Baines (2002) implied that games at recess become more sophisticated and students economize their break times as they get older a factor that may play into the scheduling of recess as students mature.

Recess provides a break from academic activity, and it is during recess when students find freedom of choice in activities and play. On further exploration of the activities at recess, we can judge the value of recess or determine the area of needed research. Piaget (1962) claimed that play is an end in itself and he posed it opposed to work. King (1987) found that children categorized work and play as separate activities and “their ability to differentiate work from play is stable throughout the elementary grades” even though their categorization criteria change (p.145). Younger children defined work as anything in which the teacher required their participation, and considered play voluntary and free of adult supervision. As children mature, they see play as pleasurable experiences and children begin to consider that what may be fun for one may be boring or difficult to another. King determined that all children agreed that recess was play, she placed recess in the third category of her definition of play called recreational play (instrumental, explicit, being the first two).

Recreational play, King (1987) explained, takes place outside the academic schedule, and because it falls outside the goals of the classroom, it falls under the interest

of anthropologists, linguists, and folklorists. She pointed out three categories of playground activity word play, games, and the nature of authority. King explained that students perceived as leaders demonstrated the nature of authority category. While recreational play falls outside the academic curriculum, Jensen advised (2005) that there is value in the playground; he pointed out that recess provides students with exercise, which in his words, provides “an effective cognitive strategy” because it improves memory retrieval and enhances motivation, morale and learning (p.60). Jensen provided anatomical evidence of the connection between movement and cognition. He also pointed out that play improves the capacity to handle stress, make decisions, evaluate situations, create social bonds, and experience emotional intelligence.

Byers (1998) countered that no one has proved that the amount of exercise in play is enough to produce a physiological response. Furthermore, exercise and recess diverge; where the former has a means to its end, the latter has none. Especially considering the difference in activity between aerobic exercise and sedentary word play, both are present during recess. The National Association for Sport and Physical Education put forward a position that recess and physical education are components of the school experience, and while recess provides students with a regularly scheduled opportunity for physical activity and allows children to practice life skills, it does not replace physical education classes. Recess provides students with the opportunity for physical activity, but it is up to the students to take advantage of this allotted time.

In a position paper for the Association for Childhood Education International, Bergen (2004) claimed that 75% of the brain develops after birth bringing into focus the importance of experiences in the early years. She outlined levels of brain development

from birth to age fourteen and used stages in play development to classify the levels. This confirmed Jensen's claim that "Many early cognitive researchers ignored play, assuming it had nothing to do with intellectual growth. They were dead wrong." (Jensen, 2005, p. 64). This leads back to the value of recess, its purpose in public education and the possibilities that recess is indeed a benefit to students' cognitive development.

Summary

Chapter one described what recess is, when it occurs, its duration and what occurs there. The chapter described the type of play, recreational ludic play, which occurs there. Briefly, the chapter examined the concern for the necessity of including recess in the school schedule, and whether public schools are responsible for providing students with time for this activity. Chapter Two describes the history of recess and provides more information about how recreational play has evolved over time.

CHAPTER TWO: HISTORICAL BACKGROUND

Introduction

Chapter one described what recess is, when it occurs and its duration. It described the type of play, recreational ludic play, and briefly, examined the concern for the necessity of including recess in the school schedule, and whether public schools are responsible for providing students with time for this type of play. It questioned the possibility of a direct correlation between the reduction of recess and childhood obesity and if the type of play that occurs at recess is cognitively and socially beneficial.

Chapter two describes the history of recess and provides more information about how recreational play has evolved over time. It begins with a brief history of childhood, because recess and the type of recreational play in focus are aspects of childhood and not intended to be confused with leisure or pastime. Chapter Two also considers research regarding recreational play, its purpose in public schools and the political debate surrounding its removal in several districts across the nation.

History of Recess

Recess is a relatively new development in the history of childhood. Because of its non-academic status, it has not received the historical attention, beyond nostalgia, that it deserves. Recess as we know it began during the playground movement in the late nineteenth century (Spring, 2008). The type of play that occurs at recess has its roots in the medieval period, about the time that the idea of childhood appeared.

The concept of childhood rose out of European culture through the institution of age segregation in schooling, which according to Aries (1962) emerged in the 16th century. Previously, children were in the company of adults without consideration for

their difference in age, nor protected from adult behavior. Typically, as soon as a child could participate in the community, he went to work in an apprenticeship, or helped with chores. Not until the United States government enacted child labor laws in the early twentieth century were children removed from the work force. This lengthened education and expanded age segregation (Rogoff, 2005). Even the games that children play today have their roots in adult pastimes.

Not until the 17th century, was a distinction “made between the games of adults and noblemen and the games of children and yokels” (Aries, p.92). Before the renaissance, adults shared folklore and games in the presence of and including children, but not intentionally for children. Games, stories and even terms such as “kings or times” became fads, which children often adopted. Which forms persist over time is interesting, it is a common assumption that folklore and games change with each generation, however, as Knapp and Knapp (1976) pointed out, some of the folklore that children use today on the playground extends into antiquity. Knapp and Knapp implied and provided evidence (1976) that the phrase Eeny meeny, miney, moe dates to the time when the Romans violently wiped out druidism in England around 61 CE. This provides evidence that folklore and games are part of our cultural heritage, and they emerge at times when we feel free, or feel the need to express ourselves. Today, we can find versions of the counting rhyme in England, Ireland, and the United States.

Aries (1962) claimed that the games children play come from the adult world such as hide and seek or blind man’s bluff. He talked about how children appropriate adult behavior into their play and ways that children pretend in play mimicking adult activities. However, he stressed the difference between this pretend play and the inclusion

of children in adult games, and the games falling out of fashion for adults and then carried over generations by children. It is possible that we will never know how games and folklore evolved because of the lack of seriousness attached to the subject. What little we know about the historical development of free play comes from its condemnation rather than from its celebration.

The Puritans considered play frivolous. Our national attitude toward childhood and the corruption of it, as well as the schooling and nurturing that continues today is a puritan legacy (Mintz, 2004). However, we can trace a negative attitude toward games to the moral elite before 17th Century Europe, when the desire to protect childhood got its start (Aries, 1962). As early as 1379, the medieval Church began forbidding pastimes in all their forms: physical sports, tennis, gambling, dancing, theater, and dice, all of which children enjoyed and played alongside adults. Conversely, the Jesuits believed that exercise was good for the whole body, and that games had educational merit.

The medieval Church's efforts in Europe to curb pastimes is a form of social management akin to the late 19th century United States efforts to take poor children off the streets, remove them from crime and criminals and place them in the classroom to the extent that the play movement surfaced. According to Spring, (2008) educators endeavored to "regulate children's play in efforts to promote healthy living and reduce juvenile crime" (p. 228). The play movement is responsible for the construction of playgrounds, sandlots and parks, all of which in the last century have become tantamount to childhood. The social management of the Puritans and the medieval Church to suppress play became the method of social control that endorses play. Not only would play promote healthy living and reduce crime, it would "produce future workers who

would be good cooperative citizens,” (p.229). Within fifty years, this ideology succumbed to the rising public fear of stranger danger, child safety, and the loss of urban revitalization as people moved to the suburbs.

Today, parents scramble to provide for their children the ideal childhood they remember without realizing that the perfect childhood peaked fifty years ago (Mintz, 2004). Today, educators, especially environmental educators have raised the alarm that children have left the playground. Stranger danger, liability for the child’s safety, and the loss of play spaces contribute to the vacancy of play spaces. Nature Deficit Disorder, a term coined by Louv (2006) describes the syndrome of a child left inside to play safely never experiencing the benefits of nature. Louv also pointed to an ironic correlation between the increase in organized sports participation and the rise in childhood obesity. Nabhan (1994) influenced Louv when he complained that machinelike structures and pavement dominate playgrounds; the loss of wild spaces he saw as a loss of habitat for learning. Parents no longer feel safe about allowing their children the autonomy of exploring their neighborhood, and the green belts that children once ruled are vanishing. One wonders if the last place where children can experience the freedom of non-directed play is on the playground during recess.

Another aspect of parental attempts to provide the perfect childhood is the phenomenon of the hurried child, an idea introduced by Elkind (1981, 2001). The hurried child is a product of the hyper-parenting phenomenon described by Rosenfeld and Wise (2001). In either case, parents micromanage their child’s life until the child is bereft of free time, much less free play. Consequentially when a school with a policy of uninterrupted instructional time reinstated recess for the purpose of an investigation to

study the behavioral effects of recess the researchers found that most of the students stood around and chatted, they rarely played games (Jarrett, Maxwell, Dickerson, Hoge, Davies, and Yetley, 2001). Were these children the product of the hurried child/hyper-parent phenomenon? Did they forget how to play?

Knapp and Knapp (1976) argued that,

The best laid plans of adults can never accomplish for children what children can accomplish for themselves, if given a chance. Few adults realize this, because not many have the opportunity, patience, or curiosity to observe children at un-supervised play for any length of time. When they do, they are unlikely to keep from interfering. It is a rare adult who can refrain from offering assistance when children have difficulty or who can keep their mouth shut when they begin to argue. But when the locus of authority is shifted – ever so slightly – from the children themselves to adult supervisors, the delicate machinery of their natural social relationships is thrown out of kilter. Left to work of its own accord, it functions in a remarkable way. Unsupervised children playing together learn how to govern themselves according to a system of rules. They learn how to deal with cheaters and cry-babies and how to make sophisticated judicial distinctions that strike a fine balance between the self-interest of individuals and the good of the group (p. 1-2).

The last quarter of the twentieth century saw a diminishment of free play, both at home and at school (Blatchford & Baines, 2006; Elkind, 1981, 2001; Ginsburg, 2006; Louv, 2006; Mintz, 2004; Moore, 1997; Pellegrini & Smith 1993; Rosenfeld & Wise,

2001). The No Child left Behind Act never proposed to eliminate recess and it alone is not responsible for its elimination. However, reports of the research often implicate it as the culprit that drives the high standards high stakes movement and thereby the loss of playtime at school (Axtman, 2004; Henley, McBride, Milligan, & Nichols, 2007; Zygmunt-Fillwalk & Billelo, 2005). Very little research exists to describe the amount of time districts provide for student breaks; much less, the amount of time cut from breaks in the school schedule. Ohanian (2002) never mentioned the No Child Left Behind Act when she criticized the state of play and the reduction of recess in schools. She claimed that maggots making movies in Hollywood have more break time guarantees than do the children of the United States public school system.

Summary

The history of recess is complicated because of its non-academic status; it has not received the historical attention, beyond nostalgia, that it probably deserves. Recess as we know it began during the playground movement in the late nineteenth century (Spring, 2008), when progressives built playgrounds adjoining schools in an attempt to curb crime. Chapter Two described the history of recess and provided more information about how recreational play evolved over time. It began with a brief history of childhood, and the type of recreational play in focus, its purpose in public schools and the political debate surrounding its removal in several districts across the nation.

Chapter three will review current research about recess. It will look at the amount of time children spend in the break, as well as the quality of activity in which they participate. The chapter features the types of games children play, gender differences in how they play, and the affects of recess on behavior and classroom attention. The

research investigates safety factors at recess including bullies on the playground and the potential for learning opportunities such as language, and literacy, on the playground. Finally, the research considers the effects of the playscapes on the quality of student activity at recess.

CHAPTER THREE: CRITICAL REVIEW OF THE LITERATURE

Introduction

Chapter one described what recess is, when it occurs and its duration. It described the type of play, recreational ludic play, and briefly, examined the concern for the necessity of including recess in the school schedule, and whether public schools are responsible for providing students with time for this type of play. It questioned the possibility of a direct correlation between the reduction of recess and childhood obesity and if the type of play that occurs at recess is cognitively and socially beneficial.

Chapter Two described the history of recess and provided more information about how recreational play evolved over time. It covered a brief history of childhood, and the type of recreational play in focus, its purpose in public schools and the political debate surrounding its removal in several districts across the nation.

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Recess Schedules, Activity, and Games

This section presents surveys of recess times in the United States and the United Kingdom. It explores the kinds of activities and the amount of physical activity students

engage in during recess. Some of the information presented here deals with the perceived correlation between the reduction of recess and childhood obesity. Much of the research in this section highlights gender differences on the playground.

