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THE EFFECT OF TRAINING METHODS AND LEG MUSCLE POWER EXPLOSION TOWARD KICKING SKILLS IN PENCAK SILAT

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Abstract

The purpose of this study was to determine the difference in effect between the Plyometric training method, the Maxex training method and the Circuit training method, with leg muscle power explosion toward kicking skills in the Pencak Silat. This research was conducted on students of the Physical Education Program in STKIP Setiabudhi Rangkasbitung, Banten Province. This research uses a 3x2 Level Design Treatment by factorial. The sample consisted of 60 students. Data analysis techniques used the two way variance (ANOVA) and then used the *Tuckey test* at the significance level α = 0:05. The results of this study show that: 1) The plyometric training method has better influence on the circuit training method on the Pencak Silat kicking skills in the student group. 2) the plyometric training method is better in influence than the maxex training method on the Pencak Silat kicking skill on the student group, 3) The circuit training method has no significant effect compared to the maxex training method on the Pencak Silat kicking skills in the student group, 4) There is an interaction between the training method, the leg muscle power explosion and the Pencak kicking skills.

Key words: Training method, Plyometrics, Maxex, Circuit, Leg Muscle, Kicking skills, Pencak Silat.

Introduction,

The achievements of Banten fighter in various national multi events starting from the Pekan Olahraga Pelajar Nasional (Popnas), Pekan Olahraga Mahasiswa Nasional (POMNAS), Pekan Olahraga Nasional (PON) the which is an embodiment of the achievement of Banten province's target of the which entered the top 10 ranks in the national sports arena still not materialized until now, failure after failure of the Banten fighters to win at national events has never been achieved, since the separation from the division of the province of West Java in 2000 until now none of the Banten fighters has ever won a gold medal.

The failure of the Banten fighters could be caused by technical and non-technical factors. Technical factors include: the number of trainers who do not yet have a well programmed training program that delivers training material only relies on experience as if it seems boring and monotonous, nursery athletes are not well programmed, training is only incidental and not sustainable so that the quality obtained not optimal, and not yet using more modern training methods based on scientific studies of training. As for non-technical factors, among others: the attention of management who are still considered less than optimal in carrying out their programs, not professional management and the lack of funds for sports which has been a classic problem in Banten province.

Progress in the field of science and technology clearly has a wide impact on the development of training theories and methodologies in Banten province. The existing training so far still uses many traditional models. It is not uncommon for Pencak Silat coaches to be based only on the sign of a higher level of "belt" that is considered to have more knowledge, the trainer only teaches exercises like what they used to get from the teacher or the warriors who raised more traditional elements, as well as from former athletes who did not have an appropriate educational background in the world of sports.

The main factor that can spur the development of achievement in sports is an increase in quality in training and coaching. Improvements in training and coaching can be achieved by applying scientific and technological disciplines. Efforts to improve achievement must be through training conducted with a scientific approach to the related sciences. Various sciences related to sports include sports psychology, biomechanics, and exercise physiology. With the support of various disciplines, good training theories can be developed, so sports performance can be increased, especially in Banten province.

In an effort to compile an exercise program to improve achievement, one must pay attention to 4 (four) aspects, namely (1) technical aspects, (2) physical aspects, (3) tactic aspects (4) mental aspects. The four aspects must be trained in the right way and method so that every aspect can develop optimally. Judging from the aspects of the techniques, techniques and tactics of Pencak Silat, there were no significant obstacles, because they already had experience in learning and developing these skills. Mental aspects are reflected in self-confidence, aggressiveness, and the need to achieve. However, when viewed from the physical aspect it seems that it still needs further development. The limited instruments in the Pencak Silat sport can be seen from the lack of reference books relating to training in developing physical conditions. For example, the physical needs and energy systems for the Pencak Silat sport are not yet known.

