EUROPEAN ACADEMIC RESEARCH
Vol. IV, Issue 3/ June 2016

Impact Factor: 3.4546 (UIF)
DRJI Value: 5.9 (B+)

ISSN 2286-4822
www.euacademic.org

Role of Yoga for Development Motor Learning of School Boys

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Abstract:

The purports of this study was to investigate the role of yoga to develop motor learning of school boys. Fifty (50) male school boys were randomly selected as subjects for the purpose of this study from Brilliant Public School, Aligarh. The age group of the subjects was in between 12-16 years which was recorded from the school registers. They were divided randomly into two groups of 25 each. Group A acted as experimental group (yogic group) and Group B acted as control group (no treatment group).The selected motor learning was measured by Adams Sports-Type Motor learning test . The collected data from both the groups were taken before and after the experiment and was statistically analyzed by using t-test. The results of this study showed that the motor learning of the experimental group has increased significantly through yoga in comparison with the motor learning of the control group.

Key words: Yogic practices, Motor Learning, School Boys

INTRODUCTION

Yoga has been advocated as way of life. Yoga, which encompasses several techniques including physical postures, breathing techniques (Pranayama) and meditation, has become very popular on account of its applications in health related issues. According to the great sage Patanjali, the withdrawal of sense organs from their worldly objects is yoga. Further, it may be relevant to recount here that the historical concept of yoga was different from that concept of yoga which has been expounded by Patanjali. Malick (2000) proved the utility of Yoga practices such as stretching and relaxation for improving rifle shooting performance among the personnels of Indian Defense.

Motor learning is a change, resulting from practice or a novel experience, in the capability for responding. Motor learning is also called skill learning. Everyday life is full of activity that demand motor learning. It also defined motor learning a fairly permanent change in the person's capacity for skilled performance as a result of practice or experience. Schmidt (1977) defined a motor programme as a multitude of commands that travel from the central nervous system to the muscles, and which are defined prior to the movement.

Motor learning is a process of acquiring, completing and using motor information, knowledge, experience, and motor programmes (Adams, 1976). It is closely connected with mental abilities, motor abilities, foreknowledge, the cognitive and connative characteristics of an individual as well as his familiarity with the theoretical bases of movement technique. In further Medical dictionary defined the Motor learing the process of improving motor skills through practice, with long-lasting changes in the capability for responding. The cerebellum and basal nuclei play a major role in the such coordination. The present study wanted to examine the effect of

yoga to develop motor learning of school boys and also find out any significant improvement among school boys.

OBJECTIVE OF THE STUDY

The objective of this study was to analyze the role of yoga on motor learning of school boys.

METHODOLOGY

The study was formulated as a true random group design, consisting of a pre-test and post-test. The subjects were fifty (n=50) randomly selected to two equal groups of 25 School Students each. The age ranged from 12 to16 years. Among the two groups, the control group was strictly under control, without undergoing any special activity. The experimental group 'A' had to undergo with the experimental treatments. Group A was provided yogic practices to school students for a period of twelve (12) weeks, six days in a week from 6.00 to 7.00 AM in the Brilliant Public School, Aligarh. The control group was not allowed to participate in any kinds of training programmes, except their routine works. The Adams sports-type Motor learning test consists of four items i.e of wall volley test, lying tennis ball Catch and ball bounce test, basketball shooting test. The subjects were trained for a period of 12-weeks and after this period significant improvement was measured in motor learning of school students .The data were analyzed by applying t-test technique. The level of significance was set at 0.05.

Schedule of yogic practice

12 weeks training program (6 days in a week) of asana and Pranayam which were previously selected was conducted. Duration, frequencies and repetition was increased after each 4 week. Relaxation asana was performed in supine and prone

position after each asana (Shavasana & Makarasana). The training program i.e. names of various Asanas and Pranayam with their positions, number of frequencies, duration of excecution and recovery time, is presented below.

