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Effects of Recess on Children's Cognitive, Social and Physical Development

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Abstract: *The purpose of this study is to show teachers, principals, and parents the need for recess in elementary schools, to report benefits of recess, to explain effects of recess on children's cognitive, social, and physical development, and to break down misconceptions about recess through a slide show presentation. In this research, an elementary school in Denver, Colorado was chosen as presentation site because of convenience and accessibility. The presentation included information about co arguments of the role of recess in schools, eliminating recess in U.S. schools, the scientific theories of the role and benefit and effects of recess on children's cognitive, social, and physical development. Following presentation, the survey questions were passed out to teachers to get feedback about the presentation overall, and their ideas about recess system. According to survey results, teachers understood the educational and social value of recess and they recognize the effects of recess on children's cognitive, social, and physical development. They also appreciated that children need opportunities to play, to do physical activity, to burn off stored energy, to interact with peers, and to fresh their mind regarding survey results. However, since the principal is the primary decision-maker about the recess system in that school, and since principal and teachers are pushed for more academic time because of standardized test and school accountability teachers would not able to provide frequent recess for the children in this school as indicated in survey and orally told. On the other hand, teachers consider using alternative recess breaks that were proposed in the presentation according to survey results.*

KEYWORDS: recess, cognitive development, school administration

Teneffüsün Çocukların Bilişsel, Sosyal ve Fiziksel Gelişimlerine Etkisi

Özet: *Bu araştırmanın amacı slayt gösterisi sunum yolu ile, okullarda çocukların teneffüse ihtiyacı olduğunu öğretmenlere, okul müdürlerine ve velilere göstermek, tenefüsün çocukların bilişsel, sosyal ve fiziksel gelişimi üzerindeki etkilerini açıklamak, tenefüsün yararlarını rapor etmek, ve teneffüs hakkındaki hakkında yanlış kanıları yıkmaktır. Bu araştırmada, ABD'de Colorado eyaletindeki bir ilkokulu kolaylığı ve erişilebilirliği nedeniyle tanıtım alanı olarak seçildi. Sunum tenefüsün okullardaki rolü üzerine karşıt tartışmaları, Amerikadaki okullarda tenefüsün elimine edilmesi, tenefüsün çocukların bilişsel, sosyal, ve fiziksel gelişimlerine etkilerinin rolü ve yararları hakkındaki bilimsel teorileri içerir. Sunumun ardından, anket soruları tenefüs sistemi hakkında öğretmenlerin fikirlerini ve sunum hakkında görüşlerini almak için öğretmenlere dağıtıldı. Anket sonuçlarına göre, öğretmenler tenefüsün eğitim ve sosyal değerini kavramış ve tenefüsün çocukların bilişsel, sosyal ve fiziksel gelişimi üzerindeki etkilerini tanımıştır. Öğretmenler aynı zamanda çocukların oyun oynamak için, fiziksel aktivitede bulunmak için, depolanan enerji yakmak için ve yaşıtları ile etkileşim içinde olmak için olanaklar verilmesi gerektiğini anket sonuçları ile vurgulamıştır. Ancak, okul müdürleri okuldaki teneffüs sistemi hakkında asıl birincil karar mercii olmasına rağmen okul müdürleri ve öğretmenler standart test ve okul hesapverbilirliği yüzünden daha çok akademik öğretime zaman ayırmaya zorlandığı için öğretmenler okulda öğrenciler için daha sık teneffüs imkanı sağlayamadıklarını sözle belirtmiş ve anket sonuçlarıda bunu göstermiştir. Ayrıca, öğretmenler anket sonuçlarına göre sunumda önerilen alternatif teneffüsleri uygulamayı düşündüklerini anket sonuçları ortaya koymuştur.*

Anahtar Kelimeler: Teneffüs, Çocukların Gelişimi ve Okul Yönetimi

Recess is defined as a "break during the day set aside to allow the children the time for active, free play" (National Association of Early Childhood Specialist in State Departments of Education, 2001, p. 3). It usually takes place outdoors or in adjusted play areas, but during inclement weather, school may choose to have indoor recess in the gymnasium or in the classroom. Schools in the United States and around the globe vary in the number of recess periods provided for children, the length of the periods, and the availability of spaces for recess. For instance, Asian schools and some European schools offer 45-minute class periods separated by at least 10-minute recesses throughout the day. The Asian educational model is built upon the idea that frequent intervals are ideal, therefore classroom teaching time alternates with active outdoor playtime throughout the school day (Gross-Loh, 2007). However, most of the schools and school districts in United States provide one or two recess break either before or after lunch for children. Recently, many school district officials and school principals have cut or eliminated the recess in order to have more instructional time regarding school accountability, to make more time

for standardized tests due to the No Child Left Behind Act of 2001, and because of liability and safety issues on the playground during recess (Chaker, 2006).

The trend toward eliminating recess time in the United States gained momentum in the late 1980s with the support of some professional association, educators, and parents. Jambor and Guddemi (1992) and Pellegrini (1995, as cited in Holmes, Pellegrini, & Schmidt, 2006) have identified several arguments about the preference of American schools to eliminate recess. According to their argument, "children need more instructional time to meet curriculum goals and outcomes (fueled in part by federal mandates such as by No Child Left Behind); bullying and aggressive behavior occur; and it interferes with children's ability to attend to their schoolwork" (Guddemi 1992 and Pellegrini 1995, as quoted in Holmes, et al., p. 736). Their arguments have not gone encountered. Scrupskelis (2000 as cited in NAECS/SDE, 2001) stated that such claims are not based on serious research, and are actually prejudicial to increasing the academic achievement of students. Educational policy regarding school accountability should be based on empirical evidence and theory (Pellegrini, 2005). The authors of several studies have identified the role of recess in school curriculum and the effects of recess on children's cognitive, social, and physical development through the empirical and theoretical data. This researcher also shows the effects of recess on children's cognitive, social, and physical development through empirical and theoretical support from earlier research.

