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Effects of recess types on classroom attentiveness

Prentice, David G., Ph.D.

The University of Nebraska - Lincoln, 1994

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PREVIEW

Effects of Recess Types on Classroom Attentiveness

by

David G. Prentice

A Dissertation

Presented to the Faculty of

The Graduate College at the University of Nebraska

In Partial Fulfillment of Requirements

for the Degree of Doctor of Philosophy

**Interdepartmental Area of
Major: Psychological and Cultural Studies**

Under the Supervision of Professor Robert D. Brown

Lincoln, Nebraska

August, 1994

DISSERTATION TITLE

Effects of Recess Types on Classroom Attentiveness

BY

David G. Prentice

SUPERVISORY COMMITTEE:

APPROVED

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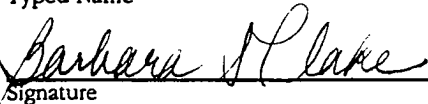


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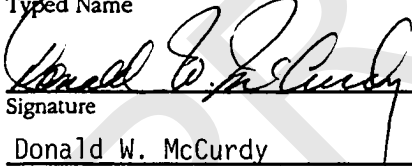


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Effects of Recess Types on Classroom Attention

David G. Prentice, Ph.D.

University of Nebraska, 1994

Adviser: Robert D. Brown

The effect of various recess configurations (location and duration) and gender on subsequent post-recess classroom attentiveness was examined from the perspective of novelty and deprivation theories, on 79 first grade elementary school children. A four factor repeated measures MANOVA conducted on the data revealed the presence of a significant four-way interaction. Neither novelty nor deprivation theory was supported as a viable explanation for the findings. Results varied as a function of gender, location, duration and the time frame at which the attentiveness measure was taken. Previous research reflecting simple gender differences in attentiveness was not supported by the current findings with location, duration, and time included as independent variables. Post-hoc analysis revealed that previous researchers averaging attentiveness scores over time, lost valuable information which restricted the interpretation of their findings. Implications for the educational practitioner is for the use of caution in assuming longer (15 minutes) outdoor recess for males or females facilitates post-recess attentiveness to task. Other common recess practices are questioned. Future research directions need to avoid a piece meal curiosity approach and aim for a systematic examination to avoid creating a new recess *folklore*.

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CHAPTER I

INTRODUCTION

Annually, from September to June, millions of young people move from home to school. They will spend over ten thousand hours in this setting (Bloom, 1976), from childhood to young adulthood. Despite the universality of this experience, relatively little is known about the nonacademic aspects of student life (Doyle, 1982). Particularly unexamined are the personal and social activities which occur at school, and how these activities affect the development of the student and classroom learning (Mehan, 1980). Recess is one of these activities.

In most, if not all elementary schools in America, recess is an integral part of the school day. As much as 15% of an elementary school student's school day is spent engaging in recess. There is little research examining recess and its effects. Considering that elementary students spend nearly 36 weeks or 179 days of their first 6 years of public school in recess, it is important to investigate its effects on children and its contribution to the educational mission of the school setting.

Although there are innumerable studies on children's play, there are few that could be reasonably generalized to apply to the public elementary school setting. It appears the practice called recess has been guided by a folklore about what adults perceive children want or need, and may be based on what adults might require (i.e., a break from the students). Theories on the importance and necessity of play are numerous, but again relatively few relate to the value of play in the recess setting, and the relationship of recess play to school attentiveness or performance (Pellegrini & Smith, 1993).

This study examined the effects of recess on school attentiveness. The length and type of recess, and gender were examined to determine the effects of these variables on student classroom attentiveness.

Theoretical Framework

Recess and the possible effects of recess on children can be viewed from two theoretical perspectives: novelty and deprivation theories. Novelty theory is an outgrowth of early work by Hebb (1949) on sensory restriction, Mackworth (1948) on vigilance, and Berlyne (1960) on arousal and the properties of stimuli. Proponents of novelty theory (Ellis, 1984; Fein, 1981) state attending behavior is affected by the degree of novelty inherent in the activity. On the other hand, proponents of play deprivation theory (Burghart, 1984, 1988) argue sedentary behavior deprives a child of vigorous physical play which until satiated prevents the child from attending to sedentary tasks.

Novelty Theory

Application of novelty theory to children in a school setting suggests children's attentiveness to school work decreases over time as novelty decreases and recess, as a function of its novelty in contrast to school work, results in increased attentiveness upon a return to the classroom. The effects of recess may have an optimal range as children habituate to recess (i.e., it loses its novelty) and school work again becomes novel in contrast. The length of time of recess may also be significant. There may be a maximally effective amount of time, beyond which further recess has no discernable effects. Perhaps the length of recess should be determined by the point novelty wears off due to redundancy. This, in effect, might maximize available classroom time.

