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Effect of technique training on forehand long serve of novice badminton players

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Abstract

The study aimed to determine the effect of six weeks of technique sessions on the forehand high service of novice badminton players. Twenty female students who were between 17 and 23 years of age from B.P.Ed. II year. A total of 20 subjects were randomly assigned into two groups, with 10 participants in each: an experimental group and a control group. All subjects were selected from the Lakshmibai National Institute of Physical Education, North East Regional Centre, Guwahati, Assam. The basic technique selected and tested as in pre and post-test on the female novice badminton players was forehand long serve. Descriptive statistics, including mean and standard deviation, as well as comparative statistics such as ANCOVA were used and analyzed at the 0.05 level of significance and interpret the present data collected. As from the analysis it was seen that the F-value generated for the groups was insignificant due to the p-value related to it was .067 which was greater than 0.05 which can be inferred that the groups showed no variation among the adjusted means of forehand high service.

Keywords: Standard Deviation & ANCOVA, technique training, forehand high service, novice, badminton players, experimental & control group, descriptive statistics, mean

Introduction

Training in sports is a process to improve the athletics performance, which forms its base of the scientific principles through systematic development of mental and physical efficiency, to enable the formation of basic skills or techniques further to produce outstanding and record-breaking athletic performances. The individuals' personality develops in accordance with the surroundings or the social environment and prevailing societal norms foster a positive mind-set toward the latest advancements in training techniques. The essential objective of training is to cultivate the athlete's skills to achieve optimal performance levels. There are different types of sports such as indoor and outdoor sports. Some sports are totally different from each other; some sports have a similar feature in skill, technique, tactic and strategy. For example, a team game has some similar strategy of game and racket games have a little bit similar features in skill technique, footwork and movement of the body.

To enhance the performance of an athlete proper training plan is required. According to the type and the component of the sport, athlete with different sports has to be trained differently. Every component is important, performance of the athlete depends upon the effectiveness of the training and how the training effecting upon the athlete. There are different parts of sports training, such as physical, technical, tactical/specific and special training for the correcting the faults and for the improvement of the performance.

Training aimed at achieving the desired level of athletic performance contributes to the development of the individual's overall personality, encompassing both mental and physical aspects. An individual's performance is influenced by the coordinated effort and integration of various functional levels. Both physical fitness and psychological readiness are equally essential to maintaining the individual's balance.

Athletes should master in fundamental skills to perform the sports at high level. The performance is not only tactical, physiological or psychological but also basic skill is important to determine the performance during the game as well as to maintain the consistency and accuracy along with the variations and the innovation added to a particular skill of any games and sports.

There are particular strokes in badminton, it is very important to learn those strokes properly to play the game efficiently; by using proper techniques the player can perform the skills effectively and perfectly. As athletes progress through various stages from beginner to advanced levels. Fitts and Posner (1967) ^[1] proposed a clear model outlining this progression, identifying three phases of motor skill learning: the cognitive phase, the associative phase, and the autonomous phase.

A beginner badminton player needs to learn the fundamental skills so that they can execute the skills perfectly to win the point during the game with less effort. The beginner player should also aware about which skill should be used in various situations. For the beginner some of the very basic skills used to be taught because they are not able to perform the advance skills. So, considered that the subject of the study is the novice badminton player forehand long serve have been chosen for the training program. So, in this study, training program plan was planned to study the effect of six-week technique training for the novice badminton player on the skill of Forehand Long Service.

Methods

Sampling of Participants

To achieve the objectives of this study, 20 female students from the B.P.Ed. Second year, identified as novice badminton players, were chosen from Lakshmibai National Institute of Physical Education, North East Regional Centre, Guwahati, Assam. Their ages ranged from 17 to 23 years. These participants were then randomly divided into two

groups of 10 each: an experimental group and a control group.

Selection of variable

Forehand Long Service was selected as the variables of the study tested on the female novice badminton players both in pre and post-test conditions.

Criterion Measure

The Forehand Long Service tenure was analyzed by Scott and Fox long service test. The purpose of the test was to measure the capacity to deliver a high and deep serve to the backcourt. With the chalk, arcs are drawn outward starting from the point where the left singles side-line intersects with the long service line. The arcs constructed at distance of located 22, 30, 38, and 46 inches away from the midpoint. Every distance encompasses the width of 2 inches lines. A rope has to be stretch extending across the court at a height of 8ft. and at a range of 14ft originating at the net. The participant (A) positions themselves in the service court diagonally opposite the target and attempts to serve the shuttlecock over the rope into the designated corner containing the target zones. To earn points, the shuttle must successfully pass over the rope. Only valid serves are considered as trials. The target zones are delineated with point values as illustrated in Figure 1. A total of twenty shuttles are served, with any shuttle landing on a boundary line awarded the higher point value. The overall score is the cumulative total of all twenty attempts. Any faults committed are retried.