There are many misperceptions about the role of recess in the school curriculum and the effects of recess on children's cognitive, social, and physical development. According to Benjamin Canada, the former superintendent in Atlanta, "reducing recess time has a positive effect on achievement" ("No Time for Play", 2001 as quoted in Pellegrini & Bohn, 2005, p. 14). This claim which represents the widely-held without beliefs of many educators and parents was made without empirical evidence to back it up. In terms of achievement and cognitive performance, eliminating recess breaks may decrease children's attention to classroom tasks and affect their cognitive performance. Thus, cutting recess will negatively affect children's cognitive development and school achievement (Pellegrini & Bohn, 2005). Regarding children's physical development, American Academy of Pediatrics reported that over 15 percent of children in U.S. are overweight or obese, and 80 percent of

obese youth become obese adults (Council on Sport Medicine and Fitness & Council on School Health Pediatrics, 2006). The rate of obesity is increasing among school children because of inactivity and sedentary lifestyles. Since children spend a significant portion of their early lives at school, eliminating recess only serves to increase children's inactivity, and promotes sedentary lifestyle. Similarly, recess affects student's social development. Jarrett (2002) stated that "recess may be the only opportunity for some children to engage in social interactions with other children" (p. 3). During instruction in the classroom, children are allowed very little interaction with their peers. Furthermore, after school they have little peer interaction because of the fact that they spend most of their time on watching TV and playing video games. American Academy of Pediatrics (2006) reported that children are exposure to video games, computer programs as well as specialized books, toys, and after-school enrichment programs. These heavily marketed tools and programs have been considered as a "requirement of good parenting and a necessity for appropriate development" by many parents (p. 184). As a result, much of the free play time is spent on entertaining passively through television games, arranging special activities or transporting children between those activities after school. From this point of view, social isolation is becoming unavoidable for those children due to eliminating recess, diminishing or cutting the free play time out, and restricting opportunities for peer interaction. Correspondingly, children may also become more socially challenged, unmotivated, and uninterested.

There is also another common misconception about recess. Most of the principals and educators think that recess can be substituted with physical education. In contrast, National Association of Early Childhood Specialists in State Departments of Education, (2001, 4) state that "it is inappropriate to substitute recess for physical education or physical education for recess."

Purpose of the study

The purpose of this study is to show teachers, principals, and parents the need for recess in elementary schools, to report benefits of recess, to explain effects of recess on children's cognitive, social, and physical development, and to break down misconceptions about recess. In addition, this study also aims to give teachers practical advice on how to implement recess breaks into curriculum without interrupting instruction.

Literature Review

The Co Arguments of the Role of Recess in Schools

The co argument about the recess was stated by some politicians and superintendents that recess is a waste of instructional time and recess time could be more profitably used for instruction. The superintendent of Atlanta Public Schools claimed that student's achievement scores can be raised by eliminating recess from the whole school system and replacing it with physical education (Pellegrini & Bohn, 2005). Pellegrini (2005) denied his claim due to lack of empirical evidence to support it; furthermore, he asserted that "children's attention to school tasks decreased the longer they were deprived of a break and they were significantly more attentive after a recess than before" (p. 3). Additionally, a position paper by National Association of Early Childhood Specialist in State Departments of Education (2001) declared that substituting recess with physical education is improper because of the fact that physical education is structured physical activity, not the unstructured physical play as recess. Another argument against recess posits that children may get bullied during recess, especially on the playground recess (Pellegrini, 2005). According to Hughes (1991, as cited in Tyler, 2000) that recess is regarded as "most useless of activities and as almost sinful" (p. 23), although most principals agreed that "recess has educational and social values" according to National Association of Elementary School Principal survey in 1991 (p. 23). Many children today are pushed by their parents and teachers for school achievement and high standardized test scores. Elkind (1981; 1987, as cited in Tyler) noticed that young children abandon their childhood and join the world of competition and self-reliance too soon.

Elimination of Recess in US Schools

The trend toward eliminating recess time in the USA gained momentum in the late 1980s with the support of some professional association, educators, and parents. Jambor and Guddemi (1992) and Pellegrini (1995, as quoted in Holmes et al., 2006) have identified several arguments about the preference of American schools to eliminate recess. According to their argument, "children need more instructional time to meet curriculum goals and outcomes (fueled in part by federal mandates

such as by No Child Left Behind); bullying and aggressive behavior occur; and it interferes with children's ability to attend to their schoolwork" (p. 736). Additionally, another argument by National Association of Early Childhood Specialists in State Departments of Education (2001) pointed out that increased school accountability, and student testing procedures have pressured many school principals to eliminate recess. A survey conducted by the National Association of Elementary School Principals in 1989 discovered that "96 % of the surveyed school system had one or two recess periods per day" (Pellegrini 2005 as quoted in Pellegrini & Bohn, 2005, p. 13). Another survey by US Department of Education indicated that 71 % of American kindergarteners have a daily recess period. With regard to duration of recess, 27 % of all kindergarteners received 30 minutes recess, 67 % received 16 to 30 minutes recess, and 6 % received less than 15 minutes recess (Pellegrini, 2005). Another report by US Department of Education state that, "21 % to 30 % of children in grades one to six get 15 minutes or less of recess a day" (Chaker, 2006, ¶ 4) Daily recess is in danger because of a demand to focus on academics or because of insufficient supervisory staff regarding a recent survey by Parent Teacher Association (Chaker). In spite of the elimination of recess throughout US, The National Center for Chronic Disease Prevention and Health Promotion reported that (Simon & Childers, 2006) three states, namely Illinois, Louisiana, and Missouri request elementary schools to provide regularly scheduled recess.

