



Triple Jump Training Model Development based Circuit Training for Beginners Athletes

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Abstract

This study aims to develop a design for the triple jump to obtain empirical data about the effectiveness of the triple jump-based circuit training model for beginner athletes. The research method used in this study is the research and development method of Borg and Gall which consists of ten steps. The subjects of this study were male and female athletes in Klungkung regency specifically for triple jump numbers. This research resulted in 10 final training models that have gone through expert evaluations, trials, and revisions. In testing the effectiveness of the training model by using "test-t". The data of this research are in the form of the pretest and posttest of the experimental and control groups. Triple jump based on circuit training with a significance level of 0.05. The results of the average pretest mean = 59.05 are smaller than the average posttest mean = 73.40 in the count an increase of 14.36. The results of the effectiveness of the triple jump training model based on circuit training between pretest and posttest obtained results $t_0 = 11,145$ greater than $tt = 0,000$, the hypothesis was rejected. Research conclusion that the triple jump based on the circuit training model for beginner athletes is effectively used to improve the triple jump results for beginner athletes.

Keywords: Training Model, Triple Jump, Circuit training

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A. Introduction

Athletics is the oldest sport in the world and is the parent organization for other sports ([Hartoto, 2018](#)). In athletics several numbers are competed, including; run, throw, and jump numbers. There are 4 classes for the jump, namely: long jump, triple jump, high jump, and pole vault ([Kresnapati, 2019](#)).

Triple jump or triple jump is one of the jump competition numbers in athletics which has a high level of difficulty when making jumps and must have good body condition to produce long jumps.

The triple jump has different jump stages from the long jump, the triple jump consists of three phases, including approach, hop, step, and jump which is divided into take off, flying flight), and landing ([Kresnapati, 2019](#)).

Based on the results of field observations, researchers found weaknesses when athletes did triple jump competitions. The weakness lies in the hop, step, and jump technique performed by the athlete. Meanwhile, from the results of interviews with athletes, they complained about their poor physical condition so the techniques used were wrong and less than optimal.

In responding to the problems that occur in the field, it is found that the obstacles experienced by the athlete such as poor

physical condition and the ability of the triple jump technique are lacking so that it greatly affects the distance of the athlete's jump. So there needs to be a solution that must be given so that problems that occur in the field can be resolved through circuit training exercises.

Exercise is the idea that a structured training system can be formed that incorporates specific training activities that target the physiological, psychological, and individual performance characteristics of sports and athletes ([Bompa & Haff, 2009](#)). In addition, exercise is an important step to improve the physical condition of the athletes in particular, so it is so important to maintain the athletes' training so that their physical condition does not decrease ([Johansyah Lubis, 2013](#)).

The exercise referred to in this study is a systematic process of practicing or working that is carried out repeatedly and continuously to acquire a skill to perform triple jump movements ([Dr. Emral, 2017](#)). Exercises carried out by athletes aim to increase strength, speed, and accuracy, build endurance, and increase agility and skills. To be able to improve physical and technical abilities, exercise is carried out based on several training principles.

In addition to these principles which are quite basic for an exercise program, exercise programs can be regulated and

controlled by varying the training load such as volume, intensity, recovery, and frequency in a unit of daily exercise program ([Sukadiyanto, 2011](#)).

Circuit training exercises with various modifications and adapted to the physical needs required in triple jump numbers. Circuit training is an exercise system that can simultaneously improve the overall fitness of the body, namely the elements of power, endurance, strength, agility, speed, and other components of physical condition ([Juntara, 2019](#)).

In addition, "The selection of the type of training load in the training circuit must be adjusted to the aspects that are the general objectives of the training circuit to be achieved and circuit training is carried out with several posts available in the field, for example, 8 posts" ([Budi & Sugiharto, 2015](#)).

Based on the problems mentioned above, researchers want to apply circuit training exercises to improve the physical condition of athletes. Based on a study that has been conducted by ([Wahyudi, 2018](#)) states that circuit training exercises have a significant effect on improving the physical condition of athletes. According to the description above, researchers are encouraged to develop a circuit training-based triple jump training model for novice athletes.

B. Method

Research on the development of a circuit training-based triple jump training model for beginner athletes specifically has several objectives including (1) Developing a circuit training-based triple jump training model design for beginner athletes, and (2) Obtaining empirical data on the results of increased triple jump and development effectiveness. circuit training-based jump training model for beginner athletes. In addition, this research has the ultimate goal of producing a circuit training-based product of books and videos of triple-jumping exercises which can later provide benefits for trainers in practicing triple-jumping techniques.

This research on the development of the circuit training-based triple jump exercise model uses a Research and Development model which consists of ten steps, including (1) Conducting research and gathering information, (2) Planning, and (3) Developing the initial product form. , (4) Conduct initial field tests, (5) Revise the main product, (6) Conduct main field tests, (7) Revise products (based on suggestions and results of main field trials), (8) Field tests (with 40-200 subjects), (9) Revise the final product, and (10) Make reports on products in journals, work with publishers who can do commercial distribution (Gall, M. D., Gall, J. P., & Borg, 2003).

This product planning and development is carried out before the trial is carried out. For the development of the exercise model, the researcher consulted with supervisors, physical condition trainers, and expert lecturers in the field of coaching and biomechanics. In research on triple jump training based on circuit training, the next step is to evaluate the model. Evaluation is carried out to improve and perfect the training model that has been made. These steps are expert judgment, small group trials, large group trials, and effectiveness tests.

