

# The Effect of Circuit Training Methods and Achievement of Motivation towards Triple Jump Achievement

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**Abstract:** *This study aims to discover the effect of circuit training methods and achievement of motivation towards triple jump achievement. The samples of the research was 67 man students of Study Program physical education school of State University of Medan. This research was conducted by using factorial 2x2 design. The data analysis used by "ANAVA" (analysis of variance) followed by Tukey test.*

**Keywords:** Circuit Training Method, Triple Jump

## 1. Introduction

Triple jump is one of the subjects in the course of athletic which also required to pass consistent with other material in the exam for students of Physical Education. So the students should be able to show triple jump technique well and leap great of distances measured by the level of success of the jump.

Triple jump is a complex movement, elements of the movements of each other can't be separated because of a series of motion in triple jump. In practice, a triple jumper is required to have exploded (explosive power) or power as a product of two capabilities that strength (strength) and velocity (speed) to do the maximum force in a very fast time. Based on observations and experience of the writer who is also a lecture in FIK of UNIMED on athletics course, in subject of triple jump the level of success of male students UNIMED Physical Education Studies Program as indicated by the jump distance is still very low. From the data results of summative exam material triple jump on athletic subjects with borderline pedestal distance to the nearest end of the landing area 13 meters only 14 students who passed this threshold of 133 students.

Difficulties faced by students in general repulsion and leg speed at the time of the movement quietly, step and jump. This is likely due to the low level of leg muscle explosive power to get the students expected leap great distances.

In this case are suggests that limb muscle power, as one of physical component for students of Physical Education is very important. Because of that, the research seeks to create and design the training methods in order to improve limb muscle power were quite efficient and effective. So one of them is circuit training method. Training method do are circuit plyometric training method and circuit load training method.

Based on the description above, the writer are interested in giving different training methods, there are: (1) circuit training method which is consist of circuit plyometric training and circuit load training, and (2) achievement of motivation, which is can divided into 2: (a) high

achievement of motivation and (b) low achievement of motivation and also how it can effect toward jump trill. Both of these methods in principle develop the achievements of speed power generating limb muscle power that aims to obtain a jump distance as possible.

Achievement is the results achieved (from do / done). Brian said that achievement with regard to what is desired, is able to determine the goals to be achieved, and is able to carry out the entire plan to overcome obstacles and difficulties ahead.

Hiam define achievement as a force for achieving personal desires and the pursuit of proficiency do the job. Thus from some of the above understanding can be explained that it is obvious achievements as an end result in the pursuit of objectives to be achieved and achieved only after overcoming all forms of difficulties and obstacles.

Triple jump is also said to jump hopscotch or triple jump that the triple jump is a leap that consists of hopscotch (hop), a step (step), and a jump (jump) is done sequentially and integrated. William J. Bowerm and William H. Freeman stated triple jump also called hop (hopscotch), step (step), and jump (jump).

Suparman explained that the method is a method used to present the lesson content to students / objects to achieve a goal. While Surahmat explained that the method is a way that serves as a tool to achieve the learning objectives.

Circuit training is a training method that has a physical condition and keeping the advantages of the method or approaches other exercise. Some of the advantages and benefits of circuit training in the public domain is that circuit training can do a lot of participants or athletes at the same time and be able to develop or train the physical condition of several components at once and easily controlled.

Exercise plyometric according Amheim is a type or form of isometric exercise overload, which use the stretch reflex (a reflex strain) on mitotic reflex that is a contraction eccentric (elongated), where muscles really "on the stretch" stretched quickly before contraction concentric (shorter). And

according to Radcliffe and Farentinos argued that plyometric exercises are specific exercises to increase muscle explosive power (explosive power). To jump event Donald A. Chu, advocating forms of plyometric exercises include hops stage, alternate bounding with double arm action, combination with double arm action, and 1-2-3 Single leg bounding drill.

Circuit training workout load is done in the form of a circuit by circuit training load setting. Because the exercises performed in the exercise load circuit, the method and arrangement (dose) training load following the rules of good circuit training intensity, volume, interval, repetition and frequency of load and exercise. Implementation of the program consists of 6 (six) stations with 4 (four) forms of exercise focuses on the muscles of the leg, while the 4 (four) more as an exercise intermediaries.