The International Perspectives on Recess

The role of recess in primary schools is approached from different perspectives. Some researchers, educators, and parents support the idea of maintaining and increasing recess periods. On the other hand, another group of educators and administrators support the idea of minimizing recess and extending instruction time in order to achieve higher academic performance (Pellegrini & Bohn, 2005).

Elementary schools around the world have different recess model in terms of the length, the number of class periods, and the nature of activities during recess. According to a survey about recess by Szecsi (2006), in European countries such as Austria, Finland, Germany, Hungary, Lithuania, and Russia elementary school officials propose 45-minute class periods separated by at least 10-minute recess. Furthermore, elementary school administrators in Latin America countries such as, Bolivia, Cuba,

Ecuador, Panama, and Peru offer recess every two hours for children, including two 15-minute breaks and a longer lunch break. Szecsi stated that most recess activities including "talking to friends, walking around, going to the bathroom, playing different games, such as ball games, playing in the fruit orchard behind the school building, swinging, and climbing on playground equipment" occur outdoors (p. 1). Moreover, in Japan and other Asian countries teaching time followed vigorous outdoor playtime at frequent recess breaks throughout the school day (Gross-Loh, 2006). The research evidence from East Asia suggested that "children's attention to class work is maximized when instructional periods are relatively short and followed by breaks" (Stevenson & Lee 1990, as cited in Pellegrini & Bohn, 2005, p. 15). Furthermore, in the United Kingdom, schools have morning, lunch, and afternoon recess for all grades. The duration of the recess periods diminishes with age: "93 minutes for children in infant school (5 to 7 years of age), 83 minutes for children for junior school (7 to 11 years of age), and 77 minutes for secondary school students (11 to 16 years of age)" (Pellegrini & Bohn, 2005, p. 13). Pellegrini & Bohn stated that unlike U.S. school officials, United Kingdom school officials implement the recess or break time uniformly.

According to researchers and educators around the globe, recess is important component of the curriculum in the school system and it has positive effect on academic performance. Gross-Loh (2006) claimed that "if recess cut because of concerns that it impedes academic achievement, the examples of other countries show that this concern is misplaced" (p. 2). Alvarez (2004, as cited in Gross-Loh, 2006) illustrated the Finland literacy and math score from an international survey (2003) as an example of misperception about the effects of recess on children's achievement. The students in Finland had the highest scores in literacy and were in the top five scores in math and science because of or despite 15 minutes break after each 45 minute lesson to run around (Alvarez 2004, as cited in Gross-Loh). The philosophy of their education systems is "children will come to love learning through play" (Alvarez (2004, as quoted in Gross-Loh, p. 2).

The Scientific Theories of the Role and Benefits of Recess

Massed Versus Distributed Practice: Recess provides a break from sustained periods of work. It has been known for many years that when

recess is provided during tasks for children, they learn better and faster (Ebinhagus, 1885/1965; James 1901 as cited in Pellegrini, 2005). When they are given breaks during tasks, or when they are given distributed practice children's attention increased in their classroom tasks, and thus their learning is maximized. According to James (1901 as quoted in Holmes, et al., 2006) "learning is maximized when efforts on a task are distributed across time" (p. 736). Distributed practice has positive effect on children's learning and attention. Specifically, children learn different tasks such as native and foreign language vocabulary, recall from text, and math facts through distributed efforts (Dempster, 1988 as cited in Pellegrini, 2005). In addition, Dempster (1988) and Eder & Felmlee, (1984 as quoted in Pellegrini 2005) stated that "spacing of tasks may make them less boring and correspondingly facilitate attention" (p. 17). Paying attention and focusing on subject are important to subsequent learning.

Deferred Benefits of Recess on Children's Development

Researchers have designated one of the characteristics of children's recess behavior, play, as serving deferred, rather than immediate benefits. Children spend most of their free time in play. (Smith & Dodsworth, 1978, as cited in Pellegrini 2005). Play is considered as the way to learn the skills necessary in adulthood. Pellegrini gives the example that "a girl's play with dolls may help prepare her for the role of mother" (p. 18). Similarly, Kaudson (1997 as cited in McClure & Kinnison, 1999) stated that "play is a way of learning by trial and error to cope with actual world" (p. 13). Pellegrini (2005) assumed that recess period have beneficial effects on children through vigorous social play. When they play, children spend their stored energy during outdoor recess. Consequently, children's recess behavior would expect to be correlated to subsequent cardiovascular fitness and social competence (NAECS/SDE, 2001). Furthermore, the playful aspects of recess including social interaction, problem solving, creativity, spontaneity, and choice; these activities provide rich contexts in which to foster children's development (Kieff, 2001). Play provides children opportunities to learn, consolidate, and practice for further growth and learning (Bateson, 1976; Piaget, 1962; Vyogotsky 1978 all cited in Kieff, 2001).

Benefits of Recess

Effects of Recess on Children's Cognitive Development: The most important characteristic of recess is to provide a break from the day's routine. Breaks are considered essential for both alertness and satisfaction. Research on memory and attention by Toppino, Kasserman & Mracek et al. (1991, as cited in Jarett, 2002) found that recall is improved when learning is distributed rather than introduced all at once. These findings are consistent with three important facts about brain functioning: "attention requires novelty; the brain needs downtime to recycle chemicals crucial for long-term memory formation, and attention involves 90- to 110-minute cyclical patterns throughout the day" (Jensen 1998, as quoted in Jarett 2002, p. 2).

