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Analysis Of Aggle-Foot Agility And Coordination On The Ability To Drive The Ball In Football Games

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Abstract. This study aims to determine; (1) How much agility contributes to the ability to dribble the ball in the game of soccer for students at Mamajang Makassar Elementary School; (2) How much eye and foot coordination contributes to the ability to dribble the ball in the game of soccer for students at Mamajang Makassar Elementary School; (3) How much agility and eye and foot coordination contribute to the ability to dribble the ball in the game of soccer for students at Mamajang Makassar Elementary School. This study is a descriptive type of research using a "correlational" research design. The population is students at Mamajang Makassar Elementary School. The sample used is 20 male students. The data analysis techniques used are descriptive analysis, Pearson product moment correlation coefficient analysis (r), and the results of multiple correlation analysis (R) at a significance level of $\alpha = 0.05$. The results of the study show that; (1) The contribution of agility to the ability to dribble the ball in the game of soccer for students at Mamajang Makassar Elementary School is 66.00%. (2) The contribution of eye-foot coordination to the ability to dribble the ball in the soccer game of students at Mamajang Makassar Elementary School is 68.50%. (3) The contribution of agility and eye-foot coordination to the ability to dribble the ball in the soccer game of students at Mamajang Makassar Elementary School is 80.60%.

Keywords: Agility, eye-foot coordination, dribbling the ball.

1 Introduction

The development of soccer in South Sulawesi can be said to have shown encouraging and satisfying results, as evidenced by the achievements achieved in several national championships that have been held, which have raised the status and brought glory to the region. Therefore, it can be said that our players have the ability to compete at the national level.

Students at Mamajang Elementary School, Makassar, enjoy playing soccer, but based on the author's observations, students at the school do not display a single basic technique, particularly dribbling.

Dribbling is a crucial skill in soccer because it can contribute to scoring goals in a match. For example, a player who successfully dribbles the ball to escape an opponent's defense while in front of the goal provides a significant opportunity to score. Successfully dribbling past blocking opponents into the empty area allows the player to freely position themselves for a shot on goal.

Dribbling is a crucial skill in soccer because it can contribute to scoring goals. For example, a player who successfully dribbles the ball past an opponent while in front of the goal provides a

significant opportunity to score. Their success in dribbling past the opposing defender into the empty area allows them to take a free shot on goal.

It should be noted that dribbling skills, as described above, cannot be achieved without the support of several supporting elements, one of the most dominant of which is physical ability. This is because without adequate physical ability, it is difficult to develop good dribbling techniques. Conversely, with good physical ability, dribbling techniques can be performed perfectly. Therefore, the physical condition or physical elements that are the focus of this research are agility and foot-eye coordination. The need for relevant physical elements is crucial for the development of player skills so that when performing basic skills or techniques in soccer, energy is not wasted.

Analysis is an activity to examine or investigate an event through data to determine the actual situation. Literally, the context of understanding analysis is an activity that investigates an object comprehensively. However, the analysis referred to in this study is the activity of analyzing the contribution of agility and foot-eye coordination to dribbling skills in soccer.

Therefore, the researcher was interested in conducting this research on students at Mamajang Elementary School, Makassar. Based on this, the main topic of discussion in this research is: "Analysis of Agility and Eye-Foot Coordination on the Ability to Dribbling the Ball in Soccer Games of Students at Mamajang Elementary School Makassar?"

2 Method

A method is a way or technique used to systematically seek scientific evidence to uncover and provide answers to the problems raised in a study. The direction and purpose of uncovering facts or truths are aligned with those found in the study to achieve the desired objectives.

1. Research Location

This research was conducted at Mamajang Elementary School, Makassar.

2. Types of Research

This research is a type of experimental research. Experimental research is a way to find a causal relationship between two factors that are deliberately caused by researchers by eliminating or reducing other interfering factors, used to find out the effects of a treatment (Arikunto, 2020:9).

3. Research variables

In this study, two independent variables and one dependent variable were used. A research variable is anything determined by the researcher to be studied to obtain information about it and then draw conclusions (Sugiyono, 2015:2). The independent variables (agility and ankle coordination) are referred to as influencing variables, while the dependent variable (dribbling) is the variable influenced by or the result of the independent variable (Arikunto, 2020:162).

