

Load Exercise Implementation Method of Circuit Training on Phase Conversion Power for Unimed Tarung Derajat Athletes Preparation of National Student Sport Weeks

Bangun Setia Hasibuan¹, Muhammad Chairad²

^{1,2}Faculty of Sports Science, State University of Medan, Indonesia

Abstract: *The purpose of this study was to determine the effect of applying the circuit system load training method in the phase of power conversion for Tarung Derajat athletes in preparation for the National Student Sports Week. This study uses action research methods developed by Kemis. Research activities carried out with 2 cycles. The results of this study appear that there is an increase in the speed and strength / power of the limbs and arms in athletes.*

Keywords: Tarung Derajat, Athletes, Sport Science

1. Introduction

Law of the Republic of Indonesia Number 3 of 2005 concerning National Sports System, in Article 20 paragraph 3 explains that performance sports are carried out through a planned, tiered, and continuous development and development process with the support of sports science and technology. Furthermore, Article 75 emphasizes that: (1) the community has the same and broadest opportunity to participate in sports activities, (2) the participation of the community as intended can be done individually, in groups, in families, professional organizations, business entities or other community organizations in accordance with the principles of openness and partnership, (3) the community can act as a source, implementer, volunteer, mobilizer, user of results, and / or service for sports activities, (4) the community participates in encouraging sports development and development.

The development of sports in Indonesia according to Harsuki et al (1996) has been directed and carried out in various directions through: (1) Schools or students (ranging from basic education to higher education), (2) parent training, (3) organizations and sports associations, and (4) organizations in the community. This opinion can be explained that sports coaching can be carried out through universities for all sports.

Tarung Derajat is the art of self-defense that utilizes the natural, rational, and rational motives of muscle, brain and conscience. In its implementation several elements of the main physical conditions are needed, namely: anaerobic endurance, strength, speed and accuracy and mental elements, namely: courage and tenacity. Both of these elements are always inherent dynamically and aggressively in the framework of a system of defense / self defense and patterns of techniques, tactics and attack defense strategies that are practical and effective for a defense. Tarung Derajat is also one of the sports contested at the National Student Sports Week.

Athletes always try well to take the time to keep practicing even though there are no match events. But to get to the National Student Sports Week, athletes train more optimally for two months. Before the training, athletes conducted a trial with the training unit (satlat) in North Sumatra and with the athletes of the PON prequalification TC. The results obtained from these trials show some weaknesses including: (1) weak at the speed of the punch, (2) the position of the arm in the last round down below the shoulder, (3) the kick tends to be slow so the opponent is very easy to anticipate the kick done by the athlete. These three problems indicate that the speed of force and the speed of the punch and kick are still weak.

Weak strength and speed show that the arms and legs are very low. Though the exercises so far have been considered quite optimal, but researchers feel I have to be satisfied with the results of the training so far. Therefore it is necessary to accelerate the improvement of the athlete's physical condition aimed at the power of the arms and legs. To overcome this condition, one of them can be done by applying circuit training exercises to help solve athletes' problems.

Circuit training is a form of training consisting of several posts which are carried out in rotation by moving from one post to another. Given the period of training preparation is approximately 2 months, it is necessary to implement a very appropriate training method to help increase the acceleration of the results of the exercise. Therefore the method of circuit training is chosen which has many advantages. As Bompa (2000) stated that the advantages of training using a circuit system are; a) increase the various components of the physical condition simultaneously in a relatively short period of time, b) every athlete can practice according to their own progress, c) every sportsman can correct his own progress, d) practice is easy to monitor, e) save time, because in time relatively short can accommodate many people practicing at once.

Based on the results of the research Imran Akhmad (2006) concluded that circuit training exercises have a better effect than the system set method training on increasing power. This research shows that circuit training is very effective for increasing muscle power.

2. Method

The method in this study is an action research method, which is a jointly developed research for researchers and decision makers about variables that are manipulated and can be used to make improvements. This research is an implementation of the strength training power conversion phase with the circuit training method.

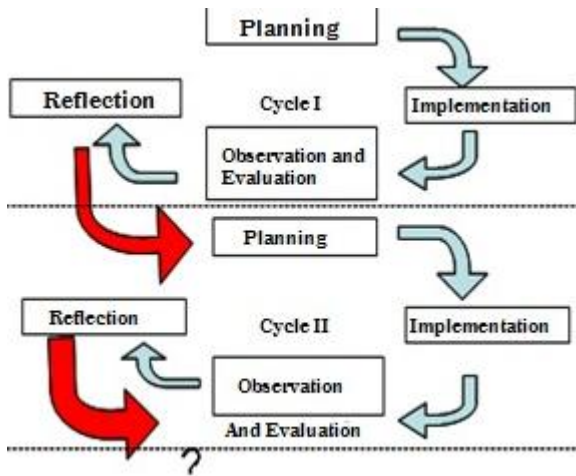


Figure 1: Research Design

This research was conducted at Unimed with a total of 14 athletes. The research was carried out during preparation for training physical conditions in the face of the November National Student Sports Week. The research subjects in this study were Tarung Derajat athletes who were prepared to attend the National Student Sports Week. Data collection tools used in this study include: trainer notes, athlete records, tape recorder recordings, interviews, questionnaires and various documents related to athletes. The observed aspect in each cycle is the athlete's activities during training with the circuit method to see changes in the physical condition and behavior of the athlete, to determine the level of progress of his physical condition which will affect the athlete's performance. The data taken is quantitative data from the test results, qualitative data that describes the activeness, enthusiasm and participation of athletes.