During this time to photograph the physical needs of Pencak Silat done by looking for similarities or closeness to other pencak silat sports. But in reality, there is a difference between Pencak Silat and the

characteristics of its sport branches. Fox states that "training must be specific, aimed at the energy system used and specifically on the patterns of movement that are appropriate to the sports skill".

The physical aspect is a fundamental component to determine an athlete's ability to complete a training program, as well as excellent physical condition in a game. Bompa(1994) suggested training methods to develop and improve muscle explosive power of which method: isotonic, isometric, isokinetic, circuit training, ballistic, power-resistance, plyometrics. In general, almost all physical movement is the result of cooperation of power, speed, duration of activity, as well as the complexity of the individual. Naturally, each individual has the strength, endurance, and speed. Flexibility excluding natural ability, but rather the quality of the anatomy of the organ to be considered in the exercise. For sports that require physical aspect to carry out its activities, Pencak Silat has also developed relationships of the three components of strength, endurance and speed to be a major component. to become a winner in a game Pencak Silat is requiring stamina or strong physical condition other than that required wealth of playing techniques and mental high morale to win the match. Athletes who have a complete technique will be able to face any opponent with characteristic, and will be able to deal with this type of game opponent with a different character. to become a winner in a game Pencak Silat is requiring stamina or strong physical condition other than that required wealth of playing techniques and mental high morale to win the match. Athletes who have a complete technique will be able to face any opponent with characteristic, and will be able to deal with this type of game opponent with a different character. to become a winner in a game Pencak Silat is requiring stamina or strong physical condition other than that required wealth of playing techniques and mental high morale to win the match. Athletes who have a complete technique will be able to face any opponent with characteristic, and will be able to deal with this type of game opponent with a different character.

In addition to engineering and slamming punches, kicks is one of the attack techniques used in Pencak Silat in sparring category. In Pencak Silat rules, described on the Rules Match, the notion of sparring categories: Category Pencak Silat game featuring 2 (two) fighters from different camps. Both face each other using their defense and attack elements ie parry / dodge / hit / strike on target and dropping the opponent; the use of tactics and playing techniques, stamina and fighting spirit, using rules and patterns that exploit the wealth of technical measures stance in getting the most value. engineering attacks must be orderly sequential succession in different ways and vary in meaning are not similar. Studied engineering skills of analysis of the attack, then the kick is the most dominant component. In the game Pencak Silat, when compared with stroke technique that is only worth one point, the kick has several advantages, including the kick has a value that is high enough that two (2). In addition to a longer attack range and have a higher power than the other attack techniques. Good kick is a kick done quickly and loudly as anticipated opponent. By the direct field observations on some of the game Pencak Silat in Banten province by the author, data showed the average percentage amount of the types of attacks that use the leg (kicks) in the game Pencak Silat. The data were obtained as follows.

Table of Leg Type of Attacks and Percentage

No.	Type	percentage
1.	Sabit kick	33%
2.	Kick Front	27%
3.	Side kick / T	20%
4.	Rear kick	5%
5.	Kick Sirkelan	10%
6.	Kick Swoop Down	5%
total		**100%**

By the data, it can be said that almost the average fighter Banten in competing more dominant in sabit kick. This is due to sabit kick is a kick technique that is relatively easy to learn and very easy to train, so many fighters who use sabit kick in the game, but if it does by engineering a high speed then sabit kick will be easily anticipated and dropped the opponent. From the principles that have been described, it is necessary to look for physical training models that match the characteristics of sports Pencak Silat. It is necessary that the dominant elements of that. To describe the physical needs, it is necessary to observe and examine the performance of athletes in the atmosphere of the game. Pencak Silat is a sport shall be contested at Pekan Olahrga Daerah (PORDA), Pekan Olahraga Pelajar Nasional (Popnas), Olimpiade Olahraga Siswa Nasional (O2SN), Pekan Olahraga Mahasiswa Nasional (POMNAS), Pekan Olahraga Nasional (PON), while in High School Teaching Education (STKIP) Setiabudhi Rangkasbitung located at Jl. Budi Utomo 22 L, Lebak - Banten, which prepare students in the field of sports education, making Pencak Silat as a compulsory subject to be taken by students, so the natural thing in this study, students STKIP Setiabudhi Rangkasbitung used as samples.