Population and Sample

Sugiyono, 2016: A population is a generalized area consisting of objects/subjects with certain qualities and characteristics, determined by the researcher to be studied and then conclusions drawn. Every study always uses an object to be studied, also known as a population. A population is all individuals who are the objects of research. A research population must have the same or nearly the same characteristics. Therefore, the population in this study is all students of Mamajang Elementary School, Makassar.

Suharsimi Arikunto (2006: 131) defines a sample as a subset or representative of the population being studied. This sampling technique uses categorization with a sample size of 20.

5. Data Analysis Techniques

The collected data will be processed using the SPSS (Statistical Package for the Social Sciences) application to ensure data accuracy before analysis. Furthermore, data analysis is carried out using the following methods:

1. Descriptive Analysis

Descriptive analysis is a research method by collecting data according to the actual data, then the data is arranged, processed and analyzed to provide an overview of the existing problems (Toolkit et al., 2010).

2. Normality Test

The normality test is one of the prerequisite tests in data analysis. This normality test aims to determine whether the data is normally distributed or not. If the data is not normally distributed, the calculation uses non-parametric. Data is said to be normally distributed if the p value> 0.05 and if the p value <0.05 then the data is not normally distributed.

3. Paired sample t-test

Paired t-test is one of the hypothesis testing methods where the data used are not free (paired). This test uses the same sample, but is given different treatments. The requirements used to conduct a paired t-test are that the data owned is interval or ratio data, both groups of paired data are normally distributed.

3 Results

1. Descriptive Analysis

Descriptive analysis was conducted on the experimental group data regarding agility and ankle-foot coordination in dribbling ability. A summary of the analysis results is presented in the table below.

Table 1. Summary of descriptive data analysis

Statistics	Variable		
	Speed (X_1)	Agility (X_2)	Dribbling (Y)
Number of Samples (n)	20	20	20
Minimum Value	15.45	5	17.69
Maximum Value	18.97	14	20.87
Range	3.52	9	3.18
Mean	17.6630	9.00	19.0485
Median	17.7800	9.00	19.1550
Standard Deviation (s)	1.022	2.406	0.897
Variance (S^2)	1.045	5.789	0.804

2. Data Normality Test

Because the data processing in this assessment uses statistical regression, it is necessary to conduct analysis requirements tests. The requirements test in question is a normality test using the Kolmogorov-Smirnov test.

The results of the data normality test using the Kolmogorov-Smirnov (KS-Z) test showed the following:
1) For the agility data, the KS-Z value was 0.149 (P = 0.200 > α 0.05), thus concluding that the agility data follow a normal distribution.
2) For the foot-ankle coordination data, the KS-Z value was 0.111 (P = 0.200 > α 0.05), thus concluding that the foot-ankle coordination data follow a normal distribution.
3) For the data on dribbling ability in soccer games, the KS-Z value was obtained = 0.112 (P = 0.200 > α 0.05), so it can be concluded that the data on dribbling ability in soccer games follows a normal distribution or is normally distributed.

Table 2. Summary of Kolmogorov Smirnov Normality Test Results

	Kolmogorov-Smirnov[a]		
	Statistics	df	Sig.
Speed	.149	20	.200*
Agility	.111	20	.200*
Dribbling	.112	20	.200*

Table 4.2 shows that the significance level for each data group is greater than 0.05. Therefore, it can be concluded that this study's sample comes from a normally distributed population. This conclusion implies that statistical analysis can be used to test the hypotheses proposed in this study, thus fulfilling the first requirement for hypothesis testing.

