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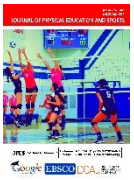

The Effects of Exercise & Coordination Eyes-Hand against Drop Shot Accuracy in Badminton Athletes

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Abstract

The purpose of this research is to know and analyze: (1) Differences in the influence of one-way drilling drills and two-way drilling to the accuracy of the drop shot at the athletes PB C-PLUSco Semarang. (2) Differences in influence between athletes who have high and low eye-hand coordination on the accuracy of drop shot at athletes PB C-PLUSco Semarang. (3) The interaction between exercise and eye-hand coordination to the accuracy of a drop shot at athletes PB C-PLUSco Semarang. This research uses an experimental method with the 2x2 factorial design. Data analysis technique using Analysis of Varian (ANOVA) at significance level (α) 0.05. The independent variable in this research is the method of drilling one-way drilling and two-way drilling. High and low eye-hand coordination as attribute variable and the dependent variable is the accuracy of a drop shot. The result of this research are: (1) There is the significant difference of influence between one-way drill and two-way drilling method toward the drop shot accuracy with sig value (0.019) < α (0.05) and F_{value} (7.53) > F_{table} (4.49), (2) There is a difference in the effect of high and low eye-hand coordination on the accuracy of drop shot where the significance value (0.042), < α (0.05) and F_{value} (5.25) > F_{table} (4.49), (3) method of exercise and eye-hand coordination of drop shot precision with sig (0.022) < α (0.05) and F_{value} (6.14) > F_{table} (4.49).

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INTRODUCTION

Badminton is one of the most popular sports game in Indonesia, even in the whole world, a game that uses a lot of physical ability with fast movements and hard stroke done within seconds of long rallies, basic skills which are needed in badminton among them is how to hold the racket, standing attitude, foot movements, and hitting shuttlecock (Herman Subarjah, 2010).

Hendya Alif Junanda (2016) suggests that in order to play a badminton game as well a professional player must be able to do some stroke technique or hit hitting skills. The essence of badminton game is a stroke, the activity of hitting a shuttlecock with a racket. According to (Arisbowo, 2008) the strokes technique in badminton game is as follows: (1) Lob shot, (2) Drop shot, (3) Smash, (4) Drive, (5) Return service.

A drop shot in a badminton game is an important element to support an athlete's achievement, because a good drop shot can be a deadly stroke, especially in a single game, this is often the case where the strokes are high and far backward making it difficult for the opponent to reach the shuttlecock inside effort to restore the shuttlecock properly, and if the ability of the drop shot cannot be mastered properly then the punch will be easily returned by the opponent (Andi Rizal, 2014).

The benefits of using a drop shot are: (1) force the player to lift the shuttlecock or do the netting closer to the net, (2) immediately drop the shuttlecock while the opponent is still in the back, (3) as a shock stroke so the opponent can not anticipate what stroke will be done next (Indra Birawan, 2013).

Indra Birawan (2013) How to perform the technique of drop shot motion is divided into three phases: (a) the position of the body when will hit, (b) racket swing, (c) when an impact or touching with the shuttlecock. Drop shots must be done continuously to obtain better results.

In the current era to inflate a maximum achievement is to do the proper exercise that is in badminton association (PB). Badminton union is the most appropriate form of badminton coaching, whose main objective is to accommodate and provide opportunities for athletes in developing their talents.

According to Alvindo (2014) exercise early or young age is one of the processes of achieving the maximum, because young age is possible to be coached in a relatively long time span, and at the same time is a search for seeds of talented badminton athletes which is one of the absolute requirements in the development of maximal achievement.

PB C-PLUSco Semarang is one of badminton association that has been established since 2005. PB C-Plusco focusing only on athletes ages 6-18. According to the information provided by the coach (Cornelis Arnold) PB C-PLUSco Semarang some of the problems that exist in the athlete PB C-PLUSco Semarang among the most visible is the placement of shuttlecock that has not been maximized, this can be seen from the time of the drop shot stroke the athletes during training and the game due to lack of utilization of the wrist.

Achievement of optimal achievement in an athlete badminton must have good motion coordination. Continuous exercise will improve good motion coordination. Eye-hand coordination is the basis for achieving skills in badminton games including doing drop shot (Azi Faiz Ridho, 2015). Therefore, achievement of achievement needs to be elaborated in a comprehensive concept in a tiered form of coaching. The guidance and development of sports is done by the parent organization of the sport both local and central level (Santoso et al, 2017).

The trainer also informed that the drop shot training had been given to the athlete but not yet fully varied, the athletes were only given pairs of exercises (play) without giving any training to sharpen the drop shot. The principle of training is very important to be noticed by the trainer and also the athlete, the attention and also the obedience then the goal of the exercise will achieve a maximum result.

Understanding and mastery of the correct badminton technique will help the athlete to do the right punch, therefore the trainer should pay

more attention to the athletes who have eye-hand and high-hand coordination, therefore the athletes who have high-hand eye coordination better in drop shot comparison of athletes with low eye-hand coordination. Coordination it self is a complex ability so that the need for a movement to shape and improve coordination (Pritama, 2014).