The other important characteristic of recess is that it provides opportunities for children to play in an active way. National Association of Early Childhood Specialists in State Departments of Education (2001) indicated that recent research substantiated links between play which recess provides for children, and cognitive gains. Children develop intellectual constructs and cognitive understanding through play opportunities that provide hands on, manipulative, and exploratory behavior. Moreover, they learn and develop their skills through play contexts that provide appropriate scaffolding for their skills. Guddemi et al. stated that "children can remember more, focus better, and regulate their own behavior better in play than in any other context" (1999, as quoted NAECS/SDE, 2001, p. 6). Physical activity is also another feature of recess. Physical activity provides better supply of blood and a healthier supply of natural substances for brain cells to help brain make a larger number of connections between neurons (Healy, 1998 as cited in NAECS/SDE, 2001). Through connections the brain is able to process a variety of information; thus, this helps to improve retention of facts, to advance understanding of concepts, and to accommodate higher achievement (NAECS/SDE). Bjorklund & Green (1992) and Bjorklund (1997), theory of "cognitive immaturity" states that primary school children especially, preschool children might benefit from recess regimens (as quoted in Holmes et al., 2006, p. 737). According to their theory, young children are unable to process information and perform high level of cognitive tasks as efficiently as older children because of immature nervous system performance and lack of experience. In order to increase their cognitive

performance and decrease cognitive interference, they should experience a break between focused intellectual activities (Bjorklund & Green, 1992; Bjorklund, 1997 as cited in Holmes et al.).

The cognitive immaturity theory also helps to explain "gender differences in classroom attention and recess behavior" (Holmes et al, 2006, p. 737). Numerous field experiences with primary school children showed that boys, as compared to girls, are less attentive in class and more active on the playgrounds and in the classroom (Eaton & Enns, 1986; Pellegrini & Horvat, 1995 all cited in Holmes et al.). In addition, "the surplus and novelty theory" by Jambor (1994 as quoted in NAECS/SDE, 2001), explains why physical activity increases children's attentiveness and decreases restlessness (p. 5). According to surplus energy theory, through recess children release their excess energy that has been accumulated while they have been sitting in the classroom. On the other hand, the novelty theory by Jambor (1994 as quoted in NAECS/SDE, 2001) is based on the claim that "on-task attention can be increased by providing opportunities for diversion from boredom" (p. 6). Correspondingly, Healy (1998 as cited NAECS/SDE) pointed out that if students are given opportunities at least to move around and to be active, they will be more attentive, and they will be better able to concentrate on tasks, leading to increased efficiency.

Effects of Recess on Children's Social Development

Recess is a period of time school day that gives children opportunities to interact with peers. During instruction time or classroom time, children are allowed to have a little peer interaction. After school, children spend most of their time playing computer games or watching TV (Jarrett, 2002). According to Gross-Loh (2007), because of exaggerated societal fears about safety, parents seldom allow their children to play freely in the neighborhood by their parents. Consequently, children are given less time for the free exploratory play and socialization that contributes to social development. In terms of importance of recess and play on children's social development, NAECS/SDE (2001) reported that during recess children learn, interpret, and practice a wide range of social competencies such as "cooperation, sharing, language, conflict resolution" (p. 5). Children also "develop respect for rules, gain self discipline, and construct an appreciation for other people's cultures and beliefs through

active, free play and peer interaction" (NAECS/SDE, p. 5). During recess play, children learn how to appropriately express themselves to others, they discover their own-abilities, and they learn about perseverance, self-direction, and self-acceptance. Furthermore, children are able to meet with other students in the school throughout the recess to develop friendship with peers. If children are not given opportunities to experience social interactions with peers and develop friendships with them, they may not learn how to develop and maintain such relationships later in life. A sense of social and emotional competence can be developed through positive and social relationship with peers (NAECS/SDE).

Furthermore, recess serves as an outlet to decrease anxiety, to manage stress, and to gain self-control (NAECS/SDE, 2001). The Council on Physical Education for Children (2001) support this theory with the statement that recess provides a developmentally proper strategy to reduce stress. National Association for the Education of Young Children (1997, as cited in NAECS/SDE) reinforced this theory by stating that "unstructured physical play is a developmentally appropriate outlet for reducing stress in children's lives" (p. 14). When children are involved in a social play with their peers, they are often acting out roles and behavior that are not accessible in real life (Fein, 1979; Vygotsky 1967 as cited in Pellegrini & Bohn, 2005). For instance, when boys are involved in forms of play fighting, they take turns being superhero through "self-handicapping" and "reciprocal role taking" (Pellegrini & Bohn, p. 14). Children's social skills are improved through the frequency with which they enact different and varied social roles (Pellegrini & Smith, 1998, as cited in Pellegrini & Bohn). Coie and Dodge (1998, as cited in Pellegrini & Bohn, 2005) claimed that recess periods are especially important to primary school children since they support social exchanges between peers and children's cognitive performance and school adjustment. Successful peer relationships are associated with school success, and with cognitive performance. Indeed, Piaget (1983 as quoted in Pellegrini & Bohn) pointed out that "the social cognitive demands associated with peer interactions, such as perspective taking and using language, relate to more cognitive performance" (p. 14). Close peer relationships also provide social-emotional support for young children to adjust to the stress of early schooling (Boyle, Marshall, & Robeson 2003; Ladd, Kochenderfer, & Coleman 1996; all cited in Pellegrini & Bohn).

