

The Effect Of Leg Muscle Power Flexsibility And Achivement Motivation On Long Jump Ability

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Abstract

This study aims to determine whether there is a direct or indirect influence between leg muscle power, tooth shape, achievement motivation on the ability of the long jump for university sports education students at PGRI Palembang, this research was conducted at the PGRI University of Palembang, sampling using random sampling, the test results are direct and indirect effects of the three variables on the ability of squat style long jumps, both individually (partially) and together to obtain the results of a good and perfect leap, thus the ability of the long jump can be improved through leg muscle power, the shape of the pitch, and the Achievement motivation of the foundation.

Keyword

Leg muscle, achivement motivation, long jump

1. Introduction

Long jump is one branch of athletic sport, where a long jumper is required to carry out a series of moves starting from a run at a certain distance as a prefix, to get a horizontal speed, and when he reaches the fulcrum he has to do as much as possible, to get a vertical speed, then make a jumping style before landing on a sandbox. The ability of long jump is a person's ability to perform a series of jumping movements in a simultaneous, smooth, fast and precise manner to produce a jumping distance. Thus to produce a squat style long jump fast and good, then there are several factors that need to be considered, including: attitude to stand facing the field, leg muscle power, the shape of the bench, facilities and infrastructure, mental, achievement motivation, Long jump is a leap motion carried out on a track with a sandbox used for landing in a predetermined size (Wirato 2013).

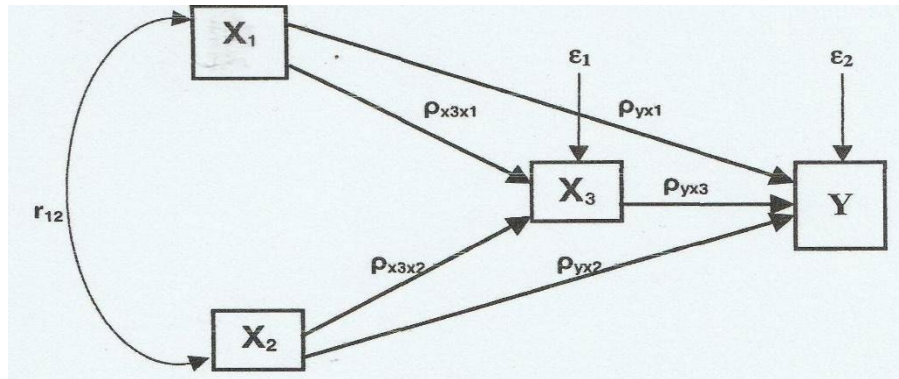
2. Methodology

ability of the long jump is a person's ability to carry out a series of jumping techniques simultaneously in a smooth, fast and precise manner to produce a jumping distance. (Widiastuti 2011) states that flexibility is the ability of the joint to carry out movements in a wide range of motion maximally. (Tangkudung 2012) Someone who has good flexibility is a person who can do a wide range of motion in his joints and which has elastic muscles. Determination of benchmarks in this study is, the ability of muscle groups, ligaments and joints found on the trunk of the body or togo (Collumna vertebralis) to carry out the movement of the body to make the jump style in lues, smooth without any significant obstacles to makelong jump movement

(Jay Dawes and Mark Roozen 2011) power is defined as the ability to do work, this is a very important aspect in the expression of agility. This may be the determinant of success in athletic sports. (Sukirno 2013) the ability of a person to use the maximum power that is directed in the shortest possible time the muscles hold at high speed in one whole motion. *Power of the leg muscles* has a very important role, because the leg muscles contribute to the initial motion, repulsion on the pedestal board to make the leap as far as possible. So the repulsion made by the leg muscles is repulsion with maximum strength.

Motivation has an important role in achieving success in activities, but not the only other factors. In sports activities it is suspected that the role of motivation has success in improving achievement. Because sports activities to achieve high achievement require a long enough time, with various problems and obstacles that must be passed without

knowing saturated during the exercise, without having a strong motivation, then a person will not be able to overcome all that, because motivation has an element of thrust, desire, and effort to achieve a desired goal. The research method used in this study is a type of quantitative design with Path Analysis approach between variables namely independent variables (exogenous) to dependent variables (Endogenous), samples used by university sports education students at PGRI Palembang, For (1) test squat style long jump ability (2) knockdown test using seat test. (3) test leg muscle power using a vetical jump test. (4) achievement motivation using questionnaires / questionnaires.