By these principles above, the focus of research in the activities of the movement of Pencak Silat as sabit kick should be done with a fast and powerful because of the power and the optimal speed is an absolute necessity required by a fighter province of Banten, especially students STKIP Setiabudhi Rangkasbitung are the backbone of nursery athletes in Banten province in order to improve performance at the national level. the objectives of an athlete must go through a process of training and coaching are organized, planned and sustainable, without having to sacrifice the future of the athlete. Under these conditions, this research focuses on the influence of plyometrics training methods, training methods maxex and circuit training method,

Purpose.

This study was aimed to find out which of the three types of training methods, the method of plyometrics exercises, circuit training methods and training methods maxex more effect on field improvement skills training Pencak Silat kick. The results of this study are expected to be a guide for teachers and physical education teachers, coaches or coaches of sports in society in implementing learning for athletes and other sports participants.

Operations in this study aims to determine:

1. Know the results kick skills Pencak Silat group of students who obtained plyometrics training methods with a group of students who obtained circuit training method.

2. Know the results kick skills Pencak Silat group of students who obtained plyometrics training methods and training methods maxex.
3. Know the results kick skills Pencak Silat group of students who obtained circuit training methods and training methods maxex.
4. Knowing the interactions between the results of Pencak Silatantara kick skills training and explosive power training method of leg muscle.

Method.

The method used in this study is an experimental method (quantitative comparative) factorial design with 3 x 2. Determination Sudjana (1994) design refers to the opinion, the experimental units grouped in such a way that the cell units in the cell experiments are relatively homogeneous and unit experiment in the same cell with many treatments that are being studied.

The treatments were randomized to the experimental units in each sample. This research involves three kinds of factors or variabel, which will be examined influence on the dependent variable, namely Pencak Silat kick skills. Independent variables include: plyometrics training methods, maxex, circuit and variable attributes that explosive power leg muscle. Leg muscle explosive power has two levels such as:

a. Strong leg muscle explosive power.
b. Weak leg muscle explosive power.

Correlation between independent variable, variable attributes and dependent variable in an experimental research like this is called experimental design with factorial 3x2, namely the structure of research investigating the three kinds of independent variables, whether each variable affects the dependent variable, whether it is a combination of the level of the factors affecting the dependent variable explosive power leg muscle and a control variable or attribute, while the kick skills Pencak Silat as a dependent variable, whether it is a combination of stage-level by a factor influencing the dependent variable.

The design used in this study is a factorial experimental design is experimental Design Treatment by factorial 3x2 of a particular factor combined or crossed with all the level of any other factors that exist in the experiment. The number of samples in this study were 60 students STKIP Setia Budhi Education Rangkasbitung on subjects Pencak Silat, genelalisasi level of students and athletes that have the characteristics and attributes of the same population. The method is basically the means used to achieve a goal. Thus, in the study, "what methods will be used depending on the problem and accuracy goals to be achieved. Furthermore, according Sugiono (2010) that experimental research method can be interpreted as the research methods used to find a specific treatment effect against the other under controlled conditions "

Correlation independent variables as predictors and the dependent variable as the study called Treatment by Level Design 3x2, the research structure investigate the effects of three independent variables and their interactions with the same against the dependent variable.

The study design described below is an experimental design with Design Treatment by factorial 3x2 that will be used to see a difference of influence and interactions, where the independent variable (treatment) consists of three (3) groups of cells and variable attributes (moderator) is composed of two groups. The design of each variable can be seen in the following table.

