

Eye-Hand Coordination as a Fundamental Factor that Influences Basketball Shooting Skills

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ABSTRACT: Skills in playing basketball are fundamental factors that basketball players must possess. You have to have good physical and mental health to control skills to play good basketball. Based on study theory, eye-hand coordination is essential to basketball shooting skills. Research: This aims to know the connection and coordination of eye-hand basketball shooting skills. Research: This uses a quantitative approach with a correlational design. Population from study: The total number of students in the Physical Education, Health, and Recreation Study Program in 2023, totalling 52. Considering the small size of the relative Population, all members of the Population were included in a sample research (total sampling). Data collection techniques are as follows: (1) coordination eye-hand measured with the Ball Wall Pass test, (2) basketball shooting skills are measured with the shooting test. Data analysis techniques use correlation, simple correlation, and correlation double. Based on the results, data analysis can conclude that: there is a significant relationship between eye coordination and basketball shooting skills ($r=0.604$), the variable Coordination eye-hand contributes 60,04% to basketball shooting skills..

KEYWORDS: Eye-hand Coordination ; Shooting Skills; Basketball.

I. INTRODUCTION

Shooting skills in basketball are fundamental aspects that determine a player's points. One of the suspected factors influencing shooting accuracy is eye-hand coordination, ie, the ability to integrate visual information with fine motor skills in the hands. This coordination is essential in aiming, controlling the ball, and releasing a shot with the right foot. However, the extent to which the relationship between hand-eye coordination and shooting skills still needs to be investigated more in-depth, especially in basketball players at various levels of expertise. Therefore, research aims to analyse the connection between coordinated eye-hand with shooting skills in basketball.

To play basketball well, a player must control the skills. The skills in question are skills-based playing basketball, which consists of the following: (1) passing, (2) dribbling, and (3) shooting. These are mandatory for someone to play basketball (Zacharakis, 2020).

Shooting (shooting) is included as the main element for determining victory in a match, because victory is determined by the number of balls entered into the basket (ring). Every team that controls the ball looks for a chance for a can shooting. Every attack can end with a shot. Therefore, that element shoot is a technique that must be studied with good and right and improve his skills with exercise (Cheng et al., 2021).

Eye-hand Coordination is an essential element of physical role, important in increasing performance in a basketball game. Eye-hand Coordination is necessary for every player in basketball because the eye is the centre where the view is for seeing the surrounding conditions of the field, as well as the hand role as the ball processor at the time of dribbling, passing, and shooting. The game of basketball is dominated by in use hand make role coordination eye-hand is very important.

Eakronnarongchai and Duangkam (Cao et al., 2024) stated that in every sports activity, ability coordination is a significant factor in fine motor tasks. Coordination is essential in every activity, such as sports, good movement coordination, and member body coordination. Coordination of movement is the ability of somebody to do a task like a shot in basketball, whereas coordination between the members of the body is like the coordination of hand-eye. Shooting under the basket is one of the shots fired from a close distance, so it needs eye-hand coordination so that the position of the ball is shot accurately.

The connection between the coordination of the eyes and hands with shooting skills in basketball is an important aspect often reviewed in sports. Eye-hand Coordination is the ability to integrate visual information with hand movement in a precise and fast way, while shooting is one of the techniques based on the successful points. Problems that arise are unclear regarding how

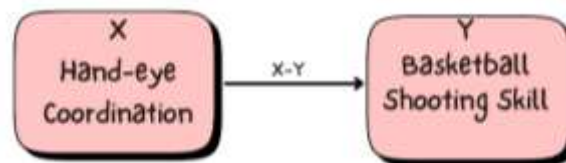
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eye-hand coordination influences the accuracy and consistency of the player's shooting. Some players may have good physical condition, such as strength and speed, but still experience difficulty shooting accurately. This raises the question of whether the eye-hand coordination becomes the main factor or is precisely influenced by other factors, such as basic technique or less-than-optimal training. In addition, little research examines how exercise specific to increasing eye-hand coordination can impact shooting skills, especially in beginner or young athletes still in the developmental stage. Therefore, research needs to carry on the connection between the second variables to provide recommendations for practical training for basketball players and coaches. Based on the description and background above, this is an objective study to determine the connection between coordinated eye-hand and basketball shooting skills.

II. METHODS

Study This uses a quantitative approach with a correlational purpose to examine the connection between variables; the connection size is stated as a correlation coefficient.