Deprivation Theory

A competing theoretical explanation is deprivation theory. Burghardt (1984, 1988) postulates that confinement to sedentary activities results in increased levels of stimulus seeking, such as physical activity. Thus, recess allows this rebound effect to occur. Children can engage in large muscle activity during recess, an activity that is denied them in the classroom. Having had the opportunity to engage in the deprived activity, the children can then return to the classroom ready to engage in formal learning activities of a sedentary nature.

The difference between these two theoretical perspectives, is that novelty theory suggests that an organism attends due to the newness of the situation; whereas play deprivation theory suggests an organism ceases to attend due to deprivation of a physical activity. Once satiated, the organism is in a state of attentiveness. These theories are the basis for the present research.

Two variables are hypothesized to be related to the effects of recess: gender and time. It is well established in the research literature that young males are more physically active than young females (Eaton & Enns, 1986; Maccoby & Jacklin, 1974), and active playground behavior is observed to decrease markedly over the duration of recess for both females and males (Pellegrini, 1991). Thus, length of time for recess may have a differential effect based on gender preferences for certain types of playground activities. Young males may need enough time to engage in large muscle activities but may not benefit discernably from additional time. Schools may need to offer differential opportunities of time and activity to maximize the effects of recess, if there are discernable effects on classroom behavior. This study examines gender as an independent variable.

Statement of Problem

There is extremely limited research on recess, and specifically on the relationship of recess to student classroom behavior. Pellegrini (1993), the primary researcher on the topic of recess, called for additional investigation of recess variables that affect classroom behavior and performance. The present study examines the effects of recess on the attentiveness of a group of first-graders in a suburban, public school setting.

Specifically this study investigated hypotheses regarding the effects of duration of recess, and location of recess (outdoor vs. indoor) on the on-task, attending behaviors of first-graders. Gender was examined as an independent variable. Outdoor recess allows for large muscle group activities, whereas indoor recess restricts the opportunity for large muscle group activity. The students' attention to a story read by their teacher was rated at three timed intervals immediately after recess, on 5 consecutive days.

Duration of recess consisted of two levels: 7 minute duration and 15 minute duration. The duration of the recess periods were selected following a study by Pellegrini (1991), which found a significant decrease in large muscle group activities after 7 minutes and a corresponding rise in verbal and social interactions. If the nature of outdoor play changes significantly in this time frame, it would be important to observe any differences in classroom behavior, particularly if there is an additional gender difference.

There are several expected relationships between the independent variables of gender, type and duration of recess, and the dependent variable of on-task, attending behavior. According to novelty theory, indoor/outdoor recess, of 7 or 15 minute duration should all have a positive effect on subsequent attention to task in the classroom. Novelty theory suggests that the change itself is enough to promote increased attention to task following recess. Thus, novelty theory would imply that there are no differences between inside and

outside recess and effects on attention to task in the classroom, and that there are no gender differences. Different lengths of time of recess should show no difference in attention ratings on students.

In contrast, deprivation theory suggests that inside recess for boys, without the opportunity for large muscle group activities, results in males being more inattentive than females on the subsequent attention task. Outside recess males would be expected to be more attentive than inside recess males. Girls, who are generally less physically active than boys, would be expected to show no difference as a result of inside or outside recess.

This study has the potential to assist elementary schools in maximizing the use of recess, by predicting whether recesses of short or longer length, indoor or outdoor are more effective in improving on-task behavior in the classroom. Systematic effects due to gender are also considered.

Chapter II reviews the literature: the basis for selecting the variables of interest, along with a brief overview of the phenomenon of recess and an examination of the experimental literature which has an immediate bearing on this study. Following the literature review is the methods section, Chapter III, which describes the variables, subject pool, measurement methods, intervention procedures, and statistical methods. Chapter IV presents the results of the analysis, followed by a discussion and summary of the results in Chapter V, noting limitations of the study and directions for future research.

CHAPTER II

LITERATURE REVIEW

This chapter reviews the history of recess and play and the theories describing the need for recess during the school day. The next section reviews the existing research on recess and focuses on the research which examines the educational implications of recess. Research on the variables of interest in this study are then examined, and the last section of the literature review describes the research on the use of videotaped observations to collect data in naturalistic settings.

History of Recess and Play

The value of play in cognitive and social development is now broadly recognized in the psychological literature. But this was not always so. During the pre-Industrial period, children were important to the economic survival of the family and were trained early to assist with adult tasks. In the Colonial period in the United States, New Englanders condemned play as selfish and irresponsible (Mergan, 1982).

With the advent of industrialization and the establishment of more widespread formal schooling that occurred outside the home, the subject matter of education became quite different than instruction in home tasks. As formal education methods and content became more established, play became a function of the structure of school (Finkelstein, 1987). The structure of school, in gathering together large numbers of children, contributed to the development of a new view of childhood as a distinct stage different than adulthood. This new view was underlined by the developing culture of childhood, as children had the