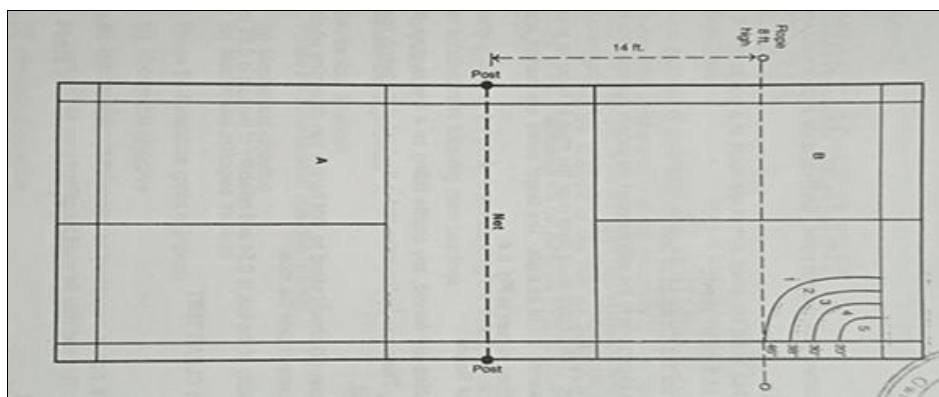


Fig 1: Scott and Fox Long Service Test

Approach to the study

A true experimental design, namely the pre-test-post-test randomized group design, was selected for this study. In this approach, participants are randomly allocated to different groups, with each group being assessed both before and after the intervention using pre-tests and post-tests. The total number of subjects, novice badminton players (N=20), following random assignment, the sample was divided into two groups: an Experimental group (N=10), which participated in a structured six-week badminton technique training program, and a Control group (N=10), which did not receive any form of training during the same period.

Procedure of test administration, training protocol and data collection

Before the commencement of the test met with the subjects the female novice badminton players. The objectives of the research and the nature of the tests were clearly explained to

the participants to ensure they understood what was expected of them. Subsequently, the entire sample (N=20) was randomly divided into two groups: the experimental group and the control group (N=10 subjects in each group). Pre-test assessments were carried out on all participants to obtain baseline measurements on the skill related variables of forehand high service. Post-pre-test, each group experienced its designated condition: the experimental group participated in training, and the control group did not. A comprehensive six-week training program was crafted utilizing simple to complex and was undertaken. The program incorporated technical training carried out three times a week, each lasting approximately 40 to 45 minutes which included both warming up and cooling down exercises. Training was facilitated only to the experimental group (N=10), where the subjects performed the training under supervision of the researcher. The control group (N=10) was not given any training for the period of 6 weeks

and was exposed to regular institute's curriculum. The experimental group (N=10) was given a total of 6 weeks technique training for 3 days a week with a session duration of 45 minutes. The post-test, employing the same measures as the pre-test, was conducted on both the experimental and control groups, each consisting of 10 participants.

Statistical Techniques: The hypothesis was examined through the application of descriptive statistics mean and

standard deviation and comparative statistical techniques such as ANCOVA was employed and tested at 0.05 threshold for significance to measure the present data collected.

Results

Analysis & Discussion of the skill related variable of forehand high service is as under:

Table 1: Descriptive statistics test scores of forehand high service of experimental and control group

	Treatment Groups	Mean	Std. Deviation	N
Pre-Test High Service	Experimental Group	17.00	7.93	10
	Control Group	8.40	7.90	10
	Total	12.70	8.88	20
Post-Test High Service	Experimental Group	29.80	11.02	10
	Control Group	15.00	10.69	10
	Total	22.40	13.01	20

Table 1 revealed the mean and standard deviation across all participants/groups for pre-test and post-test of forehand high service are 12.70+8.88 & 22.40+13.01 respectively. The mean and SD within the experimental group and control group in the pre-test condition of forehand high service are 17.00+7.93 & 8.40+7.90 respectively. The mean and SD of

the experimental group and control group in the post-test condition of forehand high service are 29.80+11.02 & 15.00+10.69 respectively. The mean scores of pre-test and post-test of forehand high service of experimental and control groups are illustrated graphically in Figure 2.