Moderator variable		Method (A)		
		plyometrics (A1)	circuits (A2)	Maxex (A3)
Explosive power Leg Muscles (B)	Strong (B1)	A1B1	A2B1	A3B1
	Weak (B2)	A1B2	A2B2	A3B2
Total		A1	A2	A3

Table of Design Treatment by factorial 3x2

The research Design Treatment by factorial 3x2, independent variables is Training Method (A) independent variables classified into 3 types: Plyometrics (A1), Circuit Training (A2) and Maxex (A3). Moderator variable is Leg Muscle Explosive Power (B) moderator variables classified into two types (B) Strong (B1) and (B2) Weak.

Annotation:

A: Training methods
A_1 : Plyometrics
A_2 : Circuits
A_3 : Maxex
B : Leg Muscle Explosive Power
B_1 : Strong
B_2 : Weak
A1B1 = Group Plyometrics training methods with a strong leg muscle explosive power.
A2B1 = Group circuit training method with a strong leg muscle explosive power.
A3B1 = Group maxex training methods with a strong leg muscle explosive power.
A1B2 = Group training methods Explosive power plometrik with weak leg muscles.
A2B2 = Group circuit training method with weak leg muscles Explosive power.
A3B2 = Group training methods maxex with weak leg muscles Explosive power

Description of comparison / difference in data from the results of this study aims to provide an overview of differences training method are divided into 3 treatment groups namely plyometrics, circuits and Maxex. To find out the description of the data the researcher uses the distribution of the data distribution, the size of the location of the frequency distribution, normality data, the homogenity of data and hypothesis. The Data presented from the processing of raw data after using descriptive statistical methods items, namely the maximum value, minimum value, range, average, standard deviation and variance.

SAMPLE DETERMINATION TECHNIQUES

1. Population

The target population in this study were all students Prodi Education Sport STKIP Setiabudhi Rangkasbitung, Lebak - Banten. According Djaali (2010) that, "the population is the total number of units of analysis that will be investigated, whether the characteristic or trait characteristics". And according Sugiyono (2010) that, "the population is generalization region consisting of: objects / subjects that have certain qualities and characteristics which have been established by researchers to learn and then drawn conclusions".

Thus it can be concluded that the population is all observations that will serve as the object of research. While affordability is a student population of Sport Education Prodi 4th semester 2016-2017 academic year, amounting to 200 students and spread on four (4) of each class as follows: (1) A class of 50 students, (2) Class B 50 students, (3) a class C many as 50 students, (4) D class of 50 students.

2. Sample

Table grouping samples:

Power Legs (B)	Exercise Method (A)			
	Plyometric (A1)	Circuits (A2)	Maxex (A3)	total
Strong (B1)	10	10	10	30
Weak (B2)	10	10	10	30
Total	20	20	20	60

Based on the table above can be explained that, for samples with high leg power consisted of 30 samples, while the sample for lower leg power is also made up of 30 people, ie respectively on plyometric training methods, maxex and circuits. To enter each sample in groups or cells are used randomization method that each cell obtain homogeneous samples. Randomization is the application of the experimental treatment of members in a certain way, so that each member has the same propabilitas great to have shared something specific treatment application. Randomization in the study using ordinal scale, where an ordinal scale is a scale that provides information about the relative ranking of different characteristics possessed by subject or individual

Data analysis

First stage, Ther are two requirements test:

1) Normality test by Liliefors to check the samples are normal.
2) Homogenity test by Levene's Test to check the sample has the same character (homogeneous) by significance $\alpha = 0.05$.

Using the Application SPSS 17.

Second stage, Analyzed hypotheses using variance analysis techniques (ANOVA) One-way and Two-way Anova Anova by significance $\alpha = 0.05$, aims to:

1) Test of the main influences (Main effect)
2) Test of the "Interaction"

Results,

In accordance with the study design 3 x 2 factorial experiment the hypothesis testing was done using analysis of variance (ANOVA). However, before analyzing it first has to be done some testing. First to test the hypothesis statistical techniques used in the analysis of variance (ANOVA) 3x2 at the level of $\alpha = 0.05$. , Furthermore, the frequency distribution is visualized.

