

Effect of Multiball Exercise Method and Wall Reflection to Increasing of Forehand Drive in Table Tennis Game

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Abstract: Based on the finding on the field, there are still many extracurricular participants who have not been able to do forehand drive techniques such as frequently hit the ball out of field or the ball is caught on the net. This research is an experimental research with pre-test and post-test design model which is not equivalent. The sample used is SDN Cisitu as experiment group and SDN Corenda as control group. The instrument used in this research is a backboard test. The results of this study show that from the two-sample difference test (Independent sample t-test) with the assumption of two homogeneous variances (Equal Variance Assumed) with significance level $\alpha = 0.05$ obtained P-value (Sig 2 tailed) post-test of 0.035. It shows that $P\text{-value} \leq \alpha = 0,05$, so that the influence of multiball practice method and wall reflection is accepted. The multiball practice method is much more significant to the forehand technique of a table tennis game drive with an average post-test score of 29.25 compared with the wall reflection method with a post-test average of 24.67.

1 INTRODUCTION

Table tennis is a popular sport in the world even in Indonesia, this is proved by the many championships that take place in some areas. It aims to conduct a coaching of table tennis athletes.

Table tennis is a sport that requires dynamic movement so that the motor and sensory system in the athlete's body will be well trained. Because when playing or practicing table tennis, there will certainly happen a combination of physiological, be it speed, strength, endurance and motor coordination. This is stated by Can (2014). Racket sports such as tennis, table tennis and badminton require a combination of physiological requirements like speed, resistance, strength, motor coordination, short-term maximal or submaximal efforts, game-based techniques and strategies. These demands make the racket sports particularly challenging for athletes at different levels such as professional, amateur and beginner (8.9) ".

In addition to the presence of table tennis clubs (PTM), extracurricular table tennis activities held in schools can be an effort in coaching table tennis.

Hence, SDN Cisitu still haven't got the achievement in O2SN activities on the table tennis, this is due to some weaknesses that existed in table tennis extracurricular participants such as there are still many forehand drive blows that are caught in the net, then the forehand drive that is blown out from the field and the uncontrolled forehand drive blows so that the ball is not in accordance with the desires.

Though this technique is the most basic technique and technique used in table tennis as suggested by Lubrica (2013) which states that

The standard forehand drive is a basic skill in table tennis. The initial position of the arm is extended and weight shifted to the racket arm. In executing the forehand drive, the arms wings forward and slightly upward in the same direction as the ball. This action is simultaneous to the weight shift to the other leg while twisting the waist. The forehand drive is an aggressive attacking stroke; the ball is made to land close the opponent's side-line or baseline.

Practicing this forehand technique can be quite easy, because it only uses the legs and hips are played, so it will support power to the arm to beat

the ball in forehand. In line with Whiting & Zernicke (in Muhamad, 2016) stating that Rotation of both upper body and the upper body has been described as a source of power in the forehand stroke. The energy is transferred upward from the legs to the pelvis, through the trunk of the arm and then to the racket. In the kinetic chain of the lower body, the knee joint is regarded as the "critical middle link" in the proximal transfer of force.

In more detail Tepper (2002) describes the steps of doing the forehand drive as follows:

- Ready Position: Feet shoulder width apart, Knees bent and leaning slightly forward, Left foot slightly forward, and Racket in front of the body;
- Backswing: Right foot moves back into side-on position, left foot adjusts to side on position, rotate backwards from hips and waist, and arm rotates back at elbow and slightly down;
- Forward Movement: Transfer weight onto front foot as, arm moves forward and up, contact in front of the body and waist and hips rotate forward. 4. Follow Through: Racket follows through forward and up and recover to ready position.

To solve the mentioned problem, the practice method would be able to overcome the above weaknesses. Training methods are often done at his special table tennis club in the region of Sumedang Regency by using the method of Multiball practice. This practice method is fine to be applied in extracurricular program in SDN Cisu because this Multiball practice method is very effective especially in using to train amateur athletes as proposed by Zheng et al. (2016) Multi-ball training in table tennis is an effective training method. Multi-ball training with different means of rotation, strength, speed, placement, arcs, combinations of different technologies and continuous ball hitting can compensate for the fewer to-and-fro times, more space and other weaknesses, in order to improve the exercise efficiency and make athletes grasp and strengthen a variety of difficult movements.

According to Houdges (2007) Table Tennis is the most famous racket sport in the world and the second position in the number of participation. Meanwhile, according to Seve (in Jafarzadehpur, 2004) Table tennis is a dynamic sport that training of sensory and motor systems may be more influence in expert performance.

The Manpower Services Commission (in Masadeh, 2012) suggests the definition of the

exercise a planned process to modify attitude, knowledge or skill behaviour through a learning experience to achieve effective performance in any activity or range of activities. Its purpose, in the work situation, is to develop the abilities of the individual and to satisfy the current and future manpower needs of the organization.

From this opinion it can be concluded that the exercise method is a way to process the exercises systematically and done repeatedly with increased training loads each time the exercise to improve skills, achievements and achieve goals that have been determined first. Zheng and Keyi (2016) suggested that when do tactical training for athletes, multi-ball training is a good choice. In the technical combination of training in table tennis, the quality of training and the results in some technical training content with single ball training methods and means are not ideal.