Table 2: Adjusted group mean and corresponding standard error of forehand high service in different groups during treatment

Treatment Groups	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Experimental Group	27.6 ^a	3.550	20.157	35.137
Control Group	17.1 ^a	3.550	9.663	24.643

a. The model estimates were computed with the covariate Pre-Test High Service held constant at 12.70.

The adjusted mean and standard error of forehand high service in different groups have been shown in Table 2. The mean of the forehand high service has been obtained in the treatment groups i.e., experimental group (M=27.6) and control group (M=17.1) after adjusting the covariate (pre-

test high service-M=12.70). The mean score comparison between the experimental and control groups indicated a significant difference in the post test conditions. For further revelation of findings, ANCOVA result was discussed.

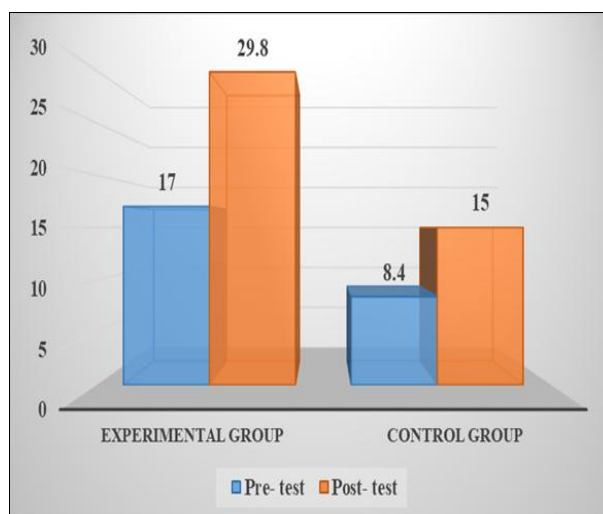


Fig 2: Mean test scores of forehand high service of experimental and control group

Table 3: ANCOVA of forehand high service in different groups during treatment

Source	Type III Sum of Squares	DF	Mean Square	F	Sig.
Pre FHS	282.901	1	282.901	2.613	.124
Groups	414.703	1	414.703	3.830	.067
Error	1840.699	17	108.276		
Corrected Total	3218.800	19			

Table 3 illustrates the *F*-value resulting from the analysis of covariance (ANCOVA) conducted on the adjusted means of the skill variable of forehand high service (FHS) in the treatment groups i.e., experimental and control groups. The *F*-value estimated for the groups was insignificant owing to the *p*-value accompanying it was .067 such that it was more than 0.05. Thus, the data support the conclusion that no meaningful variation existed between the groups among the adjusted means of forehand high service. Since the *F*-value was insignificant the post hoc comparison with respect to the adjusted means of the treatment groups were not done. Thus, considering the findings above, it is reasonable to conclude that there was Impactful mean inequality observed within the variable of forehand high service between the test conditions among the treatment groups, but the ANCOVA resulted in insignificant *F*-value throwing light upon settling the findings as no difference in the groups among the adjusted means of forehand high service.

Discussion of Findings

As from the analysis it was seen that the *F*-value estimated for the groups was insignificant due to the fact that the *p*-value linked to this result was .067 which was more than 0.05. Thus it may be inferred that no difference existed in the groups among the adjusted means of forehand high service. This event hypothesised that a notable impact is predicted after six weeks of technique training in regard to the skill performance of forehand high service of the novice badminton players, the hypothesis stated was hereby rejected.

Also, it was felt that the training imparted needed to be retrospectively and further intensive work in this direction was need of the hour. The results of this study are in consonance to the research of Yasir *et al.* (2021) ^[8] as it studied the effect of physiological skills training on performance and mental skills of 20 male and 20 female badminton players. The study concluded with No evident advancement in badminton skills of long service, forehand clear, forehand drop, and forehand smash of both male and female badminton players.

It was understood from the reviews that skill training is essential for the athletes to improve their performance level. And test, measurement and evaluation play vital role to understand the level of performance and to improve an individual's performance. Most studies concluded stating that a notable difference emerged post-administration of technique training on skill performance. Apart from particular skill training, different training program also effects in performance enhancement. The findings of this study differ with the conclusions generalized by majority of the literature as because significant effects were evident of improvement seen in both the experimental and control groups in the posttest conditions.

Conclusion

It can be concluded from the analysis that the *F*-value computed for the groups was insignificant as the *p*-value associated with it was .067 which was more than 0.05 depicting that there was no difference in the groups among the adjusted means of forehand high service. The reasons for obtaining this result might be owing to various explanations like the subjects selected for this study were students of physical education, they were already fit and having enough exposure towards the game thus making it

clear that the technique training given to the experimental groups could not surpass remarkably the natural skills of the subjects in control group were not required for them.

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