Furthermore, the normality test data obtained from the results of Pencak Silat kick skills used *Lilliefors test*. For homogeneity test using *Bartlett test*, if there is an interaction between the practice and the leg muscle explosive power to kick Pencak Silat skills, will be followed by *Tuckey test.*

1. **Normality test**

Summary of the results of the sample normality test

Group	N	L0	Lt	Conclusion
1	10	.224	.280	Normal
2	10	.224	.280	Normal
3	10	.200	.280	Normal
4	10	0.174	.280	Normal
5	10	0,217	.280	Normal
6	10	.240	.280	Normal

Annotation**:**
Group 1 = Group plyometrics with high leg muscle explosive power
Group 2 = Group plyometrics with lower leg muscle explosive power
Group 3 = Group method of circuit with high leg muscle explosive power
Group 4 = Group method of circuitry with lower leg muscle explosive power
Group 5 = Group maxex method with high leg muscle explosive power
Group 6 = Group maxex method with a lower leg muscle explosive power
Lo = Lillifors observation
Lt = Lillifors table

Overall normality test group research data shows that the value of Lo greatest of all the treatment groups was smaller than Lt value, thus it can be concluded that the sample comes from a population of normal distribution.

2. Test Homogeneity

Testing homogeneity regarding the respective treatment groups, conducted by *Bartlett test* at significance level α = 0,05. Homogeneity test result data and the training method of leg muscle explosive power against skills of Pencak Silat kicks in full can be found in the appendix, page summary of results homogeneity test calculations on each group shown in the table below.

Table of Summary of the results of test calculations *Bartlet* α = 0.05

Group	dk	1 / dk	SI2	Log Si	(Dk) Log Si
1	9	0111	0.90	-0.04576	-0.41182
2	9	0111	1.79	0.252583	2.27325
3	9	0111	1.82	0.260601	2.345412
4	9	0111	1.61	0.207125	1.864129
5	9	0111	1:43	0.156347	1.407125
6	9	0111	0.99	-0.00485	-0.04367
	54				7.434427

Annotation**:**
Group 1 = Group plyometrics method with high leg muscle explosive power
Group 2 = Group plyometrics method with a lower leg muscle explosive power
Group 3 = Group method of circuit with high leg muscle explosive power
Group 4 = Group method of circuit with lower leg muscle explosive power
Group 5 = Group maxex method with high leg muscle explosive power
Group 6 = Groups maxex method with a lower leg muscle explosive power

The result of the calculation as illustrated in Table 4.9, by α 0.05 list chi-square distribution with df = 5 obtained $\chi^{2t\ 0.95}$ (5) = 11.1. Evidently$\chi^{2hitung}$= 1.424 <11.1. Thus Ho:$\sigma_{12} = \sigma_{22} = \sigma_{32} = \sigma_{42}$ received at the real level of 0.05 can be deduced that the six populations having variances equal (homogeneous),

3. Hypothesis Testing

Calculation Results Summary Table Data Research

Leg muscle explosive power	training methods			total
	plyometrics	circuits	Maxex	
High leg muscle explosive power	20 21 20 19 22 21 19 21 20 20	18 20 19 18 19 18 17 17 21 20	17 18 16 16 15 15 15 16 19 17	
N	10	10	10	30
X	20.30	18.70	16.40	18.47
S	0.95	1.34	1.35	2.01
ΣX	203	187	164	554
Low leg muscle explosive power	17 19 15 16 18 16 16 16 15 17	18 16 17 19 17 17 17 20 18 19 18	18 17 19 17 18 17 18 20 19 18	
	10	10	10	30
	16.50	17,90	18.10	17.50
	1.27	1.20	0.99	1.33
	165	179	181	525
	20	20	20	60
	18.40	18.30	17.25	17.98
	2.23	1.30	1.45	1.76
	368	366	345	1079