Description:
 Y: Ability to jump long
 X₁: Power of leg muscles
 X₂: flexibility trunk
 X₃: Achievement motivation

Testing Hypotheses are carried out by using the t test, t test is carried out with a significance level of 5%, then testing merits are:

- 1). When significant $t < \text{the level of significance } (\alpha) = 0.05$, then H_0 is rejected and H_a be accepted

Tabel 1. Summary of research results

Statistik	Variabel			
	X ₁	X ₂	X ₃	Y
Jumlah Sampel (n)	45	45	45	45
Maximum value	28	70	172	98
Minimum Value	21	50	108	49
Range	7	20	64	47
Average	24,82	64,96	13,83	78,33
Simpangan Baku (s)	3,061	7,177	8,496	9,786
Varians (s ²)	3,74	22,63	191,23	95,773

Table 2
Results of Analysis of Structural Equation I

Coefficients^a

Model	unstandardizedCoefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	74,4529,027	.000			(Constant)
VAR00002	.309	.524	1,135	3,679	.001
VAR00003	.583	.396	1,618	2,776	.010

a. Dependent Variable: VAR00001

The structural equation of sub structure 1 is:

$$X_3 = 0.396X_1 + 0.524X_2 + 0.256 \varepsilon_1$$

Above is $X_3 = 0.396X_1 + 0.524X_2 + 0.256$. Based on the sub-structure equation model 1 above, it can be explained that self-confidence as an endogenous variable is influenced directly by kinesthetic perception and motor educability as exogenous variables and other factors. The magnitude of the contribution of kinesthetic and motor educability perceptions simultaneously influencing self-confidence is $1 - 0.744 = 0.256$.

This figure shows the direct effect of the long jump ability and the size of the score on self-confidence motivation of 0.744, while the remaining 0.256 is influenced by other factors. In other words, the variability of self-confidence motivation that can be explained by using the kinesthetic and motor educability perception variables is 0.774, while the effect of 0.246 is caused by other variables outside the model.

Table 3
Results of Analysis of Structural Equation

Coefficients^a

Model	unstandardizedCoefficients		Coefficients Standardized	T	Sig.
	B	Std. Error	Beta		
1	-18,068	6,658	-2,714		(Constant) 0,000
VAR00002	.077	.429	0.00	2,439	.000
VAR00003	.271	.182	0,167	1,198	.325
VAR00004	.155	.334	0,051	2,043	.316

a. Dependent Variable: VAR00001

The structural equation:

$$X_4 = 0.182X_1 + 0.429X_2 + 0.334X_3 + 0.0222\varepsilon_2$$

is $X_4 = 0.182X_1 + 0.429X_2 + 0.334X_3 + 0,0222$. Based on the sub-structure equation model 2 above, it can be explained that the ability of long jump as an endogenous variable is directly influenced by the shape of the bench, Power of the leg muscles, and motivation as the exogenous variable and other factors besides the three variables. The size of the contribution of the Power of the leg muscles, the size of the stick, and the motivation of achievement simultaneously affecting the ability of the long jump are $1 - 0.778 = 0.222$

3. Conclusion

Drawing conclusions is based on the findings of the study with variables consisting of tugkai muscle power, tooth shape and achievement motivation and long jump ability, as follows:

- a) There is a direct influence of leg muscle power on the long jump ability of University Sports Education students. This means that the ability of a well-trained long jump will result in an increase in the ability of the long jump.
- b) There is a direct effect of motivation motivating the ability of the long jump at the University of Palembang PGRI Student Sports Education. This means that good achievement motivation will result in an increase in the long jump capability achieved by students.

- c) There is a direct influence between leg muscle power on the jumping ability of the University of Palembang PGRI education students. This means that a good Strike Detection will result in an increase in the student's Long Jump Ability.
- d) There is a direct influence between the ability of the long jump to the achievement motivation of the It means that the good long jump ability will increase student-level motivation.
- e) University of Palembang PGRI sports education students. There is a positive direct influence between leg muscle power towards achievement motivation in the University of Palembang PGRI Student Sports motivation. This means that the determination of a good Strike will increase the Achievement Motivation of sports education students at the University of PGRI Palembang.

Reference

- Homarudin., *Sports Psychology* Bandung: PT. Teenager Rosdakarya, 2013
- Harsono., *Coaching and Psychological Aspects in Coaching*. Jakarta: CV Tambak Kusuma, .2004.,
- Sukirno. *Basics of Athletics and Physical Exercise*. Palembang: Printing of Sriwijaya University, 2012.
- Kirkendal, Don., R., Gruber, J., Joseph., & Johnson, E., Robert. *Measurement and Evaluation for Psychical Educator*. Dubuque Io wa: Brown Company Publisher, .2007
- Tangkudung, James. *Physiology*, Jakarta Smart Jaya, 2006
- End, Tisnowati. *Physical and Health Education*. Jakarta: Open University of the Ministry of Education and Culture

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