3. Hypothesis Testing

After conducting data normality tests for the hypotheses to be tested, further testing of the hypotheses was conducted to verify their validity. The results of the statistical calculations hypothesized in this study are described as follows.

a. Contribution of Agility to Dribbling Ability in Soccer

The first hypothesis tested in this study was "There is a contribution of running speed to dribbling ability in soccer for students at Mamajang Elementary School, Makassar." Statistically, this hypothesis can be formulated as follows:
Ho: $\beta x1.y = 0$
H1: $\beta x1.y \neq 0$

Based on the results of a simple linear regression analysis between the research data pairs of agility and dribbling ability in soccer, the constant (a) was 6.463 with a regression direction coefficient (b) of 0.713. Thus, the relationship between agility and dribbling ability in soccer yields a regression equation of $\hat{Y} = 6.463 + 0.713$ X1.

Furthermore, to determine the contribution of running speed to dribbling ability in soccer games among students at Mamajang Elementary School, Makassar, we can examine the correlation coefficient obtained. A summary of the correlation coefficient calculation results and the F-test can be seen in Table 4.3.

Table 3. Significance Test of the Determination Coefficient Between Agility and Dribbling Ability in Soccer Games at Mamajang Elementary School, Makassar.

Number of Observations (n)	Correlation (r_{y1})	Coefficient F_{hit}	F_{tab} α=0,05
20	0,660	34.913**	4,16

From the results of the correlation coefficient significance test calculation, it is known that Fcount = 34.913 is greater than Ftable = 4.16 at α = 0.05. Based on these results, it can be concluded that the correlation coefficient between agility and dribbling ability in soccer games (ry2) of 0.660 is significant. Thus, the first hypothesis that states there is a contribution of agility to dribbling ability in soccer games of students at Mamajang Makassar Elementary School is accepted. Or in other words, the better the agility, the better the dribbling ability in soccer games.

b. Contribution of Foot-Eye Coordination to Dribbling Ability in Soccer

The second hypothesis tested in this study is "there is a contribution of foot-eye coordination to the dribbling ability in soccer games of students at Mamajang Elementary School, Makassar." Statistically, this hypothesis can be formulated as follows:

Ho: $\beta x2.y = 0$

H1: $\beta x2.y \neq 0$

Based on the results of a simple linear regression analysis between paired research data on foot-eye coordination and dribbling ability in soccer, the constant (a) was 21.825 with a regression direction coefficient (b) of 0.309. Thus, the influence of foot-eye coordination on dribbling ability in soccer yields a regression equation of $\hat{Y} = 21.825 + 0.309\ X2$.

Table 4. Significance Test of the Determination Coefficient between Foot-Eye Coordination and the Ability to Dribbling the Ball in Soccer Games of Students at Mamajang Elementary School, Makassar

Number of Observations (n)	Correlation (r_{y1})	Coefficient F_{hit}	F_{tab} α=0,05
20	0,685	39,177**	4,16

The correlation coefficient significance test showed that F = 39.177 was greater than F = 4.16 at α = 0.05. This result indicates that the correlation coefficient between agility and dribbling ability in soccer games of students at Mamajang Elementary School, Makassar (ry2) of 0.685 is significant. This means that the hypothesis that there is a contribution between foot-eye coordination and dribbling ability in soccer games of students at Mamajang Elementary School, Makassar, is accepted. In other words, the better the foot-eye coordination, the better the dribbling ability in soccer games.

The coefficient of determination obtained for the contribution of foot-eye coordination to dribbling ability in soccer games of students at Mamajang Elementary School, Makassar, was 0.685. Thus, the contribution of foot-eye coordination to dribbling ability in soccer games was 68.50%.

c. The Contribution of Agility and Ankle-Foot Coordination to Dribbling Ability in Soccer

The fourth hypothesis tested in this study is "there is a joint contribution of agility and ankle-foot coordination to dribbling ability in soccer games for students at Mamajang Elementary School, Makassar." Statistically, this hypothesis can be formulated as follows:

Ho: $Rx.1.2.3.y = 0$

H1: $Rx.1.2.3.y \neq 0$

Based on the results of a multiple regression analysis between the research data pairs of running speed (X1), agility (X2), and dribbling ability in soccer, the constant (a) was 13.521, with a regression direction coefficient for running speed (b1) = 0.411 and for agility (b2) = 0.192. Thus, the influence of running speed and agility together on the ability to dribble the ball in soccer games is obtained by the regression equation $\hat{Y} = 13.521 + 0.411\ X1 + 0.192\ X2$.

