



Coordinative Abilities of Sprinters and Hurdlers of Intermediate Level- A Comparative Study

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ABSTRACT

The purpose of the study was to compare the sprinters and hurdlers in selected coordinative abilities namely Differentiation Ability, Balance Ability and Rhythm Ability. The subjects for this study were fifteen athletes and fifteen hurdlers (N=30), aged 18-25 years, who were training at DDA Athletic Academy situated at Jawaharlal Nehru Stadium, New Delhi. For the analysis of selected coordinative abilities, descriptive statistics and independent t-test was applied. The result revealed that the hurdlers were having similar Differentiation Ability in comparison to sprinters. In terms of balancing ability the sprinters and hurdlers were also having similar balancing abilities. The result also revealed that the mean rhythm ability of the sprinters and hurdlers were also same level. In the other two coordinative abilities namely differentiation ability and rhythm ability there was no significant difference was found in the performance of sprinters and hurdlers ($p < 0.05$).

KEYWORDS : Differentiation Ability, Balance Ability and Rhythm Ability.

INTRODUCTION

The theory of coordinative abilities is still in a stage of infancy. Though there is rapidly increasing acceptance of the term coordinative abilities yet there is no agreement regarding the number of coordinative abilities important for sports. The methodology of improving different coordinative abilities is also yet not available in full detail. But in the near future it is expected that a clear-cut system of means and methods for improving coordinative abilities will be evolved (Singh, 1991).

There are five motor abilities, which were recognized as components of physical fitness. They were strength, endurance, speed, flexibility and agility. But since about two and a half-decades the term agility has been gradually replaced by the term coordinative abilities (Martin, 1979; Matweyew, 1981; Hirtz, 1985; Harre, 1986; Meinel and Schnabel, 1987)

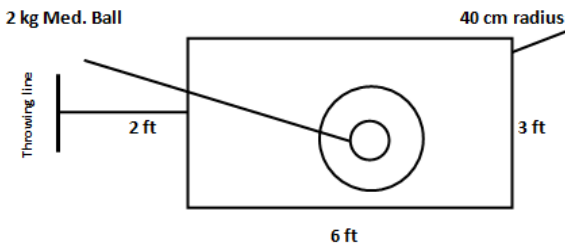
Methodology-

Selection of the Subject

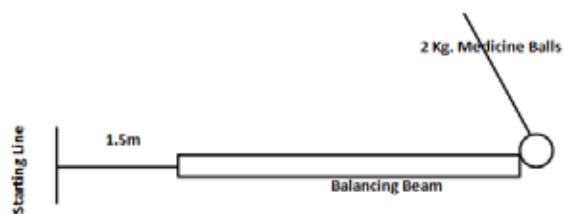
For the purpose of the study fifteen sprinters and fifteen hurdlers training regularly at the DDA Athletic Academy were selected as subjects for the study. The age of the subjects ranged from 18 to 25 years.

Criterion Measure

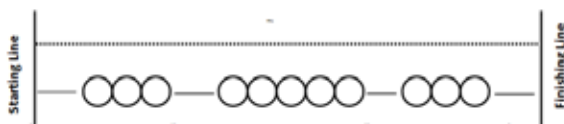
Differentiation Ability- It is the ability to achieve a high degree of accuracy and economy of separate body movements and movement phases in a motor action. It was measured by Backward Medicine Ball Throw Test-



Balance Ability- it is the ability to maintain body position which is necessary for the successful performance of sports skills. It was measured by Long Nose Balance Test-



Rhythm Ability- it is the ability to perceive the externally given rhythm and to reproduce it as motor action". It also denotes the ability to reproduce a rhythm existing in motor memory in motor action. It was measured by Straight and Rhythm Run Test-



RESULTS-

The statistical analysis of data on coordinative abilities (Differentiation ability, Balance ability and Rhythm ability), using 't' test, in respect of sprinters and hurdlers is presented in Tables 1 to 3.

Table 1
Significance of difference between means of sprinters and hurdlers in differentiation ability

Variable	Group	Mean	Mean diff.	SE	t ratio
Differentiation Ability	Sprinters	2.53	0.4	0.36	1.11*
	Hurdlers	2.93			
					$t_{.05} (28) = 2.03$

From Table 1 it is seen that a difference of .4 between the means of sprinters and hurdlers in differentiation ability is not statistically significant as the 't' ratio of 1.11 is less than the table value of 2.03.

Table 2
Significance of difference between means of sprinters and hurdlers in balance ability

Variable	Group	Mean	Mean diff.	SE	t ratio
Balance Ability	Sprinters	7.598		0.19	0.23
	Hurdlers	7.4			
*not significant at .05 level					$t_{.05} (28) = 2.05$

The above Table 2 clearly shows that the difference between the means of sprinters and hurdlers in statistically not significant in balance ability as the t' ratio of 0.83 is less than the table value of 2.05.

Table 3
Significance of difference between means of sprinters and hurdlers in rhythm ability

Variable	Group	Mean	Mean diff.	SE	t ratio
Rhythm Ability	Sprinters	0.98		0.07	0.16
	Hurdlers	0.814			
*not significant at .05 level					$t_{.05} (28) = 2.03$

The analysis of data in Table 3, in respect of sprinters and hurdlers in rhythm ability shows that the difference in the means is not statistically significant as the t' ratio 1.06 is less than the table value of 2.03.

DISCUSSION/CONCLUSION-

The purpose of this study was to analyze the sprinters and hurdlers in selected coordinative abilities namely Differentiation Ability, Balance Ability and Rhythm Ability. The analysis of data using 't' test reveals that in none of the coordinative abilities a significant difference has been obtain between sprinters and hurdlers. In each case the value of coefficient of correlation is less than the table value of 2.03

The subjects selected for the study were sprinters and hurdlers and the training program of both the groups is dominated by high intensity. In as much as the athletes in both the groups were in the process of gradual development (Intermediate level) and due to this the training means which they adopt probably brought about similar development except running over the hurdles which a hurdler does and a sprinter does not do it. The pattern of performance of athletes in both the categories is more or less identical. The literature on sports training reveals that the chief method for developing coordinative abilities is systematized and guided practice and the principle means is physical exercise. Since there is lot of uniformity in the sports training process in both the events and both are dominated by high intensity and that could be the main reason of no significant difference in the coordinative abilities selected in the study.

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