Concerned with the rate of obesity, Parsad and Lewis (2006) conducted a survey in attempt to define current national information about foods offered, and physical activity opportunities in public Schools in the United States. The researchers worked under the authority of the National Center for Education Statistics and used the Fast Response Survey System. The system sent surveys to 1,198 elementary schools in fifty states, and the District of Columbia by mail. The 2002 – 2003 NCES Common Core of Data Public School Universe file determined the selection of sample schools. The purpose of including this study here is for the data regarding recess duration.

Parsad and Lewis (2006) determined from returned surveys, that 93% of schools scheduled recess for first and second grade students and 87% scheduled recess for sixth grade students in elementary schools where elementary included sixth grade. In contrast, 7 to 13% of schools surveyed did not provide for recess in their schedule.

Parsad and Lewis (2006) reported that urban schools, schools in the southeast, schools with the highest poverty concentration, and schools with the highest proportion of minority students most ostensibly did not have recess. Conversely, the researchers reported that schools in rural areas, or suburbs, schools serving middle to upper class populations, and schools serving a lower minority ratio included recess in the daily schedule. Of the schools with regularly scheduled recess, 83 to 88% reported that recess occurred daily, and 4 to 7% reported having recess one to four days per week.

Parsad and Lewis (2006) reported that most schools, 55 to 60% scheduled recess once a day, 21 to 28% scheduled recess twice a day, only 4 to 10% scheduled recess more than twice a day. The researchers determined the duration of a recess period by calculating the mean number of minutes of scheduled recess for each grade across all elementary schools. They found that the average number of minutes per day ranged from 27.8 for first grade to 23.8 for sixth grade, if considered elementary. Parsad and Lewis reported a similar phenomenon with recess duration as mentioned previously; larger schools and schools with high poverty concentrations reported shorter recesses.

Strengths of the survey were its comprehensiveness and its demonstration of serious inequities in the determination of which populations participate in recess. An additional strength of the survey was how the researchers offer respondents multiple avenues for returning the questionnaires including, internet, fax and telephone. Of the 1,198 schools in the sample, researchers deemed 1,161 eligible and 1,055 schools returned completed surveys. The limitation of the survey was that it sought to determine if schools offer students healthy options in the face of rising obesity. While the data reported illustrated what schools were offering students in terms of food and activity, it failed to determine if these offerings correlate with the rise in obesity. Additionally the survey by Parsad and Lewis (2006) did not include the sampling errors, partly because the report was so big. To compensate, the researchers generated standard errors using the jackknife technique.

The survey illustrates the belief that recess is a valuable period for students to engage in activity during school, which may prevent obesity. However, recess provides free time, and therefore does not guarantee that students engage in physical activity

necessary to have an impact of obesity. The information provided in the survey helps to determine if the amount of recess is actually in decline and it provided a profile for the demographic of students who have little or no recess available.

Blatchford and Sumpner (1998) noted a lack of information describing school recess, as well as a diminishment of the duration of recesses in the United Kingdom. The term breaktime is equivalent to the term recess in the United States and appears as breaktimes in the plural form (Blatchford, Pellegrini, Baines, and Kentaro, 2002). In a survey, the first of its kind, Blatchford and Sumpner (1998) determined the durations of breaktimes in an attempt to confirm or dismiss the assumption that breaktimes are shrinking. Additionally, the researchers explored other elements of breaktime such as supervision and student behavior.

The survey focused on breaktimes for all grades; however, this narrative will focus on the primary level of breaktimes. Blatchford and Sumpner (1998) mailed 2,075 questionnaires to primary schools and received 1,245. The average response rate from all schools was 61%. They found that primary break duration was 15 minutes in the morning, 65 – 75 minutes at lunch (including time to eat) and 70% of schools had an afternoon break. The average combined amount of time during the day spent in primary breaktime in the United Kingdom was 83 minutes. Fifty-six percent of primary schools reported a reduction in the lunch break time in the previous five years.

The strengths of the study were that it was the first attempt to determine if there is a trend toward the reduction of recess and that it included exploratory visits to schools. The study's weakness was that it did not include the socioeconomic or ethnic information about the population within the demographics of each school. The reported demographics

were limited to 66% of primary schools located in the county and 29% of respondents metropolitan.

The purpose of this study, in the context of the purpose of recess, was to determine if recess is truly in decline or in danger of disappearing. It also allows for a comparison of recesses in the United Kingdom to recesses in the United States. It would be interesting to see if the United Kingdom's data compares to the United States data with a correlation between the location of the schools, demographics and the duration of recess. Next, Blatchford and Baines (2006) conducted a follow-up survey to examine school breaktimes in the United Kingdom. The purpose of this survey was to determine the amount of time allocated to breaktimes in the daily academic schedule. The main difference between this survey and its predecessor was it sought student perspectives.

Blatchford and Baines (2006) sent questionnaires to 3,432 primary schools along with return envelopes and the option of alternative response by internet. Forty percent of primary schools responded. Researchers found that since the 1998 survey, there was no change in the morning break. Forty percent of key stage one schools had a 65-minute lunch break, reduced from 60% in 1998, key stage two schools reduced from 31% to 12%, and key stage three/four reduced from 23% to 5%. Previously, Blatchford and Sumpner (1998) found that 70% of primary schools offered an afternoon break, however the researchers did not offer a statistic in the new survey for the number of primary schools with this same break, instead they reported that only 25% of all schools had this break. According to Blatchford and Baines (2006), afternoon breaktime for key stage one showed no change, for key stage two, they found a 16 percent decrease in the number of

schools offering the breaktime, and a 9% drop in key stage three/four schools with the afternoon breaktime.

The survey demonstrated that secondary schools, more than primary schools, saw a reduction in breaktime, and this became the focus of the survey's discussion. The limitation of this study was that it did not compare the number of minutes per day allowed for breaktime across grades as done by the previous survey, nor did the survey list any demographics. The strength of the survey was the large response due to the facility of the internet.

Blatchford and Baines (2006), and Blatchford and Sumpner (1998), demonstrated that recess in the United Kingdom is shrinking; however, they did not determine the cause for the reduction. Parsad and Lewis (2006) determined the amount of time that students participate in recess in the United States, which allowed for comparison with the amount of time students have in the United Kingdom. The latter study also allowed for a comparison of recess times within the United States and pointed to a trend in recess elimination in urban schools, schools in the southeast, schools with the highest poverty concentration, and schools with the highest proportion of minority students. Another survey of its kind will be helpful in determining if there is a reduction in time dedicated to recess in the United States.

The next two studies touch on perceived beliefs about play. It would take another thesis to explain play and all its nuances; for this reason, it is important to consider how people perceive play in order to determine its place in the academic schedule. The first study determined that most people agree on what play is and when it appears. The second study delved into parental beliefs based on cultural perspectives about the value of play.

King (1987) determined that all children agreed that recess was play. Further studies look into the types of activities and the amount of physical activity that occur at recess.

Smith and Vollstedt (1985) performed an empirical study to see if researchers who came from a variety of backgrounds agreed on a generally accepted definition of play. The results of their study suggested that play has the following criteria: it is enjoyable, flexible, and often includes pretense. They recruited 70 well-educated, mostly undergraduate subjects for the study. The researchers divided 10 subjects into seven conditions, eight females and two males in each with an age range from 17-45, 80% were not parents and the seventh condition utilized experienced subjects, five females and five males, between the ages of 23-41 of whom seven were parents. The subjects from the final condition were all child psychologists; they received no specific training for the study.

Each subject viewed and rated a thirty-minute video tape of children aged three to four. The tape consisted of ten three minute long focal samples displaying a variety of activities. The samples included four girls, and six boys, each different, displaying different activities. The experimenter provided each subject with a neutrally phrased transcript that simplified each episode, as well as an instruction and score sheet. The experimenter instructed the inexperienced conditions to tick episodes that matched one of five play criteria provided them. However, the experimenter asked the experienced condition, and one inexperienced condition to tick each episode in which they believed displayed an episode of play. The subjects could pause the tape at any time and none of them knew that the study was about play behavior.

From the score sheets, Smith and Vollstedt (1985) scored each occurrence where six or more of the ten subjects assessed that one of the five criterion for play was present. Fewer than ten percent of the episodes produced a split. Next, with the majority verdicts, they checked the amount of consensus between subjects within each condition, considered the agreement between conditions, and evaluated the utility of the criteria in defining play. The researchers defined play using the following criteria Intrinsic Motivation, Positive Affect, Nonliterality, Means/Ends and Flexibility. Finally, they sought agreement across conditions and considered the utility of the different criteria for defining play in the study. The researchers found that the observers agreed on what was play about 80% of the time. A limitation of the study was the age of the children, play differs in older children and this research focused on a preschool group.

Smith and Vollstedt (1985) demonstrated that play is easily recognizable in its various forms. In comparison, the next study explored the potential that both the recognition of play and the value of play depend on cultural perspectives. If this is the case, the value of recess and its purpose depends on cultural perspectives as well. The purpose of the next study was to create a measure of play beliefs specifically for low-income African American families.

Fogle and Mendez (2006) developed a scale for measuring the play beliefs of parents, which they used in their study of the play beliefs of African American mothers whose children attended Head Start. They revealed that two factors, play support and academic focus represent parent attitudes regarding the developmental significance of play.

The sample group consisted of mothers with children attending Head Start located in an urban part of the southeastern United States. Fogle and Mendez (2006) recruited the participants from two centers, 136 from a pool of 226 families. Six months later, they collected a second set of data to achieve the target sample size. This second group included mothers from the first pool who had been invited, but had not yet participated, Fogle and Mendez invited a third center yielding a total sample of 253 participants.

Mothers comprised 96% of the participants, with aunts and grandmothers rounding up to 4%. Thirty-nine percent of the participants completed high school or obtained a GED, while 18% completed some college and 10% had college degrees. The mothers classified 96% of the children as African American. The children were between the ages of 38 and 67 months (mean age 53 months), 52% girls, 48% boys. The mothers' families comprised of 1.6 adults in the home, with 2.5 children (both means), as many as 1 to 5 adults and 1 to 11 children.

Fogle and Mendez (2006) cooperated with the Head Start staff and parents to create the Parent Play Beliefs Scale. They used the measurement tool to assess parents' beliefs about their preschoolers' play. The researchers consulted with three experts, each with PhDs in child development, who examined the Parental Play Beliefs Scale. Two focus groups comprised of African American parents, discussed the Parental Play Beliefs Scale and how certain items reflected the behaviors they observed or performed in their homes and communities. These groups also served to clarify terms, directions, and overall readability of the Parent Play Beliefs Scale.

Fogle and Mendez (2006) sent home packets containing the questionnaires with cover letters, including demographic questions, the Penn Interactive Peer Play Scale and

the Temperament Assessment Battery for Children in a staggered fashion to reduce the workload for the parents. The primary investigator hosted breakfasts twice a week during data collection at the Head Start Centers, partly to recruit parents, but also to answer questions and assist in completing surveys. Parents received a children's book for participating.

Fogle and Mendez (2006) found a positive association between play support and parent education, whereas academic focus had a negative association with parent education. No other demographic variables correlated with play beliefs. While this was the first study that investigated the play beliefs of African American mothers, its limitation was that it drew its sample from one specific type of preschool and may not reflect the general population.

Fogle and Mendez (2006) claimed that Caucasian mothers consider play as very important and educative, while Mexican parents see it as unimportant and simply amusing. In their research, they found that African American mothers who favor an emphasis on academic focus did not see play as a priority; however, mothers who supported play saw it as a teaching opportunity. In determining the purpose of recess in schools, future research will need to consider cultural perspectives, which define play and determine its importance within the community.

The next three studies considered the amount of physical activity that students engage in during recess. All three studies cited that students need opportunities to be active; however, only Parsad and Lewis (2006) suggested that recess had the potential to deter adolescent obesity. The trouble with measuring physical activity during recess is that students are completely free to choose their level of activity and some students tend

to remain sedentary during recess. The most important finding from the studies and a point that persists through much of the research about recess is the gender difference in behavior on the playground.

Beighele, Morgan, Le Masurier, and Pangrazi (2006) performed an analysis of student activity during recess and after school. They examined the levels of activity of grade school students during recess and after school in order to determine how much physical activity students accumulate. Results indicated that children were more physically active during recess than after school, and that boys were more active than girls were.

