



Relationship of Reaction Time And Speed of Movement to Performance in 200 Metre Run And Between Speeds Of Movement To Performance in High Jump And Shot-Put

KEYWORDS

Dr. Mahesh M. Mahida,

Depute Director Physical Education & Sports, Parul University

INTRODUCTION:

General motor ability may be defined as present acquired and innate ability to perform motor skills of fundamental nature, exclusive of highly specialized sports or gymnastic skills and it encompasses several components, namely arm-eye co-ordination, muscular power, agility muscular strength, muscular endurance, flexibility speed and foot-eye co-ordination. Development of these components enables an individual to perform well in such basic activities as running, jumping, climbing, throwing and dodging. An individual with high level of general motor ability possesses the basic motor qualities necessary to achieve excellence in a number of activities, may still be unable to perform well in a particular sport unless he has developed the specific skills of that sport through long hours of practice. Strength, speed, endurance, agility, reaction time, and speed of movement are general components of performance in track and field events, but because a person possesses these basic physical components, it does not make him an expert in all track and field events because the technique of different track and field events varies. General motor ability assists a sportsman in learning the specific skills and forms a solid base over which he can develop excellence in various athletic performances.

METHODOLOGY:

Out of one hundred and twenty seven men athletes who participated in Inter College National Awards Competition for Physical Fitness, thirty men athletes were selected at random as subjects for this study. The subjects belonged to different States and Union Territories of India.

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The ages of the subjects ranged between 16 and 23 years. The physical variables chosen for this study were tests for auditory Hand Reaction time was measured with the help of electronic reaction time apparatus and Speed of Movement was measured using Nelson's Movement Time Test. The tests were administered to the subjects in the Research of Parul University Department of Physical Education, Borada Gujarat. Performance of the subjects in selected track and field events, namely 200-meter Run, High Jump and Shot-put as recorded during the competition was obtained.

The data in selected motor qualities, namely Reaction Time and Speed of Movement were correlated with performance in 200-meter Run, High Jump and Shot-put, employing Product Moment Method for finding out correlation.

The level of significance chosen was .05

FINDINGS:

To compute correlation between performance in 200-metre Run and reaction time and between performances in 200 meter Run, High Jump and Shot-put with Speed of Movement, the Product Moment Method was used. The co-efficient of correlation thus obtained presented in Tables 1 and 2.

Table-1

Relationship of Performance in 200 meter runs with reaction time

Variables	Co-efficient of Correlation
200 meter Run and Reaction Time	- .0163*

* Not significant at .05 level of confidence. The value of 'r' required to be significant at .05 levels with 28 degrees of freedom is 0.361

The analysis of the data clearly reveals that there is no significant relationship between Performance in 200 meter Run and Auditory Reaction Time Therefore, it may be concluded that performance in sprinting events is not markedly affected by the reaction of an organism to an auditory stimulus.

TABLE 2

Relationship of Performance in 200 meter run High jump and Shot-Put with Speed of Movement

Variables	Co-efficient of Correlation
200 meter Run and Reaction Time	- 0.0163*
High Jump and Speed of Movement	- 0.3352*
Shot-put and Speed of Movement	- 0.2819*

* Not significant at .05 level of confidence.

The value of 'R' required to be significant at .05 levels with 28 degrees of freedom is 0.361.

It is quite evident from Table 2 that speed of movement and performance in 200-metre Run, High Jump and Shot-put are not significantly related to each other.

DISCUSSION:

The statistical analysis of data shows that Reaction Time (auditory) and Speed of Movement are not significantly related to performance in 200 meter Run. Speed of Movement and performances in High Jump and Shot-put are also not significantly related to each other. Reaction Time is the ability of an individual to respond to a stimulus as quickly as possible, where as Speed of Movement

can be defined as the rate at which a person can propel parts of his body through space. Even though these two variables have an important part to play in contributing to better performance in track and field events, yet there is a limit to which these two variables can contribute. The other components of physical and motor fitness, namely Strength (explosive and maximum), Sprinting Speed, Endurance, Agility, Flexibility and Coordinative Ability and the technical aspect play more significant role in achieving better performances in track and field events. The Reaction Time depends upon the nerves and nerve processes and their roles ends as soon as the individual executes the first movement and thereafter for the entire duration of running other motor qualities continue to affect the performance for much longer duration. Speed of Movement on the other hand, depends upon nerves and muscles for bringing about quick contraction which results in movements.

In events like 200 meter Run, and Long Jump, it has a limited role, whereas in Shot-put which is performed from limited area, it is presumed to contribute to better performance. But from the results of this study, it appears that this variable does not seem to contribute to performance in 200 meter Run, High Jump and Shot-put, therefore the role of other motor qualities and efficient technique may once again be emphasized for the better performance in the events mentioned above.

CONCLUSION:

Within the limitations of the present study the following conclusions may be drawn:

1. Auditory Reaction Time does not contribute significantly to performance in 200-metre Run.
2. Performance in 200-metre Run, High Jump and Shot-put are not significantly influenced by Speed of Movement.
3. As Reaction Time and performance in 200-metre Run and Speed of Movement and performances in 200-metre Run, High Jump and Shot put are not significantly related, therefore, during training sessions greater emphasis should be laid on components of physical and motor fitness and improvement of technique to improve performance in above track and field events.

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