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## Effect of visual skills training on the abilities of short-serve and long-serve among the school level badminton players

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### Abstract

Vision is the key of victory in all sports. Visual skills are very important for players. There can be no doubt that visual skills have a positive impact on the performance of players. A successful player needs not only good physical fitness, but also visual skills. The game badminton is a multidisciplinary skill. In this game, the short-serve and long-serve play a dominant role. In this present study the researchers tried to study the effect of visual skills training on the abilities of short-serve and long-serve among the school level badminton players. One hundred and twenty nine students studying in schools in the age group of 12-14 who have experienced minimum at inter-school level competitions were selected. Out of this, samples exist in the range from 3.5 to 5 on the performance of overall playing ability are screened to 64. Among them, 45 samples were randomly selected and assigned to three groups equally. Thus, each group consists of 15 subjects. Group-1 is named as Visual Skills with Imagery Training (VSIT), Group -2 as Visual Skills Training (VST) alone and Group-3 as Control Group (Traditional Training Group). As variables, the performance of subjects on the abilities of short-serve and long-serve were selected. The French Short-serve Test and Pool Long-serve Test have been used to measure short-serve and long-serve respectively. The samples of Experimental Group-1 were treated with visual skills with imagery training, Experimental Group -2 with visual skills training alone and Experimental Group -3 with traditional training for about 12 weeks in alternative days a week. For employing visual skills, the drills related to coordinative abilities and basic fundamental skills were used with duration of 40 minutes. The collected data were tested with paired t-test, so as to test the individualised effects and comparative effects of visual skills with imagery training, visual skills training alone and traditional group on selected coordinate abilities of short-serve and long-serve. To test the significance of the results derived, 5% level of significance was chosen. The results of the study revealed that there is positive effect of visual skills training on the abilities of short-serve and long-serve among the school level badminton players.

**Keywords:** Badminton, visual skills, imagery, short-serve and long-serve

### Introduction

The badminton is a type of fast-paced racket or racquet sport played between either two opposing players (singles) or a team of two opposing pairs (doubles). Badminton is considered as the second most popular sport in the World, because around 220 million people play this game. It is an easy sport to pick up, but difficult to master. It was started as a leisure activity. Playing badminton is an excellent exercise for the body. Core exercise enhances the ability of the player and builds his/ her hips, back and pelvis muscles. It means, it is a body-toning workout. It involves a lot of physical activity. Between running, lunging, diving and ball hitting, playing badminton can help to burn fat around 450 calories per hour. It strengthens muscles, enhances reflexes and motor coordination, increases flexibility and improves balance. The varied moments provide a powerful cardio workout by engaging the entire body, including the hamstrings, quads, calves and core.

In sport, the player has to prepare himself both physically and mentally to learn the skills, techniques and tactics. Normally physical training is a very basic for a sport to prepare the player to earn the basic movements (Scheiman and Wick, 2002) [33]. During the course of training, the trainer will review the skills on the player learned which enable the player to recollect their learned skills and realized their strength and weakness. Visually, a player can bring the events he performed.

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Visual skills are necessary in decision making, since accurate decision making is in need in sport activities, specifically learning the complex task. The visual skills involves combined efforts of eyes, eyelids, intra and extra ocular muscles, several cranial nerves and sub-cordial brain stem, spatial audition and kinesthetic perception and balance. It is one of the sensory systems in the human body, when a player wants to observe the fast movements of a ball in the badminton game. Since a player has to eye focusing in learning the skills, judging the speed and height of the flight of the ball during playing, the visual skills serve as the basic requirements. In the badminton game, visual information is essential when the movements of the player must coincide with a changing environment, such as hitting the ball. If a player is not having the visual acuity, efforts over the visual abilities may result in failure to meet the shuttle. Thus, the need of visual skills is to be considered as important for the badminton players. With this perspective, the present study has been undertaken to study the effect of visual skills training with imagery, visual skills training alone and traditional training on the abilities of skill performance variables short-serve and long-serve.

### Materials and Methods

In this study, pre-post random group experiment research design was employed. In the selection of samples, convenience sampling method was adopted. Since the present study has been undertaken to study the effect of visual skills training on the skill performance variables short-serve and long-serve, the performance on overall playing ability was measured using the selected fundamental skills in badminton by expert rating method.

One hundred and twenty nine students studying in schools in the age group of 12-14 who have experienced minimum at inter-school level competitions were selected. Out of this, samples exist in the range from 3.5 to 5 on the performance of overall playing ability are screened to 64. Among them, 45 samples were randomly selected and assigned to three groups equally. Thus, each group consists of 15 subjects. Group-1 is named as Visual Skills with Imagery Training (VSIT), Group -2 as Visual Skills Training (VST) alone and Group-3 as Control Group (Traditional Training Group). As variables, the performance of subjects on the abilities of short-serve and long-serve were selected. The French Short-serve Test and Pool Long-serve Test have been used to measure short-serve and long-serve respectively.

The samples of Experimental Group-1 were treated with visual skills with imagery training, Experimental Group -2 with visual skills training alone and Experimental Group -3 with traditional training for about 12 weeks in alternative days a week. For employing visual skills, the drills related to coordinative abilities and basic fundamental skills were used with duration of 40 minutes. The collected data were tested with paired t-test, so as to test the individualized effects and comparative effects of visual skills with imagery training, visual skills training alone and traditional group on selected coordinate abilities of short-serve and long-serve. To test the significance of the results derived, 5% level of significance was chosen. The results of the study are as follows.