Three hundred and seventy-two students participated in the study at a southwest United States suburban elementary school where the population of the school was divided racially, 62% Hispanic, 12% White, 11% Asian, 8% African American, 6% Filipino and 1% other; furthermore, 41% participated in the free and reduced lunch program. The third through fifth graders wore sealed pedometers for four consecutive school days during their fifteen-minute recess and outside of school in the afternoon. However, students did not have access to the school playground before or after school.

Beighele, et al. (2006), scanned data for excessively high or low values, and at times asked students about their adherence or about the types of activities, they engaged in. Researchers judged the amount of time as fifteen-minutes of recess, and the number of daylight hours between 2:45 (dismissal from school) to approximately 7:51 and 30 minutes in the morning before school, and determined a total of outside of school activity time 5 hours and 36 minutes. In order for the researchers to consider the data, students needed to be present for at least three consecutive days of recess and outside of school

time. Some data was lost due to loss of pedometers and students forgetting to wear them. Finally, the data was categorized into four categories; recess activity time, recess step counts, out of school activity time, and out of school step counts. They based the mean of both activity time and step counts on the average of 3-4 days of pedometer data.

Beighele, et al. (2006), analyzed the data using statistical graphic software, SPSS 12.0. They used a factorial analysis to examine the differences in recess activity time, recess step counts, out-of-school activity time, and out-of-school step counts as well as between gender and grade level. The results for all outcome variables showed that there were no interactions between grade level and gender ($F_{2,264} = 0.05$, $p = .952$) and no main effect for grade level ($F_{2,264} = 0.09$, $p = .911$) indicated that males were more active during recess and outside school. Boys spent 78% and girls spent 63% of their recess time engaged in physical activity. Outside of school, girls spent 20% and boys spent 23% of their time engaged in physical activity. Recess comprised 13% of total unrestricted activity time for girls and boys. The results of the study demonstrate that children spend the majority of their recess (>60%) in physical activity and spend less time in physical activity outside of school (.20%); boys accrued more steps during both discretionary periods. The results demonstrate that recess is a significant source of activity.

Strengths of the study were that experimenters observed students on the playground and found that students chose gender specific activities, but that their activities did not vary by grade. The most popular games for boys were soccer and football out in a field, and the most popular activities for participating girls included either standing and watching the boys' games or playing handball, the latter of which

involved waiting in line for turn taking. The researchers revealed that a conversation with the physical education teacher suggested that the boys played modified versions of soccer and football to increase activity and speed up the game during the short duration of recess.

The limitations of the study included the method used to estimate time outside of school, because the calculation offered a gross estimate of the amount of time available for students to be active. Students could have been active after sundown and for more than thirty minutes before school, and the amount of time participants wore the pedometers was not available. In addition, school policy barred researchers from collecting socioeconomic or ethnicity data, making unclear whether the study sample represented the school population. Furthermore, Beighele, et al. (2006) conceded that the recess environment at the study school was safe, conducive to physical activity, provided high supervisor to student ratio, large areas for playing, and the school provided play equipment. In addition, the climate of the region in the southwest United States was conducive to outdoor recess. These factors bring into question the generalizability of the data.

For the purpose of this thesis, the importance of the study lies in the comparison with the amount of activity students engaged in during recess compared to activity outside of school. This report provided an important point in consideration for determining if recess is a source of physical activity. In a similar study, researchers looked at the playscape and endeavored to determine its effect on students' physical activity.

Ridgers, Stratton, Fairclough, and Twisk (2007) performed a quasi-experimental intervention study to investigate the short-term effects of playground markings (painted lines on the ground used for games such as hopscotch) and play equipment on the physical activity of students. The researchers also intended to investigate the effects of covariates on the intervention. Researchers determined that gender predicted recess activity, with boys showing the greater of both moderate and vigorous activity; furthermore, the intervention effect was stronger for younger students and as the duration of recess increased.

The participants consisted of 150 boys and 147 girls randomly selected from 26 elementary schools from one large urban city in England. Participants' parents signed informed consent forms. Ridgers, et al. (2007) recruited eleven students from each elementary school, stratified by gender and equally selected from grades K-1 and 2-4. Of the 26 schools, 15 (76 boys, 73 girls) took part in the intervention, and 11 (76 boys, 73 girls) functioned as socioeconomic controls. All the schools were from the same district and involved in a national £10 million Sporting Playground initiative. This initiative allowed districts to allocate funds for playground improvements if the schools demonstrated socioeconomic need. In order to participate, schools needed to meet two criteria. First, schools needed to be involved with the School Sport Partnership, the purpose of which was to develop PE and sport opportunities for youth in the UK. This first criterion allowed the partnership to identify schools that had no playground markings or play structures. The second criterion required that the schools were within a Sport Action Zone, defined as areas of low socioeconomic status in the United Kingdom. The purpose of Zones was to provide sports opportunity and integrate sports into local

community programs. Each school received £20,000 to redesign the playground environment.

Ridgers, et al. (2007) quantified the children's activity levels during recess using accelerometry. They used an Actigraph (Model 7164 MTI Health Services, Florida). This instrument measures the vertical acceleration of motion and converts it to numerical values. Researchers determined that the amount of time that students spent in Moderate to Vigorous Physical Activity during recess by finding the sum of the amount of time spent in each type of physical activity, and determined Vigorous Physical Activity by summing high and very high physical activity.

During the study, researchers visited the schools twice; first before the playground redesign and again six weeks after the playground redesign. In each visit, the students had time to familiarize with the Actigraph, and then they wore the equipment from the start of the day. They followed their normal routine and researchers monitored their physical activity during morning, lunch and afternoon recess.

Each intervention school received new playscapes. The allocated funds from the district provided new play structures. They divided the playscapes into three colored zones; red for the sports area, blue for a fitness and skills area, and yellow for a quiet area. Each area contained additional demarcations representing appropriate games for that area. The control school's playground remained the same. All schools had play equipment such as play structures, jump ropes and balls available to the students.

Ridgers, et al. (2007) calculated descriptive statistics to describe the anthropometric characteristics of the students. They conducted exploratory independent t-tests to examine group differences in baseline variables by gender and intervention. They

used the t-tests to explore the differences in children's physical activity at recess between students who stayed in the study and students who withdrew from the study. Following the intervention, the researchers took the moderate to vigorous physical activity, vigorous activity as outcome variables, and used the body mass index of the students, age, and daily recess time and gender as covariates. They conducted two analyses, first they determined the difference in children's recess physical activity levels on the follow up measure between the intervention group and the control group, and next they established the effect of adding the covariates to the model. Using interaction terms, the researchers assessed potential effect modification for all covariates to see if the intervention effect was different for different subgroups. They set the statistical significance at $p < 0.05$, with the exception of interaction terms where it was $p < 0.10$. Independent t-tests revealed no significant differences between complete and incomplete measures in baseline recess physical activity for boys and girls ($p > 0.05$).

Independent t-tests revealed differences between the experimental boys who had greater stature, body mass and BMI, but engaged in lower levels of vigorous physical activity during recess than the control group of boys at baseline ($p < 0.05$). They found no significant differences in the anthropometric data for the girls, although, the experimental girls engaged in significantly less moderate to vigorous physical activity and vigorous physical activity during recess than the control girls ($p > 0.01$). The mean daily recess time available for children to engage in physical activity was 81.1 (\pm 17.3) minutes (range = 31-140 minutes) per day. Researchers found that the intervention group engaged in 5.95% more moderate to vigorous physical activity during recess than the control group respectively (crude analysis). When they performed the correction for potential

confounders (adjusted analysis), they found the regression coefficient for the intervention term reduced and rendered non-significant for both moderate to vigorous physical activity. The analysis revealed however, that gender and BMI were significant negative exploratory variables of recess's moderate to vigorous physical activity following the intervention. The results indicated that the boys engaged in 7.2% more physical activity than the girls did during recess. In addition, the results indicated that as BMI increased, recess physical activity decreased, though this change was relatively small.

Ridgers, et al. (2007) found an inverse interaction between the intervention and age for both moderate to vigorous physical activity and vigorous physical activity ($p = 0.01$ and $p = 0.09$, respectively). This indicated that the intervention effect was stronger for the younger children and the effect was stronger for moderate to vigorous physical activity and vigorous physical activity. Also, they found a positive interaction between the intervention and daily recess time for moderate to vigorous physical activity ($p = 0.07$) which indicated that the longer daily recess duration offered, the stronger the intervention effect on moderate to vigorous physical activity. All other interactions (with a baseline physical activity, gender, and BMI) showed p -values > 0.10 .

The strength of the study was its contribution to the empirical literature investigating the short-term effects of school-based interventions on children's recess physical activity levels and by investigating the variables that may decrease the intervention effect. The study suggested that the effect of the intervention was not significant with potential confounders added to the analysis. The research demonstrated that a change in playscape increased the levels of activity in children, and that the effects were greater with younger students and in students with longer recesses.

The limitations of the study included its lack of control over the amount of equipment available to the children in each school and the need to monitor the method of supervision at any of the schools. Researchers suggested that future studies on physical activity during recess include direct playground observation to explain other factors that may influence the findings. They did not assess the effect of the intervention on general physical activity and suggested that future studies explore the effects of school-based interventions on physical activity levels to determine whether the intervention promotes higher physical activity or has no effect on daily physical activity.

For the purpose of this thesis, the study supported the previous claim and supports additional research that boys are more active than girls at recess are (Beighele, Morgan, Le Masurier, and Pangrazi, 2006). If this is the case, the purpose of recess is gender dependant and further studies will need to determine if recess is a benefit to one gender or both. The next study, carried out in Portugal, looked at the quality of the physical activity at recess.

Lopes, Vassques, Pereira, Maia, and Malina (2006) studied the activity levels of students at recess in Portugal. Their goal was to describe the intensity and duration of bursts of physical activity and to note, as well, the differences in physical activity level between genders. They found that while boys “engaged in higher intensity activity than girls and in general spent more recess time in physical activity” (p. 192), both genders were physically active approximately 50% of the time during recess.

The sample consisted of 271 students (140 boys and 131 girls), six to ten years old, from five, randomly selected schools (from a pool of ten) in the Bragança council, Portugal. Portugal officially prescribes recess at thirty minutes per half day. Researchers

used the MTI actigraph model 7164 to measure physical activity and randomly selected twenty children to wear the actigraphs during their thirty-minute recess. Evaluations occurred outdoors between April and June. The playgrounds had open areas with grass, swings, slides, and loose items such as balls and jump ropes.

Lopes, et al. (2006) set the actigraph to read movements ten times per second, making it possible to gather a spectrum of intensity in each second as well as the duration of physical activity variability. Next, they used software to convert the actigraph calculation into units of relative energy expenditure: METs are the equivalent of 50Kcal/60s/m². Using this unit of energy expenditure and the software calculation from the actigraph readings, researchers developed the following categories of physical activity intensity: rest (≤ 2.9 METs), moderate physical activity (3.0 – 5.9 METs), vigorous physical activity (6.0 – 8.9 METs), and very vigorous physical activity (≥ 9.0 METs).

Lopes, et al. (2006) discovered significant differences in the number of episodes and intensity of physical activity in each gender: (girls: $F(128, 3) = 460$; $p < 0.001$; boys: $F(137, 3) = 362.667$; $p < 0.001$). For both genders, the most episodes appeared in moderate physical activity, followed in order by rest or mild physical activity, vigorous physical activity, and very vigorous physical activity. The total amount of time students spent in moderate physical activity, vigorous physical activity, and very vigorous activity exceeded the total amount of time spent in rest or mild physical activity. The difference in gender was significant only in very vigorous physical activity $F(4, 260) = 3.952$; $p = 0.048$ and average duration of episodes $F(4, 260) = 4.140$; $p = 0.043$. Boys had a higher number of very vigorous physical activity episodes than girls, although the mean of

average duration of each episode was higher in girls than in boys; however the period was not adequate to compensate for the lower number of episodes.

Lopes, et al. (2006) noted the limitation of the study was that it only explored student physical activity at recess and made no comparison to any other part of the child's day. The strength of the study was that it provided more evidence to suggest that boys were more physically active than girls were at recess.

