

The Effect of Part and Whole Methods to Improving Shooting Accuracy in Futsal Players of UNY

Subagyo Irianto¹, Fitriyan Agung Yudhistomo¹

¹*Sport Coaching Department, Universitas Negeri Yogyakarta, Jl. Colombo No.1 Yogyakarta, Indonesia*

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Abstract: This research aims to identify the effects of part and whole method in increasing the shooting accuracy for the players of UNY Futsal Club. This research's method is experimental research with two groups pre-test post-test as its design. The population for this research is 20 players from the UNY male futsal club, and they were chosen using the total sampling technique. All the samples are given a pretest in the form of shooting accuracy in order to determine the treatment group, the result of the test was ranked, and then matched with the A-B-B-A cycle into two groups, consisting of 10 members each. This research uses the instep as its research instrument, with the validity of 0.978 and reliability of 0.989. This research uses T-test as its data analysis technique, with the significance level of 5%. The result of this research shows that (1) there is a significance effects on the use of part method in increasing the shooting accuracy of the players, with the T-count 6.946 > T-table 2.262, and the significance value 0.000 < 0.05, and the increasing number of the percentage as much as 28.88%. (2) There is a significance effect on the use of whole method in increasing the shooting accuracy of the players, with T-count 5.823 > T-table 2.262, and the significance value 0.000 < 0.05, and the increasing of the percentage as much as 19.46%. (3) The part method is better than the whole method in increasing the shooting accuracy of the players, with the post-test mean difference of 1.8.

1 INTRODUCTION

Futsal game is a sports game played by teams that require teamwork in each group. Futsal game not only requires teamwork but also individual techniques. Some aspects of skill mastery in futsal include technique skills, understanding of tactic, physical and mental fitness.

Every futsal player has to have good skills in playing futsal. The basic skills in futsal are not very different from those in soccer. Those basic skills are ones with or without the ball. Practice for a kid under 13 years old has an emphasis on technique mastery, so the given materials are related to the techniques that are applied in the game. The basic techniques that are developed in futsal are also not very different from those in soccer. Among those techniques are kicking, passing, keeping, and shooting the ball to the soccer goal. The smaller size of the field in futsal, the smaller number of player, and faster movements make bigger number of goals. Futsal game puts more emphasis on skills, so the tactics and strategies are easily applied in this game.

Skills mastery in futsal requires regular and oriented practice, so futsal players can play well.

Improving futsal skills is certainly not easy. Not only does it need frequency, but also the right method. The basic techniques of futsal are not as many as they are in soccer, but in practice, the players must have prime skills in order to play this sport well. Futsal is a type of sports which has rigid physics rules (Jaya, 2008). Sliding tackle, body charge, and other harmful aspects in soccer are not allowed in futsal.

In line with that opinion, futsal is a very fast and dynamic game (Murhananto, 2006). In terms of a relatively small field, there is almost no room to make a mistake. It needs teamwork among the players for an accurate passing, not just passing by the opponent. Teamwork among the players is a necessary factor to support a good team play. During a futsal game it no longer matters who scores, but the teamwork and high team collectivity will elevate a team's achievement.

Futsal is a branch of sports game adopted from soccer game, thus having no different techniques

from those in soccer games. Among those techniques are passing, shooting, controlling, chipping, and dribbling. One of the skills the players need is a powerful kick and directed to the goal which is often called 'shooting'. Shooting towards the goal is required in order to score in each match. It has a particular characteristic that is the ball kicked so hard and fast that it is difficult for the goalkeeper to anticipate. However, a good shooting combines power, accuracy and faith and focus to score a goal. Shooting is an extremely important technique in a futsal game because the main purpose of the game is to score a goal. A player with a good and accurate shooting skill will find it easy to score a goal especially during penalty. A good shooting mastery will make it easier to score a goal or to kick the ball to the opponent's goal.