Achievement motivation is the motive in the exercise which is the driving force for someone to do sports activities achievers. Gill defines that achievement motivation (achievement motivation) is the orientation of a person to keep the best results as possible on the basis of achievement to stay afloat even if it fails, and still trying to complete the task as well as possible because they feel proud to be able to complete the task well.

## 2. Method

The population in this research was all of the man students of UNIMED faculty of sport science and Inaccessibility of the student population was a set of male students of UNIMED Studies Program Faculty of Sport Sciences IV semesters have passed the athletics courses totaling 67 people.

Students who total 67 people given test achievement motivation questionnaire. Results of tests of achievement motivation in ranking 1-67. Ranking group measured levels of motivation underachievement by Verducci.

Variance source	Db	JK	RJK	Fo	Ft	
					$\alpha: 0,05$	$\alpha: 0,01$
JK (T)		5934,74				
Average (Ry) treatment	1	5934,13	5934,13			
A	1	0,06	0,06	6,82*	4,11	
B	1	0,01	0,01	1,02*	4,11	7,44
AB	1	0,31	0,31	33,66*	4,11	7,44
Mistake (Ey)	32	0,29	0,01			7,44
Total	36	11869,78	5934,52			

The method of the research was conducted by experimental method with factorial 2x2 designs. Determination of the design refers to the opinion of Sudjana, experimental units grouped in such a way that the cell units in the cell experimental are relatively homogeneous and many experimental units in the same cell with many treatments that are being studied. The treatment was do randomly to the experimental units in each cell. Factorial 2x2 design matrix:

**Table 1: Factorial Design 2 x2**

Achievement of motivation (B)	Training method (A)	
	Plyometric circuit (A1)	Load circuit (A2)
High (B1)	A <sub>1</sub> B <sub>1</sub>	A <sub>2</sub> B <sub>1</sub>
Low (B2)	A <sub>1</sub> B <sub>2</sub>	A <sub>2</sub> B <sub>2</sub>

Note;

A<sub>1</sub>B<sub>1</sub> = group of Plyometric circuit training methods for students who have high achievement motivation with triple jump achievement.

A<sub>2</sub>B<sub>1</sub> = Group of load circuit training methods for students who have high achievement of motivation with triple jump achievement

A<sub>1</sub>B<sub>2</sub> = Group of Plyometric circuit training methods for students who have low achievement motivation with triple jump achievement.

A<sub>2</sub>B<sub>2</sub> = Group of load circuit training methods for students who have low achievement of motivation with triple jump achievement.

Based on research design, then there are two kinds of data that should be collected: (1) achievement of motivation data, and (2) data about triple jump achievement. To get the data about achievement of motivation and data about far distance of jump on triple jump, it is using by test and measurement.

In this research to analysis the data using by analysis of variance technique (anava) followed by Tukey Test in significance level  $\alpha = 0,05$ .

## 3. Result

Analysis of variance technique (anava) two lanes used to test hypotheses one and two are used.

Table 2.summary of Anava Calculation Result Score Improvement of triple jump achievement on leveltarafa = 0,05

Note:

\* = Significant at the level of significance

df = degrees of freedom

JK = sum of squares

RJK = average number of squares

Fo = F price observations

Ft = F price table

## 4. Testing Requirements Analysis

### 1) Normality test

Normality test score achievements in triple jump is done by using Liliefors test on significant level  $\alpha = 0,05$ .