For the purpose of this thesis, it is important to note that Portugal officially prescribes recess for primary students and requires a determined amount of time per half day. In contrast, in the United States and the United Kingdom, the duration of recess is determined at the district or individual school level and appears to be diminishing. Additionally, the Lopes, et al. (2006) report supported the claim that boys are more active than girls are. The next report attempts to investigate the types of activities that occur at recess and notes gender differences at recess as well. Additionally the study looks at student social relationships.

Blatchford, Baines, and Pellegrini (2003) conducted a short-term longitudinal study to examine recess activities and social relationships. The researchers intended to investigate children's activity and social group changes (specifically gender and/or ethnicity) over the school year. The goal of this study was to present descriptive information for three elements of playground games; first, types of games and behaviors, second, sex differences, and third, the ethnic dimension of groups. Furthermore, they gave descriptive information about how these three elements change over a school year.

Blatchford et al. (2003) focused on one grade level in four different schools, totaling a sample of 129 seven and eight year old students, 61 boys and 68 girls. Each

school had playgrounds and included at least two multiple-age recess periods per day. All school playgrounds had markings for games, benches, loose toys, and two to three adult playground supervisors. Observations, described as scans, took place during every recess over two weeks. Three observers, including one of the researchers, recorded information using audio tape and hidden microphone. Each day, the observers scanned individual students from the sample for twenty seconds per episode with a total amount of 90 minutes of recess. To facilitate swift recognition of students, observers also performed interviews outside of recess with the sample students.

Blatchford et al. (2003) included in their report an extensive list of criteria in four categories for which the observers scanned. The four categories and examples of the criteria were 1. contextual information, who the child played with; type of activity, verbal, sedentary, vigorous, fantasy or none, 2. behavior, child's demeanor, 3. level of participation, onlooker, teasing, aggressive, distressed, or disciplined, and 4. networks, the number, identity, gender, and ethnicity of the students involved with the scanned child. The sub headings of the networks category were Active Social Network or Game/Play Network. An additional note made during the twenty seconds of scanning described the location of and the interaction, if present, of an adult with the scanned child. Observers made 7906 scans, averaging 64 scans per child, 46% boys and 54% girls.

Blatchford et al. (2003) found that boys engaged in more social activities and girls engaged in more parallel and solitary activities. Out of the three categories, they reported only one difference that only approached significance: an increase in parallel activities by summer. From the activities reported, the researchers created three categories:

conversation, play, and games. The first accounted for 20% of all activities, while play and games occupied 33%, and the remaining 11% consisted of solitary or parallel on looking behavior. Over the year, boys played less, and girls' activities remained constant; conversely, boys played more games than girls did while girls' involvement with games decreased.

Blatchford et al. (2003) found in 80% of the scans that students were in same sex groups. The most popular activities, where gender balanced groups occurred were conversation 21%, fantasy play 14%, chasing 13% and ball games 16%. They emphasized that few games were gender balanced and most had one minority of one sex. Furthermore, researchers noted that in game networks girls tended toward same race groups, whereas boys' groups integrated racially. Over the year, researchers saw same ethnic groups decrease as mixed ethnic groups increased.

Limitations of the study involved the differences between schools. Schools varied in size of population, ethnic demographic, and available physical space. The playgrounds were also divergent in size and type; however, researchers included square footage per child data and admitted that the most populated school had the largest playground. The strength of the study was the effective use of systematic observation and recording of details.

For the purpose of this thesis, the report supports the claim that boys are more active than girls are in that boys played more games while girls decreased involvement with games over the year. Additionally, the fact that Blatchford et al. (2003) found that boys engaged in more social activities and girls engaged in more parallel and solitary activities is another point of interest in the study of what occurs at recess. This

observation in particular re-emerges in the studies regarding bullying. The next study looks more carefully at the games children play at recess. It also notes the divide between boys and girls.

Pellegrini, Kato, Blatchford, and Baines (2002) described the playground games of first grade students in their first year of schooling in a short-term longitudinal study. They found that boys play more games than girls do, and the variety of games increased over the year. In contrast, girls played more verbal games. Boys' capability on the playground was more of a prevailing predictor of social competence than it was for girls; this was also true for leadership on the playground and school adjustment.

The sample, 77 first graders (30 boys and 47 girls) with a mean age of 6.4 years, attended two urban elementary schools in a large Midwestern city in the United States. Only a mile apart, the schools served a diverse population, 33% African American, 31% white, 22% Latino, 22% Asian and 9% Native American, with 75% receiving free and reduced lunch. The consent rate, after forms sent home in both English and Spanish was 71%. No Native American students participated in the study.

Four graduate students served as research assistants and split much of the work between the two schools. For instance, only one of the assistants spoke Spanish, so she interviewed Spanish-speaking students. The assistants did not interview and observe the same students. Researchers used direct behavioral observations, peer nominations, and self-reports, as well as teacher and researcher ratings of the students. Research assistants made observations in two formats, focal child sampling with continuous recording and scan sampling with instantaneous recording.

With the combination of focal and scan sampling, the games that research associates observed the children playing were chase games, ball games, and verbal games. Pellegrini et al. (2002) defined chase games as having alternating turns at being it or the tagger, and ball games as involving a ball. They defined verbal games to include hand clapping, jump rope, and hopscotch. All games are rule governed and can be social or solitary. Boys played games more often than girls did, including more chase and ball games. While chase games decreased over the year, ball games increased over the year. Girls played more verbal games than boys did and the frequency of games did not change over the year. Boys also played a wider variety of games.

Research assistants determined play leadership by using peer nominations, adult ratings from a teacher checklist, as well as behavioral observations. Pellegrini et al. (2002) defined social competence in terms of popularity and reciprocated friendship nominations. The researchers administered measures in the fall and spring, the former = $r = .70, p < 0.0001$, the latter $r = .80, p < .0001$. Because of gender differences in total games, researchers tested separate models for boys and girls. They found that game leadership had no indication on girls' social competence just approaching significance with a $p = 0.08$; however, it did for boys.

Pellegrini et al. (2002) offered a number of limitations including that they only studied the games children played on the playground, thus they believed they “underestimated the sophistication of girls’ games” (p. 1011). They recommended for future research in an all girl school for a closer examination of girls’ games. Perhaps further research into the social context of the games will allow for comparison instead of determining the categories of the games by their props, such as a ball or vocabulary.

A matter of interest in this study was the definition of games and the designation of verbal games to games that are traditionally feminine. Perhaps the researchers' perception of what girls do on the playground caused them to lump the girls' games into a verbal game category. Indeed more research into the sophistication of girls' games is overdue and imperative. For the purpose of this thesis, this study introduced the idea that boy's capability on the playground was a prevailing predictor of social competence. In addition, this was true for leadership on the playground and school adjustment. The next study considers how boys establish gender identity on the playground, and brings into focus the venue that recess provides for gender expression and apparently gender oppression.

In the United Kingdom, Swain (2000) observed six grade six boys, whom he determined had positions of dominance within the culture of their playground in a school situated in southern England. He observed the students over eight weeks on the playground and in the classroom and included twenty-five interviews incorporating the focus group as well as students outside the focus group. Boys in the focus group were between the ages of ten and eleven, all of them judged by the observer and the classroom teacher to be high academic achievers, however, deemed a dominant group by the observer.

The school, in southern England, consisted of year three through six. Located in the edge of a small town, the campus afforded two playgrounds, including a football field, (football in England is called soccer in the United States) large enough to accommodate two simultaneous games. Due to troubling behavior, the school limited the amount of time the students could play football. The year six boys played football every

other day and only during the morning 15 minute breaktime. The school promoted an equal opportunity environment, and occasionally girls would join the lower school games; however, the year six boys overtly discouraged the girls from joining them and this arrangement persisted unchallenged.

Swain (2000) described the dominance phenomenon as a micro-cultural experience of the playground, where the boys of his focus group used football to demonstrate their gender identity by emulating their football heroes. Swain observed the group actively banishing subordinate boys as well as girls from the football field both in homophobic language and in deliberate and aggressive plays.

The strength in the study was Swain's (2002) observations of overt and unimpeded misogynist and homophobic behavior in spite of school policy. This corroborates the gender segregation described on many playgrounds, as well as the inherent need for preadolescent boys to secure dominance. The use of directive questioning in the interviews failed to lend credibility to the study, limiting its impact.

For the purpose of this thesis, Swain (2000) corroborated with other studies that found that boys engaged in more social activities and girls engaged in more parallel and solitary activities (Blatchford et al. 2003). Furthermore, this leads to the discussion of bullies, which will continue in the next section. The boys featured in this study apparently dominated the playground and prevailed unchecked. If the purpose of recess is to provide students the opportunity to exercise, they should have the opportunity to do so without the conditions of one small group of children. Unfortunately, a characteristic of the playground is the bully; the next section will look closer at what causes children to become bullies.

The section, Recess Schedules, Activity, and Games presented surveys of recess times in the United States and the United Kingdom. It explored the kinds of activities and the amount of physical activity students engage in during recess. Some of the information presented dealt with the perceived correlation between the reduction of recess and childhood obesity. Much of the research in this section highlighted gender differences on the playground. The next section will continue to look at gender differences on the playground and move into the discussion of behavior on the playground and after recess.

The Effects of Recess on Behavior

This section looks at the behavior of students on the playground and deals with the perceived problem of the bully. Many districts eliminate recess because of violence and student safety. For instance, Parsad and Lewis (2006) point out that many urban schools, schools with a high poverty concentration; schools with a high proportion of minority students do not have recess at all. Perhaps there is a cultural misunderstanding about what recess should be like compounded by inaccurate understanding of what makes a bully. The first two studies presented here, deal with the effects of recess on classroom behavior.

Holmes, Pellegrini, and Schmidt (2006) completed an observational study that examined the effects of different outdoor recess routines on preschoolers' classroom attention. Researchers used the cognitive immaturity theory (Bjorklund & Green, 1992) as the basis of their hypothesis that classroom attention would improve after recess. They found that the preschoolers' attention was greater after a recess break.

Researchers carried out the study in the northeastern United States. The sample group consisted of 27 European American children aged 50 to 63 months (the mean age

55.56 months), of which 18 were boys and nine were girls. The sample, split in two groups, morning and afternoon, had the same routine. The school was a not-for-profit private preschool with a play-based curriculum that included academic work. The playground included swings, climbing toys, a sandbox, picnic tables, and riding toys.

Holmes et al. (2006) employed a graduate student, and two undergraduate students to make observations. Along with Holmes, they observed children three days a week during and after recess, making 16 observations of each child over a period of one and a half months. During the post recess observation, students listened to a story read by the teacher.

Observers coded pre-recess behavior for about ten to fifteen minutes before recess, during circle time and for ten minutes after recess during story time. The investigation necessitated altering the school routine. Normally recess was at the end of the day, but for the sake of observing, they moved the recess to an earlier place in the schedule. In addition, they altered the duration of recess to see if the length of recess had an effect on student behavior. Recess had three durations, ten minutes, twenty minutes, and thirty minutes.

Holmes et al. (2006) found that all children had the greatest attention after the 20-minute recess. Attention was greater for the 10-minute recess than the 30-minute recess. Girls were more attentive than boys were after recess.

The limitations of the study were the size and the demographically uniform sample. The authors of the study admitted that the post recess activity was not demanding and observations did not continue over the course of the school year. However, the study illustrated how different amounts of time provided for recess affects the behavior of

students in the classroom and lends credence to the claims that students benefit academically from the break. Similar research might determine similar results from a novel activity and not necessarily recess.

Jarrett, Maxwell, Dickerson, Hoge, Davies, and Yetley (2001) carried out an experimental study to establish if recess effects classroom behavior. The results of their research suggested that for most children, uninterrupted instruction may be inefficient compared to interrupted instruction. According to the observations, students who participated in recess were more on task and less fidgety.

Jarrett et al. (2001) conducted the study in an urban school in the southern United States. The district had adopted an uninterrupted instructional time policy, which meant that the students in the district did not have recess. The researchers gained permission from the district to allow two classrooms 15-20 minutes of recess once per week. This allowed them to observe classroom behavior on non-recess days and after recess on recess days to make a comparison. When recess occurred, the students went to a park with a playground across the street from the school, or on the school playground. The playgrounds had similar settings, swings, and monkey bars, however, the students did not have loose playground equipment such as balls or hula-hoops. The observers included the researchers, two graduate students and a university faculty member. They noted that the children did not play games, during recess, except for chase. The students did play on the playground equipment, but mostly they stood around and chatted.