Shooting is a way to score a goal, this is caused by the fact that every player has a chance to score a goal and improve the game or the match (Lhaksana, 2011). Shooting can be done in various ways, by using the top of the foot, the tip of the foot, the inner side of the foot. However, shooting with the top of the foot is more effective and more often done by futsal players. They must be able to shoot well and accurately under and in a limited time, narrow space, a tired body, and within the opponent's guard (Lhaksana, 2011).

Based on the observation done by the researchers, futsal players of UNY futsal club have not mastered the shooting technique yet. The common problem is that they perform shootings that are not very accurate and optimal, resulting in a miss and a less-oriented shot. This could be seen when they kicked the ball and rarely scored. The problem was, during a match the players often gave inaccurate shots, the ball even shoots high upwards. Shooting is one of the technique that holds an important role. Because the purpose of shooting is to get the ball into the opponent's goal in an attempt to score a point to change the situation or what is commonly called a score.

To overcome the problem, a method of practice needs to be given to improve shooting accuracy. A method of practice is a procedure and a way of choosing the type of exercise and its organization based on the level of complexity and body weight (Nossek, 1995). The purpose of an exercise planning to develop an athlete's skills and performance. The method of practice used is whole method. It is generally applied to learn a simple skill. As stated, "If the taught sports skills are simple and easily understood, they are better taught as a whole, and each particular technique is only taught specifically

if the athlete or the subject always makes a mistake in that particular technique" (Harsono, 2015).

A suitable method of practice is so required to master the basic skills in futsal that the right method of practice is needed to fix the basic technique movements of futsal, which are Part Method and Whole Method. "Part method is an approach where in the beginning the students are directed to practice the whole movements part by part, and only until each part is mastered do they start practicing the movement as a whole" (Sugiyanto, 1997).

Part method is expected to help fix and improve the basic techniques of futsal skills during practice. "Whole method gives a maximal advantage if simple movements were to be taught" (Lutan, 2002). Whole method is basically very suitable or relevant to learn simple skills. However, if there is some complexity or a difficult movement in some parts, they could be taught specifically to students if they often make mistakes in performing those movements.

2 RESEARCH METHOD

2.1 Research Type

This is an experimental research. Experiment method is defined as a systematic method in order to build a causal-effect relationship (Sukardi, 2015). The design used in this research is "Two Groups Pretest-Posttest Design".

2.2 Research Time and Place

The research took place in Badminton Hall of Universitas Negeri Yogyakarta. It was conducted in February – March 2019. Treatment was given in 16 meetings, with the frequency of 4 times a week, on Tuesday, Wednesday, Friday, and Sunday.

2.3 Research Target/Subject

The population of this research is the 20 male futsal players of UKM UNY. The samples of this research are male futsal players who were chosen through total sampling technique. Samples were divided into two groups, Group A as an experiment group was given part method of practice and Group B whole method of practice.

2.4 Data, Instrument, Data Collection Technique

The test instrument for both pretest and posttest utilized futsal shooting accuracy test using the top of the foot, with a validity level of 0.978 and reliability of 0.989. The figure of shooting accuracy test with the top of the foot (Maulana, A. T., 2009) can be seen below.

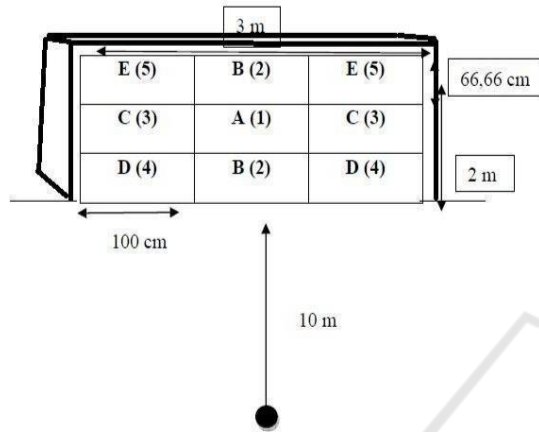


Figure 1: Shooting accuracy test field. (Source: Maulana, A. T., 2009)

Shooting was done from the second penalty point within 10 m from the goal and the ball was kicked towards the target, which was the futsal goal of 2 m high and 3 m wide, which was then divided into 9 parts, and each part was 66.66 cm high and 100 cm wide. Score 1 was for target (A), score 2 was for target (B), score 3 was for target (C), score 4 for target (D), and score 5 for target (E). If the kick hit the goal post and was not in, no score was given and there was no repetition. Each testee did 10 shots.