3. Discussion

The beginning of the study was carried out in the first cycle, starting with "planning". The activities include identifying and preparing various needed resources, identifying problems and determining alternative solutions to problems, planning training programs for strength training circuit systems that will be applied in the power conversion phase exercise, setting indicators of achievement and developing the format of observation sheets and test forms.

Followed by "actions", namely applying actions that refer to the training program, the athlete listens to the coach's

explanation of the training program to be carried out, and the athlete carries out the exercises according to the program that has been made. Furthermore, "observation", namely making observations using the format of observation that has been prepared, namely with the observation sheet to collect data and assess the results of the action using the athlete's behavior sheet format. The last step in the first cycle is "reflection". At this stage evaluating the actions taken includes evaluating the quality, amount and time of each type of action, meeting to discuss the results of the evaluation of the training program and activeness of the athlete and improving the implementation of actions according to the evaluation results, to be used in the next cycle.

The results of the first cycle, it was found that the training program was still not optimal and there were still many indicators of success that had not been achieved. This reflects that efforts in the first cycle have not been successful, then continued with cycle II.

Cycle II is carried out with the initial stage of "planning", the activities are identifying problems that arise in the first cycle and have not been resolved and alternative solutions to problem solving and developing cycle II action training programs according to the results of observations in cycle I. Furthermore "actions", implementing action programs II which refers to an exercise program that has been rearranged on the basis of the results of identification of problems that arise in the first cycle, in accordance with alternative solutions to problems that have been determined, among others, through trainers conducting deeper appraisals and athletes implementing training programs that have been formulated with the intended orientation achieved in training more seriously. The third stage of "observation" is to make observations in accordance with the format of the program that has been prepared and record all the things that need to be corrected that occur during the implementation of the action taking place and assess the results of actions in accordance with the format that has been developed. The last stage of "reflection" is by evaluating the actions in cycle II based on the collected data, discussing the results of the evaluation of the training program in cycle II, improving the implementation of actions in accordance with the evaluation results to be used in cycle III. But the results obtained in cycle II are good, meaning that there is progress towards the athlete's ability. The indicators of success found in the tests are almost entirely done by athletes well. So it is no longer necessary to proceed to cycle III.

The results of the cycle I and cycle II tests have significant differences. The results of improving athletes' abilities can be seen from the table below.

Table 1: Comparison of Average Cycle I Test Results and Cycle II Tests

No	Test Item	Test		Target
		cycle I	cycle II	
1	Right Foot Kick	66,6	99,6	110
2	Left Foot Kick	68,4	95,7	110
3	Punch Speed	72,4	99,2	110
4	Blow Resistance	31,3'	55,4'	60'

From the table above, there are differences in the results of the increase that occurred in 14 athletes. The increase occurred as many as 33 points against the right foot kick which is from the average cycle I 66.6 and in the second cycle 99.6. While the left foot shot increased by 27.3 points, which is from 68.4 to 95.7. Against the speed of the blow also increased by 26.8 points, the speed of the punch of the first cycle resulted in an average of 72.4 while the average cycle II was 99.2. Finally, the blow resistance has increased by 24.1 points, where the average time recording occurred in the first cycle for 31.3 minutes and the second cycle at 55.4 minutes.

The results obtained are very satisfying, because all values obtained during cycle II almost reach the desired target as shown in the table above. Based on the results of the interview, it was also known that the athlete's response to the training provided. Athletes feel satisfied and feel more confident after being given training with the circuit method. This is because the whole series of training provided is in accordance with the physical training needs needed by athletes, namely increasing the speed and strength / power of the limbs and arms.

4. Conclusion

The conclusion obtained from this study is that there is an increase in the speed and strength / power of the limbs and arms in athletes. All values obtained by athletes almost reach the target value of 110 for right foot kicks, left foot kicks, and punch speeds, and 60 minutes for athletes' punch endurance. The advice that can be given is to use this circuit training method to increase the power of athletes, so that they can produce athletes who excel in various championship events.

References

- [1] Baechle, Thomas, R dan Grove Barney R. 2003. *Latihan Beban*. Jakarta: PT Rajagrafindo Persada.
- [2] Bompa, Tudor O. 1999. *Periodization Training For Sport*. York University: Human Kinetics.
- [3] Bompa, Tudor O., Carrera, Michael C. 2005. *Periodization Training For Sport*. Human Kinetics.
- [4] Chu, Donald A. 1998. *Jumping Into Plyometrics. 100 Exercises for Power & Strength*. Second Edition. USA: Human Kinetics.
- [5] Fox, Edwar L. Dan Bowers Richard W. 1992. *Sports Physiology. third edition*, Dubuque. Iowa: Wm. C. Brown Publishers.
- [6] Harsono. 1998. *Coaching dan Aspek-aspek Psikologis dalam Coaching*. Jakarta: P2LPTK Ditjen Dikti Depdikbud.
- [7] Harsuki, dkk. 1996. *Paper Akademik untuk Penyusunan Undang-Undang Keolahragaan*. Jakarta; Kantor Menteri Pemuda dan Olahraga RI.
- [8] Imran, Akhmad. 2013. *Dasar-dasar Melatih Fisik bagi Olahragawan*. Medan: Unimed Press
- [9] Setiawan, Iwan dkk. 1991. *Manusia Dalam Olahraga; Prinsip-Prinsip Pelatihan*. Bandung: ITB dan FPOK IKIP Bandung.

- [10] Undang-undang Republik Indonesia Nomor 3 tahun 2005 tentang *Sistem Keolahragaan Nasional*. Jakarta: Kementerian Negara Pemuda dan Olahraga RI.