Participating students came from two fourth grade classrooms, each having 25–30 children. The school admitted students from the middle to upper class socioeconomic neighborhood, and admitted students bussed from several types of transient housing

situations. The racial profile of the participants was approximately 70% white and 30% African American. Researchers observed 43 students, 18 boys and 25 girls and noted that 12 students dropped out from the study because of absenteeism, the reason given for absence was that students stayed in from recess for remedial tutoring. Additionally, due to the nature of transiency, researchers could only gather data for half of the transient group.

On any given day, the children did not know whether they would have recess until just before it began. Data collection began in mid-November and continued until each class had recess six times. Because some scheduled recess days became non-recess days as a result of assemblies, rain, cold weather, fire drills, or testing, data collection continued until mid-March.

Jarrett et al. (2001) coded the following classroom behaviors: W (work) - On-task behavior; F (fidgety)-Excessive movement; L (listless)-Head on desk, etc. Two graduate assistants and a university faculty member made the observations. They practiced coding, and rapid identification of the students until they reached an interrater reliability of at least 88%. The schedule for observing each classroom was the same in regards to duration, and schedule order, but in order to observe both classrooms, the times were different.

Jarrett et al. (2001) found the effect of recess highly significant, $F(3,40) = 13.00$, $p < .001$. Subsequent univariate analyses showed that the children worked more, $F(1,42) = 10.02$, $p = 0.003$, and were less fidgety, $F(1, 42) = 31.36$, $p < 0.001$, when they had recess. Without recess, the students were on task 85% of the time, and fidgety 16% of the

time. With recess, they were on task 90% of the time and fidgety 7% of the time. They did not differ on listless behavior.

The strength of this study was that the students were in their normal setting, and served as their own controls. The researchers believed that the observed classroom environment allowed for freedom of movement, and that a more rigid environment might cause a greater recess effect. According to Jarrett, et al. (2001), the single age group was a limitation of the study. Other limitations not noted by the researchers was that further research needs to be done to compare the novelty of recess in this study to another novel activity with the same period, especially since observers noted that students did not play games, nor did they have loose equipment such as jump ropes or balls. Such factors might increase aerobic activity and make the break more identifiable as recess.

The study illustrated that recess provides an opportunity for students to return to academic activity with renewed energy and concentration. Additional research needs to determine if this is the case, or if simply a novel activity in the classroom could not produce the same effect. The study also demonstrated that students learn the games and activities that characterize recess and that the games and activities were not spontaneous manifestations that occur in free time. For the purpose of this thesis, it is important to consider what students are learning at recess and how it might benefit cognitive performance or social development. An alternative to recess might provide the same results.

While the last two studies looked specifically at classroom behavior and the students' ability to concentrate on academic activity, the next several studies examine behavior on the playground. School safety has become an increasing concern (Limbos &

Peek -Asa, 2003). A comparable concern to the dangers children face after school leading families to bring their children inside to play (Louv, 2006). The next series of studies evaluate dangers on the playground, especially the phenomenon of the bully.

Pellegrini (1994) observed the playground behavior of boys during their recess to determine if the boys' popularity status affected their involvement in rough play. He found that average and rejected boys engaged in more rough play, and saw this as evidence that children may exploit rough play for the purpose of demonstrating dominance.

Pellegrini (1994) conducted the study in a rural public school in northern Georgia. The sample consisted of 305 sixth grade students with the average age of 13.25 years, 73 boys and 65 girls. Since most of the boys were white, Pellegrini focused on the Caucasian population. From this, he sorted the boys into three sociometric groups, 22 popular boys, 19 average boys, and 13 rejected boys. Pellegrini interviewed the students about their personal preference and perspectives to determine who would fit in each category.

Two observers, unaware of the students' sociometric status, observed the students in a 7,900 square foot courtyard from September through May. The observers observed focal students for three-minute episodes recording behavior, the identity of the child the focal child interacted with, and the location. They collected data using a mini tape recorder. The study reported data on students observed at least ten times.

Pellegrini (1994) determined that average/rejected boys engaged in rough and tumble rough play more often than popular boys did. Rejected boys engaged in rough and tumble rough play that led to aggression beyond the chance level with a statistically

significant z score showing probability of transition from rough and tumble to aggression as $z = 2.79$, $p \leq 0.05$. Pellegrini also found that average and popular boys engaged in rough and tumble chase with children of equal or greater dominance; whereas, rejected boys chose to initiate bouts of rough and tumble rough play with children of lower status.

Pellegrini (1994) suggested that further studies explore the possibility that rejected boys use rough play to exploit children of lower dominance status, or if it helps them in perspective-taking skills. Further research needs to sort out the difference between rough play, aggression and bullying to determine its purpose on the playground as well as how its presentation differs with gender. Another consideration is how children on the playground or supervisors on the playground perceive aggressive behavior and if this perception has a cultural frame. More research will determine the affect of cultural perception on the definition of the behaviors at recess whether ludic or aggressive.

Astor, Meyer, and Pitner (2001) studied elementary and grade school students to determine their perceptions of dangers in the school context. They hypothesized that the developmental age and the grade level of the student influenced his or her perceptions of school safety. They found that older students recognize more spaces that are dangerous.

The sample consisted of 222 elementary students from five urban grade schools in the Midwest, in addition to 155 middle school students from two middle schools. Fifty-one of the sixth graders attended elementary school, while 54 sixth graders attended middle school. The entire sample consisted of 67% boys, 33% girls, 51% African American, 40% white, and 5% Latino, with 82% of the entire sample receiving free and reduced lunch. The researchers deliberately measured the levels of student aggression because they believed that aggressive student perception of space would differ from a

non-aggressive student. They found that student perception did not differ among aggressive and non-aggressive students, nor did it differ across gender.

Astor et al. (2001) used trained interviewers to interview the students. The interviewers showed a map of the school to students and without knowing the hypothesis of the study explained to the students that some students thought that some areas of the school were unsafe, then asked the students to point on the map or explain where they felt the school was unsafe. They further questioned if the dangerous spaces were dangerous for all students or certain students or more or less dangerous at certain times of day. The researchers coded the responses and created categories of spaces deemed dangerous by the students.

All students identified places where there was little adult supervision, or potential for crowding. Consistently, middle school students identified feeling unsafe in their school more often than grade school students did $X^2(1,337) = 3.46, p < .05$. Grade school students, and especially the sixth graders attending grade schools nominated the playground as the most dangerous space, this differed from the middle school and the sixth graders attending middle school, as they did not have a playground or recess. The researchers reported that school officials cited violence as the reason for eliminating recess. This study illustrates student perceptions of safety and corroborates claims that districts eliminate recess for the purpose of safety. However, it measures perceptions of safety and does not provide data to suggest that violence or danger truly exists on the playground. Additionally it points to the need for increased adult supervision and space as factors in student perception. More research will determine if these factors in fact increase playground safety.

Butcher (1999) evaluated a recess-based social skill intervention that targeted students' behaviors on the playground. She paid particular attention to gender differences and examined the program's effectiveness. The principal at the school called for an intervention after a number of fights on the playground, and in her discouragement suggested that the students simply did not know how to play.

The sample included a Title I school in the Intermountain West with a population of 450 students in first through sixth grade, 55% boys, and 45% girls. Seventy percent of the students were white, 30% Hispanic, 2% African American, and 1% Native American. Sixty-five percent of the student population qualified for free and reduced lunch, and the district considered 60% transient. The researchers noted that the urban area of the school had a lot of gang activity.

Butcher (1999) used direct observation on the playground and had the assistance of two trained observers who used coded behavior checklists to record behavior on the playground. Target behaviors, selected from the established playground rules, included violent, verbal abuse, and inappropriate equipment use. The observers made one-hour observations each day, for each grade at recess for twenty minutes at a time, for 25 days before the intervention and 26 days during the intervention.

Three men and four women volunteered from the neighboring University College of Health, to participate in the training of specific competences. Three to five volunteers came to recess during the intervention and taught the students games that develop social skills including soccer, ultimate Frisbee, parachute games, basketball, obstacle course, jump rope and tag. At the same time, volunteers aided students with problem solving skills.

Butcher (1999) discovered that for boys, incidents of violent behavior decreased significantly during the intervention; however, Butcher found no significant effect for girls. The limitation of the study was that Butcher made the final measurement before the end of the intervention. Astor et al. (2001) and Limbos and Peek-Asa (2003) pointed out that students feel safer and fewer intentional injuries occurred in well-supervised places. During the intervention, with five to seven extra adults present on the playground, the students very likely perceived them as supervisors. A post assessment would demonstrate the results of the intervention.

Butcher's (1999) evaluation suggested that boys responded better to the intervention than girls did. However, the list of games provided in the evaluation led to a predictable result. The list, consisting of soccer, ultimate Frisbee, parachute games, basketball, obstacle course, jump rope and tag provided more options for boys than for girls because boys play more ball games and chase games than girls according to the previous study by Pellegrini, Kato, Blatchford, and Baines (2002). The study promoted the belief that games at recess develop social skills; however, more research needs to determine if games can teach social skills.

In a similar study of social skills intervention at recess, Anderson-Butcher, Newsome, and Nay (2003) executed a recess intervention targeting twelve aggressive behaviors. Observers recorded the behaviors and researchers found that with intervention the aggressive behaviors decreased.

The sample school located in Salt Lake City enrolled about 462 students, 52% boys, 48% girls. Sixty-five percent of the student body received free and reduced lunch. The students 65% were white, 25% Latino, 5% African American, 2% Native American,

3% other and 62% transient. Researchers recorded the number of playground supervisors and researchers on the playground; however, they did not report this number.

Anderson-Butcher et al. (2003) produced a systematic observation checklist with definitions of each target behavior. Two research assistants collected data in ten-minute cycles during a sixty-minute recess; the report implied that grades one through six cycled through the sixty-minute period. The intervention consisted of training recess supervisors in a three-hour workshop modeling skills, reinforcement and feedback strategies, implementation of personal reflection in play settings, and strategies to enhance participants' sharing and cooperation during play.

The research assistants gathered data from 133 episodes of recess. Anderson-Butcher et al. (2003) found that the intervention effectively reduced aggressive behaviors on the playground; however, the data in the report is too vague to determine if the reduction of aggressive behaviors correlated to the actions of the intervention, or the presence of more activities or the weather. A strength of the analysis; the researchers claimed that they noted the positive results after controlling for the number of adults on the playground.

The last two studies corroborate the belief that recess provides an opportunity for social skill development; however, more research needs to determine how playgrounds become violent dangerous places in the first place. The next few studies look closely at how the bully and victim personalities develop on the playground and how gender plays a role in this development.

In a longitudinal study of playground behavior, Boulton (1999) determined the factors that lead to bullying and victimization and demonstrated for the first time the

possibility that gender differs in episodes of bullying and victimization. Over the months of December through March, researchers observed students on the playground and performed interviews in which they found gender specific grounds to determine the victim and the bully. The hypothesis proposed that girls view other girls in sedentary conversations positively, while boys view boys in sedentary conversations negatively, specifically while on the playground.

Eighty-nine (45 girls and 44 boys) schoolchildren, between the ages of eight and nine from working-class backgrounds, participated in the study. Students attended two urban schools in the United Kingdom, which afforded between 80 and 100 minutes of recess in three segments throughout the day. Observers used a behavioral coding scheme that included 60 second scan sampling of focus students in random order with a mean number of scans at 56.8 of all participants. Observers determined who the child was with, the number of children involved, the engaged activity of the child, and if the interaction included conversation.

In sociometric interviews, experimenters encouraged the students by explaining that it was not a test and that information gained in the interview remained confidential. Children looked at photos of classmates and pointed out, three of each, who they liked the most and who they liked the least. With this information, researchers built Social Preference scores. Next, interviewers defined the term bully, and then asked the students to point out children who they considered a bully and children who they considered a victim of bullying. With this information, researchers developed a Bully score and a Victim score.

Boulton (1999) found that for boys and girls, group size correlated positively with the Social Preference score and time alone correlated positively with the Victim score. The data demonstrated slight significant evidence $p < .06$, that high levels of time alone for girls predicted the greatest increase in the Bully score and high levels of conversation increased the Social Preference score. The results indicated that boys found alone or in conversation increased the Victim score.

