

# A Comparative Study of Different Training Methods on the Performance of Table Tennis Players

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**Abstract** – The purpose of the study was to compare the effect of different training methods on the performance of table tennis players. The study was delimited to 30 randomly selected male table tennis players. The players were selected from Lakshmbai National University of Physical Education and Gwalior District Table Tennis Association. The subjects were divided into three groups namely, Throwing Machine Training Method Group, Manual Training Method Group and Control Group. Each group consisted of 10 players. The Skill Test constructed by Dr. Pushpendra Purashwani was selected as criterion measure to measure the performance of table tennis players. In order to measure the performance of table tennis players, the data was collected on the basis of 'pretest' and 'posttest'. The scoring was done on the basis of norms of the selected skill test. The means of different groups were compared using One Way Analysis of Variance i.e. 'F'-ratio. The level of significance chosen was 0.05. After administering of six weeks training programme, groups were re-administered the skill test and the result showed a significant difference between Throwing Machine Training Method and Manual Training Method, between Throwing Machine Training Method and Control Group, where as insignificant difference was found between Manual Training Method and Control Group.

**Keywords:** Training Methods, Skill Test, Performance, Pre Test, Post Test, One Way ANOVA.

## 1. INTRODUCTION

Sports performance is the unity of execution of a sports action or a complex sequence of actions measured or evaluated according to socially determined and agreed norms.

Training is a learning process that involves the acquisition of knowledge, sharpening of skills, concepts, rules or changing of attitudes and behaviours to enhance the performance of an individual/athlete.

As we know, there is a lack of throwing machine training in Table-Tennis for assessing the ability and predicting the performance of Table-Tennis players, a definite and appropriate training method is essential. The comparative study of different training methods on the performance of Table Tennis Players serves this purpose in a meaningful way.

Therefore, observing the felt requirement, the researcher considered it necessary to attempt compare the effect of different training methods on performance of table tennis players.

## 2. MATERIALS AND METHOD

For the purpose of study, 30 male table tennis players were randomly selected. The players were selected from Lakshmbai National University of Physical Education and Gwalior District Table Tennis Association. The subjects were divided into three groups namely, Throwing Machine Training Method Group, Manual Training Method Group and Control Group. Each group consisted of 10 players. The Skill Test constructed by Dr. Pushpendra Purashwani was selected as criterion measure to measure the performance of table tennis players. This test includes items namely, Alternate Push Test, Alternate Counter Test, Target Service Test & Drive on Target Test. In order to measure the performance of table tennis players, the data was collected on the basis of 'pretest' and 'posttest'. The scoring was done on the basis of norms of the selected skill test. All the subjects were undergone though six weeks training programme of different training methods i.e. Throwing Machine Training Method Group, Manual Training Method Group and Control Group.

In order to compare the means of different groups that participated in the experiment, the data were compared using One Way Analysis of Variance i.e. 'F'-ratio. The level of significance chosen was 0.05.



Fig.1. Subject's performance being tested

The analysis was done by using Statistical Package for Social Science 12.0 for Windows and online statistics calculator "http://www.danielsoper.com".

### 3. RESULTS

Throwing Machine Training Method (A) Manual Training Method (B) Control (C) Mean Difference Critical Difference (.05)

The data collected through administering Table Tennis Skill Test constructed by Dr. Pushpendra Purashwani among the participants of three groups, namely, Throwing Machine Training Method Group, Manual Training Method Group and Control Group was analyzed by computing 'F'-ratio in the initial stages prior to treatment in order to find out the difference among the groups, if any. The finding pertaining to analysis of variance among the three groups in pre test scores has been presented in table 1.

Table 1

#### One Way Analysis of Variance among Pre Scores Belonging to Different Training Groups

SV	df	SS	MSS	F-Ratio
Between Group	2	2.4	1.2	.19
Within Group	27	164.3	6.08	
Total	29	166.7		

Tab. F = 05 (2,27) = 3.35

Table 1 reveals that there is insignificant difference among the means of three groups as the obtained 'F'-value (.19) is less than the tabulated value (3.35) needed for significance at .05 level of confidence with 27 degree of freedom.

