Research Paper

Analysis of Long Jump Run Up Distance in MTSN 8 Jombang's Students

Sutrisno[1], Budiman Agung Pratama[2], Setyo Harmono[3]

[1,2,3]Master of Sport Teacher, University of Nusantara PGRI Kediri, Indonesia

Corresponding Author: Sutrisno

ABSTRACT

The run up to the long jump is the important initial stage. This initial stage determines the results of the jump. Because if the speed is obtained at the start, it will affect the explosive power when making a jump so that the after repulsion becomes perfect and produces the best jump. The problems in this study were (1) What are the results of the analysis of the starting distance with the results of long jumps in class VII A students of Jombang State Madrasah Tsanawiyah 8 (2) Which starting distance produces the farthest jump in class VII A students of Jombang State Madrasah Tsanawiyah 8?

This study used a quantitative approach with percentage descriptive techniques. The instrument used in this research was the kinovea application.

The conclusions of this study (1) the results of the initial distance analysis in the long jump had an important role in producing the farthest jump. Because the starting distance will determine the inertia force that will occur causing a person's thrust to produce great power at the time of take off, resulting in the farthest jump, (2) The 30 meter run up distance is the best starting distance compared to the 35 meter and 40 run up distances. This was because the initial distance of 30 meters produces maximum speed, causing a greater force when taking off

Keywords: [Analysis, Long Jump run up, Athletics.]

INTRODUCTION

Sport as an educational medium provides positive direction for physical, mental, social and emotional development and growth in a harmonious and balanced manner in meeting physical and spiritual needs (Syarif, 2019). In formal educational institutions, physical education is provided, one of which is movement and sports education which is contained in physical education and health subjects (Parwata, 2021).

The long jump is one of the branches of jumps in athletics. The long jump is done by jumping forward with the support of one of the strongest parts of the leg which aims to reach the distance of the jump as far as possible. The goal and purpose of the long jump is to reach the distance of the jump as far as possible to a landing point or a jump. The jump distance is measured from the closest boundary of the landing point produced by the body part to the takeoff board, which is done in three (3) repetitions and the result taken is the longest jump distance (3) kali pengulangan dan hasil yang di ambil adalah jarak lompatan yang terjauh (Aziz & Yudi, 2019). The long jump is a movement of jumping forward and upward in an effort to bring the body's weight as long as possible in the air (floating in the air) which is done quickly and by pushing off on two legs to reach the farthest distance (Nurfauzan, 2018). The four elements of the long jump movement are run up, repulsion, flying in the air and landing. Of course, so that the results of the jump get maximum results, each stage of the movement must be

mastered properly and correctly (Sobarna & Hambali, 2020).

The run up to the long jump is the initial stage that is carried out. This initial stage determines the results of the jump. Because if the speed is obtained at the start, it will affect the explosive power when making a jump so that the after repulsion becomes perfect and produces the best jump. This is in accordance with the research results of Santoso & Irwanto (2018) that the more initial steps, the generated power tend to increase where the jump power is the product of force and speed. (3)

The purpose of this study was to analyze how much impact the starting distance has in the long jump and to find out the best starting distance in producing the farthest jump in class VII A students of Jombang State Madrasah Tsanawiyah 8.

LITERATURE REVIEW
Long Jump
The long jump is a jumping movement using one foot to reach the farthest distance. The goal of the long jump is to get as far as possible to a landing site or jump box. The jump distance is measured from the repulsion board to the closest point of the landing site produced by the body part (Hanifah, 2012). The long jump is a branch of athletics with the goal of jumping as far as possible, with the basic elements of run up techniques, pedestal techniques, and repulsion techniques (Puspitasari, 2016). Long jump running is a closed skill type sport where sprint speed and jumping technique affect the distance of the jump (Azuma & Matsui, 2019). Factors that must be considered when performing the long jump are the angle of hip extension, duration at takeoff, running speed at the start, angle of repulsion, and potential energy (Kozlova et al., 2020).