The limitations of the study included the sample size and age restriction as well as the broad definition of the term bully presented to the sample. The strengths of the study involved the authentic setting of a school playground versus a contrived playgroup and its addition to the evidence that links recess behavior to peer relationships and its pioneer investigation of gender differences in bullying and victimization. This study illustrates the need for more research to determine how playgrounds become violent dangerous places in the first place. Additionally, if recess provides an opportunity for social skill development, any intervention designed to prevent bullying should consider gender as a crucial element. The next report looks closely at school safety using data from accident and injury reports.

In a report on school safety, Limbos and Peek-Asa (2003) pointed out an increase in public concern for school safety with school shootings in the news. They investigated the perception of violence in a review of accident and injury reports from a single calendar year. They found that elementary schools had the highest number of injuries, and most of these injuries occurred during recreational activities.

Limbos and Peek-Asa (2003) pulled the accident reports from a single year in the Los Angeles school district. In 1997, there were 670,551 students and 11,755 accident

reports completed. From the total number of reports, they selected a random sample of 3,279. From the samples, they extracted the age, gender, and grade level, injury characteristics, and response to injury. In addition, they categorized the injuries as unintentional or intentional; if the intent was unclear, the data was categorized unknown. For the purpose of categorizing grade levels, they defined elementary as first through sixth grade, middle school as seventh and eighth, and high school as ninth through twelfth grade.

Similar to the findings of Astor et al. (2001) who found that students perceived certain areas as potentially violent, such as the playground or hallways, Limbos and Peek-Asa (2003) found that many injuries do occur on the playground, however hallways were the third most likely place for injuries after classroom, and lunchroom. Most injuries were associated with recreational activities, interestingly, 50% of unintentional injuries occurred during Physical Education class while 46% occurred during unstructured play. Seventy five percent of intentional injuries occurred during unstructured play and this type of injury was 2.8 times more likely to occur than an unintentional injury (95% CI =2.00 – 4.07).

In keeping with Astor et al. (2001), Limbos and Peek-Asa (2003) found that most intentional injuries occurred where there was little to no adult supervision. Limitations of the study may be in the calendar year of the school district selected for the study; apparently, the Los Angeles school district uses six different academic calendars, one of which resembles the traditional nine-month scholastic calendar.

The report supported student perceptions about dangerous places at schools to the extent that intentional injuries occurred in places where there was little adult supervision.

However, Astor et al. (2001) failed to determine by using student perception, the dangers of unintentional injuries which according to Peek-Asa (2003) occurred more frequently in class, especially Physical Education making recess a relatively safe place to play. The high rate of intentional injuries at recess is a matter of concern and more research needs to determine the correlation with this data and behavior on the playground. The next study returns to the subject of the bully and provides more insight into gender variation.

Boulton (2005) examined the associations between students' social activities and interactions during recess and their self-perceptions, along with the gender differences in the associations. In a longitudinal study through observation and interviews, Boulton found that several factors on the playground affected student self-perceptions; however, the effects differed across gender.

The sample of the study consisted of 75 children between the ages of eight and nine from two schools in England. Boulton (2005) targeted two classrooms from each school. Recess periods occurred three times per day, supervised by two to five adults. Three trained observers made observations using scan sampling of one minute per student. The observers made a mean of 62 scans per child and noted the child's activity and the number of interactions the student made.

The observers interviewed the students in small groups or individually, they encouraged the students to keep their responses secret from other students. Boulton (2005) used the interviews to determine the self-perceptions of the children in the focus group. He looked at social acceptance, athletic competence, physical appearance, and global self worth.

Boulton (2005) found that the association between games with rules and changes in social acceptance was negative for girls and positive for boys. He found a positive association between conversation and changes in social acceptance with girls, but not with boys. He also found a negative association between conversation and changes in athletic competence with boys but not girls.

A limitation of the study was the failure to determine if lone students controlled their solitude voluntarily. Another limitation was in the gender stereotyping of playground games and the broad category of games with rules. Boulton (2005) suggested that the study's most important finding directs further study into the possible detrimental impact of time alone for students at school, and the possibility that solitude is an anti-social behavior.

This study presented a single factor that may lead to victimization and bullying and thereby the cause for violence and danger on the playground. Students who fit the profile of loner may not respond to social skill development interventions that promote group activities in playground games. Further research needs to corroborate this finding and determine the factors that lead students to solitude as well as student perceptions of students in solitude.

Pellegrini and Bartini (2000) examined bullying, victimization, aggressive victimization and changes in peer affiliations as students make the transition from elementary school to middle school in a longitudinal study. They found that bullying and aggressive victimization remained the same, while peer affiliations decreased at the point of transition, only to increase before the end of the year. The researchers hypothesized

that bullying would increase with the move to the new school while students adjusted to the new setting in order to establish dominance.

The sample came from the entire fifth grade population in a rural school district in the Southeastern United States. Researchers invited all 329 students to participate and offered to pay students \$35 (teachers earned \$50), however only 154 students (87 boys, 66 girls) accepted. The median age of participating students was 12.8 years at the beginning of the year. The community had a mixed socioeconomic background with 85% being white. Pellegrini and Bartini (2000) and research assistants administered peer nominations and self-reports. Teachers completed a temperament measure as well as a checklist. The researchers made direct observations of focal students once per week, throughout the day. Researchers made much of the observations in the hallways, the cafeteria and during free time, presumably when and where bullying occurs. The observations provided information regarding amount of aggression and victimization as well as identified aggressors and victims. The researchers asked students to keep journals that described bullying and victimization events throughout the year and used these for indirect observation. The researchers performed these administrations in February before the transition to middle school and again at the new school a year later.

Pellegrini and Bartini (2002) found that dominance declined over the year, with boys scoring higher for bullying than girls did. Girls had a more negative attitude toward bullying than boys did, however the attitude declined over the year. Regarding peer affiliation, the researchers found that girls had more friends than boys; though, friendships among girls demonstrated a significant decrease over the year. Aggressive victimization did not change over the year.

A limitation of the research which Pellegrini and Bartini (2000) suggested was that aggressive victimization showed a stable condition because students were reluctant to self report it since their names were on their journals (even though they were reassured that the research was confidential). Another limitation of the study was that researchers did not make direct observations, at the grade school level. The strength of the study was its look at another age group and the inclusion of a factor perceived to perpetuate bullying and victimization. Continued research looks at the characteristics of bullying and victimization.

In a pilot study, Fujiki, Brinton, Isaacson, and Summers (2001) scrutinized the social behaviors of students with language impairments on the playground, and found that they exhibited more withdrawn behaviors than their peers exhibit and engaged in fewer interactions than their peers. According to the researchers, teachers claimed that students with language impairments had more behavior problems and inferior social skills when compared to their peers.

Fujiki et al. (2001) focused on eight students identified by the school speech pathologist as language impaired. The children had no impairment other than language. They were between the ages of 6.1 and 10.7, seven girls and one boy. Five students were in the same first grade classroom and had participated in speech therapy since kindergarten. The researchers decided to stay with this sample and not add another school because they felt that playground equipment and supervision might interfere with their findings, and therefore considered the investigation as preliminary. The researchers collected data from this group from October to December in 1998.

One year later, Fujiki et al. (2001) selected another group of students, this time the students had no language impairment, nor identified as having any disability. This sample of students matched the former sample in age \forall six months and in gender. The playground environment was the same as the previous year. Students had access to the entire playground. Recess occurred twice per day amounting to an hour.

A strength of the study was that the environment remained the same. The sample students wore hidden microphones and researchers videotaped the students at recess, as Fujiki et al. (2001) made an effort to stand far enough away that student play continued uninhibited. They obtained an hour of videotape of each child and analyzed forty-five minutes of each.

The fact that students exhibited behaviors that are more withdrawn and engaged in fewer interactions than their peers is a matter of interest, as it may be a factor that leads to victimization and anti-social behavior. More research needs to determine how recess affects language development along the lines of social development, and how students with language impairments might respond to social skill development interventions that promote group activities in playground games. The next study examines student perceptions of bullying and victimization behavior.

In a survey, Frisen (2007) investigated students' views about what makes a bully, how they perceive bullies, and what actions do they believe will work to stop bullying. Frisen approached six high school classes in the city of Goteburg with questionnaires. Ninety-five percent of the students participated. She found that bullying peaks between the ages of seven and nine, and very little difference between genders.

The sample consisted of 119 adolescents, 48 boys, and 71 girls between the ages of fifteen and twenty with a mean age of 17.1. Frisen's (2007) questionnaire asked students if they had been a victim of bullying, if they had bullied others, and categorized their responses by the standard age groups in the Swedish school system. Students responded to three open ended questions describing why they think individuals become targets of bullying, why children become bullies, and what actions they think makes bullying stop.

Frisen (2007) reported that 39% of the respondents had been victims, 20% admitted to bullying, and 13% described being both bully and victim. She found no significant difference between genders. The age group with the highest incidence in bullying was between seven and nine years old. Students responsible for bullying reported that they bullied most between the ages of ten and twelve, this led Frisen to believe that older students pick on younger students.

In response to the question, who gets bullied? Students chose the response that victims had a different appearance, with the second choice that victims behaved differently, and with the third choice that victims had the characteristics of a bully. An interesting point; none of the students who admitted to bullying chose the third characteristic, that a victim had the characteristics of a bully. In response to the question, why do some students bully? Students chose the response that bullies suffer low self-esteem, their second most common response was that it makes the bully feel cool, and the third response was that the bully has a problem.

Frisen (2007) used nine categories to code the response for the question, what makes bullying stop? Frisen also compared students' involvement with bullying behavior

to their responses and found that 43% of all responses suggested that stopping bullying relies on the victim; however, adult intervention was the most common response among students who had been victims. Frisen put forth the idea that research suggests a difference in gender in bullying because boys use physical means while girls typically use more subtle means.

The strength of the survey was in its focus on older students and the consideration that older students may bully younger students. A weakness of the study was the lack of demographic information in the sample leading the reader to assume that the group was homogenous. If this is the case, it demonstrates the need for a multicultural perspective on aggressive behavior. For the purpose of this thesis, Frisen (2007) provided a bully's perspective into how the phenomenon occurs and student perspective into how to prevent the behavior.

The section, the Effects of Recess on Behavior looked at the behavior of students on the playground and the perceived problem of the bully. Many districts eliminate recess because of violence and student safety; for instance, Parsad and Lewis (2006) point out that many urban schools, schools with a high poverty concentration, and schools with a high proportion of minority students do not have recess at all. Perhaps there is a cultural misunderstanding about what recess should be like compounded by an inaccurate understanding of what makes a bully. The section also looked at behavior in the classroom caused by recess and especially gender differences in many aspects of behavior during and beyond recess.

The next section investigates playground safety and looks at the playscape and environmental factors that may affect student safety. It also considers the idea that

playscapes stimulate learning and provide an environment where students possibly gain literacy and language skills. Included are two articles about wild spaces. Louv (2006) and Nabhan & Trimble (1994) claimed that children who experience nature have less stress, welcome diversity, and stand to become stewards of the earth.

Safety, Literacy, and the Playscape

This final section investigates playground safety and looks at the playscape and environmental factors that may affect student safety. It also considers the idea that playscapes stimulate learning and provide an environment where students possibly gain literacy skills. Included are two articles about wild spaces. Louv (2006) and Nabhan and Trimble (1994) claimed that children who experience nature have less stress, welcome diversity, and stand to become stewards of the earth.

Weintraub and Cassady (2002) conducted the sixth survey of public playgrounds for the Consumer Federation of America and the United States Public Interest Research Group. In the spring of 2002, investigators for several state PIRGs and CFA members investigated the most injurious hazards on 1,037 playgrounds in 36 states. They found that 75% had insufficient surfacing, 34% of playgrounds had equipment that posed an entrapment threat that could lead to strangulation, 34% of playgrounds had entanglement hazards (small gaps, open s-hooks). They found that 28% of slides and climbers had inadequate fall zones, 30% of swings required adequate fall zone, 55% of swings had swing bays with pivot points over eight feet, 49% of swings violated recommended guidelines.

The strength of this survey is its comprehension and potential for comparison across years as it is the sixth of its kind. The limitation of the survey is it fails to delineate

the term public playground and disclose if it includes public school playgrounds, it is possible that students are safer on school playgrounds. Research demonstrating the actual numbers of injuries on these playgrounds would be helpful, as well as information regarding the cost of maintaining safe playgrounds. Similar research with a focus on public school playgrounds could inform a district's decision regarding the importance of recess.