Summary results of Anova calculation method of exercise and leg muscle explosive power to kick pencak silat skills at the level of α = 0.05.

source of Variation	**dk**	**JK**	**RK**	**fo**	**Ft**
The average line	1	14.02	14.02	15.49	4.02
The average column	2	16.23	8.12	8.97	3.17
Interaction	2	103.87	51.93	57.39	3.17
Error	54	48.87	0.90		
total	59	182.98			

Annotation:

* = significant at α = 0.05 significance level.

dk = degrees of freedom

JK = sum of squares

KT = the average sum of squares

fo = F value observations

Ft = F value table

Based on the summary of the analysis calculations (ANOVA) on the variation of the average line, the level of significant α = 0.05 obtained Fo = 15.49 and Ft (1,54) = 4.02 so Fo> Ftsehingga Ho rejected. It can be concluded that overall there is a significant difference between the practice and leg muscle explosive power both high and low on the skills of pencak silat kicks.

In addition, the average variation column, the value level significant α = 0.05 obtained and Ft Fo = 8.97 (2.54) = 3.17 so Fo> Ftsehingga Ho rejected. It can be concluded that overall there are differences in the average field for all three methods of exercise.

In variations of the interaction, the value level significant α = 0.05 obtained Fo = 57.39 and Ft (2,54) = 3.17 so Fo> Ftsehingga Ho rejected. So it can be concluded that there are interaction between explosive power with a leg muscle training methods to the results of the skills of pencak silat kicks.

1. **There is a difference Pencak Silat skills results kicks the group of students who obtained plyometrics training methods with a group of students who obtained circuit training method**

The first research hypothesis which states there difference Pencak Silat skills results kicks the group of students who obtained plyometrics training methods with a group of students who obtained circuit training method summarized in a further test results that can be seen in the table below:

Tuckey test calculation results summary Pencak Silat skills results kicks the group of students who obtained plyometrics training methods with a group of students who obtained circuit training method on tarafα = 0.05

Couples groups compared	**Qhitung**	**Qtabel**	**Conclusion**
A1 and A2	5.17	4.45	Significant

Annotation :

* = Qhit> Qtab significantly on the real level α = 0.05

A1 = Group Plyometrics training methods

A2 = Group Circuit training methods

The table shows that the value Q_{count} (Qh) = 5.17 greater than Q_{tabel} = 4.45> significant level α Q_{tabel} at 0:05, so the null hypothesis (Ho) is rejected and the alternative hypothesis (H1) is accepted, that is, that Overall there are differences in the results of Pencak Silat kick skills groups of students who obtained plyometrics training methods with a group of students who obtained circuit training method.

2. **There differences in the results of Pencak Silat kick skills groups of students who obtained plyometrics training methods and training methods maxex**

The second research hypothesis which states there difference Pencak Silat skills results kicks the group of students who obtained plyometrics training methods and training methods maxex summarized in a further test results.

***Tuckey* test calculation results Summary results kick skills Pencak Silat group of students who obtained plyometrics training methods and training methods maxex on α = 0.05**

Couples groups compared	Qhitung	Qtabel	Conclusion
A1 and A3	5.41	4.45	Significant

Information :

* = Qhit> Qtab significantly on the real level α = 0.05

A1 = Group Plyometrics training methods

A3 = Groups training methods Maxex

based on Table 4.12 shows that the value Qhitung (Qh) = 5.41 greater than or Qhitung Qtabel = 4.45> significant level α Qtabel at 0:05, so the null hypothesis (Ho) is rejected and the alternative hypothesis (H1) is accepted, that is, that Overall there are differences in the results of Pencak Silat kick skills groups of students who obtained plyometrics training methods and training methods maxex

3. There was no significant difference Pencak Silat skills results kicks the group of students who obtained circuit training method with the group of students who obtained training methods maxex