The advantage of using the multiball training method proposed by Katsikadelis (2014) is The advantage of the Multiball method is that it simulates the match conditions while, at the same time it develops the players' strokes accuracy, aiming on the high intensity and quality training.

Siahaan (2014) stated that the teaching of table tennis strokes skills still need attention on the best learning method to be used, the learning stages that would be reached, the improvements in the learning result, and the parameter used to measure the learning result.

In practice there is still a problem in the practice of training efficiency for athletes and trainers this is conveyed by Young (2006) is a key issue for athletes and coaches at all levels is efficiency of training, that is, achieving the greatest gains in performance for a given amount of work effort. Therefore, the concept of maximizing the transfer of training to performance is paramount.

However, with the method of practice will provide a solution to the problem as said by Bompa (in Murugaian and Alexandra, 2015) opines that a broader base of knowledge about sports is now reflected in training methodology.

2 METHODS

2.1 Research Design

The design of this study is quasi experimental design with The Non-Equivalent, Pretest-posttest Design (non-equivalent pre-test and post-test design). In this research, the experimental group and the control

group are both doing pre-test and post-test. The form of research design is as follows:

$$\begin{array}{l} S : O1 X O2 \\ S : O3 X O4 \end{array} \quad \begin{array}{l} (1) \\ (2) \end{array}$$

Explanation:

S = Sample

X = Treatment

O1 = Pre-test to multiball experiment group

O2 = Post-test to multiball experiment group

O3 = Pre-test to wall reflection control group

O4 = Post-test to wall reflection control group

2.2 Research Location

This research was conducted in two elementary schools which are located in Kecamatan Cisitu Kabupaten Sumedang. Both schools are SDN Cisitu as experimental group and SDN Corenda as the control group.

2.3 Research Subject

The population in this study are all extracurricular participants from four elementary schools that have extracurricular table tennis in Kecamatan Cisitu Kabupaten Sumedang. Sample is randomly selected based on class / group. Based on the description, the sample used are extracurricular table tennis participants in SDN Cisitu about 12 participants as an experimental group and extracurricular table tennis participants in SDN Corenda about 12 participants as a control group.

2.4 Research Instrument

In this research, data collection and processing obtained from test instrument from Nurhasan and Cholil (2007) namely back board skill test with validity level of 0.77 and reliability of 0.87.

2.5 Data Analysis

Quantitative data obtained from the pre-test and post-test are identified first and then analyzed. Then the average calculation was done, where the data obtained are tested by using gain test, normality test, homogeneity test and two-tailed T-Test. In this study, after obtaining pre-test and post-test data, data processing techniques and data analysis were done by software SPSS 16.0 for Windows.

3 RESULTS AND DISCUSSION

3.1 Pre-test Data Processing of Forehand Drive in Table Tennis

Based on the data analysis, it is known that the pre-test data normality test of the experimental group has p-value of 0.825 for the Shapiro-wilk normality test. Meanwhile for normality test of pre-test data of control group has p-value of 0,839. Thus, for the normality test (Shapiro-wilk) the experimental and control groups obtained values greater than $\alpha = 0.05$, so the data came from normally distributed samples. Therefore, the data for the experimental and control groups are normally distributed.

3.2 Post-test Data Management of Forehand Drive in Table Tennis

Based on result of data analysis that test of normality of post-test data of experiment group have p-value of 0,590. While for normality test of data of post-test of control group have p-value of 0,579. Thus for the normality test (Shapiro-wilk) the experimental group and the control group obtained the value of $\geq \alpha = 0.05$, so the data came from a normally distributed sample. Therefore, the data for the experimental group and the control group are normally distributed.

After the normality test, then the homogeneity test of post-test data. Based on result of data analysis that result of homogeneity test of post-test data from both group have p-value (Sig) equal to 0,077. Thus $0.077 \geq \alpha = 0.05$, then H_0 is received and post-test data there is no difference in variance of the two groups of post-test data.

After the normality and homogeneity tests, the second difference test was done with the data analysis result that the post-test data from the data analysis result stated that when the post-test data with the average value of 29.25 for the experimental group and the average value of 24.67 for control group. And the value has a p-value (Sig 2-talent) of 0.035, and the value of t test of 2.252. Thus H_0 is declared rejected and H_1 is declared accepted. So in the posttest data there are differences in the experimental and control groups.

Hence the average value of $29.25 \geq 24.67$ based on the statistical result states the average value of 29.25 can be said that the influence is more significant than the average value of 24.67.

4 CONCLUSIONS

From the results of the above research can be concluded that there is a significant influence of multiball practice method and wall reflection method to increase forehand drive in table tennis.

With the result of pre-test data analysis showing no difference, but for post-test data showed that both methods give effect to table tennis forehand with p-value (sig 2-tailed) of 0,035 meaning p-value $\leq \alpha = 0,05$ and H_0 is rejected.

However, in posttest data the group receiving the multiball practice method had an average score of 29.25 indicating that the multiball method was significantly more influential on the table tennis forehand compared to the wall reflection practice with an average value of 24.67.

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