**Table 3: Summary of normality test sample result**

Group	N	L <sub>0</sub>	L <sub>t</sub>	Conclusion
1	18	0,124	0,200	Normal
2	18	0,161	0,200	Normal
3	9	0,231	0,271	Normal
4	9	0,223	0,271	Normal
5	9	0,180	0,271	Normal
6	9	0,188	0,271	Normal

Note:

group 1= a group of circuit plyometric training overall

group 2 = a group of load circuit training overall

group 3= group of high achievement motivation with circuit plyometric training method  
 group 4= group of low achievement motivation with circuit plyometric training method  
 group 5= a group of high achievement of motivation with circuit load training method  
 group 6= a group of low achievement of motivation with circuit load training method

**2) Homogeneity Test**

Homogeneity test by using Barlett test on level significant  $\alpha = 0,05$ . (we can see summary of result homogeneity test )

**Table 4:** Summary of Homogeneity test result

Group	Variance	The combined variance	$X^2_h$	$X^2_t$	Conclusion
1	0.010	0.01	0.51	7,81	Homogen
2	0.007				
3	0.009				
4	0.011				

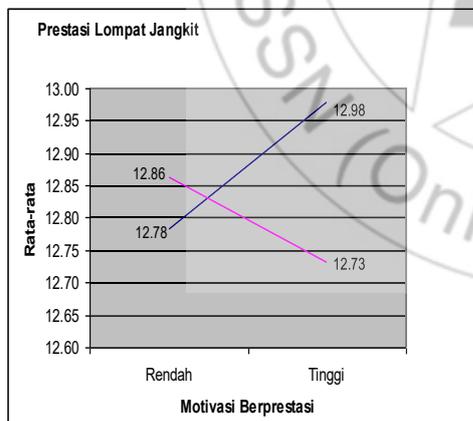
Note:

- Group 1 =a group of high achievement of motivation with circuit plyometric training method
- Group 2 = a group of high achievement of motivation with circuit load training method
- Group 3 = a group of low achievement of motivation with circuit plyometric training method
- Group 4 = a group of lowachievement of motivation with circuit load training method

$X^2_h$  = Price Chikueadrat count

$X^2_t$  = Price Chikueadrat table

The interaction between the method of circuit training and achievement motivation influence on achievement triple jump can be visualized graphically as shown in table 1.



**Figure 1:** The interaction between the practice and achievement motivation on triple jump achievement

**5. Discussion**

Overall there was a real difference between the circuit plyometric training methods with circuit load training method. in other words that the triple jump achievement with plyometric circuit training method is better than the circuit load training method.. This means the research hypothesis which states that the overall achievement triple jump with plyometric circuit training method is better than using circuit training load.

The second testing the hypothesis showed that the differences in triple jump achievement between circuit plyometric training method with circuit load training method for the students who have high triple jump motivation.

While the third hypothesis showed that there is no statistically significant difference. The average that scoring of students in circuit plyometric training method who have low achievement of motivation trained by using circuit load training method higher than using circuit plyometric, but if the test level of significance showed there is no a significant difference between students who have low achievement of motivation which trained by using circuit load training method and circuit plyometric toward triple jump achievement. The result of collecting the data showed that the third hypothesis was not proven or can't be verified. Based on this research it can be concluded that triple jump achievement toward the students who have low achievement motivation was not affected by variations of both circuit training method.

Therefore, it was need to discuss toward a variety of possible causes for this hypothesis was not proven. As for the possibility that occur as follows:

- 1) Other physical factors. It is also possible they despise other physical components that contribute to the achievement of such triple jump, coordination and flexibility as well as different levels of explosive power her leg muscles.
- 2) Interest. Interest is an element of psychology who allegedly participated on research, where interest is one of driving a person to have a specific activity. If someone has interest toward some activity, so she/he would be more serious for doing the activity.

While on testing the fourth hypothesis showed that there was the interaction between circuit training method and achievement of motivation toward triple jump achievement.

Thus it can be stated that the overall of circuit plyometric training method has plyometric has a better effect than the circuit load training method. Meanwhile, for those who have low achievement motivation level, can do exercises to improve the performance of triple jump, but tend to be better to do exercise with circuit load training method.

**6. Conclusion**

Based on the result of the research and the hypothesis testing it can be concluded that:

- 1) Overall, there was significant difference between circuit plyometric training methods with circuit load training method toward triple jump achievement.
- 2) For students who have high achievement of motivation, circuit plyometric training method was better than circuit load training method toward triple jump achievement.
- 3) For students who have low achievement of motivation, there were no differences between circuit plyometric training methods with circuit load training method toward triple jump achievement.
- 4) There was positive interaction between circuit training methods with achievement of motivation toward triple jump achievement.

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