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THE EFFECT OF MOVEMENT EDUCATION BASED ON COOPERATIVE LEARNING METHOD ON THE DEVELOPMENT OF BASIC MOTOR SKILLS OF PRIMARY SCHOOL 1ST GRADE LEARNERS

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Abstract. *The purpose of the research was to determine the effects of 12-week physical activities based on Cooperative Learning Method on development of basic motor skills of Primary School 1st Graders. Pretest-Posttest Design, Semi-Empirical Research Method and Unequaled Control Group Methods were used in the research. To determine the effects of physical activities based on Cooperative Learning Method on the development of basic motor skills, controlling the ball with feet, controlling the ball with hands, running coordination, agility, promptness and dynamic balance skill tests were used. According to the statistical results, no significant differences were detected in pretest average values of the research and control groups in Independent sampling t-test; however, a significant difference was found in favor of the research group in posttest averages. In the t-test for Dependent Variables, significant differences were found in pretest-posttest averages in favor of the posttest values of Research Group. In pretest-posttest averages of Controls, negative significance was found in controlling the balls with hands, and no significant differences were determined in other motor skills. We believe that students are active in application process, and the long-term planned learning-teaching environments with physical activities based on Cooperative Learning Method might contribute to the development of basic motor skills.*

Keywords: *physical education, physical activity, movement education, cooperative learning, basic motor skills, lifelong education.*

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Introduction

The importance and necessity of movement education with the early childhood period has begun to be emphasized among the most important topics by parents and sports scientists. The individuals need qualified movement processes in order to be able to sustain their life in a healthier and more qualified manner. It attracts attention that children, who have reached the age of schooling, act in different forms when compared with the other age groups. It has been reported that the lifelong movement education requirements, which are at the very basis of activity, are health, fitness, entertainment, influencing and being influenced, aesthetics, shaping, performance, self-confidence, adventure, sense of community, and recreation, etc. (Pangrazi, 2001; Gallahue & Donnelly, 2003; Johnson & Johnson, 2009; Kirk, 2013; Altınkök, 2015; Altınkök, 2016).

It has also been reported that the issue of creating a medium is considered among the duties of primary school teachers to ensure that the basic motor skills, which form the infrastructure of future sportive activities in which the individual will take part, are acquired by students. It is emphasized that throwing, catching, controlling the ball with feet and hands, and similar motor skills may be acquired between the ages 6 and 7 at a mature level. It is also emphasized that teaching the skills are important in taking part in various games and sportive activities in a successful manner (Hardin & Garcia, 1982; Dauer & Pangrazi, 1992; Johnson & Ward, 2001). When the developmental stages of children are considered, we can observe that children start to know themselves and their environment by moving before anything else (Piaget, 1950; Slavin, 1980).

It has also been reported that regular systemic and qualified teaching-learning media are needed to develop the motor skills of children, and the exercises of children must be guided (Gallahue, 1989; Gallahue, 1993). In the process in which the learning experiences are acquired, the methods and techniques that ensure that students participate in the class actively may ensure that students learn faster and better, and enjoy these processes (Ward & Ward, 1996; Johnson & Ward, 2001; Dyson, 2001). The Cooperative Learning Method, which is among the methods used in physical science, social

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sciences, mathematics, and physical education classes have different applications for each of these disciplines.

Cooperative Learning is a teaching strategy used successfully by applying many learning activities to small groups consisting of students from different skill levels in order to make them understand certain subjects. The Learning by Cooperation Approach is different from the other group activities like research groups, project groups, laboratory groups and reading groups in that it requires the use of positive solidarity, individual responsibility, face-to-face interaction, social skills and development of the group by self-assessment. The responsibility of each individual in the team is not only learning what is taught, but also helping the other team members to learn, and thus creating a success (*winning together*) atmosphere. It is reported that students feel responsible until the learning of the whole group is completed (Johnson, Johnson, & Holubec, 1994; Grineski, 1996; Dyson, 2001; Johnson, Johnson & Smith 2006; Dyson, Linehan, & Hastie, 2010; Altınkök, 2012; Dyson & Casey, 2012). The Cooperative Learning Method, which is used as a pedagogical method, has been used intensely in intra-class activities (Johnson, Maruyama, Johnson, Nelson, & Skon, 1981; Kagan, 1992; Slavin, 1995). With this research, the effects of physical activity applications based on Cooperative Learning Method used in learning-teaching environments on acquisition and development of basic motor skills are investigated.