2.5 Data Analysis Technique

Before hypothesis testing, precondition testing was needed. The test of the measurement result data related to the research result aims to improve the analysis. Therefore, the normality and homogeneity of the data were tested.

Hypothesis testing used t-test with the help of SPSS 16, that is by comparing the mean between the pretest and the posttest. If the t value is smaller than t table, H_0 is rejected, if t value is bigger than t table, H_0 is accepted.

3 RESEARCH RESULT AND DISCUSSION

3.1 Research Result

3.1.1 Shooting Accuracy Pretest and Posttest Group A

The shooting accuracy pretest and posttest of male futsal players of UKM UNY of part method are shown in the following figure 2:

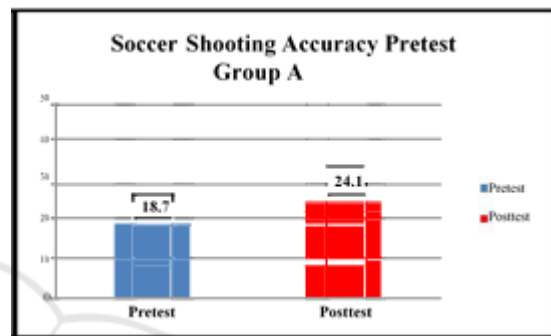


Figure 2: Bar chart of shooting accuracy pretest and posttest of male futsal players of UKM UNY of group A

3.1.2 Shooting Accuracy Pretest and Posttest Group B

Shooting accuracy pretest and posttest of male futsal players of UKM UNY of whole method are shown in the following figure 3:

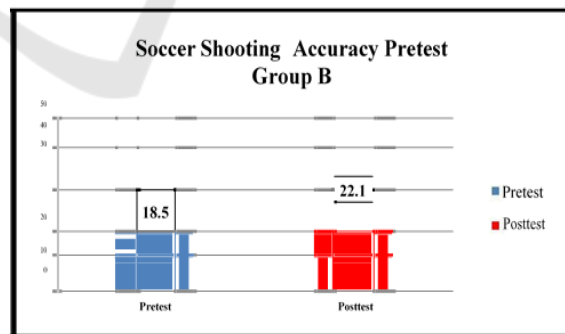


Figure 3: Bar chart of shooting accuracy pretest and posttest of male futsal players of UKM UNY of group B

3.2 Precondition Testing of Normality Test Results

Normality test was measured using Kolmogorov-Smirnov Z formula. The result is shown in the table 1 below:

Table 1: Normality testing.

Group	P	Notes
Pretest Group A	0.660	Normal
Posttest Group A	0.932	Normal
Pretest Group B	0.556	Normal
Posttest Group B	0.925	Normal

From the result in table 1, we can see that all data have a p value (Sig.) > 0.05. so the variables are normally distributed. Because all data are normally distributed, the analysis could be proceeded with parametric statistics.

3.3 Test of Homogeneity

Homogeneity principle suggests that if $p > 0.05$, then the test is homogenous, if $p < 0.05$, then the test is not homogenous. Test of Homogeneity for this research are shown in the following table 2:

Table 2: Test of homogeneity.

Group	Sig.	Notes
Pretest	0.873	Homogenous
Posttest	0.503	Homogenous

From table two, we can see that pretest-posttest sig. $p > 0.05$ so the data is homogenous. "Because all data are homogenous, the data analysis could be futsal players of UKM UNY".