### Results

**Table 1:** Significance of Mean Gains & Losses between Pre and Post Tests Scores on coordinate Abilities and Skill Performance Variables of Visual Skills Training Group

S. No.	Variables	Pre-Test mean	Post-Test mean	MD	SD	SEM	't' ratio	DF	Sig.
1.	Short-serve	61.80	66.06	4.27	1.39	0.36	11.91	14.00	0.00
2.	Long-serve	32.53	37.33	4.80	2.24	0.58	8.29	14.00	0.00

Table 1 indicates the obtained t-ratios for short-serve and long-serve among the subjects treated with visual skills training (VST). The obtained t-ratios for short-serve is 11.91 ( $p > 0.00$ ) and for long-serve is 8.29 ( $p > 0.00$ ) and are found to be statistically significant at 5% level. From the results, it is

inferred that in the mean gains and losses made from pre-test to post-test on short-serve and long serve, significant changes were made from the base line to post training of after 12 weeks.

**Table 2:** Significance of Mean Gains & Losses between Pre and Post Tests Scores on Coordinate Abilities and Skill Performance Variables of Visual Skills Training with Imagery Group

S. No.	Variables	Pre-Test mean	Post-Test mean	MD	SD	SEM	't' ratio	DF	Sig.
1.	Short-serve	63.53	69.53	6.00	2.27	0.59	10.25	14.00	0.00
2.	Long-serve	33.60	39.06	5.47	1.96	0.51	10.81	14.00	0.00

Table 2 delineates the obtained t-ratios for short-serve and long-serve among the subjects treated with control (traditional) group. The obtained t-ratios are 10.25 ( $p > 0.00$ ) and 10.81 ( $p > 0.00$ ) for short-serve and long serve respectively and are found to be statistically significant at 5%

level. From the results, it is revealed that in the mean gains and losses made from pre-test to post-test on short-serve and long serve, significant changes were made from the base line to post training of after 12 weeks.

**Table 3:** Significance of Mean Gains & Losses between Pre and Post Tests Scores on Coordinate Abilities and Skill Performance Variables of Traditional Training Group (Control Group)

S. No.	Variables	Pre-Test mean	Post-Test mean	MD	SD	SEM	't' ratio	DF	Sig.
1.	Short-serve	61.60	61.87	1.27	1.75	0.45	2.80	14.00	0.01
2.	Long-serve	33.87	35.00	1.13	2.00	0.52	2.20	14.00	0.05

Table 3 illustrates the obtained t-ratios for short-serve and long-serve among the subjects treated with visual skills training with imagery (VSTI). The obtained t-ratios are 2.80

( $p > 0.00$ ) and 2.20 ( $p > 0.00$ ) for short-serve and long serve respectively and are found to be statistically significant at 5% level. From the results, it is observed that in the mean gains

and losses made from pre-test to post-test on short-serve and long-serve, significant changes were made from the base line to post training of after 12 weeks.

### Discussion on Findings

In the present study, the observed results confirmed the positive effect of visual skill training over the improvement of visual skills such as short-serve and long-serve. In human life, if a person is unable to utilize his visual abilities to his/her fullest potential, he could not complete his/her task effectively. Like the physical skill training, visual skills training can also be provided to the players (Edward *et al.* 2005) <sup>[11]</sup>. According to Du Toit, P.J. *et al.* correct sports vision training can improve certain visual skills. Sports vision exercises are the efficient method of improving certain visual skills. The combination of visual and athletic skills training is better than the exclusive athletic and visual training. The visual skills training programme can be beneficial to competitive sports performance (Kruger, P. E. *et al.* 2009) <sup>[34]</sup>. The sports vision dynamics appear to be the most effective approach to help the players to maximize their use of vision during sport performance (Elizabeth S. Bressan, 2003) <sup>[12]</sup>. The higher ability training group achieved a significant improvement in their first serves, while the lower ability training group declined in their accuracy (Noel, R. C., 1980) <sup>[24]</sup>.

The coordinative ability training influences the serving ability and hand-eye co-ordination (Dhatchiyayani, S., 2017) <sup>[35]</sup>. The mental imagery plays a key role in the planning and implementation of action (Issac, A.R. and Marks, D.F., 1994) <sup>[15]</sup>. The poor eye teaming can result in frequent loss of place, when tracking the shuttlecock during the serving either low or high, which results in eyestrain (Wilson, T.A. and Falkel, J., 2004) <sup>[28]</sup>. The positive energy added to the level of aspects of the player may be the significant source for the imagery group who performed better in passing and serving (Balamurugan, R., Rajeswaran, S.T.N. and Suresh Kaliraj, D., 2016) <sup>[2]</sup>.

### Conclusions

Based on the results, the following conclusions have been made. In the present study, in testing the individualized effect of visual skill training on short-serve and long-serve, the observed results confirm that the positive changes have been made from before treatment and after treatment on the performance of short-serve and long-serve. Results from the individualized effect of visual skill training explained that performance on short-serve and long-serve has been improved from the base line. Hence, it is concluded that the need of visual skill training is viable source for the players in procuring the abilities such as short-serve and long-serve. Therefore, it is suggested that in future, in physical training, the physical education teachers, coaches, trainers and exercise designers should incorporate the visual skill training to extract potential of the players in the badminton game.

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