METHODS

This research uses an experimental method with 2x2 factorial design. Data analysis technique using Analysis of Varian (ANOVA) at significance level (α) 0.05. The independent variable in this research is the method of drilling one-way drilling and two-way drilling. High and low eye-hand coordination as the attribute variable and the dependent variable is the accuracy of the drop shot. The population in this study were athletes PB CPLUSco Semarang which amounted to 33 Athletes. The sampling technique used purposive samples with a total sample of 24 athletes. The variables in this study consist of free variables (drilling exercise), attribute variables (eye-hand coordination), as well as the dependent variable (drop shot accuracy).

The data normality test aims to shows that the data comes from a normally distributed population. Testing of normality of data in this study using Kolmogorov-Smirnov test with the help of SPSS program at significance level $\alpha > 0.05$.

Homogeneity test aims to show that two or more groups of data come from populations having the same variation. Data homogeneity test in this research is Levene test with help of SPSS 16.0 application at significance level $\alpha > 0.05$.

Research data obtained must be accountable, then the data retrieval in this study through the final test or post-test by doing a drop shot test. Before the training program is done, first eye-hand coordination test by performing a throwing ball with a purpose to know the level of eye-hand coordination of high and low category. Then perform the initial test or pre-test by doing a drop shot test. A test form used to measure the accuracy of a drop shot.

RESULTS AND DISCUSSION

Hypothesis testing research conducted based on data analysis and interaction analysis of variance. To find out the difference need ANOVA test, ANOVA summary result showed a significant difference.

Table 1. ANOVA Summary Result

Source	df	Mean square	F	Sig.
Corrected Model	3	378.842	5.743	.001
Intercept	1	172.024	2.091	.000
Exercise method	1	9.854	7.533	.019
Coordination	1	6.860	5.250	.042
Exercise method *Coordination	1	7.642	6.146	.022
Error	20	4.500		
Total	24			
Corrected Total	23			

Hypothesis 1, which states there is a significant effect difference between drilling method one-way and two-way to the accuracy of dropshot tested using ANOVA test and obtained $F_{value} = 7.533$ with a significance value of 0.019. The result of this calculation is consulted with F_{table} with dk of numerator = 1 (b-1) and dk denominator (kb (n-1)), with significance level 0.005 obtained $F_{tabel} = 4.49$, because $F_{value} > F_{table}$ or $7.533 > 4.49$ with a significance level of $0.019 < 0.05$ then H_a which reads: "there is a difference of influence between the method of exercise that is significant between the method of drilling one-way and two-way training" is accepted.

Hypothesis 2, states that there is a difference in the effect of high and low eye-hand coordination on the accuracy of drop shots in athletes PB C-PLUSco Semarang, which was tested using ANOVA test and obtained $F_{value} = 5.250$ with significance value 0.042. The result of this calculation is consulted F_{table} with dk numerator = 1 (b-1) and dk denominator (kb (n-1)), with a significance level of 0.05 obtained $F_{table} = 4.49$, because $F_{value} < F_{table}$ or $5.250 > 4.49$ with a significance level of $0.042 < 0.05$ then H_a which reads: "there is a

difference of influence between high and low eye-hand coordination to drop shot precision on athlete PB C-PLUSco Semarang" accepted.

There is an interaction between training methods there is an interaction between exercise methods and eye-hand coordination of drop shot precision on athletes PB C-PLUSco Semarang, used ANOVA test, F_{value} = 6.146 with significance value 0.022. The result of this calculation is consulted with F_{table} with dk of numerator = 1 (b-1) and dk denominator (kb (n-1)), with significance level 0.005 obtained F_{table} = 4.49, because $F_{value} > F_{table}$ or 6.146 > 4.49 with a significance level of 0.022 < 0.05 Then H_a which reads "there is an interaction between exercise methods and eye-hand coordination to the accuracy of drop shots on athletes PB CPLUSCO Semarang" accepted.

Erny Susilowati (2013) states that the drill method benefits the athlete since the athlete is given a continuous understanding so that the taught treatment can be more attached to the athlete's dexterity in performing a movement directed by the trainer. Drilling or training is a teaching method that can be used to attain athlete's dexterity during the exercise process. Therefore the two-way drilling method is perfect for the practice of drop shot precision because the drop shot is basically one to gain points in a badminton game.

There is an interaction between one-way drilling and two-way drilling methods, eye-hand coordination of drop shot precision caused by one-way drilling and two-way drilling have similarities in drilling in each part of the exercise, this is also related to the drop shot accuracy test which uses drilling. Although it has been given good practice, without the support of a fit physical condition then the goal of the exercise will not be achieved because in the training of a trainer must consider the physical condition of the athletes. A coach must be good at choosing the right exercise for the athlete because if one in determining the method of exercise to be selected then will not get an increase will even harm the athletes later. Based on the above exposure there is an interaction between training methods with eye-hand coordination of drop shot precision. Players with high or low eye-hand coordination are more appropriately given two-way drilling exercises to improve drop shot precision than the one-way drilling method.

CONCLUSION

Based on the results of the above analysis and discussion, it can be concluded as follows: (1) There is a significant effect difference between the one-way drilling and the two-way drilling method toward the accuracy of the drop shot punch on athletes PB C-PLUSco Semarang. (2) There is a significant difference of influence between athletes who have high and low eye-hand coordination to the accuracy of drop shot on athletes PB C-PLUSco Semarang. (3) There is an interaction between one-way drilling methods, two-way drilling and eye-hand coordination of precise drop shot on athletes PB C-PLUSco Semarang.

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