The Separate Speed Parameters Analysis of The 100-Meter Dash

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Abstract

Purpose: the overall aim of this study was to analysis alter of speed, stride length and stride frequency among every 10 meters in 100-meter dash. And investigate the relationship among speed, stride length and stride frequency. Methods: Eleven male senior high school students who are track and field sports were served as the subjects for this study. The amount of running step was captured by using high speed camera and the researcher also used radar gun to capture the running speed in every 10 meters. Furthermore, the research can compute stride length and stride frequency by using amount of running step and speed. In order to analysis the correlation among speed, stride length and stride frequency, the researcher selected Pearson product-moment correlation to process data. Results: There was maximum speed in 40 to 50 meters. The stride length was increase rapidly when start of a race and decrease slowly in 50 to 60 meters. And there was maximum stride length in 60 to 70 meters. The stride length was became short rapidly in 70 to 80 meters and then kept stable until the runner arrive the destination. Furthermore, the maximum stride frequency was occurred in 20 to 30 meters and reduced very fast in 60 to 70 meters. There were growth and decline correlation between stride length and stride frequency. Stride length and stride frequency were both increased in accelerated phase. Otherwise, they were both decreased in the accelerated phase. Conclusion: There were higher correlations between stride length and speed than between stride frequency and speed in deceleration phase. Stride length and stride frequency had functional complementation and also had negative correlation. It will be helpful to enhance the performance by exercising related muscles and strengths at teenage.

Keywords: stride length, stride frequency, 100 meters