The third research hypothesis which states there significant differences Pencak Silat skills results kicks the group of students who obtained circuit training methods and training methods maxex summarized in a further test results that can be seen in the table below:

Tukey test calculation results summary Pencak Silat skills results kicks the group of students who obtained circuit training methods and training methods maxex on tarafα = 0.05

Couples groups compared	Qhitung	Qtabel	Conclusion
A2 and A3	0.24	4.45	Not significant

Annotation :

* = Qhit> Qtab significantly on the real level α = 0.05

A2 = Groups Circuit training methods

A3 = Groups training methods Maxex

The table shows that the value Qhitung (Qh) = 0.24 smaller than the Qtabel = 4.45 or Qhitung <Qtabel at significant level α 0:05, so the null hypothesis (Ho) is rejected and the alternative hypothesis (H1) is accepted, that is, that Overall there was no difference significantly the results of Pencak Silat kick skills groups of students who obtained circuit training methods and training methods maxex.

4. There are interaction between the practice and the leg muscle explosive power to kick Pencak Silat skills.

Based on the summary of the results of the calculation of two-way analysis of variance, The interaction between explosive power with a leg muscle training methods to the results of the skills of pencak silat kick ANOVA calculations shown in the table above. Values count Fo interaction (FAB) = 57.39 and Ft (2,54) = 3.17, it appears that Fo> Ft, so H0 is rejected and H1 accepted. Based on the above description is therefore concluded that there is an interaction between explosive power with a leg muscle training methods to the results of the skills of pencak silat kick,

Discussion

Based on the conclusions from the results of this study that students were given plyometrics training methods have higher than if given maxex method and circuit training. Thus expected that the trainers have an understanding and insight in providing training methods. Due to the provision of appropriate training methods to create a quality workout interesting and not boring and monotonous.

Overall the results of this study have concluded that in the development of a technique that is through proper training. For that it is necessary to lecturer in Pencak Silat, especially in the study program of Physical Education and Health STKIP Setia Budhi Rangkasbitung for the implementation of the provision of training methods plyometrics, the method of circuit training and training methods maxex, the intensity of the exercise with explosive power leg muscle in accordance with the findings of the study to improve the quality of Pencak Silat kick. Referring to these conclusions, the implications of this study can be stated as follows:

Explosive power leg muscles are part of the components of physical fitness-related skills. Pencak Silat sport desperately needs a balance that is used to improve a better shot, because the leg muscle explosive power is good then a student will be able to perform the technique perfectly. The level of each student balance on different levels.

Method of plyometrics exercises, circuit training methods and training methods maxex have characteristics almost similar implementation with a different emphasis. Plyometrics training methods, focus on the springboard to reach the heights with the speed of movement of the foot.

The difference is that plyometrics priority to speed and distance achievement. Because of their similarities and differences in the characteristics of the scientific method and the characteristics of these students, the lecturers are expected to know and understand these differences in order to take a grouping and the application of appropriate types of treatment based on differences in students and training methods are used. Differences will increase the quality of vocational training to the maximum Pencak Silat kick ..

Conclusions:

Based on the results of data analysis, hypothesis testing results and the results of discussions, studies using experimental methods involving independent variable is the method of plyometrics exercises, circuit training methods, training methods maxex and leg muscle explosive power while the dependent variable is the ability to Pencak Silat kick.

Based on the results of research and discussion that has been described in previous chapters, the conclusions drawn as follows:

1. Better methods plyometrics exercises influence of circuit training method toward Pencak Silat kick skills in the student group.
2. Better methods plyometrics exercises influence of the training methods maxex toward Pencak Silat kick skills in the student group.
3. Circuit training method does not significantly compared toward the training methods maxex to Pencak Silat kick skills in the student group.
4. There is interaction between the method for the practice, leg muscle explosive power with Pencak Silat kick skills in the student group.

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