The Effect of Speed on Improving Long Jump Ability in the Unit Kegiatan Mahasiswa (UKM) STOK Bina Guna

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The Effect of Speed on Improving Long Jump Ability in the Unit Kegiatan Mahasiswa (UKM) STOK Bina Guna

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Abstract.

Background The long jump isn't as easy as it might seem. This sport also requires specific techniques. Many people have tried it, but the expected results haven't matched the actual results, including those of UKM STOK Bina Guna, who were testing their long jump speed.

Objectives The aim of this study is to determine the contribution of physical speed ability to the jumping ability of UKM STOK Bina Guna students..

Methods The research was conducted as a simple experimental study. The population was students of the STOK Bina Guna Student Activity Unit (UKM). The authors used a non-probability sampling technique, namely saturated sampling. The test used was a 6-second sprint test.

Results Based on the summary of the descriptive analysis results in the table above regarding the speed data of UKM STOK Bina Guna, it can be explained that the speed data, from 15 samples obtained a total value of 712.00. The average value obtained = 47.4667 with a standard deviation result = 6.15127. For the range number = 18.00 obtained from the difference between the minimum value = 40.00 and the maximum value = 58.00. Proven from the results of the analysis (ρ <0.05) or Ho is rejected and H1 is accepted, then the results obtained when associated with the framework of thinking and the underlying theories and basically the results of this study support the existing theory.

Conclusion The results of this study concluded that there was a significant contribution between speed and the long jump ability of UKM STOK Bina Guna students.

Keywords: Jump Away, Speed, Contribute

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INTRODUCTION

Sports are supported by Unit Kegiatan Mahasiswa (UKM) STOK Bina Guna, which includes a variety of sports as part of student activities on the campus. They abandon individual sports and instead train for team sports. Nonetheless, these student activity units allow us to observe and identify talented long jumpers. Long jumps are difficult. Since generating excellent athletes involves the right training of multiple body components, it necessitates specialist training and extra-strength coaching, particularly from an early age.

Every athlete or person competing in the long jump sport needs to possess a unique skill. In practice, the long leap is more difficult than it looks. There are unique methods for doing this sport as well. One sporting event is the long jump (Ritonga et al., 2024) (Lengkana, 2018). In order to reach the floating stage, the long jump is a movement that necessitates support, perfect coordination of each step, unstable leg quality, and physical components to increase speed (Singh. K. & Singh. R., 2016) (Sunaryadi, 2009). Important long jump indicators include the need to maintain the pace and rhythm of the run you have learnt prior to the competition in order to increase precision on the springboard when pushing off during the run-up (Kurniawan, 2020). Run-up, push-off, floating, and landing are the several steps that make up the long jump method (Dikdik, 2010). Although a lot of people have tried it, the outcomes haven't been what was anticipated. In essence, a person's leap is connected to a number of other bodily parts. Long jump ability is

influenced by a variety of factors, including explosive power, speed, strength, agility, flexibility, balance, and coordination (Fitri, 2016). Speed is one of these.

Speed is the capacity to travel a specific distance in the least amount of time (Hidayat et al., 2020). Speed is the capacity to move successively in order to traverse a distance in a single time interval (Olivia et al., 2015). Speed is the distance traveled in a given amount of time, either in minutes or on a numerical scale (Budiwanto et al., 2012). Speed is the capacity to do actions quickly (Angga et al., 2019). Speed is the capacity to move swiftly over distances (Lubis, 2013). The capacity to travel swiftly from one location to another is known as speed. Many activities demand the ability to move quickly (Nosa, 2013). The conditional ability to generate bodily actions in the quickest amount of time or state is known as speed. The long jump also requires running speed, and in order to achieve the best outcomes, running speed is applied at the beginning of the jump (Ridwan et al., 2017). In essence, the long jump is a fast, supported sprint. Accordingly, if a jumper runs quickly and then follows it with accurate and firm support on the takeoff block, they can leap successfully (Alimuddin et al., 2019). The jump angle, the height of the center of mass, and the jump speed are the three elements that make up the long jump support technique. The leap angle is the release angle produced by the long jump's support procedure (Suhartoyo et al., 2022). Additionally, by lowering wind compression, which reduces the body's speed, the arm swing helps you float in the air. The leap distance is influenced by the starting jump speed (Rizal et al., 2024). Long jumpers can use a 21-degree take-off angle to determine the ideal distance (Rubiono et al., 2018).