Effects of Recess on Children's Physical Development

Physical movement is crucial for healthy growth and development. According to the 1999-2000 National Health and Nutrition Examination Survey, the rate of obesity and overweight among children is over 15 % and has tripled since 1960 (Council on Sports Medicine and Fitness, & Council on School Health Pediatrics, 2006). Approximately 80% of obese youth carry this trend into adulthood (CSMF & CSHP). Lifelong obesity is highly correlated with "insulin resistance, type 2 diabetes mellitus, hypertension, obstructive sleep apnea, nonalcoholic steatohepatitis, poor self-esteem, and a lower health related quality of life" (CSMF & CSHP, 2006, p. 1834). Although nutritional factors such as poor eating habits and excessive consumption of fast foods contribute to obesity, this study concentrate on factors associated with "decreased energy expenditure, namely excessive sedentary behaviors and lack of adequate physical activity" (CSMF & CSHP, p. 1835). Besides physical education classes, the "PLAY (Promoting Lifestyle Activity for Youth) program" (CSMF & CSHP, 2006) including 30 to 60 minutes of moderate physical activity beyond the school time are suggested to children to increase physical activity levels in children and youth (p. 1837). Kraft (1989 as cited in Jarrett, 2002) reported that elementary school children engage in physical activity during 59 % of recess time. Indeed, they engaged in physical activity during recess more vigorously than physical education classes. Pellegrini and Smith (1998, as cited in Jarret) demonstrated the similar pattern in their recent research as well.

Children discover their capabilities or skills learn about their bodies and gain the control of their muscles through active play. Apparently, they are able to practice physical skills such as "running, climbing, jumping, chasing, traveling, batting, kicking, catching, balancing, hanging, swinging, stretching, pushing, and pulling" with the opportunity of recess throughout the school day (NAECS/SDE, 2001, p. 6). The benefits of recess regarding physical benefits are evident on children with Attention Deficit Hyperactivity Disorder (ADHD). More boys tend to have ADHD than girls. Pellegrini and Holmes (2006 as cited in Gross-Loh, 2007) claimed that"recess breaks are especially effective in maximizing boy's attention" (p. 3). More breaks minimize fidgeting and maximizes attention. Similarly, Pellegrini and Bohn (2005) declared that some of the boys may not be diagnosed with ADHD if less structured regimens are provided for them.

Method

In this study, an elementary school in Denver, Colorado was chosen as presentation site because of convenience and accessibility. The permission slip was mailed to the principal in order to get approval and to schedule time and place for the presentation. Two early childhood education, two kindergartens, three first grade, three second grade, two third grades, two fourth grades, two fifth grades, one physical education teacher, and one art teacher would be expected to participate in presentation. Before presentation, the pamphlet which includes summary of presentation, and suggestions for alternative recess breaks and was passed out to teachers. The presentation was a slide show by power-point program. At the beginning of presentation the purpose of this project was explained. Then, the co arguments of the role of recess in schools, the scientific of the role and benefits of recess, and the international perspective of recess were reviewed. The benefits and effects of recess on children's cognitive, social, and physical development were explained as well. The presentation ended with the statements of the suggestion on alternative recess breaks. Following presentation, the survey questions were passed out to teachers to get feedback about the presentation overall, and their ideas about recess system. Peer assessment of this project was done through the review of two colleagues. Each colleague received a copy of power-point presentation and pamphlet in order to review in terms of usability and relevance of the project. Additionally, these colleagues provided feedback and recommendation on the presentation.

Results

Power-point slide presentation was displayed by the researcher to the teachers. Twenty-one teachers participated in both presentation and survey. The content of the presentation consisted of elimination of recess in U.S. schools, the international perspective over recess, effects of recess on children's cognitive development, effects of recess on children's social development, effects of recess on children's physical development, and alternative recess breaks. In the first slide, the elimination of recess in US schools was presented with the following statement: The trend toward eliminated recess time in the USA gained in the late 1980's because of school accountability and student testing procedures, playground accidents,

liability and safety issues, curriculum goals and outcomes by No Child Left Behind Act of 2001. In the second slide, the international perspective over recess was mentioned. The recess system in U.S. schools, European countries such as Austria, Finland, Germany, Hungary, Lithuania, and Russia, Japan and United Kingdom were presented. The characteristics of recess such as a providing a break, play opportunities and physical activity for children and effects of recess on children's cognitive development were mentioned in the third slide. The scientific theories about the recess effects on children's cognitive development were covered in the following slide. Effects of recess on children's social development and physical development were described in the fifth slide. Alternative recess breaks were presented to teachers shortly.

Surveys were passed out to teachers to fill in following presentation. Twelve females and 9 male teachers participated in a survey. The results of the survey based on Ashley elementary school teachers were as followed: Question: How long have you been teaching? Eight teachers have been teaching for the range from 1 to 5 years. 7 teachers have been teaching for the range from 5 to 10 years. Four teachers have been teaching for for the range from fifteen to twenty years. One teacher has been teaching for the range from ten to fifteen years. One teacher has been teaching twenty to twenty five years. Question: How often you had recess when you were at elementary school? Answer: Four teachers answered 1-3 per week, 6 teachers answered 3-6 per week, 6 teachers answered 6-9 per week, and 5 teachers answered 9-12 per week. Question: How long did these recess periods last (on average)? Answer: Four teachers answered 10-15 minutes, 9 teachers answered 15-20 minutes, 7 teachers answered 20-25 minutes, and 1 teacher answered more than 25 minutes. Question: How often should children have recess in average school week? Answer: One teacher answered 1-3 per week, 1 teacher left it blank, 2 teachers answered 3-6 per week, eight teachers answered 6-9 per week, 9 teachers answered 9-12 per week. Ouestion: According to Pellegrini (2005), children are more attentive after recess than before. (In terms of your experience and observation of children throughout the school day), do you agree, strongly agree, disagree, or strongly disagree? Twelve teachers agreed, 7 teachers strongly agreed, and 2 teachers disagreed with the statement. Question: According to National Association of Early Childhood Specialists in State Departments (2001), children establish intellectual construct and cognitive understanding through play episodes and play opportunities that recess

