

The Effects of Exercise and Agility on Dribble (Skills) of Basketball Extracurricular Participants in SMPN 10 Bengkulu

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Abstract

The aim of this research is to identify and analyze: (1) the difference in effects of two ball dribble and dribble of the wall exercise method on the dribble skills of basketball extracurricular participants in SMPN 10 Bengkulu, (2) the difference in the effects of participants' different agility level on the dribble skills of basketball extracurricular participants in SMPN 10 Bengkulu, (3) interaction between exercise methods and agility level on the dribble skills of basketball extracurricular participants in SMPN 10 Bengkulu. This research uses experimental methodology with 2x2 factorial design. Data analysis technique uses Analysis of Variance (ANOVA) with significance level (α) 0.05. Independent variables are two ball dribble exercise method and dribble of the wall exercise method. Attributive variables are high and low agility and its dependent variable is dribble skills. The findings are: (1) there is a significant effect difference between two ball dribble exercise method and dribble of the wall exercise method on basketball dribble skills with $p (.049) < \alpha (0,05)$, and $F_{test} (4.37) > F_{table} (4.04)$, (2) there is an effect difference on basketball dribble skills between participants with high agility and participants with low agility, with $p (.003) < \alpha (0.05)$, and $F_{test} (11.42) > F_{table} (4,04)$, (3) there is an interaction between exercise methods and agility levels on basketball dribble skills with $p (.030) < \alpha (0.05)$, and $F_{test} (9.64) > F_{table} (4.04)$.

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INTRODUCTION

Basketball is played by many people in Indonesia. It is considered a unique sport thanks to its invention by a Canadian physical teacher Dr. James Naismith, Nuril Ahmadi (2007)

Basketball is a competitive sport in a simple form using a ball as the object and is able to adapt to various condition that may arise in it, Muhammad Saifullah (2015)

Indonesia people's interest in playing basketball is elating although its development in competition level is not yet optimal. As proposed by Rudiyanto (2012) early age introduction is the most suitable method in character building. Improvement in basketball competition level cannot be separated from player's development in local areas, be it in junior high school (SMP), senior high school (SMA), or college levels. The development of basketball competitiveness in Regency and Provincial governments would give positive contribution for the development of nation wide competitiveness level.

One determining factor in the interest for basketball is physical education subject in schools. Aside from that, there is also the fact that basketball extracurricular is among student's favorite. Schools are willing to support such extracurricular thanks to its potential contribution to their lists of achievements. The two factors give rise to the total number of students playing basketball and the popularity of competitions held and joined by junior high schools across Bengkulu Province.

Ability in certain sport relies on the combination of functional, attitude and physical characteristics as well as sport-specific skills, Manuel J. Coelho E Silva et al, (2014). In schools across Indonesia, students can chose certain sports as their extracurricular activity based on their interest, talent, and ability to be developed further. Among these extracurricular participants, we can find potential talents for various competitions such as PORKAB, PORTA, and PORPROV.

Basketball uses hand to dribble, shoot and pass. These are known as basic techniques. To be done effectively, the techniques require

coordination between one's eyes and hands (Puji Rahayu, 2017). Dribble requires most of such coordination because it is a sport of high determination and demands high level of fitness from its players.

On dribble, Danny Kosasih (2007) proposes that dribble is a fundamental technique in attempting to bring the ball forward in attacking play and serves as chances opener for player to score. According to Ananda Rudith (2015) dribble has a unique advantage in getting the players closer to opponent's ring, penetrating the defense, controlling the game, and in turn scoring a field goal.

Field goals scored in a game are commonly started with a good dribble and ended with an accurate shot. Dribble is also useful in a counter attack (fast break) in which ball is moved quickly to the front court and shot with high success rates is attempted, without giving any chance to the opponent to form defensive line Ketut Mertayasa (2016).

This research will focuses on boys participants of basketball extracurricular in SMPN 10 Bengkulu City. The team is struggling in various competitions due to its player's shortcomings. They have poor controls when dribble and allow a lot of room from opponent's player to steal the ball. They often lost possession of the ball without any significant pressure from the opponent. In terms of competitive achievement, during Student Basketball League (*Liga Basket Pelajar/LBP*) they can only reach top five.

Dribble requires control and agility so that the ball is continuously in possession and not easily stolen or lost. Mastering an effective dribble is a difficult task so that players have hard time doing it successfully. Various factors are neglected or overlooked in practicing the technique.

Aside from the external factor such the method chosen during exercise, dribble skill is also influenced by internal factors. One of it, according to Ahmad Supian (2014) is the physical abilities such as strength, balance, endurance, power, and eye and hand coordination. Also an internal factor is player's physique such as height,

length of limbs and arms, and body weight. With good physical abilities and physique player will have better agility, as long as he exercise his ability hard and continuously.