According to Zafar (2010) the notion of the long jump is the approach phase, the jumper accelerates to a maximum controllable speed, the takeoff phase, the jump produces vertical speed and minimizes the loss of horizontal speed, the hovering phase, the

jumper prepares to land. Three gliding techniques can be used: sailing, hang, and hitch kick/walking in the air. In the landing phase, the jumper maximizes the potential distance on the flight path and minimizes the loss of touch distance on the landing. To achieve long jump performance is influenced by physical condition factors and jumping technique factors. In terms of physical condition, the physical components that can affect the long jump achievement include explosive power, speed, strength, agility, flexibility, coordination. While in terms of jumping techniques include run up, repulsion, hovering in the air and landing. To achieve maximum performance in long jump, both of these factors must be owned by a jumper through systematic and continuous training (Subarkah, 2016).

MATERIALS & METHODS
This study used a quantitative approach. The sample in this study were 30 male students in class VII A Jombang State Madrasah Tsanawiyah 8 and the sampling technique was purposive sampling in which all male students in the population were used as the research sample. According to Arikunto (2010) the sample is part or representative of the population being studied. Data analysis in this study uses average statistics, where the results from the first to third jumps are accumulated by the average results and video analysis uses the Kinovea software.

RESULT
Data analysis in this study used average statistical data analysis, where the results from the first to third jumps accumulated the average results.

Table Long Jump Results Data

Run Up	N	Minimum	Maximum	Average
30 Meter	30	4,17	5,07	4,6797
35 Meter	30	3,87	5,20	4,5963
40 Meter	30	4,13	4,73	4,4027

This research was conducted by providing a variation of the starting distance in making long jump jumps such as 30 meters, 35 meters, and 40 meters. The results showed

that the 30-meter run up could produce the longest jump between the 35-meter and 40-meter prefix distances. This can be seen in the results of data analysis where the 30 meter run up shows an average jump result of 4.68 meters. The initial distance of 35 meters resulted in an average jump distance of 4.60 meters. Meanwhile, at an initial distance of 45 meters shows the result of a jump with an average of 4.40 meters.

Based on the results and findings above, it can be concluded that the initial distance of 30 meters in the long jump has better results compared to the initial distance of 35 meters and 40 meters. This is because the speed at the initial step of 30 meters has a better speed so that the force produced is better than the initial distance of 35 meters and 40 meters.

DISCUSSION

Results of Initial Distance Analysis with Long Jump Results
The initial speed is the speed of the body's point of weight when the repulsive foot touches the repulsion board. this speed is also determined by the force and the effective distance the jumper uses. Speed is a conditional ability to produce body movements in the shortest possible circumstances or time. Running speed is also needed in the long jump. This is in accordance with Ridwan & Sumanto (2017) which explains that the application of running speed in the long jump is carried out as a start in making jumps in order to get maximum results.

The Best Initial Distance
Based on the results of data analysis, an initial distance of 30 meters produces the best jumping distance compared to an initial distance of 35 meters and 40 meters. The initial distance of 35 meters and 40 meters tends to decrease in the result of the jump, this is due to a change in acceleration when taking off or repulsion so that the inertia force becomes small. At an initial distance of 30 meters, the speed changes to acceleration and the change in speed to

acceleration is what causes the inertia force to become greater pushing the body forward so that the last step during takeoff is longer. This is in accordance with Pujianto (2009) that in long jump motion, when you start running quickly and then do takeoff, it is an angular motion or rotary motion which is converted into linear motion. This is also reinforced by Permadi & Yuliastrid (2021) that is a relationship between long jump performance and speed, agility, height and weight. Placing a good time in the sprint test requires being able to generate enough power to start quickly and reach maximum speed early in the sprint before the takeoff.

CONCLUSION
Based on the results of the analysis of research data, it can be concluded that the results of the analysis of the starting distance in the long jump have an important role in producing the farthest jump because the starting distance will determine the inertial force that will occur causing a person's thrust to produce great power at the time of take off, resulting in farthest jump. The initial distance of 30 meters is the best distance compared to the initial distance of 35 meters and 40 meters. This is because the initial distance of 30 meters produces maximum speed, causing a greater force when taking off.

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