Problem of Research

It is considered that Movement Education must start at the early childhood period when the child feels the need for movement and games; and this must be sustained as a lifelong activity based on Lifelong Learning Principles. Because it is emphasized that it is extremely difficult to acquire some skills later in life once the critical period is missed to acquire them. It is also emphasized by sports scientists that this deficiency will produce serious negative results in lifelong learning process.

When the literature was reviewed, it was seen that the teaching activities based on Cooperative Learning Method are mostly used in physical sciences, social sciences, and mathematics classes as well as physical education classes. However, studies conducted on the application of Cooperative Learning Method in physical education classes of Primary School 1st Graders are very few in number. In active curricula of Ministry of National Education, it is seen that activities based on Cooperative Learning Method are emphasized. When the importance of the conditions in our country and the movement education is considered, it is obvious that studies that will be conducted to determine the effects of Cooperative Learning Method on academic success, are necessary. For this reason, examining the effects of physical activities based on Cooperative Learning Method on the development of basic motor skills of the Primary School 1st Graders is important in terms of the efficiency of investigating the effects of physical activities based on Cooperative Learning Method.

Research Focus

With this research, the purpose was to determine the effects of physical activities based on Cooperative Learning Method on the development of some basic motor skills of Primary School 1st Graders who were between 6-7 years of age, and to contribute to the revision of games and physical activities classes applied in primary schools. For this purpose, answers to the following questions have been sought for: 1. Can the Movement Education with Cooperative Learning Method be applied to Primary School Children? 2. Is the Movement Education based on Cooperative Learning Method effective on the development of basic motor skills of Primary School children? 3. Is it possible to ensure the activity and socializing of children with the Movement Education based on Cooperative Learning Method? 4. Is there a difference between the Research Group to which the Movement Education based on Cooperative Learning Method has been applied and the Control Group to which this method has not been applied in terms of the development.

Methodology of Research

General Background of Research

The Pretest-Posttest Design, Semi-Empirical Research Method and Unequaled Control Group Methods were used in the research. The research was conducted in spring semester of the academic year. 12-week activities based on Cooperative Learning Method on the development of some basic motor skills of Primary School 1st Graders were applied to the research group. The effects of dependent variable, which is *the physical activities based on the*

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Cooperative Learning Method, on the independent variables like object control skills, running skills, agility, promptness and balance skills were investigated.

Sample of Research

For the purpose of the research, 38 students, who were selected randomly from the 1st graders in a primary school in Istanbul, were included as the research group; and 36 students were included in the research as the control group. 2 students were excluded from the research because they had health problems, 1 student was excluded due to attendance problems, and 1 student was excluded because the number of the days on which he did not participate in the research was high. 2 students in the control group were not included in the research because they did not want to participate in the research. As the final status; 34 students (17 females-17 males) were included in the research group and 34 students (17 females-17 males) were included in the control group, which made 68 participants in total. The research started after the parents were informed and the written consents of the parents of the students and the necessary permissions were received.

Instrument and Procedures

Physical Education classes based on Cooperative Learning Method were performed by the author in classes in free activity hall, in sports hall, and in school garden in agreement with the characteristics of the research and with the active participation of the students after the necessary safety precautions were taken. "Test Results Registration Form**"** was created in order to record the data of the research, and a separate form was used for each participant. The basic motor skill test measurements were performed by the author of the research, a measurement assistant, and three other people recorded the test results to the registry form.

In order to determine the effects of physical activities applied in learning environments designed with the Cooperative Learning Method on basic motor skills, the skill test for controlling the ball with feet, controlling the ball with hands, running coordination, agility, promptness and dynamic balance motor skill tests were used as the data collection tools.

From the beginning of the research until the end of it, the experimental part of the research was completed by applying a pre-application (1 week), applying the pre-tests (1 week), applying the physical activities based on Cooperative Learning Method (12 week) and applying the post-tests (1 week).

Pre-Application

Before starting the research by forming the research and control groups, a pre-application was performed to the whole of the research group in order to determine the time that would be spent for each basic motor skill performance test, to examine the applicability of the tests, and to ensure that children would start motor skill tests with the same proficiency.

Application of the Pre-test

The pre-tests were applied in a style that would follow each other in sequence in agreement with the characteristics of the measurement tools for basic motor skill tests by giving adequate resting times within 5 working days.