This trial aims to (1) find out whether the model design has been implemented properly and correctly by the trainer, and (2) how effective the results of implementing the model are for this study. The approach used in this research is qualitative and quantitative.

Thus, a quantitative approach is used to find out the effectiveness of a pre-experimental research design in the form of the one-group pretest-posttest design as follows: The steps taken in this trial include: (1) Establishing groups of research subjects, (2) Implementing pre-test. -test (O1), (3) Trying out the developed model, (4) Implementing post-test (O2), (5) Finding the average score of pre-test and post-test and comparing the two; (6) Finding the difference between the two averages through the statistical method (t-

test) to determine whether there is a significant effect from the use of the model.

The final result of this development research is that the triple jump training model based on circuit training produces a product in the form of a new training model design or completes an existing one complete with product specifications while testing the effectiveness of the exercise model created so that it can improve quality and can be used as a guide in training activities. triple jump.

C. Result and Discussion

The results of this study were to test the effectiveness of the circuit training-based triple jump training model for novice athletes using the "t-test" technique. To find out the data from the pretest and posttest triple jumps, this beginner athlete used the Liliefors test at a significance level of 0.05

Based on research data (see Table 2), with a sample of 50 participants, the average pretest result with a mean = of 59.04 is smaller than the post-test mean = of 73.40, in that calculation, there is an increase of 14.36. Thus, it can be stated that the triple jump training model based on circuit training for beginner athletes is effectively used to improve the triple jump.

Then based on the results of the effectiveness test using the t-test (Table 3), from the difference in the results of the pretest and post-test models of circuit

training-based triple jump training for novice athletes, sig. = 0.000 is smaller than the significance level (p) = 0.05, then the hypothesis H_0 is rejected. So it can be concluded that there is a significant average

difference in the increase in triple jumps with the application of developing a circuit training-based triple jump training model for novice athletes

Table 1. Results of the Experimental and Control Group Jump Jumps

	Mean	N	Std. Deviation	Std. Error Mean
Pre Test	59,04	50	5,337	,755
Pro Test	73,40	50	8,327	1,178

Table 2. Summary of Effectiveness Test Results for Experimental and Control Groups

	Paired Differences						T	df	Sig. (2-telled)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference					
				Lower	Upper				
Pretest- Posttest	14,360	9,111	1,288	-16,949	-11,771	11,145	49	,000	

Discussion

Based on the results of the t-test, it is known that the average pretest was 59.04, while the posttest increased to 73.40. So it has increased by 14.36. Furthermore, based on the t-test of the circuit training-based triple jump training model for beginner athletes, sig. = 0.000 is smaller than the significance level (p) = 0.05. So it can be stated that there is a significant average difference in the increase in the triple jump.

A triple jump is a form of jumping movement which is a series of sequences of movements performed by tiptoeing (hops), stepping (steps), and jumping (jump) to reach as far as possible (Makorohim, 2018). So that the circuit training exercise used in this study is an exercise consisting of several posts that are used as variations of the inner movement for the triple jump.

In a circuit training exercise, it is declared complete if the athletes have

completed the exercises in each of the existing posts within the specified time. This circuit training exercise in which the items in the post have different exercise movements such as in post 1 doing the initial jump with 2 legs in place for 30 seconds, then moving to post 2 by jumping single leg hops for 30 seconds, and finally in post 3 with a tuck jump for 30 seconds performed alternately by the athletes. In-circuit training, athletes will be tested for movements such as:

- (1) The basic triple jump movement, in this case, the triple jump basic exercise such as prefix, execution, and landing, but the triple jump implementation has three parts, namely hop, step, and jump, so it is very different from the long jump. The hop movement is the first pedestal movement using the strongest foot as a repulsion as well as the long jump, but in this section, it will be continued in the second movement, namely the step. The step movement is a stepping movement using the same foot when doing the hop movement before proceeding to the jump movement. The jumping movement in the triple jump is the last follow-up movement with a change of legs before reaching like a jump. So to get a good triple jump basic movement, it is necessary to help with a circuit training-based triple jump training

model as a variation exercise by the trainers.

- (2) Formation of body condition, with this circuit training exercise, can help beginner athletes in shaping body conditions such as strength, endurance, muscle power, balance, flexibility, reaction, speed, agility, and body coordination which are indispensable in the triple jump. ([Yudiana, Subardjah, & Juliantine, 2007](#)). first to avoid possible injuries that come when doing triple jumps, and can increase triple jumps.

Using circuit training as an exercise method is a powerful way to practice triple jump techniques and improve body abilities such as endurance, power, vo2max, and strength ([Julianto, 2016](#)). Using circuit training as an exercise method is a powerful way to practice triple jump techniques and improve body abilities such as endurance, power, vo2max, and strength ([Julianto, 2016](#)). Judging from the conditions in the field by researchers, the development of circuit training-based triple jump exercises can run well and effectively and provide training variations for beginner athletes. In addition, the athletes also felt unsaturated by the previous training programs due to the lack of variety in training which provided benefits for the coach as well.

D. Conclusion

Based on the results of the study, it can be concluded from research and development of circuit training-based triple jump training models for novice athletes empirically through effectiveness tests that can increase triple jumps and are feasible to be used and applied in training for novice athletes. This points to the benefits of circuit training, which can increase triple jumps and can also be an alternative exercise so that athletes do not get bored quickly. In addition, the development of exercise movements that are integrated into circuit training can be a reference for other sports.

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F. Conflict Interest

There is no conflict of interest in this journal is published.

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