METHODS

This research uses experimental methodology with 2x2 factorial design. Data analysis uses Analysis of Variance (ANOVA) with significance level (α) 0.05. Independent variables in this research are two ball dribble exercise method and dribble of the wall exercise method. High and low agility level are two attributive variables, with basketball dribble skills as dependent variable. Statistic population for this research is the participants of basketball extracurricular in SMPN 10 Bengkulu City (36 students). Sampling uses purposive technique resulted in 24 participants. The variables are independent variables (ballhandling exercise methods), attributive variable (agility levels), and dependent variables (dribble skills).

Normality test is conducted on the data to show that it is derived from a population with normal distribution. It uses Kolmogorov-Smirnov test in SPSS with significance level of (α) > 0.05.

Homogeneity test is conducted to show that two or more data groups are collected from population with identical variation. It uses Levene test in SPSS 16.0 with significance level of (α) > 0.05.

Data collection is done through post-test, with the student performing basketball dribble. Before the exercise, an agility test was conducted using dogging run test to identify students with high agility level and low agility level. A pre-test was then conducted in which participants perform a series of basketball dribble moves.

RESULTS AND DISCUSSION

The test on the research hypothesis is conducted based on the result of data analysis and the interactions of analysis variants. To spot the difference, ANOVA test is required with the following result:

Table 1. ANOVA Test Result

Source	df	Mean square	F	Sig.
Corrected model	3	8.819	5.484	.006
Intercept	1	2838.375	1.7653	.000
Exercise	1	7.042	4.378	.049
Agility	1	18.375	11.425	.003
Agility exercise *	1	17.042	9.648	.030
Error	20	1.608		
Total	24			
Corrected total	23			

Hypothesis 1 states that there is a significant difference between the effect of two-ball dribble exercise method and dribble of the wall exercise method on participants' dribble skills. ANOVA generates F_{test} of 4.378, with significance level of 0.049. This calculation is consulted with F_{table} with numerator's degree of freedom = 1 (b-1), denominator's degree of freedom = (kb(n-1)), and significance level 0.05 in which the $F_{table} = 4.04$. This shows that $F_{test} > F_{table}$ or $4.478 > 4.04$ and with significance level $0.049 < 0.05$. H_a that states "there is a significant difference between the effect of two-ball dribble exercise method and dribble of the wall exercise method on participants' dribble skills" is accepted.

Hypothesis 2 states that there is a difference between the effect of high agility level and the effect of low agility level on participant's dribble skills. It is tested using ANOVA and it generates F_{test} of 11.425 with significance level of 0.003. This calculation is then consulted with F distribution table with numerator's degree of freedom = 1(b-1), denominator's degree of freedom = (kb(n-1)), and significance level = 0.05. F distribution table shows 4.30 which means $F_{test} > F_{table}$ or $11.425 > 4.04$ With significance level = 0.003, the hypothesis "there is a difference between the effect of high agility level and the effect of low agility level on participant's dribble skills" is accepted.

ANOVA is also used to test if any interaction exist between exercise methods and agility on dribble skills of the participants of basketball extracurricular in SMPN 10 Bengkulu City, resulted in $F_{test} = 9.648$ with significance level = 0.030. This calculation is then consulted with f distribution table with numerator's degree of freedom = 1 (b-1), denominator's degree of freedom = (kb(n-1)), and significance level =

0.030 from which F_{table} shows 4.04 This means $F_{test} > F_{table}$ or $9.648 > 4.04$ and with significance level = 0.030, the hypothesis that states “there is an interaction between exercise methods and agility on dribble skills of the participants of basketball extracurricular in SMPN 10 Bengkulu.

Ananda Rudith Pramudya (2015) proposes that ballhandling exercise is one of many form of basketball exercise that will give significant effect in the ability to perform dribble basketball. This exercise is performed through contacting the ball with one’s palm of the hand while controlling it in various situations. This is done with certain variety and at different pace in order to improve one’s dribble skills. This method is suitable in improving dribble skills because basketball dribble fundamentals are basically carrying the ball pass the opponent, with controls using dominant or both hands.

Interaction between exercise method and agility on dribble skills exists due to similar movement patterns between two ball dribble and dribble of the wall methods, in which ball control and hand muscle power are given special attention. This is related to the test on dribble skills that gives certain emphasis on ball control. Although agility is part of biomotor component in dribble move, without adequate exercise on ball control, the skills will be difficult to be improved.

A coach must chose exercise methods wisely. Based on the findings elaborated above, an interaction does exist between exercise method and agility on dribble skills. Two ball dribble is better suited for high and low level of agility than dribble of the wall.

CONCLUSION

Based on the result of the analysis above, it can be concluded that: (1) There is a significant difference between effects of exercise methods on the dribble skills of basketball extracurricular participants in SMPN 10 Bengkulu City, (2) There is a significant difference between high and low agility level participants on the dribble skills of basketball extracurricular participants in SMPN 10 Bengkulu City, and (3) there is an

interaction between exercise methods and agility on the dribble skills of basketball extracurricular participants in SMPN 10 Bengkulu City.

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