1. Day; agility, **2. Day;** controlling the ball with hands, **3. Day;** controlling the ball with feet and promptness tests, **4. Day;** running coordination, **5. Day;** dynamic balance tests were applied in this order.

Application of Physical Activities based on Cooperative Learning Method

The Physical Education classes based on Cooperative Learning Method were applied to the experimental group by the author of the research in accordance with the contents to develop some basic motor and social skills. The classes were applied as one day a week and two hours a day, and included activities that were intended to make students acquire and develop the acquisitions in Primary School 1st Grade Curriculum.

On the other hand, the physical education classes were applied to the control group by the class teacher in accordance with the curriculum with the supervision of the author of the research.

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The students were divided into groups, which is consistent with the nature of the Cooperative Learning Method. There were 4 groups consisting of 7 individuals; and 1 group consisting of 6 individuals, i.e. 5 groups in total.

In each cooperation group, a dynamic group structure was adopted in which there was a president, a spokesman, reporter, a ball-boy, and a player. These duties were practiced by the students in turn. Later on, it was ensured that the alternation of the duties was performed according to the duty-order among the groups. The learning-teaching medium was prepared in accordance with the contents of the activity planned.

Before starting each activity, the general summary of the previous research sections was examined by the cooperation groups with different dimensions in the introduction parts, and the clues, feedbacks, corrections and reinforces were used both for the individuals and for the cooperation groups in the activities.

The values such as children's supporting each other, attachment of them to each other in a positive way, acting together in cooperation, their being aware of the smallest contribution to each other, the contribution of each group member to the group, and their being the driving force in the success were given to the children by the author of the research.

The Application of Post-test

The same test procedures used in pre-test process were valid in posttests. The same basic motor skill test tools were used in this process.

Data Analysis

The statistical package program was used to make the analyses on the study data. The "Independent t" test was used to find the difference between the pre-test and post-test values of the research and control groups; and the "Paired Samples t" Test was used to find the difference between the pre-test and post-test values of the research and control groups.

Results of Research

In this part of the research, the data obtained from the statistical tests have been analyzed, and the general findings are given in the direction of the hypotheses and in the light of the development of motor properties, which were observed during the application.

Table 1. The independent t test results of the pre-test; controlling the ball with feet, controlling the ball with hands, running coordination, agility, promptness, dynamic balance variables of the experimental and control groups

Variable	Groups	n	$\bar{X}$ ± SD	t Test	
				t	p
Controlling the Ball with Feet	Experimental	68	46.75 ± 11.42	-1.844	.070
	Control		51.75 ± 10.94		
Controlling the Ball with Hands	Experimental	68	40.33 ± 12.09	-2.314	.124
	Control		46.65 ± 10.34		
Running Coordination	Experimental	68	5.55 ± 0.83	-1.516	.134
	Control		5.87 ± 0.88		
Agility	Experimental	68	7.97 ± 0.88	-0.407	.685
	Control		8.05 ± 0.66		
Promptness	Experimental	68	5.12 ± 0.85	1.217	.228
	Control		4.90 ± 0.62		
Dynamic Balance Tests	Experimental	68	20.90 ± 4.49	-0.642	.523
	Control		21.62 ± 4.77		

p>0.05 There is not a significant difference

As it is observed in the table, according to the independent group t-test results applied to determine whether there is a significant difference between basic motor skill tests of the experimental and control groups in controlling the ball with feet, controlling the ball with hands, running coordination, agility, promptness and dynamic balance basic motor skill test averages, it is determined that there are no significant differences between the pre-test values ($p>0.05$). When the arithmetic averages are considered, it is understood that the basic motor skill pre-test values were close to each other at first, and the initial levels of the groups were the same.

Table 2. The Paired Samples t test results of the pre-test and post-test; controlling the ball with feet, controlling the ball with hands, running coordination, agility, promptness and dynamic balance variables of the control group.