3.4 Hypothesis Testing Result

The first hypothesis reads "There is a significant effect of part method on shooting accuracy improvement in futsal players of UKM UNY", the data of the analysis result is shown below:

Table 3: T-test of shooting accuracy pretest and posttest results of part method group.

Mean	t-test for Equality of means				
	t ht	t tb	Sig.	Difference	%
18.70	6.946	2.262	0.000	5.4	28.88%
24.10					

T-test result shows that the t-value of p significance is 0.000. Because t-value 6.946 > t-table 2.262, and significance value 0.000 < 0.05, the result shows a significant difference. Thus, the alternative hypothesis (Ha) which suggests "There is a significant effect of part method on shooting accuracy improvement in futsal players of UKM UNY", is accepted.

The second hypothesis suggests "There is a significant effect of whole method on shooting accuracy improvement in Futsal players of UKM UNY."

Table 4: T-test of shooting accuracy pre-test and post-test results of whole method group.

Mean	t-test for Equality of means				
	t ht	t tb	Sig.	Difference	%
18.50	2.753	2.262	0.022	0.8 cm	1,70%
22.10					

T-test result shows that the value of p significance is 0.000. Because t-value 5.823 > t-table 2.262, and significance value 0.000 < 0.05, the result shows a significant difference. Therefore, the alternative hypothesis (Ha) which suggests "There is a significant effect of whole method on shooting accuracy improvement in futsal players of UKM UNY", is accepted.

The third hypothesis which suggests "Part method is better than whole method in improving shooting accuracy of futsal players of UKM UNY" could be determined by the mean difference between group A and group B. The analysis result is shown in the following table.

Table 5: T test of group A and group B.

Group	t-test for Equality of means				
	%	t ht	t tb	Sig.	Difference
Burpee	28.88%	1.812	2.101	0.087	1.80
Depth jump	19.46%				

From the t test result table, we can see that the t value is 1.812 and t-table (df = 18) = 2.101, while the p-value significance is 0.087. Because t-value 1.812 < t-table = 2.101 and sig, 0.087 > 0.05, there is no significant difference. The analysis result demonstrates that the mean value of the posttest difference in part method exercise and the mean value of the posttest difference in whole method exercise was 1.80, with a higher increase of percentage in part method, 28.88%. Therefore, the hypothesis (Ha) which suggests "Part method is better than whole method in improving shooting

accuracy of futsal players of UKM UNY”, is accepted.

3.5 Discussion

Based on t-test analysis, we know several things to draw a conclusion of whether there is an improvement in shooting accuracy in futsal players of UKM UNY after part and whole method exercise for 16 meetings. The research result is further discussed as follows:

3.5.1 The Effect of Part Method Exercise on Shooting Accuracy in Futsal Players of UNY

The research result shows that there is a significant effect of part method on shooting accuracy improvement of futsal players of UKM UNY. The effectiveness of shooting accuracy improvement of futsal players of UKM UNY before and after part method exercise is 28.88%. The percentage shows that the mean of shooting accuracy of futsal players of UKM UNY during pretest was 18.7 and it increased during post-test by 24.10. Part method is a way to practice a sports skill, in this case shooting technique, done part by part and only until those parts of skill are mastered are they applied or put together as a whole. Part method is generally applied to learn a quite difficult or complex type of skill. Part method is a form of skill practice done part by part of the whole skill. It starts with the smallest part of the skill and eventually builds up as a whole skill (Prastowo, 2014). Part method is a form of skill exercise done part by part of the whole skill.

Learning skills are selected to fit more efficient and simple movements (Putro, 2015). An opinion on part method, that part method is a method to teach a movement skill by dividing the movements into parts before they are put together as a whole movement (Firdaus, 2014), so in this case, shooting technique, is broken down into parts and those parts are then put together after the players have mastered them in order to make it easier for the players to understand shooting technique.

Elementary/part method involves dividing/parsing or grouping of a movement into functional elements (Syafuruddin, 2011). This is based on the fact that the learned parts of the movements can be put together as a complex (whole) movement without losing the quality of the movement. The application of this method requires parsing or grouping of a sports technique process into some functional parts.

