

The Effect of Training on Improvement of the Speed and Explosive Power of Students

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Abstract

The objective of this research was to study the effect of training on improvement of the speed and explosive power of students. Speed is the capacity to travel or move very quickly. It means the whole body moving at maximum running speed, as in the sprinter. Speed is a scalar quantity that refers to how fast an object is moving. Speed can be thought of as the rate at which an object covers the distance. Explosive strength refers to the ability to develop max force in minimal time without the use of the plyometric stretch-reflex. The main purpose of the study was "the effect of training on improvement of Speed and explosive strength ability". Then the data were analyzed with reference to the objectives and hypothesis by using independent t-test to find out the improvement of speed and explosive strength through the training by using SPSS 15.0 statistical software and the results obtained thereby have been interpreted.

Keywords: Fitness; Speed and explosive power

Introduction

Speed is the capacity to travel or move very quickly. It means the whole body moving at maximum running speed, as in the sprinter. Speed is a scalar quantity that refers to how fast an object is moving. Speed can be thought of as the rate at which an object covers the distance. A fast moving object has a high speed and covers a relatively large distance in a short amount of time. Explosive strength refers to the ability to develop max force in minimal time without the use of the polymeric stretch-reflex. Jumping from a paused position and sprinting out of the blocks both require nearly pure explosive strength. Explosive strength relies on starting strength, which is the ability to "turn on" as much force as possible in the first 0.03 seconds of movement [1-3].

Statement of the problem

The purpose of the study is to study the effect of training on improvement of the speed and explosive power of students.

Limitations

- The diet and nutrition of the selected players are not under control.
- Psychological behavior of players, socio-economic status of players was not controlled by the researchers.

Delimitation

- This study was restricted only to 28 girls of Karnataka state Akkamahadevi Women's University, Vijayapura.
- This study is delimited to improvement of speed and explosive power through training for BPED students.

Hypothesis

- The speed and explosive power will be improved through the training.

Definition of the terms

Speed: Speed is the ability to execute motor actions under given conditions in minimum possible times.

Explosive power: The rate of force development is at the maximum for any type of muscle action is explosive power.

Significance of the study

- The result of study will help the physical education teachers, coaches to select the long jump players on the basis of training on speed and explosive power.
- The result of the study helps the coaches and physical education teachers to plan the training and coaching schedule for improving the speed and explosive power effectively

Research Methodology

In this chapter the selection of the subject, selection of variables collection of data criterion measures administration

of tests statistical procedures employed for analyzing data have been described.

Selection of the subjects

The speed and explosive power training was given to 28 girls of Karnataka State Akkamahadevi Women's University, Vijayapura, Karnataka, India.

Selection of variables

The selection of variables was done keeping in view the most contributing factors to sports performance the feasibility of collection of data and the legitimate time available with the research the following variables have been selected for the improvement through training.

Procedure of administering the test collection of data

- Speed test.
- Explosive strength.

Training procedure

Speed training: Speed is full, maximum, or optimum rate of motion. Speed training is training given to improve the rate of motion.

Exercises used for speed improvement in speed training

- Sprints
- Strides
- Bonding exercises

Explosive power training: The rate of force development is at the maximum for any type of muscle action is explosive power. The training given to improve the explosive power is called explosive power training.

Exercises used for explosive power improvement in training:

- Single leg hopping

- Double leg hopping.
- Frog squat jump.

Statistical technique

In pursuance of the objectives of the study as well as to test the research hypotheses Analysis of Variance and 't' test were used to find out whether there is improvement in the speed and explosive strength ability through training for the BPEd students.

Analysis and interpretation of data

However valid, reliable and adequate the data may be, it does not serve any useful purpose unless it is carefully processed, systematically classified and tabulation, scientifically analyzed, intelligently interpreted and rationally concluded. After the data had been collected, it was processed and tabulated using Microsoft Excel-2010 software. The data collected on speed and explosive strength test for 28 girls of Karnataka State Akkamahadevi Women's University Vijayapura. The main purpose of the study was "The effect of training on improvement of Speed and explosive strength ability". Then the data were analyzed with reference to the objectives and hypothesis by using independent t-test to find out the improvement of speed and explosive strength through the training by using SPSS 15.0 statistical software and the results obtained thereby have been interpreted. The level of significance set at 0.05% level of significance was considered to reject or accept the null hypothesis. On the basis of objectives the following hypothesis were formed [4,5].

Hypothesis

The speed and explosive power will be improved through the training.

To achieve this hypothesis, the unpaired t test was applied and the results are presented in the following **Table 1**.

Table 1: Result of t-test of improvement of speed and explosive power through training.

Group	Test	Mean	N	Std Deviation	Std Error Mean
Pair-1	Pre test score of 30 mtr dash	5.5261	28	0.79505	0.15025
	Post test score of 30 mtr dash	6.3450	28	1.20152	0.22707
Pair-2	Pre test score of standing broad jump	2.1486	28	.47953	0.09062
	Post test score of standing broad jump	1.3121	28	.31346	0.05924

Table 1 reveals that post test mean score of 30 mtr dash is higher than the pre test, while pre test mean score of standing broad jump is higher than the post test standing broad jump. To know the difference of mean at the significant level

between pre test and post test's 30 mtr dash and standing broad jump, data is subjected to independent sample t-test in **Figure 1** and **Table 2**.



Figure 1: The difference of mean at the significant level between pre test and post test.

Table 2: Paired samples test paired differences.

Group	Test	Mean	Std. Deviation	Std Error Mean	95% Confidence Interval of the Difference				
					lower	upper	t	d f	sig(2. tailed)
Pair-1	Pre test score of 30 mtr dash post score of 30 mtr dash	-81893	1.34812	25477	-1.34167	-29618	-3.214	27	.003
Pair-2	Pre test score of standing broad jump post test score of standing broad jump	8.3643	.332691	.06178	.70967	.96319	13.539	27	.000

Compared- t- test Table

Compared t - test table reveals significant difference between pre and post tests of 30 mtr dash standing broad jump. So we can assume effect of training has significantly improved the performance of speed in students while, standing broad jump performance decreases significantly.

Discussion

The data collected for the present investigation have been analyzed and findings presented in the preceding chapter. This chapter presents a brief summary of the investigation of the findings, discussions of the findings, conclusions that have been drawn from the findings and suggestions for further research in the field. This study was undertaken to improve the speed and explosive power ability. The subjects were 28 girls of Karnataka State Akkamahadevi women's university

Vijayapura, Karnataka, India. For assessing explosive power and speed conducted the test of broad jump test and 30 mtrs dash test.

Conclusion and Recommendations

On the basis of the result the following conclusion may be drawn:

- There is the improvement in the speed and explosive power through the training.
- With the help of the results of the study the following recommendations are made.
- The same study may be conducted on different group of people.
- The similar study may be conducted on female athletes.
- Similar study may be conducted on State, National and also International athletes.

- The result of the study also helps the coaches or physical education teacher for the direction or to prepare the training and coaching schedule for the athletes.

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