Variable	Test	n	$\bar{X}$ ± SD	t Test	
				t	p
Controlling the Ball with Feet	Pre	34	51.75 ± 10.94	6.056	.103
	Post		53.98 ± 8.92		
Controlling the Ball with Hands	Pre	34	46.65 ± 10.34	6.129	.001**
	Post		52.78 ± 9.65		
Running Coordination	Pre	34	5.87 ± 0.88	8.216	.321
	Post		5.98 ± 0.89		
Agility	Pre	34	8.05 ± 0.66	18.181	.051
	Post		7.98 ± 0.99		
Promptness	Pre	34	4.90 ± 0.62	6.139	.069
	Post		5.76 ± 2.48		
Dynamic Balance Tests	Pre	34	21.62 ± 4.77	-7.024	.077
	Post		20.81 ± 4.38		

$p<0.01^{**}$ There is a negative significant difference

As it is observed in the table, according to the Paired Samples t test results, which was applied to determine whether there is a significant difference between the controlling the ball with feet, controlling the ball with hands, running coordination, agility, promptness and dynamic balance basic motor skills test averages of the Control Group, it is determined that there are no significant differences in the pre-test and post-test values in terms of controlling the ball with feet, running coordination, agility, promptness and dynamic balance motor skill test averages ($p>0.05$). There was a negative significant difference between the controlling the ball with hands motor skill test averages pre-test and post-test values at .001 level ($p>0.01$) against the post-test.

Table 3. The Paired Samples t test results of the pre-test and post-test; controlling the ball with feet, controlling the ball with hands, running coordination, agility, promptness and dynamic balance variables of the experimental group

Variable	Test	n	$\bar{X}$ ± SD	t Test	
				t	p
Controlling the Ball with Feet	Pre	34	46.75 ± 11.42	6.056	.001**
	Post		40.02 ± 8.56		
Controlling the Ball with Hands	Pre	34	40.33 ± 12.09	6.129	.001**
	Post		31.75 ± 9.86		
Running Coordination	Pre	34	5.55 ± 0.83	8.216	.001**
	Post		4.75 ± 0.83		

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Variable	Test	n	$\overline{X}$ ± SD	t Test	
				t	p
Agility	Pre	34	7.97 ± 0.88	18.181	.001**
	Post		6.77 ± 0.71		
Promptness	Pre	34	5.12 ± 0.85	6.139	.001**
	Post		4.45 ± 0.56		
Dynamic Balance Tests	Pre	34	20.90 ± 4.49	-7.024	.001**
	Post		26.12 ± 4.21		

$p<0.01^{**}$ There is a significant difference

As it is observed in the Table, according to the Paired Samples t test, which was conducted to determine whether there is a significant difference between basic motor skill test averages of the experimental group in controlling the ball with feet, controlling the ball with hands, running coordination, agility, promptness and dynamic balance, a positive significant difference was observed in pretest-posttest values at .001 level (p>0.01) in favor of the posttests between the controlling the ball with feet, controlling the ball with hands, running coordination, agility, promptness and dynamic balance basic motor skill test averages. When the arithmetic averages are observed, it is considered that the increase in the experimental group in favor of basic motor skills stems from the Physical Education applications based on Cooperative Learning Method applied to the experimental group.

Table 4. Independent group t-test results of the posttest; controlling the ball with feet, controlling the ball with hands, running coordination, agility, promptness and dynamic balance variables of the experimental and control groups

Variable	Groups	n	$\overline{X}$ ± SD	t Test	
				t	p
Controlling the Ball with Feet	Experimental	68	40.02 ± 8.56	-6.582	.001**
	Control		53.98 ± 8.92		
Controlling the Ball with Hands	Experimental	68	31.75 ± 9.86	-8.883	.001**
	Control		52.78 ± 9.65		
Running Coordination	Experimental	68	4.75 ± 0.83	-5.859	.001**
	Control		5.98 ± 0.89		
Agility	Experimental	68	6.77 ± 0.71	-2.395	.019*
	Control		7.50 ± 1.62		
Promptness	Experimental	68	4.45 ± 0.56	-3.000	.004*
	Control		5.76 ± 2.48		
Dynamic Balance Tests	Experimental	68	26.12 ± 4.21	5.095	.001**
	Control		20.81 ± 4.38		

$p<0.01^{**}$, $p<0.05^{*}$ There is a significant difference

As it is observed in the table, according to the independent group t-test results conducted to determine whether there is a difference between the controlling the ball with feet, controlling the ball with hands, running coordination, agility, promptness and dynamic balance basic motor skill test averages of the experimental and control groups, it was determined that there is a positive significance at a rate of .001 among the post-test, controlling the ball with feet, controlling the ball with hands, running coordination, promptness and dynamic balance test averages (p>0.01). There is a positive significance at a rate of .05 between the agility test averages in favor of the post-tests. When the arithmetic averages are evaluated, it is considered that the basic motor skill levels of the experimental group being higher in the experimental group than the control group stem from the Physical Education applications based on Cooperative Learning Method.