The coefficient of determination calculation, which indicates the strength of the contribution of agility and ankle-foot coordination, together with dribbling ability in soccer games

for Mamajangakassar Elementary School students, is shown by Ry.1.2.3 = 0.806. The significance test for the multiple correlation coefficient can be seen in Table 4.5.

Table 5. Significance Test for the Correlation Coefficient between Agility and Ankle-foot Coordination Together on Dribbling Ability in Soccer

Number of Observations (n)	Correlation (r_{y1})	Coefficient	Coefficient Determination ($r_{y1.2.3}$)	of F_{hit}	F_{tab} α=0,05
20	0,806		0,784	35.424**	4,16

The Fcount value obtained is 34.424 and the Ftable value at α = 0.05 is 4.16. The Fcount value > Ftable so it can be concluded that the correlation coefficient between agility and foot-eye coordination together with the ability to dribble the ball in the soccer game of students at Mamajang Makassar Elementary School which has a correlation coefficient (Rx.1.2.3.y) = 0.806 is significant. With this correlation coefficient, the determination coefficient can be known from R Square = 0.806 (80.60%). This means that the contribution of the ability to dribble the ball in the soccer game of students at Mamajang Makassar Elementary School can be explained by agility and foot-eye coordination by 80.60%.

4 Discussion

Contribution of Running Speed to Dribbling Ability in Soccer

The results of the first hypothesis test revealed that running speed contributes to dribbling ability in soccer among students at Mamajang Elementary School, Makassar. The calculation yielded a correlation coefficient of 0.660, explained by the regression equation $\hat{Y} = 6.463 + 0.713$ X1. This finding suggests that the better the agility, the better the dribbling ability in soccer among students at Mamajang Elementary School, Makassar. Conversely, the worse the agility, the worse the dribbling ability in soccer among students at Mamajang Elementary School, Makassar.

Agility is a key factor in physical activity, including dribbling skills in soccer. Good agility helps with dribbling. The findings of this study, which demonstrate the contribution of agility to dribbling skills in soccer, serve as a reference for improving dribbling skills in elementary school soccer.

The Contribution of Ankle-Foot Coordination to Dribbling Ability in Soccer

The results of the second hypothesis test revealed that agility significantly contributes to the dribbling ability of students at Mamajang Elementary School, Makassar. The calculation yielded a correlation coefficient of 0.685, explained by the regression equation $\hat{Y} = 21.825 + 0.309$ X2. This finding suggests that better ankle-foot coordination leads to better dribbling ability in soccer (21.825 + 0.309 X2). Conversely, poorer eye-foot coordination leads to less optimal dribbling ability.

Eye-foot coordination is crucial in dribbling because it allows players to control the ball, assess the field, and make quick tactical decisions. This coordination allows players to control the ball with their feet without losing balance or looking at their opponents.

The Contribution of Agility and Ankle-Foot Coordination to Dribbling Ability in Soccer

The results of the third hypothesis test indicate a simultaneous contribution between agility and ankle-foot coordination and dribbling ability in soccer at Mamajang Elementary School, Makassar. The calculation yielded a correlation coefficient of 0.806, explained by the regression equation $\hat{Y} = 13.521 + 0.411$ X1 + 0.192 X2. This result further strengthens the results of the first and second hypotheses. Therefore, agility and ankle-foot coordination can be good

predictors of dribbling ability in soccer. This means that if agility and ankle coordination are in the good category, then dribbling ability in soccer will certainly be better.

Besides agility and foot-eye coordination, which contribute to dribbling ability in soccer, there are other factors that influence it. This is evidenced by the coefficient of determination for the combined contribution of agility and foot-eye coordination to dribbling ability in soccer, which only reached 80.60%.

5 Conclusion

Based on the results of the data analysis and discussion, the research conclusions are as follows: There is a significant contribution of agility to dribbling ability. There is a significant contribution of foot-ankle coordination to dribbling ability. There is a significant contribution of agility and foot-ankle coordination together to dribbling ability.

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