12 weeks

Name of Asana	Duration of asana	Frequency	Recovery Between repetition	Recovery between next asana
Standing asana				
1- Trikon asana.	20 sec. each side	2	15 sec	25 sec
2- Ardhchandrakar asana.	15 sec each side	2	15 sec	25 sec
3- Tadasana.	25 sec.	4	5 sec	20 sec
4- Veerbhadrasana.	20 sec each side	2	20 sec	30 sec
Asanas in lying position				
1- Pavanmuktasana.	20 sec	3	10 sec	30 sec
2- Naukasana. (both side)	15 sec	2	15 sec	30 sec
3- Sarvangasana.	25 sec	2	20 sec	30 sec
4- Bhujangasana.	30 sec	2	15 sec	30 sec
5- Halasana.	20 sec	2	20 sec	45 sec
6- Shalabhasana. (both leg)	15 sec	2	15 sec	30 sec
7- Dhanurasana.	15 sec	2	15 sec	30 sec
8- Chakrasana.	15 sec	2	15 sec	30 sec
Asanas in sitting position				
1-Ardha-Matsyendrasana	15 sec each side	2	20 sec	45 sec
2-Pashchimottanasana.	15 sec.	3	15 sec	40 sec.
3- suptavajrasana.	20 sec	2	15 sec	-
Anulomvilom	25 (each nostril)	2		
Bhramari	10-15 times			
Om chanting	2-5 min			

*Relaxation asana was performed in supine and prone position after each asana. (Shavasana & Makarasana)

STATISTICAL ANALYSIS

Table-1: Mean, Standard Deviation, Std. error mean, and t-value of Experimental group.

Group	Variables	Test	N	Mean	SD	Std.error mean	t –value
Experimental Group	Wall volley	Pre Test	25	27.52	6.29	1.26	5.06*
		Post Test	25	31.36	5.31	1.06	
	Lying Tennis Ball Catch	Pre Test	25	4.40	1.94	.39	3.89*
		Post Test	25	5.28	1.84	.37	
	Ball Bounce Test	Pre Test	25	51.52	10.04	2.01	6.68*
		Post Test	25	58.88	8.73	1.74	
	Shooting Test	Pre Test	25	4.56	1.53	.30	5.20*
		Post Test	25	5.64	1.22	.24	

Tabulated value = 1.68, *df*= 48, level of significance 0.05, *significant

It is evident from the table – 1 that there is significant differences exist between the Pre test and Post Test among the wall volley, Lying tennis ball catch, Ball bounce and shooting test , since the calculated 't' value 5.06, 3.89, 6.68 and 5.20 respectively, which is greater than the tabulated value (1.68) significance at 0.05 level.

Therefore there is significant difference exist in wall volley, Lying tennis ball catch, Ball bounce and shooting test of Pre Test and Post Test.

Fig.1: Graphical representation of Mean of wall volley, Lying tennis ball catch, Ball bounce and shooting test variables of Exp. group.

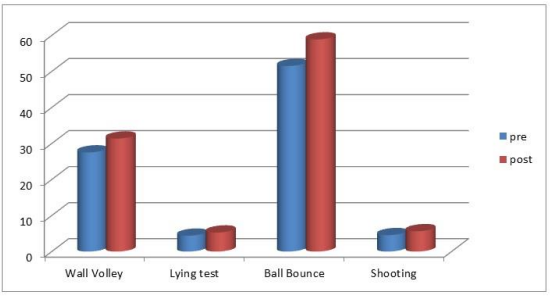


Table- 2: Mean, Standard Deviation, Std.error mean, and t-value of Control group

Group	Variables	Test	N	Mean	SD	Std.error mean	t –value
Control Group	Wall volley	Pre Test	25	24.80	6.37	1.27	1.03**
		Post Test	25	25.16	5.73	1.14	
	Lying Tennis Ball Catch	Pre Test	25	3.12	.93	.18	0.94**
		Post Test	25	3.28	.98	.19	
	Ball Bounce Test	Pre Test	25	39.20	7.39	1.48	0.97**
		Post Test	25	39.68	7.16	1.43	
	Shooting Test	Pre Test	25	3.44	1.32	.26	1.00**
		Post Test	25	3.64	.99	.20	