Discussion

The development of basic motor skills of the 6-7-year-old 1st Grade Primary School students in the experimental group, which received Physical Education classes with Cooperative Learning Method, was much higher than the control group, and the difference between these groups was found to be significant in favor of the experimental group. The results of the other studies supporting the present research are as follows.

Martin and Ward (1996), Grineski (1999), Reeves et al. (1999) and Vaughan (2002) conducted studies on 5-6-year-old preschool children and reported positive and significant results after examining the relation between major motor skills, physical finesses, communication, and interaction of the children by using games based on cooperative learning method. Although the test batteries and some variables used in the studies are various, the results of the studies support the findings of the present research.

Jordan and La Metais (1997) and Weenman, Kenter and Post (2000) conducted studies on duty-orientated and social skill situations in primary schools (being positive, positive solidarity, sharing, face-to-face interaction, caring for the others, and equal success opportunities, etc.); Quinn (2002) conducted a research on decreasing antisocial behaviors in primary schools; Penelope (1993), Anderson and Wintealt (1995), Smith, Markley and Karp (1997), Polvi and Telama (2000), Dyson (2001) and Dyson (2002) conducted studies and reported that cooperative learning at various educational levels developed interpersonal skills, positive physical communication, helping each other, working together and learning together, not criticizing the individuals but criticizing ideas, respecting rights, listening skills; and decreased negative communication and the dependency on the teacher; and reported that physical education classes were an influential way to develop social skills. The results of these studies also support the present research. Dyson and Michelle (1997) conducted a research and found that secondary school 5th and 6th Graders obtained goals like developing motor skills, working as a team, being funny, thinking and discussing in a strategic manner together with team mates; and reported that learning with cooperation with the teacher and students contributed to increasing the quality of physical education classes. Although the research group in this research and the motor skills, which were investigated in the research, are different, the results of this research support the findings of the present research.

When the studies and their results are examined, it is observed that Physical Education based on Cooperative Learning Method developed the self-confidence, strategic thinking and discussion, strategic planning, assessing the changes in the activities, assessing the group process, motivation and problem-solving and similar cognitive processes (Martin & Ward 1996;, Grineski 1999; Dyson & Michelle 1997; Dyson 2002); and improved the conscious of duty and responsibility, interpersonal skills, positive communication, helping each other, working and learning together, not criticizing the individuals but criticizing the ideas, respecting rights, listening skill and similar social skills (Anderson & Wintealt 1995; Smith, Markley & Karp 1997; Jordan & La Metais 1997; Weenman, Kenter & Post 2000; Polvi & Telama 2000; Dyson 2001) as well as developing basic motor skills, and helped in reaching the targets and success in Physical Education classes.

Conclusions

In the light of the research purpose, the answers for the research questions are as follows : It was determined with the research that the physical activities based on Cooperative Learning Method may be applied to primary school children in an efficient manner; Children may be activated in the education processes with the physical activities based on Cooperative Learning Method and they may acquire and improve basic motor skills; It is possible to observe that children are active in physical activities based on Cooperative Learning Method, they contribute to their groups, encourage and support each other in activities, increase social sharing with the activities, and have the conscious of achieving success together with their friends; The basic motor skills of the children in the experimental group in which the physical activities based on Cooperative Learning Method were applied developed more than those in the control group, and there is a difference in the results in favor of the experimental group.

Depending on the research results, it is considered that primary school teachers should allocate more time for physical activities based on Cooperative Learning Method in games and physical activity classes in order to support the object control skills and visual perceptions of children by using major and minor muscles manipulating various objects and using body coordination and basic motor skills. It may be recommended to the researchers that they should conduct studies in which different teaching methods and techniques are tested to make children use their major and minor muscles more, to make children become more active in educational programs in which physical

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activities based on Cooperative Learning Method are included and basic motor skills may be acquired. It is possible to claim that Cooperative Learning Method may contribute greatly to realize the acquisitions of education and help to increase the quality of education provided in the learning-teaching process in our present day where individual differences are cared for. This method is also helpful in sustaining lifelong and permanent learning. On the other hand, it is possible to claim that when the individuals contribute to the group in accordance with their skills and abilities; this will increase the learning level in the group. It is considered that great contributions will be made to the learning process of each student in the class by using the Cooperative Learning Method in Physical Education classes.

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