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## A comparative study of balance ability among district, state and national level of track and field athletes

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### Abstract

The purpose of the study was to compare the selected Balance Ability of track and field athletes at different levels of achievement. It was hypothesized that there may be no significant difference in Balance Ability of track and field athletes at different levels of achievement. For the purpose of the study, 90 male track and field athletes from Gujarat were selected as a subject. Thirty athlete (n=30) from district level and thirty athlete (n=30) from state level participated as subjects for the study. Hence, purposive sampling technique was considered for selection of subjects. The age of the subjects was ranged from 15-18 years. Descriptive statistics was used to process the data prior to employing inferential statistics. Analysis of Variance (ANOVA) was used to compare Balance ability of track and field players of different level on selected criterion variables separately. Level of significance was set at 0.05. It is evident from significant difference were found between the Balance Ability of District & State (0.1090), District & National (0.7380) and State & National level (0.6290). The observed sequence of performance of Balance Ability in three groups is District>State>National. It may be concluded that Balance Ability is increased with they undergo specialized type of training comprising of rhythmic sense and over balance for carrying put multi-farious activities.

**Keywords:** balance ability, field athletes, multi-farious activities

### 1. Introduction

Athletic skill is always being measured and evaluated. The reasons for measurement and evaluation in sport can be to choose members of a team, to decide positions on a team, to evaluate improvement, or to decide which type of sport an athlete should focus on. Some coaches may measure skill using objective tests, while others may rely on their subjective expertise. Club teams have try outs with hundreds of athletes hoping to make one of the teams. The methods that coaches employ to evaluate athletes may only be limited by their imagination. Coaches may be using tests that do not directly measure actual playing ability. Quantitative and qualitative measurement may also be performed by researchers. Talent identification using tests seems to be a topic of interest for sport programs, especially in the age of early specialization and nationalized sport academies. Assessing and correctly identifying potential high-caliber athletes may save many hours of searching for and developing talent. (Bishop, 2011) <sup>[1]</sup>

To reflect the opinion of various experts regarding the importance in developing the coordinative abilities level to improve selection system of elite athletes. These coordinative abilities can be viewed as the ability of a person that performs actions with a high degree of difficulty, adjusting the movements in time and space and taking into account new situations that occur. The main research method used in this paper is based on the literature studies in this area of interest, i.e. articles and publications, manuals, tutorials, etc. Initially, the study began from the hypothesis that significant improvements can be observed in the selection process of the young athlete's when is take into account the development of the coordinative abilities. Analyzing the related work in this field, selection process is the decisive factor in creating the assumptions for achieving high performances in sport. Also, these researches provide criteria, samples and standards, features and models for initial and primary selection process, and also for the selection of the Olympic or national athletes groups. The conclusion of this study shows that one of the most important criteria for athletes' selection process is represented by their level of development of coordination abilities.

Researches included in this paper also argue the importance of athlete's coordination abilities development for selection process in different types of team sport games. Juravle (2013) [2]

**2. Methodology**

**2.1 Objective of the study:** The purpose of the study was to compare the selected Balance Ability of track and field athletes at different levels of achievement.

**2.2 Hypothesis:** It was hypothesized that there may be no significant difference in Balance Ability of track and field athletes at different levels of achievement.

**2.3 Subjects:** For the purpose of the study, 90 male track and field athletes from Gujarat were selected as a subject. Thirty athlete (n=30) from district level and thirty athlete (n=30) from state level participated as subjects for the study. Hence, purposive sampling technique was considered for selection of subjects. The age of the subjects was ranged from 15-18 years.

**2.4 Administration of Tests: Long Nose Balance Test**

The objective of the test was administered to measure the 'Balance ability' of the subjects. The following equipments were arranged by the researcher before commencement of the

final test, balancing beam, one medicine ball weighing 2kg, one medicine ball weighing 1kg, stopwatch, pencil, paper and clip-board. A balance beam of standard size was kept on the floor, one and a half meter away from the starting line. The subjects were asked to stand behind the starting line with 1kg medicine ball on their strong hand fully stretched forward and the other hand holding the opposite ear lobe. On clapping, the moved over the balance beam towards the 2kg medicine ball, which was kept at the other end of the beam. Subjects were asked to push down the medicine ball with any foot and move back to the starting line without losing the balance.

**2.5 Statistical Analysis:** Descriptive statistics was used to process the data prior to employing inferential statistics. Analysis of Variance (ANOVA) was used to compare Balance ability of track and field players of different level on selected criterion variables separately. Level of significance was set at 0.05.

**3. Result**

The descriptive measure in terms significant difference of to compare Balance ability of track and field players of different level are shown in Table 1 & Table 2.

**Table 1:** Comparison of Balance Ability among District, State and National level of Track and Field Athletes (n=90)

Levels	Mean (Sec.)	S.D.	Analysis of Variance					
				Sum of Squares	Df	Mean Square	F	Sig.
District (n=30)	13.0990	0.60358	Between Groups	9.522	2	4.761	6.431	0.002
State (n=30)	12.9900	1.02515	Within Groups	64.408	87	0.740		
National (n=30)	12.3610	0.89763	Total	73.930	89			
Total (N=90)	12.8167	0.91141						

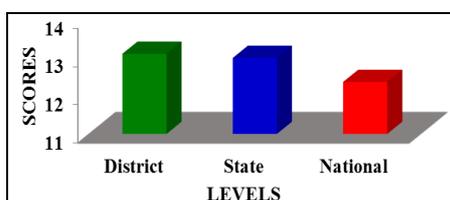
- Since significant differences was found among the District, State and National level athletes in related to Balance Ability, LSD post hoc test was applied to compare Paried Means.

**Table 2:** LSD test for mean Comparison on Balance Ability among District, State and National level of Track and Field Athletes

(I) levels	(J) levels	Mean Difference (I-J)	Sig.
District	State	0.1090	0.625
	National	0.7380	0.001
State	National	0.6290	0.006

\* The mean difference is significant at the 0.05 level.

- It is evident from table-2 that significant difference was found between the Balance Ability of District & State (0.1090), District & National (0.7380) and State & National level (0.6290).
- The observed sequence of performance of Balance Ability in three groups is District>State>National. It may be concluded that Balance Ability is increased with they undergo specialized type of training comprising of rhythmic sense and over balance for carrying put multi-farious activities.



**Fig 1:** Comparison of mean scores balance ability among district, state and national level of track and field athletes

**4. Discussions**

There was a statistically significant difference between groups as determined by one-way ANOVA {F (2, 87) =6.431, p =0.002}. A LSD post-hoc test revealed that the time to complete the balance ability was statistically significant better in National athlete (12.3610± 0.6290 sec., p = 0.006). There were no statistically significant difference between the district and state level (p= 0.625). It is evident from the statistical findings that the F-value 6.43, which is significant at 0.05 level. It indicates that there is significant difference on balance ability among district, state and national level athletes. The LSD post hoc mean comparison revealed the fact that national level athletes have better balance ability with mean score of (12.36) which was greater than state and district level. However, district and state level athletes were more or less similar on their balance ability.

**5. Conclusions**

The national level athletes are elite athletes having better sense of balance and control over their movements. They undergo specialized type of training comprising of rhythmic sense and over balance for carrying put multi-farious activities.so they are better on their balance ability, whereas the district and state level athletes are of more or less similar skill and technique level.

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