We naturally rely on the run-up, one of the sport's skills, to accomplish a long jump. A person's capacity to run a specific distance as fast as feasible is a crucial component of the run-up, which also relates to the sports running category. A person must be well-controlled because there are other phases in the long jump, like the push-off from the springboard, and they are not just directed to run. The explosive power produced by the legs during the push-off is essential and can affect the jump distance.

METHOD

Research Design

The research was conducted as a simple experimental study. The sample consisted of students from the STOK Bina Guna Student Activity Unit (UKM). The data collection method used was to record all test results given to the sample, in this case, the STOK Bina Guna students.

Participant

This research was conducted at the STOK Bina Guna campus and involved students of the STOK Bina Guna Student Activity Unit (UKM). The author used a non-probability sampling technique, namely saturated sampling, which is a sampling technique where all members of the population are used as samples.

Data Analysis

The test used was a 6-second sprint test (Nur Ichsan Halim, 2011). The analysis used was descriptive statistics, including the arithmetic mean, median, mode, and standard deviation. The next step in this research data analysis, following the descriptive test, was a data regression test to demonstrate the contribution of speed to long jump ability.

Table 1. Summary of the results of the regression analysis of speed on long jump ability.

Variable	β	t_0	ρ	Note.
Speed (X1) Long Jump Ability (Y)	0.899	7.416	0.000	Significant

Based on the table above, it can be seen that the results of the single regression calculation obtained β = 0.899, with a calculated t value (t0) = 7.416 (ρ<0.05), meaning that there is a significant contribution of speed to the long jump ability of UKM STOK Bina Guna students. Thus, if a student has good speed, it will be followed by long jump ability.

RESULTS AND DISCUSSION

Results

The speed test data, on the long jump ability of UKM STOK Bina Guna students obtained in the study will be analyzed using descriptive statistical techniques and correlation statistics. Based on the

summary of the descriptive analysis results in the table above regarding the speed data of UKM STOK Bina Guna, it can be explained that for speed data, from 15 samples, a total value of 712.00 was obtained. The average value obtained = 47.4667 with a standard deviation result = 6.15127. For the range number = 18.00, it was obtained from the difference between the minimum value = 40.00 and the maximum value = 58.00. Speed data was obtained through a 6-second running test. To determine the closeness of the contribution of speed to long jump ability, a single regression analysis was carried out with a summary of the analysis results as follows:

Discussion

Proven from the results of the analysis ($\rho < 0.05$) or Ho is rejected and H1 is accepted, then the results obtained are associated with the framework of thought and the underlying theories and basically the results of this study support the existing theory. The results of this analysis can be explained that speed contributes to long jump ability by 80.90%. while the remaining 19.10% is explained by other variables not observed in this study. This can be explained that if UKM STOK Bina Guna students have fast speed, it will provide a strong thrust when supporting. Where speed is the process of running at full speed followed by strong support. So the physical element of speed should not be ignored because it greatly influences long jump ability. This supports the existing theory as explained by Jess Jarver (2012:25) stating that the running stage is the first stage of a series of movements in the long jump branch. So, jumpers who want to achieve maximum jump results, both in terms of precise support and distance, require speed during the run-up with precise footwork to securely support themselves on the support block. Furthermore, speed is a crucial contributing factor to producing a better and more efficient jumping motion.

CONCLUSION

From the results of data analysis processed with statistical calculations through the Statistical Product and Service System (SPSS) program and the results of hypothesis testing and from the discussion, the results of this study concluded that there was a significant contribution between speed and the long jump ability of UKM STOK Bina Guna students.

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AUTHOR CONTRIBUTION STATEMENT

This study was conceptualized and designed by Muhammad Aji Gumelar, who developed the research objectives and methodology. Muhammad Abizan Hakim and Mechrimdo Christian Zebua managed data collection, coordinated with participants, and supervised fieldwork at STOK Bina Guna Medan. Mikael Tarigan and Dekati Harefa performed data analysis, interpreted the findings, and contributed significantly to the preparation of the manuscript. All authors participated in the revision of the manuscript, approved the final version for submission, and take full responsibility for the integrity and accuracy of the work.

CONFLICT OF INTEREST AND FUNDING

The authors declare no conflict of interest related to the conduct, authorship, or publication of this study.

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