AN ASSESSMENT OF EYE HAND COORDINATION OF SCHOOL GOING CHILDREN IN INDIA

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ABSTRACT

One of the main responsibilities of school is to develop the motor function among school going children. Eye-hand coordination is defined as synchronous activity of vision and hand for carrying out specific tasks. The study was conducted to assess bilateral coordination and to compare upper-limb coordination between pre-puberty girls and boys school going children (K.V. No. 1) Gwalior. Total (N = 60) students were tested for catching and dribbling as per BOT-2 test short form for upper limb coordination. The age level of the students was 7 years to 9 years of old. Normality of the data was checked and independent t-test was used as a statistical tool. The study concluded that boys showed better bilateral coordination than girls did. The study is the indicator of learning/practicing for the girls compared to boys of the school.

Keywords: *Motor Function, Coordination, Catching, Dribbling.*

Introduction

Childhood is the age when humans acquire and master motor skills (Clark & Metcalf, 2002). As most of the childhood is spent in schools, it becomes one of the important duties of the school to help school going children develop motor skills and attain proficiency in them. Eye and hand coordination is defined as the ability and act of moving eyes and hands towards a particular target in unison and is one of the trending field of research (Crawford et al., 2003; Olga & Khudolii, 2018). Nayak (2015) defined eye-hand coordination as a motor skill that entails the processing and integration of tactile and visual input to effect focused motor movement. Goyen et al. (2006) put it more simply "use of vision to guide movements of the hand for many human activities like eating, sports, using tools etc."

Eye and hand coordination is a momentous coordinative property and is crucial in learning sports skills, to develop such skills and for sustaining the quality of the skill (Altinkök, 2016). It is trainable and can be improved with coaching and practice. The chief objective of the present study was to assess and compare bilateral coordination between pre-pubescent boys and girls.

Methods and Materials

The study was conducted to assess bilateral coordination. The study was conducted on upper-limb coordination between pre-puberty girls and boys school going children (K.V.1) Gwalior. Total (N = 60) students were tested for catching and dribbling as per BOT-2 test short form of upper limb coordination. The age level of the students was 7 years to 9 years of old. The testing item number 1: Upper-Limb coordination-catching a toss ball-one hand requirement and item 2: Upper-Limb coordination-dribbling a ball-alternating ball. In upper limb coordination-catching a tossed ball-one hand students and tester stood behind the line facing each other. Tester tossed the ball with slight parabola subjects had to catch the ball in between shoulder and waist level. Five trials were given to each subject. One point was awarded to each correct catch and in total 10 catches was given. In Upper-Limb coordination-dribbling a ball-alternating ball in this test subjects hold a tennis ball in his/her preferred hand and extend it in front. Then he/she dropped the ball and dribbled it by changing hand after each dribble. They were allowed to move if necessary to continue dribbling. One point is given to each dribble and total 10 dribble are required in continuation to get maximum point.

Results

Table1: Mean Table of Catch and Dribble of Boys and Girls

Variables	Boys	Girls
Catch	5.37	4.63
Dribble	7.47	5.13

In table 1 it is shown that in variable catch the mean of boys is 5.73 and the mean of girls is 4.63. In variable dribble the mean of boys is 7.47 and the mean of girls is 5.13.

***Figure1*: Graphical Representation of Point Scored in Catch and Dribble by boys and girls.**

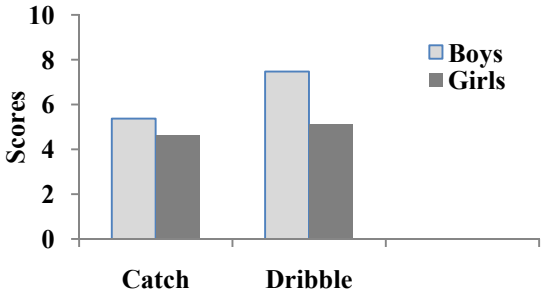

Table-2: Test of Normality for the Data on Catch and Dribble Test for Boys or Girls

	sex	Shapiro-Wilk		
		Statistic	Df	Sig.
Catch	Boys	.93	30	.06
	Girls	.94	30	.07
Dribble	Boys	.94	30	.07
	Girls	.93	30	.05

Table1 Shows the Shapiro-Wilk test statistics for testing of Normality of data. Normality exists if these tests are not significant. Thus, If significance value (p-value) of these tests is more than 0.05, the data is considered to be no normal, otherwise normality assumption is violated. Looking for the value of the test in table 1 it may be concluded that the Shapiro-Wilk test for the Catch and dribble test for boys and girls are non-significant (Verma, 2009).Hence Researcher can reveals that there is normality in data.

Table-3: Independent T test of Catch and Dribble

		F	Sig.	t	d.f.
Catch	**Equal variances assumed**	0.164	0.687	1.76	58
	Equal variances not assumed			1.76	57.63
Dribble	**Equal variances assumed**	18.435	0.00	3.86	58
	Equal variances not assumed			3.866	43.61

It can be seen from the table 3 in variable catch that the value of t statistics is 1.766. This t value is significant as the p-value ids 0.083 which is more than 0.05. Thus null hypothesis of equality of catching may not be rejected and it may be concluded that the average catching between boys and are not same. In variable dribble it can be seen in that t statistics is 3.866 which is more than 0.05.That t value is significance as the p-value < 0.05.the null hypothesis in dribble between boys and girls are not same (Verma & Salam, 2019).

Discussion

The primary aim of the study was to assess and compare bilateral coordination among boys and girls. Total (N = 60) students were selected from the Kendriya Vidyalaya No. 1 Gwalior. The age range of the students was 7 to 9 years. Students were tested for catching and dribbling as per BOT-2 test short form of upper limb coordination. The mean item scores for boys and girls in catching came out to be 5.37 and 4.63 respectively. The mean item score for boys and girls in dribbling were 7.47 and 5.13 respectively. In this study we found that the mean scores of boys are higher than that of the girls in catching as well as in dribbling. This indicates that boys are better at eye hand coordination as compared to girls. It may be because boys are more involved in leisure games and physical recreational activities in

comparison to girls in Indian society. In a study conducted in 2017, Karambe et al. reported better bilateral coordination in males as compared to female participants. Study by Jirovec et al. (2019) on Czech school children did not find any significant gender difference in the scores of BOT-2. The study concluded that boys showed better bilateral coordination than girls. The study is the indicator of learning/practicing for the girls compared to boys of the school. The study also may guide us for the measures to be taken to improve eye hand coordination in girls.

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