provides for them. Do you agree, strongly agree, disagree, or strongly disagree? Answer: Fifteen teachers agreed, 5 teachers strongly agreed, and 1 teacher disagreed. Question: Some research suggests that children should experience recess in order to increase their cognitive performance and maximize learning. Do you agree, strongly agree, disagree, and strongly disagree? Answer: Nine teachers agreed, 11 teachers strongly agreed, and 1 teacher disagreed with the statement by researchers. Question: National Association of Early Childhood Specialists in State Departments (2001) stated that during recess children learn, interpret, and practice a wide range of social competencies such as "cooperation, sharing, language, conflict resolution". Do you agree, strongly agree, disagree, or strongly disagree? Answer: Nine teachers agreed, 11 teachers strongly agreed, and 1 teacher disagreed with the statement by National Association of Early Childhood Specialists in State Departments. Question 9: National Association of Early Childhood Specialists in State Departments (2001) claimed that it is inappropriate to substitute recess with physical education classes, since physical education classes are structured while recess is unstructured and free play time for children. Do you agree, strongly agree, disagree, or strongly disagree? Answer: 13 teachers agreed, 6 teachers strongly agreed, and 2 teachers disagreed. Question: Other research suggests that recess is important to prevent obesity and sedentary lifestyle for young children. Do you agree? Answer: All the teachers who participate in survey agreed with this claim. Question: Would you consider any of alternative recess breaks to use for your classroom throughout the school day? Answer: 21 teachers answered yes.

Although most of the teachers found the presentation informative, some of the teachers had different thoughts on it. Question: How did you find the presentation overall? The answers for the open-ended question in the survey were as followed: (a) Informative. (b) Very helpful and good information. (c) We should have more recess. I am also going to try some of the recess games. (d) The presentation was informative. I agree with the findings about recess. (e) Interesting. (f) Well structured, well organized & delivered effectively! (g) Very organized & straight forward lots of information, facts given in a quick timely manner. (h) Fine. (i) Recess is very important for all kids for all the reasons presented. I think the students need time to settle down after recess. Well done. (j) Very informative. I was glad to finally see some research on this topic. I totally agree/support more unstructured play. I think this unstructured play actually benefit student

learning in the classroom. (k) Excellent, very informative. Teachers have known this for years! Unfortunately due to pressure to do well in state test, recess has fallen to the way side. (l) Quick, concise, extra handouts were very helpful. (m) There were some good points offered on the social development of children. (n) Informative. (o) Good. I agree totally that US children need more free play time. (p) Very well prepared and presented. (r) very informational. After survey, the booklet of selected games for ece, kindergarten, 1st, 2nd, 3rd, 4th, and 5th grade were passed out to teachers.

Discussion

This study provided beneficial information about the benefits and effects of recess on children's development to teachers at the elementary school through the presentation, pamphlets, and selected game booklet. Pamphlets provided a good source on the role, benefit, and effects of recess on children's development, and selected game booklets supplied alternative recess break plans for teachers. A brief presentation helped teachers to understand the effects of recess on children's development. This researcher was able to show teachers the need for recess in elementary schools, to report benefits of recess, to explain effects of recess on children's cognitive, social, and physical development, and to give practical advices on how to implement recess breaks into curriculum without interrupting instruction by power-point slide show. This researcher was also able to obtain data about the role and effects of recess on children's cognitive, social, and physical development from teachers through survey. According to survey results, 57 % of the respondents agreed, 33 % of the respondents strongly agreed, and only 10 % of respondents disagreed with the statement by Pellegrini that "children are more attentive after recess than before" (2005, p. 3). Seventy-one percent of respondents agreed, 21 % of respondents strongly agreed, and 8 % of respondents disagreed with the statement that children establish intellectual construct and cognitive understanding through play episodes and play opportunities that recess provides for them (NAECS, 2001). 43 % of teachers agreed, 52 % of teachers strongly agreed, and merely % 5 of teachers disagreed that children should experience recess in order to increase their cognitive and maximize learning regarding survey results.

In addition, although % 100 agreement was expected on improvement of social skills with recess, 52 % of teachers agreed, 43

% of teachers strongly agreed, and 5 % of the teachers disagreed with the statement that during recess children learn, interpret, and practice a wide range of social competencies such as "cooperation, sharing, language, conflict resolution" (NAECS/SD, 2001, p. 5). Over 60 % of the respondents agreed, and 29 % of the respondents strongly agreed, 9 % of respondents disagreed with the declaration that it is inappropriate to substitute recess with physical education classes, since physical education classes are structured while recess is unstructured free play time. 100 % of agreement was obtained on the acknowledgment that recess is important to prevent obesity and sedentary lifestyle for young children. Similarly, 100 % of agreement was acquired on using alternative breaks, which were proposed in the presentation, by teachers. The results of this research project did coincide with the researcher's purpose.

Results from this study shows that professional educators understood that children need recess and they benefit from recess. They also advocated that recess has positive effects on children's cognitive, social, and physical development. However, they also felt pressure to cut or eliminate the recess because of district policy, school accountability, and standardized test as being told orally and reported in the survey. The data from survey reveals that teachers believed that there is significant value of recess for children, and the positive effects of recess on children's cognitive, social, and physical development. Moreover, teachers recognized the value of alternative recess breaks and consider to use for children throughout the school day as far as survey results is concerned. In conclusion, the findings of this research highlighted the importance of recess for children's attention, motivation, and engagement of school work in terms of their cognitive development. The findings also illustrated that recess is great opportunity for children to play with their peers, to have peer relationship, and to practice social competencies. The results pointed out that recess provides opportunities for children to engage in physical activities, and to adopt healthy and active lifestyle.