Design study. This was shared in two data groups, namely: (1) test data coordination eye-hand (variable X), (2) test data basketball shooting skills (variable Y)



Information :

X = Coordination eye-hand

Y = Basketball shooting skills

The Population is the subject being used as the object to be researched (Nuryadi et al., 2017). The Population in study This is student Department of Physical Education, Health and Recreation, Serambi Mekkah University, Banda Aceh in 2023, totaling 52 people, and all Population that is as many as 52 students made into sample study.

Instrument study is a tool for data collection to implement field tests. The instruments research needed for the needs study is as follows:

1. Test eye-hand Coordination with the method of throwing and catching the ball to the wall, called Ball Wall Pass.
2. Test shooting skills in basketball with a carat es shooting to the basket.

Data analysis in the study. This uses techniques, descriptive and inferential. Data analysis begins with calculating the average and standard deviation, and continues with correlation analysis. Related

III. RESULTS AND DISCUSSION

Result

One of the stages of analysis correlation is calculating the average and standard deviation from the data research, and calculations are done using SPSS Statistics 27 software. The results of the data study and the average and standard deviation can be seen in the following SPSS Statistics 27 software.

Table 1. Results of Calculation of Average and Standard Deviation Using SPSS Statistics 27 Software

Descriptive Statistics			
	N	Mean	Std. Deviation
Koordinasi Mata-Tangan	52	20.15	3.837
Shooting	37	5.43	1.425
Valid N (listwise)	37		

Based on output results calculation, known average and standard values, the deviation of every variable, for coordination data variables eye-hand, the average value is 20.15, the standard deviation is 3.837, the basketball shooting skills mean value is 5.43, and the standard deviation is 1.425.

The connection between coordination eye-hand (X1) with basketball skills (Y) can be known with a correlation analysis, and the correlation used is the Pearson Product-Moment correlation. Here is a table description of the results data research that has been done, transformed into t-score form as a reference for count correlation using SPSS Statistics 27 software

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Correlations

		X1_Hand-eye_Coord..	Y_Basketball_Shooting
X1_Hand-eye_Coord..	Pearson Correlation	1	.604**
	Sig. (2-tailed)		<.001
	N	52	52
Y_Basketball_Shooting	Pearson Correlation	.604**	1
	Sig. (2-tailed)	<.001	
	N	52	52

**. Correlation is significant at the 0.01 level (2-tailed).

Based on the person-product moment correlation test using SPSS Statistics 27 software, the correlation coordination eye-hand with skills dribbling a ball as big as 0.736.

Furthermore, the count percentage contribution variable X with variable Y is carried out in the calculation index determination concerning table 4.11, where R Square is 0.696, so the percentage is 69.6%.

With this eye-hand coordination, muscle power, Arms, and Motivation give a contribution (donation) of 69.6% of Basketball Skills.

DISCUSSION

Based on the data research and analysis of data results, the writer interprets the data. Correlation data analysis shows that the correlation of coordination eye-hand (X1) with basketball skills (Y) is 0.604, a value indicating a significant relationship between coordination eye-hand and basketball skills, as shown by the study results. This is relevant to results research conducted by Ombi (Ramadhan Ombi et al., 2021), Saputra (Saputra et al., 2023) and Syamsulrizal (Syamsulrizal, 2023) stated that eye-hand coordination relates to skills in playing basketball. Eye-hand Coordination is a fundamental aspect of skills in playing basketball, which often determines players' success on the field. This involves synchronisation between the player's visuals with movement hands, allowing them to do various technique-based skills such as dribbling, passing, shooting, and rebounding with precision and high speed. Without good coordination, a player will struggle to control the ball, read the opponent's movement, or even utilize opportunity points. Eye-hand Coordination includes technical skills and the foundation for developing the ability to play more complex basketball. Players who can master it with goodwill will own speed, accuracy, and creativity superiority. Therefore, practising special techniques for increasing coordination, like drill passing, dribbling with obstacles, or shooting from various positions, is an essential part of basketball training to form challenging and competitive players.

IV. CONCLUSION

Data analysis shows a significant relationship between coordinated eyes and skills in playing basketball ($r=0.604$). Research results are relevant to findings in the study previously conducted by ombi et.al (Ramadhan Ombi et al., 2021), who found a significant correlation between eye-hand coordination and basketball shooting ability. Where the acquisition coefficient correlation is supported by coefficient determination and shows a meaningful connection between the second sufficient variables, which is strong, then the hypothesis in the study can be proven.

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