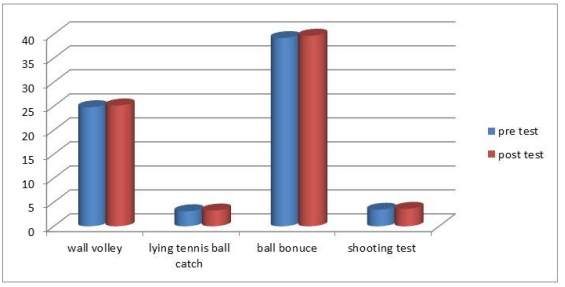
Tabulated value = 1.68, *df*= 48, level of significance 0.05, *significant, **insignificant

It is evident from the table – 2 that there is insignificant differences exist between the Pre test and Post Test among the wall volley, Lying tennis ball catch, Ball bounce and shooting test , since the calculated 't' value 1.03, 0.94, 0.97 and 1.00

respectively, which is lesser than the tabulated value (1.68) required to be significancant at 0.05 level.

Therefore there is insignificant difference exist between Pre test and Post Test among the wall volley, Lying tennis ball catch, Ball bounce and shooting test.

Fig. 2: Graphical representation of Mean of wall volley, Lying tennis ball catch, Ball bounce and shooting test variables of Control Group.



It was observed by the t-test, that findings of experimental group improved motor learning significantly with the help of four motor learning test parameters and as mentioned above, all the tabulated value was 1.68, df , 48 and were significant at 0.05 level of confidence.

RESULTS

The calculation of mean of the yogic group, pre and post test is presented in the table 1. Using the means, standard deviation and standard error mean of the group 't'- ratio was computed to find out whether there was any significant difference among the scores of pre and post tests. Experimental group Pre and Post calculated t- value of wall volley is 5.06, Lying tennis ball catch 3.89, Ball bounce 6.68, and basketball shooting test 5.20 respectively. All the calculated t-value are greater than the tabulated t- value (1.68) so there is a significant difference between the scores of before treatment and after treatment of experimental group. Control group Pre and Post calculated t-

value of wall volley is 1.03, Lying tennis ball catch 0.94, Ball bounce 0.97 and basketball shooting test 1.00 respectively. All the calculated t-value are lesser than the tabulated t- value (1.68) so there is insignificant difference between the scores of before treatment and after treatment of control group. Significant difference in this study is due to the selected yogic practices in experimental group that included asanas, pranayamas and Om chanting undergone by the group for a period of twelve weeks.

DISCUSSION AND FINDING:

Based on statistical analysis of data it was concluded that twelve weeks of yogic practices caused significant improvement in motor learning of school boys. The learning of motor skill is mainly depending on preparation of movement through kinesthetic vestibular tactical receptor and functional mechanics of central nervous system. Through yogic asanas the kinesthetic sense of proprioceptors may improve significantly. The present study supported these earlier findings by Garrote (1979) and Singh (2010). Yoga improves concentration which are helpful to improve accuracy. The results are in agreement with the result of the previous research findings. (Deasi, 1979; Singh 1996; Kennison and James. E. (1967) determined the effect of yogic practices to develop the skill and accuracy. Shirley et al (1994) conducted a study on the improvement in static motor performances following Yogic training in school children, which showed a significant difference after the training period.

These observations suggest that yoga helps to improve motor learning. This study is also supported by Pratap (1968) and Kocher (1974) which emphasized the importance of yogic asanas for improving performance in motor learning. Through yogic practice perception of depth can be improved significantly Sahu and Gharote, (1985). Perception is major factor which

may affect the performance in accuracy. K. Pradeep et al (2014) also noted that exercises and yogic asanas improve lying tennis ball catch ability.

CONCLUSION

The selected yogic practices did contribute to the improvement of motor learning among the school boys of Brilliant Public School. Yogic asanas improve the strength, flexibility and posture, pranayama improves the cardiorespiratory system and 'om' chanting improves the concentration which is helpful to improve motor learning among the sports persons and school boys. Based on the finding it is concluded that selected yogic practices could be of great contribution to improve motor learning in adolescence.

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