Table Tennis Skill test was again re-administered after the treatment of six weeks and the collected data was again analyzed by computing of analysis of

variance. The findings pertaining to analysis of variance in the skill test among the three groups have been presented in table 2.

Table 2

#### One Way Analysis of Variance among Post Scores Belonging to Different Training Groups

SV	df	SS	MSS	F-Ratio
Between Group	2	32.1	16.05	3.64*
Within Group	27	119.3	4.41	
Total	29	151.4		

F.05 (2,27) = 3.35

Table 2 reveals that a significant difference has been obtained in 'F' test as the calculated 'F'-value of 3.64 is greater than the tabulated 'F' value of 3.35 needed for significance at .05 level of confidence with 27 degree of freedom.

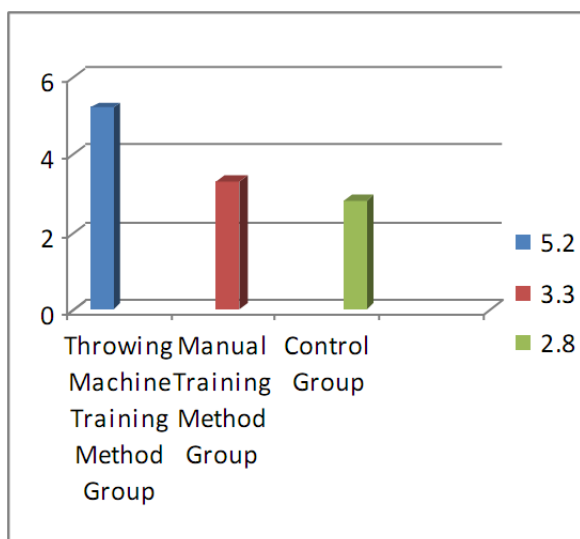
As the significant 'F'- value was obtained, in order to find out which group differed from one another, a post hoc test of significance by applying LSD (Least Significant Difference) test was employed and the findings pertaining to this has been presented in table 3.

Table 3

#### Paired Mean Difference in Post Scores among Different Training Groups

Throwing Machine Training Method (A)	Manual Training Method (B)	Control (C)	Mean Difference	Critical Difference (.05)
5.2	3.3		1.9*	1.90
5.2		2.8	2.4*	
	3.3	2.8	.5	

Observation of table 3 reveals that a significant difference has been obtained between Throwing Machine Training Method Group & Manual Training Method and Throwing Machine Training Method Group & Control Group. Insignificant difference has been obtained in Traditional Training Group & Control Group. The findings have been presented in figure 2.



**Fig. 2 Mean of Post Scores of Different Groups (N=10)**

#### 4. DISCUSSION

Analysis of data revealed that three groups namely, Throwing Machine Training Method Group, Manual Training Method Group and Control Group initially prior to administration of experimental treatment did not show significant difference. After administering treatment for duration of six weeks the three groups were re-administered table tennis test and the result showed a significant difference between Throwing Machine Training Method Group & Manual Training Method Group because throwing machine continuously feeds the balls with desired speed at desired place with desired frequency till the subjects desires while in Manual Training Method the tester is not able to provide the balls with same speed at same place for long time. Hence, the subjects got comparatively more practice while Training with Throwing Machine than that of the Manual Training Method. Thus the result showed significant difference. The findings of the study are in agreement with the findings of Thirunaunkkarasu & Reams.

A significant difference between post experimental performances in table tennis skill test scores between Throwing Machine Training Method Group & Control Group may probably be due to a group practicing table tennis with advance gadget whereas the other group did not practice the skill of table tennis with such methods. In sports, especially in table tennis a group which practices with the latest training gadgets is likely to perform better than the Control Group.

An insignificant difference between Manual Training Method & Control Group was obtained and this may probably be due to casual approach adopted by the experimental group being taught by adopting Manual Training Method. As the performance was not related to assignment of marks/grades to the students, the likely a reason is casual attitude.

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