3.5.2 The Effect of Whole Method on Shooting Accuracy of Futsal Players of UNY

The result shows that there is a significant effect of whole method on shooting accuracy of futsal players of UKM UNY. The effectiveness of shooting accuracy improvement of futsal players of UKM UNY before and after whole method exercise was 19.46%. The percentage shows that the mean of shooting accuracy of futsal players of UKM UNY during pretest was 18.5 and increased during posttest by 22.10. The whole method was applied by, first of all, explaining how to shoot properly, including the first position, movement application, and advanced movement. Those parts of shooting movements are explained and demonstrated in details. The next step is for the players to shoot from the first position to its advanced movements repeatedly.

Global/whole method, is “global method refers to the whole movement of a technique and attempts to find/get the technique through a learning process” (Syafuruddin, 2011). During exercise, the athletes do not learn the technique separately, but they do the movements as a whole. “Whole method gives advantages if simple movements were to be taught” (Lutan, 2002). Related to whole method stated, “Whole method is an approach where from the beginning the students are directed to practice the series of movements as a whole” (Sugiyanto S. D., 1997). “Whole method is a method that emphasizes wholeness of the desired learning materials” (Suhendro, 2009). Whole method is generally applied to learn a simple skill.

“If the taught sports skills are simple and easily understood, they are better taught as a whole, and each particular technique is only taught specifically if the athlete or the subject always makes a mistake in that particular technique” (Harsono, 2015). Global method or whole method is a way to teach which moves from general things to specific things (Mahendra, 2007). In teaching a movement skill or game, the whole form is taught first and then it is broken down into smaller parts.

3.5.3 The Comparison of Part Method and Whole Method Exercise towards Shooting Accuracy of Futsal Players of UNY

The analysis result shows that part method is better than whole method in improving shooting accuracy of futsal players of UKM UNY, with a mean posttest difference of 1.8. The percentage of shooting

accuracy improvement in part method exercise was 28.88%, while that in whole method group was 19.46%. Exercise methods are ways for a coach to deliver exercise materials in physical activities and techniques, in which case the right exercise method can be seen from how fast players can do the given exercise materials according to the coach's instructions. The research result is supported by Yulianto, stating that there is a difference in influence between part and whole methods in improving soccer shooting skills (Yulianto, 2016). The effect of part method is better than play practice. It is also supported by Subarna, in his research which shows that learning through part method is significantly more effective than whole method in improving spike skills in volleyball in volleyball extracurricular of MA plus Al Munir in Kabupaten Sumedang (Subarna, 2015).

Part method really helps players who still make mistakes in learning series of shooting movements. Anticipating mistakes in shooting requires a simplification of the movement into parts, from the starting phase, execution, and follow-through, so that it is easy for players to learn and understand. This approach will be good (effective) if parts of the movements are taught and understood or mastered before they are put together as a whole movement. On the contrary, this method is not effective if the players directly learn the movement as a whole (Adiesta & Tuasikal, 2017). From the opinions above we can conclude that shooting technique is better taught using part method. Because shooting techniques have phases of movements which could be taught separately, when those components or phases are continuously taught and well-organized, it will result in a maximum shooting accuracy.

4 CONCLUSIONS

Based on the results of data analysis, description, research result testing, and discussion, we can conclude that: (1) There is a significant effect of part method on shooting accuracy improvement of futsal players of UKM UNY, with t value $6.946 > t$ table 2.262 , and significance value $0.000 < 0.05$, and a percentage increase of 28.88%. (2) There is a significant effect of whole method on shooting accuracy improvement of futsal players of UKM UNY, with t value $5.823 > t$ table 2.262 , and significance value $0.000 < 0.05$, and a percentage increase of 19.46%. (3) Part method is better than whole method in improving shooting accuracy of

futsal players of UKM UNY, with a mean difference of posttest of 1.8.

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