Appendix:

EFFECTS OF RECESS ON CHILDREN'S COGNITIVE, SOCIAL, AND PHYSICAL DEVELOPMENT

Prepared by

Aysun Santistevan

I MISS RECESS!

EFFECTS OF RECESS ON CHILDREN'S COGNITIVE DEVELOPMENT

- The most important characteristics of recess is to provide a break, play opportunities, and physical activity for children.
- Breaks are considered essential for both children alertness and satisfaction.
- Children establish intellectual construct and cognitive understanding through play episodes and play opportunities.
- Children can remember more, focus better, and regulate their own behavior better in play than in any other context.
- Physical activity provides better supply of blood for brain cells to make connection between neurons.
- Through connections the brain are able to process a variety of information, and thus, it helps to improve retention of facts, to advance understanding of concepts, and to accommodate higher achievement (NAECS/SDE).
- Young children are unable to process information and perform high level of cognitive task as efficient as older children because of immature nervous system performance and lack of experience.
- In order to increase their cognitive performance and decrease cognitive interference, they should experience the break between focused intellectual activities.
- Recess maximizes learning and cognitive performance.
- Recess increases children's attentiveness throughout the school day.

EFFECTS OF RECESS ON CHILDREN'S SOCIAL DEVELOPMENT

- Recess is a period of time during school day that gives children opportunities to interact with peers.
- Recess might be the only opportunity for some children to interact with their peers and engage in free play because of recess elimination at school, exposure to computer games and TV at home.
- During recess children learn, interpret, and practice a wide range of social competencies such as "cooperation, sharing, language, conflict resolution" (NAECS/SDE, 2001).
- Children also "develop respect for rules, gain self discipline, and construct an appreciation for other people's cultures and beliefs through active, free play and peer interaction" (NAECS/SDE, 2001).
- During recess play, children learn expressing themselves to others, learn discovering their own-abilities, and learn about perseverance, self-direction, and self-acceptance.
- Recess serves as an outlet to decrease anxiety, to manage stress, and to gain self control (NAECS/SDE, 2001).
- Recess periods are especially important to primary school children since it supports social exchange between peers, and children's cognitive performance and school adjustment.

EFFECTS OF RECESS ON CHILDREN'S PHYSICAL DEVELOPMENT

- Recess provides opportunity with physical activity for children.
- Physical movement is crucial for healthy growth and development.
- Recess is considered as a precaution to prevent risk factors such as "insulin resistance, type 2 diabetes mellitus, hypertension, obstructive sleep apnea, nonalcoholic steatohepatitis, poor self-esteem, and a lower health related quality of life" for the obese youth.
- It is reported that children are engaged in physical activity during recess more vigorously than physical education classes.
- Children discover their capabilities or skills, learn about their bodies and gain the control of their muscles through active play.
- Children are able to practice physical skills such as "running, climbing, jumping, chasing, traveling, batting, kicking, catching, balancing, hanging, swinging, stretching, pushing, and pulling" with the opportunity of recess throughout the school day. (NAECS/SDE, 2001).
- Children release their excess energy that has been accumulated over time, while they have been sitting in the classroom.
- The benefits of recess regarding physical benefits are evident on children with Attention Deficit Hyperactivity Disorder (ADHD).

ALTERNATIVE RECESS BREAKS

- Have children listen to classical music.
- Take children out for five or ten minutes free play.
- Have children do some stretching, toe touch game between transition.
- Have children play Simon says.
- Have children play drama.
- Have children play math games.
- *Selected Recess Games for ECE & Kindergarten (Clements, 2000)*

  Freeze Tag, Hide and Seek, Duck, Duck Goose, Roly Poly Dodge ball, Chalk Art Games.
- *Selected Recess Games for Grades 1 & 2*

  Marbles, Leap Frog, King of the Mountain, Sack Race,Stoop Tag, Hot Potato, London Bridge, Tops, Streets and Alleys, Steal the Bacon, Jump Rope (Long Rope).
- *Selected Recess Games for Grades 3 & 4*

  Simon Says, Red Light, Green Light, Jump the Shot, Spud, Statues, Red Rover, Jacks, Hopscotch, Jump Rope (Single).
- *Selected Recess Games for Grades 5 & 6*

  Keep away, Four Square, Running Bases, Wheelbarrow Race, Kickball, Tetherball, Ankle Jump Rope.

Presentation Citations:

- American Academy of Pediatrics (2006). Ginsburg, K., R., MD, MSEd, Committee on Communications, & Committee on Psychosocial Aspects of Child and Family Health (2006). *The importance of play in promoting healthy child development and maintaining strong parent-child bonds.* Retrieved on December 14, 2007 from http://www.aap.org/pressroom/playFINAL.pdf
- Council on Sport Medicine and Fitness & Council on School Health Pediatrics (2006). Active healthy living: Prevention of childhood obesity through increased physical activity. Retrieved December 15, 2007 http://www.pediatrics.org/cgi/content/full/117/5/1834
- Clements, R. L., (2000). *Elementary school recess: Selected readings, games, and activities.* American Press.
- Holmes, R. M., Pellegrini A. D., & Schmidt, S. L. (2006). The effects of different recess timing regimens on preschoolers' classroom attention. *Early Child Development and Care*, *176*(7), 735-743.
- National Association of Early Childhood Specialists in State Departments of Education. (2001). *Recess and the importance of play: A position statement on young children and recess.* Retrieved on December 14, 2007 from ERIC, ED 463 047.