Regarding student safety on the school playground, Rundell, Caviston, Hollenbach and Murphy (2006) measured particles in the air from four different elementary school playgrounds and one university ball field. The schools were adjacent to roads with high to low traffic. The study evaluated the measures of particulate matter for the purpose of further investigation into the health risk of air pollution to students.

Rundell et al. (2006) took measurements from the four elementary grade school sites from a single district over a seventeen-day period in the summer of 2005. They took measurements from the University soccer field over a 62-day period from spring to summer that same year. Evaluators determined the type of traffic at each school and defined them as high, moderate and low.

Rundell et al. (2006) used calibrated condensation particle counters set at 1.5 meters from the ground to collect samples. The high traffic grade school had a mean four times higher than the moderate traffic grade school, and the moderate traffic grade school had a mean twice as high as the low traffic school.

Wind direction was a critical variable in collecting samples. Rundell et al. (2006) pointed out the importance of the potential effect of air pollution on exercising schoolchildren, and cited many other studies, which demonstrate the relationship between

ambient particle exposure and respiratory conditions. Future studies should investigate the threshold limits and mechanistic actions of real-world particle exposure.

For the purpose of this thesis, Rundell et al. (2006) illustrated the concern for student safety while in the environment of the school playground. The effect of pollution on students at recess will depend on individual student activity choice as well as personal health. Factors such as pollution and poor weather may drive schools to provide indoor options for recess. This leads to the question of what indoor activity can compare to recess and if an indoor activity can satisfy both genders or benefit student attention in the classroom. The next study looks at the culture of the playground and the self-contained community described by Opie and Opie (1959) where teachers find a richly inter-textual and creative site where children play out narratives, exhibit oral and multiple literacies.

In an ongoing study as part of a teacher education program, Grugeon (2005) described how teacher candidates observed children on a playground to judge the pedagogical implications of the multi-modal nature of literacy practices and how unofficial practices might affect official practices. In this ethnographic study, candidate teachers began to see the role of socio-dramatic play in the development of emergent literacy.

Each year, 70 teacher candidates participate in three groups at De Montfort University. The students complete a small research project involving observations on the playground as well as interviews with pupils from over 40 primary schools in the Eastern part of the United Kingdom. Teacher candidates are instructed to look for examples of traditional games and evidence of children's folklore. In tandem, candidates explore their

personal memories while introduced to studies conducted by authors such as Opie and Opie, and Sutton-Smith.

The teacher candidates reported that the playground is a richly inter-textual and creative site where children play out narratives, exhibit oral and multiple literacies, and where pop culture has a strong effect on young children. The teacher candidates found that there is a question of pop culture ownership, and that teachers only need to be aware of student interests and be prepared to meet the interests in literacy teaching (Grugeon, 2005).

The strength of the study is its continual attempt to involve teacher candidates in the study of recess activities, and the attempt to illustrate the value of the recess culture. The limitation of the study was that it failed to demonstrate the extent of creative thinking and language on the playground. For the purpose of this thesis, this study introduces the idea that teachers can use the playground as a resource for student assessment in the area of literacy and language development. Another investigation looked at the effectiveness of additional literacy intervention on a student with anti-social behavior.

Lane, Menzies, Munton, Von Duering, and English (2005) investigated the effectiveness of an additional literacy program for an identified at risk child with anti-social behavior. As part of the intervention, a literacy specialist provided small group instruction on phonemic awareness while university personnel observed the child's literacy development and behavioral development in the classroom and on the playground. Results of the investigation demonstrated an association between progress in phonemic awareness and lower levels of disruptive behavior in the classroom as well as improved social interaction on the playground.

The participant was a Hispanic male age 5.74 years attending a public school kindergarten. He did not respond to a school wide literacy and behavior intervention program. This deemed him as high risk by a universal screening tool. While his letter recognition skills were average for his age and his word attack skills in the low average, his social skills and behavior problems were average, however his academic competence was below average. Lane et al. (2005) noted evidence in his school record demonstrating concern including his absence rate of 23 days during kindergarten.

The literacy specialist carried out the intervention with the focal child and two low achieving students in thirty-minute lessons over nine weeks. Three research assistants, doctoral students of psychology, conducted further assessments and direct observation of the focal child.

During the intervention the child's disruptive behavior and negative interaction scores dropped, and disappeared by the follow-up observation. Unfortunately, Lane et al. (2005) could not prove if the child's improvement was due to the individualized instruction or due to more individualized attention. However, the results demonstrated a relationship between academic under-achievement and behavior problems. The primary limitation of the study is the weakness of the design having only one sample, and insufficient observation time. Replication will establish external validity.

The study illustrates the relationship between academic success or failure and behavior problems. It implies that academic failure leads to poor behavior. More research needs to determine if this is the case. Perhaps, student behavior depends less on academic success and more on the student's self-perception or social acceptance or teacher approval. According to Pellegrini, Kato, Blatchford, and Baines (2002) boys' capability

on the playground was a prevailing predictor of social competence than it was for girls; this was also true for leadership on the playground and school adjustment. The next study contains many of the elements discussed so far. Student self-perception, social acceptance and teacher approval as well as diversity of cultural perceptions create implications for a playground behavior intervention in a school with a 96% minority population including child refugees from African nations featured in the next study.

Franzen and Kamp (2008) examined the implementation of a recess intervention as part of a School-wide Positive Behavior Support system. They used a multiple baseline design to assess the effects of the School-wide Behavior Support system on five target behaviors. They found decreases in disruptive behaviors across three grade levels and increases in active teacher participation.

The sample included 180 primary students between the ages of six and nine. The target school was a Midwestern charter school in an urban setting with a nearby public school with a similar demographic acting as the control school. The focus school followed a year-round academic calendar and the study took place over two years, so students transitioned to the next grade during the study. All the students at the school took part in the intervention; however, researchers only followed first through third grades. The school population consisted of 320 kindergarten through sixth grade students. Both the focus school and the control school had about 96% of students receiving free and reduced lunch; both schools had many immigrant and refugee children from African countries with a 95% minority population rate.

The system of a School-wide Positive Behavior Support was in place before the start of the intervention and included five simple rules, which teachers went over with the

students five to ten minutes per day following lesson plans with role-play activities. Staff reported 1,962 office referrals in the year before the support system and a 50% reduction in the first year; however, researchers noted that there were still problems on the playground and staff admitted the lack of office referrals in this area since it was not during academic time.

The playground setting at the target school was very small, only 1,200 square feet, in an L shape and bordered by a six-foot high brick fence with traffic on the other side. Equipment on the playground consisted of two climbing toys, a broken teeter-totter, an area for jump rope where students tied one end of the rope to a pole, and an area for tic-tac-toe. Staff allowed students to run, and play tag and while balls were available, there was no space for basketball, soccer or football.

Franzen and Kamp (2008) split up the playground into three sections for the direct observation of student behavior. The intervention required that teachers teach recess related lessons, followed by a recess workshop in which the students practiced and the teachers interacted with his or her own students at least six times per five minutes. Teachers rewarded students for meeting recess expectations, and students out of compliance met the teacher in the reteaching-zone where the teacher retaught expected behavior and asked the student to demonstrate the expected behavior.

Franzen and Kamp (2008) looked for five student behaviors and two teacher behaviors on the playground. The behaviors were both positive and negative; they included aggressive behavior as well as active supervision and reprimands. Researchers collected data on tally sheets during five-minute cycles of observation during spring and summer of the first year and summer, fall, and winter of the next year.

Franzen and Kamp (2008) found that over the study, the intervention increased the amount of active teacher supervision and decreased student aggressive behaviors. Researchers pointed out that some of the original poor behavior reflected the cultural differences of the families as well as inability to communicate in a common language rather than physically. The study did not control for which component of the intervention caused the results of the study. Another limitation of the study was that at times, an entire class missed a recess due to student behavior, or observations stopped when half of a class was in timeout.

Several factors described by Franzen and Kamp (2008) pertain to this thesis, especially the cultural and linguistic differences on the playground; however, in this section, the playground catches the most attention. The school provided a minimal amount of space for play, and while the students could run, they could not play basketball, soccer, or football. Lack of space compounded by the broken equipment and the need to tie the jump rope to a pole implies an environment of neglect. Additionally, the description of a whole class in timeout compounded by limited space on the playground reserved for a reteaching zone revealed an atmosphere of repression in the environment. Furthermore, the 95% minority rate including immigrants and refugees from African nations in the sample, demands more research into cultural manifestations of play and the researchers cultural perception of play.

An international look at the trend of sedentary activities suggested by Louv (2006) extends beyond the United States, Norwegian Faculty of Arts, Folk Culture and Teacher Education; Fjortoft (2001) noticed the diminishing traditional activities and active outdoor games and lamented the rise of sitting indoors playing computer games. In

a quasi-experimental study, Fjortoft investigated how play environments stimulated motor fitness and the correlative effect of the landscape on versatile play.

Fjortoft (2001) carried out the investigation with three kindergartens in Telmark Norway. The sample consisted of 75 children between the ages of five and seven with a mean age of 6.1. The experimental group contained 46 kindergarteners, 27 boys and 19 girls. The reference group contained 29 kindergarteners, 11 boys and 18 girls. Both groups came from similar socioeconomic background, parents had similar levels of education and interest in outdoor activities and body mass and height were similar.

The experimental group spent one to two hours each day, in a forest next to the kindergarten, from September until June, while school was in session. At random, the same group used a fenced in playground at the kindergarten. In both environments, children engaged in free play. The reference group used the playground for one to two hours each day, in the same period as the experimental group. The reference group seldom visited natural sites, however, they also engaged in free play. Both playgrounds had similar equipment sandboxes, swings, seesaws, slides, and climbing space.

Fjortoft (2001) performed motor fitness pre-tests and post-tests and found a tendency that the experimental group performed better, even though this group scored lower in the pretest. He related the gain in motor fitness to the versatile play afforded by the natural playscape, and supported his claim by pointing out that the people of Norway have equal access to sports and leisure activities and felt that the homogenous socioeconomic status of the parents suppressed variables.

While Fjortoft (2001) described at length, the activities of the experimental group, including playing in deep snow, skiing, and den building; he failed to describe the details

of the reference group or if they attended the playground in snowy weather, although in Norway it is implied that the students were outside. Furthermore, another limitation of the study was in the lack of observation, Fjortoft only used motor agility tests to develop the results. The strength of the study is in the relatively homogenous culture of Norway and Norwegian comfort in the outdoors. Perhaps a similar study would yield similar results if the playscapes only differed in size; researchers are not likely to find a kindergarten setting which allows children to play in the forest through the winter snow in the United States. However, many environmentalists lament that children no longer play outside, and suggest that recess may be their last opportunity (Louv, 2006; Nabhan & Trimble, 1995; Moore, 1997). The next study attempts to determine if outdoor play in childhood is a factor in the personality development of an environmentalist.

Vadala, Bixler, and James (2007) interviewed fifty-one young adult naturalists and ten adults as a contrast group, not involved in natural history in order to determine if childhood play experience is a factor in developing environmental conscience that leads to the natural history profession or hobby. Researchers found several types of play during their interview, which their interviewees cited as significantly influential in their decision to pursue their profession.

Vadala et al. (2007) asked directors of conservation organizations and clubs, and research scientists to nominate subjects between the ages of 18 and 35, and select subjects including field naturalists, environmental educators, conservationists, graduate studies, and many more occupations in the environmental sciences and education. Conversely, the contrast group, although nominated by the same group, lacked interest in the area of natural history and environmental science, nor did they have hobbies or

occupations in these fields. In all, the sample consisted of 61 adults, 25 male, 36 female with a mean age of 26 years, 23% of which were ethnic minorities.

Two of the authors conducted interviews in person and over the phone, some taking over an hour and a half to complete. First the interviewers asked the subjects to describe their involvement in environmental activities, second the interviewers asked the subjects to describe how their interest developed from childhood. Vadala, et al. (2007) transcribed the interviews, coded them for themes, recoded them to extract an abstract level in order to identify a global theme.

