

THE IMPACT OF OUTDOOR PLAY ACTIVITIES IN SCHOOL CHILDREN

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Abstract: The present study explored how a natural environment in Norway provides a stimulating plays cape for kindergarten children, and how different features in the landscape an afforded plays activities. The impact of such outdoor activities on children's motor fitness was tested, and a better improvement was found in the experimental group compared to the reference group. The study indicated a probable relation between all-round play in the natural environment and the effect on motor development in the children.

Key words: children and environment, landscape as plays cape, play habitats for children, affordances for play, motor development

INTRODUCTION

Several kindergartens in the Scandinavian countries have experienced positive results from being outdoors in natural environments, but only a few studies have been done in the field (Bang et al., 1989; Fjortoft, 1999; Grahn et al., 1997). We know far too little about how the natural environment functions as a playground for children, and we know even less about what effects such a playground might have on learning in children. The physical outdoor environment, and the natural environment in particular, as a play habitat for children, has been a topic of low priority in child research (Bjerke, 1994)

OBJECTIVES

The notion that versatile play in a natural environment might have an impact on children's development constituted the background for the present study. The aim of the study was to investigate how children's playing in the natural environment might stimulate their motor fitness and it was decided to focus on the affordances of the landscape and the correlation for versatile play. The main objectives were: to examine the impact of outdoor play activities in children's motor ability and mastering.

METHODS

An experimental study was carried out with 5 to 7 years old children in kindergartens in Telemark, Norway. Because of the lack of randomization, the study might be characterized as quasi-experimental approach. The groups were selected from three kindergartens equal in age groups (in 2000 with pedagogical practice courses occasion). The experimental group of 46 children from one kindergarten was offered free play and versatile activities in the forest next to the kindergarten. The experimental group used the forest every day for 1-2 hours throughout the year when the attended the kindergarten. Only randomly they used outdoor playground inside the kindergarten fence. As reference group 29 children of the same age groups from kindergartens in the neighboring district were chosen. The groups were checked out for differences in socio-economic living conditions by the multiple regression analyses, using parents' educational and professional background as variables. The reference group used their traditional outdoor playground for 1-2 hours a day and visited natural sites only occasionally. Both groups had the same standard playground equipment, such as sandpit, a swing, a seesaw, a slide and a climbing house in their outdoor

playground. The treatment period lasted for 2 month. Both groups were tested with EUROFIT: European test of Physical Fitness, the Motor Fitness test. The test included the following test items: Flamingo balance test (standing on one foot) for testing of general balance; Plate tapping (rapid tapping of two plates alternatively with preferred hand) measuring the speed of limb movement. Sit and reach expressed flexibility in knee and thigh joints. Standing broad jump (jumping for distance from a standing start) measured explosive strength. Sit-ups (maximum numbers of sit-ups achievable in half a minute) measured trunk strength. Bent arm hang (maintaining a bent arm position while hanging from a bar) for testing of functional strength in arm and shoulder, and Shuttle run (a running and turning, shuttle, test at maximum speed) testing running speed and agility. Two additional tests were introduced: Beam walking for testing dynamic balance and Indian skip (clapping right knee with left hand and vice versa), which tested cross coordination.

THE STUDY AREA

The site of the investigation was a small forest of 7.7 hectares of mixed woodland vegetation, located close to a kindergarten in Telemark County in Norway. The landscape pattern showed a mosaic of patches of woodland with some open spaces of rocks and open fields and meadows in between. Vegetation and topography jointly afforded a diversity of play habitats for the children. The children's favorite places were named "The Cone War", "The Space Ship" and "The Cliff". The naming itself is illustrative for the activities taking place there. Free play fostered creative play, and the plays cape afforded lose parts and natural objects and materials to play with. Ply activities were observed related to the affordances of the vegetation and topography.

DISCUSSION

At the pre-test the reference group scored better than the experimental group. At the post test the experimental group had caught up with the reference group and significant differences between the pre and post test in all the items except for flexibility (sit and reach) were found within the experimental group. Comparing the groups at the post test, significant differences in favor of the experimental group were found in the Flamingo balance test ($p < .001$) and the Indian skip co-ordination test ($p < .01$) - table 1.

Table 1

TESTS	EXPERIMENTAL GROUP		REFERENCE GROUP	
	Pre-test	Post-test	Pre-test	Post-test
Flamingo / 30"	4.7	1.5***	4.0	3.3
Plate tapping/50taps	35.0	28.1***	29.9	27.4
Sit and reach/cm	24.9	24.4	25.3	25.5
Standing broad jump/cm	102.8	113.1***	103.1	111.3**
Sit-ups/ reps.30sec	5.3	6.5**	5.9	7.0
Bent arm hang/sec.	2.6	7.0***	2.6	5.4***
Beam walking/sec.	11.4	7.5**	7.7	7.2
Indian skip/ reps.in 30sec	21.8	43.6***	27.8	37.2***
Shuttle run/sec.	31.9	29.7**	30.7	30.3

($p < .01$) *($p < .001$)

The EUROFIT Motor Fitness Test was applied and the results showed a significantly better performance in the natural play area group than the traditional group.

CONCLUSION

This study has indicated the relation between versatile play in the natural environment and the impact on motor fitness in children. Significant effects were found in balance and coordination abilities. These are competencies that are of great importance to the children's general mastering of their own body in relation to the physical environment. There is a strong relation between the structures of the landscape and the functions of play. The forest itself represents an environment for play and learning that stimulates motor development and fostering in children. In the same time we still know too little about the learning effects from the natural environment, and more effort should be dedicated to further studies in this field.

Bibliography

- [1] Bang, C., Braute, J. & Kohe, B. (1989). *Naturleikeklassen. Ein stad for leik og learning*. Oslo. Universitetsforlaget.
- [2] Bjerke, T. (1994). *BARN-NATUR-FRILUFTSLIV*. Oslo
- [3] Fjortoft, I. (1999). *Naturen som lekeplass*
- [4] Grahn, P., Martenssons, F., Lindbad, B., Nilsson, P., (1997). *A functional approach to environmental descriptions*. *Scandinavian Journal of Primary Health Care*, Oslo