SURVEY

Purpose: The purpose of this survey to obtain data about the benefits and effects of recess on children's cognitive, social, and physical development.

Gender: F M
Grade you teach: ECE KINDERGARTEN
1st 2nd 3rd 4th 5th

1) How long have you been teaching?
☐ 01-5 year ☐ 05-10 year ☐ 010-15 year ☐ 015-20 year ☐ 020-25 year

2) How often you had recess when you were at elementary school?
a. Once a day
b. Twice a day
c. Three times a day
d. Four time a day
e. None

3) How often should children have recess throughout the school day?
a. Once a day
b. Twice a day
c. Three times a day
d. Four time a day
e. None

4) According to Pellegrini (2005), children are more attentive after recess than before. (In terms of your experience and observation of children throughout the school day)
☐ Agree ☐ Strongly Agree
☐ Disagree ☐ Strongly Disagree

5) According to National Association of Early Childhood Specialists in State Departments (2001) children establish intellectual construct and cognitive understanding through play episodes and play opportunities that recess provides for them.
☐ Agree ☐ Strongly Agree
☐ Disagree ☐ Strongly Disagree

6) Children should experience recess in order to increase their cognitive performance and maximize learning.

☐ Agree ☐ Strongly Agree
☐ Disagree ☐ Strongly Disagree

7) During recess children learn, interpret, and practice a wide range of social competencies such as “cooperation, sharing, language, conflict resolution”.

☐ Agree ☐ Strongly Agree
☐ Disagree ☐ Strongly Disagree

8) National Association of Early Childhood Specialists in State Departments (2001) claimed that it is inappropriate to substitute recess with physical education classes, since physical education classes is structured. Recess is unstructured and free play time for children.

☐ Agree ☐ Strongly Agree
☐ Disagree ☐ Strongly Disagree

9) Do you consider recess is important to prevent obesity and sedentary lifestyle for young children?

☐ Yes ☐ No ☐ Non-applicable

10) Would you consider any of alternative recess breaks in presentation for your classroom throughout the school day?

☐ Yes ☐ No ☐ Non-applicable

11) How did you find the presentation overall?

References

American Academy of Pediatrics (2006). Ginsburg, K., R., MD, MSEd, Committee on Communications, & Committee on Psychosocial Aspects of Child and Family Health (2006). *The importance of play in promoting healthy child development and maintaining strong parent-child bonds.* Retrieved on December 14, 2007 from http://www.aap.org/pressroom/playFINAL.pdf

Chaker, A. M (2006). Rethinking Recess. *The Wall Street Journal.* Retrieved January 10, 2008 from
http://online.wsj.com/public/article/SB116044203663787613-0lbK_m4N_z1bnVz3sbqQZ61YwDE_20071010.html

Council on Physical Education for Children. (2001). Recess in elementary schools. A position paper from National Association for Sport and Physical Education. Retrieved December 12, 2007 from http://eric.ed.uiuc.edu/naecs/position/recessplay/html

Council on Sport Medicine and Fitness & Council on School Health Pediatrics (2006). Active healthy living: Prevention of childhood obesity through increased physical activity. Retrieved December 15, 2007
http://www.pediatrics.org/cgi/content/full/117/5/1834

Clements, R. L. (2000). Elementary school recess: Selected readings, games activities for teachers and parents. United States : American Press.

Gross-Loh, C. (2007, March 1*). Give me that old-time recess: Research shows that unstructured play during the school day is essential for kids' cognitive and social development*. Retrieved December 7, 2007, from
http://www.encylopedia.com/printable.aspx?id=1G1:161022742

Holmes, R. M., Pellegrini A. D., & Schmidt, S. L. (2006). The effects of different recess timing regimens on preschoolers' classroom attention. *Early Child Development and Care*, *176* (7), 735-743.

Jarett, Olga S. (2002). Recess in elementary school: What does the research say? ERIC Digest. Retrieved December 12, 2007 from
http://www.ericdigets.org/2003-2/recess.html

Kieff, J. (2001). *The silencing of recess bells*. (Annual Theme 2001). New Orleans, LA: Early Childhood Education, University of New Orleans.

McClure, C. & Kinnison, L. (1999). *Recess in elementary schools: Implications for children who have disabilities*.(Information Analyses 070). Denton, TX: College of Education and Human Ecology Special Education, Texas Women University. (ERIC Document Reproduction Service No. EC307053)

National Association of Early Childhood Specialists in State Departments of Education. (2001). *Recess and the importance of play: A position statement on young children and recess*. Retrieved on December 14, 2007 from ERIC, ED 463 047.

Pellegrini, A. D., & Bohn C. M. (2004). The role of recess in children's cognitive performance and school adjustment, *Educational Researcher*, *34* (1), 13-19.

Pellegrini, A. D. (2005). *Recess: Its role in education and development*. (Eds. Zelazo, P. D., Baldwin, D., Bjorklund, D. F., Loache, J. L., Liben, L., & Munakata, Y.)

New Jersey: Lawrence Erlbaum Association.

Szecsi, T. (2006). *To have or not to have: Recess from an international perspective.* Retrieved December 18, 2007 from http://findarticles.com/p/articles/mi_qa3614/is_200607/ai_n17174717/print

Simon, J. B., & Childers, H. (2006). Principals' perceptions of school recess: Sources of information, benefits, and drawbacks, *Research in the School 13* (2), 37-46.

Tyler, V. (2000). Why recess?. *Dimension of Early Childhood, 28* (4), 21-23.