The coded themes described by Vadala et al. (2007) included social facilitation which recognized parental trust that allowed children to play unsupervised, and included the dynamic of child-child play in nature and child-nature play. They defined the difference as children playing in nature together or children exploring and/or observing nature alone or together. The second theme included play places, specifically wooded or interstitial spaces possibly including small bodies of water such as ponds, creeks and even ditches. The third theme included spatial play, the extent to which parents allowed a child to explore beyond the home as opposed to stationary play confined to a small space. The fourth theme, and possibly the most complex, consisted of play content and described as a form of fantasy play in which children created stories and creative acts or collected species and then related their activities to connections they made from reading literature. The final theme involved intermittent play through chore-like rehabilitation of wild places, gardening, caring for pets, or picking berries. Viewed as chores, the subjects drew on these experiences as important factors that drew them to the environmental occupations they attained as adults.

This final section investigated playground safety and looked at the playscape and environmental factors that may affect student safety and behavior. It also considered how playscapes stimulate learning and provide an environment where students possibly gain literacy skills. Included were two articles about wild spaces. Louv (2006) and Nabhan and Trimble (1994) claimed that children who experience nature have less stress, welcome diversity, and stand to become stewards of the earth.

Chapter three reviewed current research about recess, the amount of time children spend in the break, the amount of activity they participate in, the types of games children play and gender differences, the affects of recess on behavior and classroom attention, a look at bullies on the playground, language and literacy on the playground, and playscapes. Chapter three also considered the possibility that cultural perceptions about play differ to the extent that limits or eliminates recess from the school venue. Chapter four concludes the thesis by summarizing the findings, presenting classroom implications and suggesting implications for further research.

CHAPTER FOUR: CONCLUSION

Introduction

Chapter one described what recess is, when it occurs and its duration. It described the type of play that occurs there, and briefly, examined the concern for the necessity of including recess in the school schedule, and whether public schools are responsible for providing students with time for recreational ludic play. The chapter introduced the question if whether there is a correlation between the reduction of recess and childhood obesity, and if the type of play that occurs at recess cognitively and socially beneficial or is recess wasted non-academic time.

Chapter Two described the history of recess and provided more information about how recreational play evolved over time. It covered a brief history of childhood, and the type of recreational play in focus, its purpose in public schools and the political debate surrounding its removal in several districts across the nation.

Chapter three reviewed current research about recess, the amount of time children spend in the break, as well as the quality of the activity they participate. The chapter featured the types of games children play and gender differences in how they play, the affects of recess on behavior and classroom attention. The research investigated safety factors at recess including a look at bullies on the playground. It considered the potential for learning opportunities such as language, and literacy, on the playground. Finally, the research considered the affects of the playscape on the quality of student activity at recess. Chapter four will summarize the finding from chapter three and address classroom implications as well as implications for further research.

Summary of Findings

Most of the research about recess and play made a case for maintaining recess in the schedule. Researchers allege that a shift to increased academic time is the cause for the reduction or elimination of recess (Ohanian, 2002). The academic movement and stress on accountability that drives the decision to eliminate or reduce recess in the United States has no basis in research. The trend has become more apparent with the ramifications and reactions to the No Child Left Behind act of 2001 (Pellegrini, 2005) and yet the act demands that districts base their academic actions on research. In the United Kingdom, a similar phenomenon exists where Blatchford and Sumpner (1998) blamed poor behavior in schools and the bad reputation of recess in Great Britain for the reduction in time spent at recess there.

While seeking to find if recess is a source of activity worthy to combat obesity, Parsad and Lewis (2006) made an important discovery regarding urban and minority youth. They reported that urban schools, schools in the southeast, schools with the highest poverty concentration, and schools with the highest proportion of minority students most ostensibly did not have recess. Conversely, the researchers reported that schools in rural areas, or suburbs, schools serving middle to upper class populations, and schools serving a lower minority ratio included recess in the daily schedule. Such a finding brings to light the cultural implications of the privilege of play and recess.

Supporting Parsad and Lewis' claim, Franzen and Kamp (2008) described a Midwestern charter school in an urban setting where lack of space compounded by broken equipment implied an environment of neglect. Additionally, their description of a whole class in timeout compounded by limited space on a 1,200 square foot playground

reserved for a reteaching zone revealed an atmosphere of repression. Researchers pointed out that some of the original poor behavior reflected the cultural differences of the families as well as inability to communicate in a common language. Furthermore, the 95% minority rate including immigrants and refugees from African nations in the sample, demands more research into cultural manifestations of play.

In the research featured in chapter three, Fogle and Mendez (2006) found a positive association between play support and parent education, whereas academic focus had a negative association with parent education. They claimed that Caucasian mothers consider play as very important and educative, while Mexican parents see it as unimportant and simply amusing. In their research, they found that African American mothers who favor an emphasis on academic focus did not see play as a priority; however, mothers who supported play saw it as a teaching opportunity. In determining the purpose of recess in schools, future research will need to consider cultural perspectives to define play and determine its importance within the community and its place in the academic schedule. When the research determines that play is a privilege, it may call for the elimination of recess for all schools or perhaps, require a provision for time for play for the same reasons schools provide free and reduced lunch.

Recess is one of three opportunities for students to participate in a significant source of activity during the school day (Beighle, Morgan, Le Masurier and Pangrazi, 2006). Additionally, the research established that recess affects classroom behavior and attention, as well as determined the most effective amount of time for the break (Holmes, Pellegrini, and Schmidt, 2006; Jarrett, Maxwell, Dickerson, Hoge, Davies, and Yetley, 2001). This substantiated Jensen's (2005) claims about movement and the brain when

Jensen advised that there is value in the playground. He pointed out that recess provides students with exercise, which in his words, provides “an effective cognitive strategy” because it improves memory and retrieval and enhances motivation, morale and learning (p.60). Jensen provided physiological evidence of the connection between movement and cognition. He also pointed out that play improves the capacity to handle stress, make decisions, evaluate situations, create social bonds, and experience emotional intelligence. However, another study should look at a novel activity in lieu of a recess to see if recess is the only option as a break.

Most of the research on recess revealed gender differences in how children play and behave on the playground. Gurian (2005) corroborated the gender disparity on the playground when he explained that because girls have higher levels of estrogen and oxytocin, and boys have higher levels of testosterone and vasopressin the former is inclined to verbal activities while the latter is driven to action-response and aggression. Gurian also pointed out that boys were more physically inclined because they have more fluid in their brain stem making them primed to move. The research highlighted Gurian’s point by claiming that boys are more active than girls are (Beighele, A., Morgan, C., Le Masurier, G., & Pangrazi, R., 2006; Blatchford, P., Baines, E., & Pellegrini, A., 2003; Blatchford, P., Pellegrini, A., Baines, E., & Kentaro, K., 2002; Lopes, Vassques, Pereira, Maia, and Malina, 2006; Ridgers, Stratton, Fairclough, and Twisk, 2007). This includes the difference in how boys and girls present aggressive behavior; an important consideration for bully prevention programs (Boulton, 1999; Boulton, 2005; Butcher, 1999; Frisen, 2007; Pellegrini and Bartini, 2000; Pellegrini, 1994).

More research needs to investigate the gender differences among bullying in order to develop effective anti-bully campaigns. The intent of this thesis was not to focus on bullying; however, the playground appears to be the ideal venue for bully behavior (Astor, Meyer, and Pitner, 2001; Limbos and Peek-Asa, 2003). Additionally, research needs to confirm the speculation that play provides children with conflict resolution, negotiation and perspective taking skills (Van Hoorn and Nourot, 1993).

Evident in the case for recess is a fear that children are missing an element of childhood, as children purportedly spend more time indoors and/or alone or increasingly under adult directed activity (Louv, 2005; Fjortoft, 2001). Moore (1974) claimed that asphalt playgrounds contribute to aggressive behavior in children and that children need access to nature. The environment of the playground affects student behavior and the quality of play. What message do we send children when we put them in a 1200 square foot playground with broken equipment? Moore lamented the loss of outdoor unsupervised play, "School yards hold the possibility of becoming one of the last "free zones" in the city, where the anarchy of childhood can be liberated and where young people can escape from the specialized adult-oriented urban scene" (p.644). Nabhan and Trimble (1994) concurred, pointing to the loss of wild spaces as a loss of habitat for learning.

Two studies provided evidence that ludic play provides children with opportunities for learning literacy, Grugeon (2005) and Vadala, Bixler, and James (2007) made claims that connected playing to reading. Teacher candidates in the Grugeon (2005) study reported that the playground is a richly inter-textual and creative site where children play out narratives, exhibit oral and multiple literacies, and where pop culture

has a strong effect on young children. The teacher candidates began to see the role of socio-dramatic play in the development of emergent literacy. Vadala, Bixler, and James (2007) included in their themes of play content a complex form of fantasy play in which children created stories and creative acts or collected species and then related their activities to connections they made from reading literature.

Classroom Implication

Grugeon (2005) reported on the De Montfort University Teacher program where the teacher candidates observed on the playground and drew their own conclusions about childlore and literacy. She talked about the importance of meeting students' knowledge about pop culture, and allowing students ownership of it, instead of introducing it in regular curriculum or diminishing it in the classroom. This study acknowledged the correlation between play and literacy, however, little research exists to establish the correlative effect.

The shortage of information about the connection between childlore on the playground and literacy is disappointing. Fordham & Anderson (1992) pointed out that play correlates to the relationship of risk taking and emergent literacy. It seems axiomatic that childlore and games have a connection to literacy, but recess is antithetical to schooling, as we know it. Van Hoorn and Nourat, (1993) suggested that play lends to literacy as children develop the skill of multiple transformation, or in other words the child pretends that an object is something else (such as a broom is a horse). This leads to symbolic transformation in literacy; multiple transformation equips students for the subtleties of our symbolic system of written language an example of this is the three sounds for the letter C

Teachers have the authority to pair students with more capable play peers on the playground, and perhaps older students can shift a child out of isolation without the teacher visibly stepping in which may be the most effective way to prevent victimization by bullies (Boulton, 1999, 2005; Fujiki, Brinton, Isaacson, and Summers, 2001; Frisen, 2007 Pellegrini, 1994;). For both boys and girls, this would be a step toward the cessation of bullying and perhaps a more effective bully prevention campaign.

Jarrett, Maxwell, Dickerson, Hoge, Davies, and Yetley, (2001) implied that eliminating recess from the school schedule diminished the playskills of the students, as the students stood around when offered recess. If play is correlative to literacy, what have children lost if they cannot develop playskills? Beyond literacy, Paley (2005) made a case for the importance of fantasy play in preschool and kindergarten when she suggested that there would be no need to teach inquiry if we introduced it as children begin to say, "Let's pretend".

Implications for Further Research

Further research needs to determine if students need a play break such as recess or if a novel activity will suffice in benefiting students' classroom attention and social competence. Judging from the research, the individual student determines the amount of physical activity s/he participates in and therefore it is difficult to insist that recess is a significant source of exercise. Piaget (1962) claimed that play is an end in itself and he posed it opposed to work; arguably, exercise is a means to an end. King (1987) found that children categorized work and play as separate activities.

The National Association for Sport and Physical Education (2006) supported claims that recess provides time for students to engage in physical activity. The position

paper pointed to the current matter of adolescent obesity and stated that students participating in regularly scheduled recess can engage in daily physical activity as a solution. However, the paper clarified that recess is not a replacement for physical education, nor is it a reward and therefore should not be withdrawn from students who need additional academic support nor as a means of punishment.

The National Association for Sport and Physical Education (2006) recommends that schools provide students with access to safe spaces, outdoors as weather permits, where students can be physically active, as well as developmentally appropriate equipment, supervision from qualified adults, and instruction in social skills for use during recess. Armitage (2005) suggested, in a review of research that recess is a source of concern for teachers and school staff as recess is an important part of a child's social world and that adults must consider the needs and wishes of children in the creation of playscapes

Much research exists about preschoolers and play, however the human child plays far beyond preschool and hopefully will remain playful throughout life. Vygotsky (1978) explained that play creates the zone of proximal development, because in play, the child always behaves older than his/her age and above his/her normal behavior, play is a major source of development. Continual research corroborates Vygotsky's claim with physiological evidence of play and brain development (ACEI, 2004; Gurian, 2005; Jensen, 2005). Further research should determine the optimal amount of time children should spend in play and find a balance between play and learning. Such research would eliminate the implied privilege of play and determine the responsibility of schools to provide equitable time and space for children to play.

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