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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. The purpose of this study is to ascertain: (1) How much agility contributes to the ability of students at Mamajang Makassar Elementary School to dribble the ball in the game of soccer; (2) How much eye and foot coordination contributes to the ability of students at Mamajang Makassar Elementary School to dribble the ball in the game of soccer; and (3) How much agility and eye and foot coordination contribute to the ability of students at Mamajang Makassar Elementary School. This study uses a "correlational" research approach and is descriptive in nature. Students from Mamajang Makassar Elementary School make up the population. Twenty male pupils make up the sample. Descriptive analysis, Pearson product moment correlation coefficient analysis (r), and multiple correlation analysis results (R) at a significance threshold of $\alpha = 0.05$ are the data analysis approaches employed. The study's findings indicate that: (1) Agility contributes 66.00% to children at Mamajang Makassar Elementary School's capacity to dribble the ball during a soccer match. (2) Mamajang Makassar Elementary School pupils' eye-foot coordination accounts for 68.50% of their ability to dribble the ball during a soccer match. (3) 80.60% of Mamajang Makassar Elementary School kids' ability to dribble the ball during a soccer match is attributed to agility and eye-foot coordination.

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 an approach or strategy used to methodically look for scientific proof to identify and address the issues brought up in a study. In order to accomplish the intended goals, the direction and purpose of discovering facts or truths are in line with those discovered in the study.

1. Location of Research

The Mamajang Elementary School in Makassar served as the research site.

2. Kinds of Studies

This study is an example of an experimental study. In order to determine the effects of a treatment, researchers intentionally eliminate or reduce other interfering factors in order to establish a causal relationship between two factors (Arikunto, 2020:9).

3. Research factors

One dependent variable and two independent variables were included in this investigation. Anything that the researcher decides to study in order to gather data and make conclusions is considered a research variable (Sugiono, 2015:2). The dependent variable (dribbling) is the variable affected by or the outcome of the independent variable, whereas the independent factors (agility and ankle coordination) are known as influencing variables (Arikunto, 2020:162).

Samples and Populations

In 2016, Sugiyono A population is a broad category made up of items or subjects with specific attributes that the researcher has chosen to be examined in order to make conclusions. A population, or item to be examined, is used in every study. All of the people that are the subjects of the study make up the population. The characteristics of a research population must be identical or almost identical. As a result, every kid at Mamajang Elementary School in Makassar makes up the study's population.

A sample is a portion or representative of the population under study, according to Suharsimi Arikunto (2006: 131). This sampling method employs a sample size of 20 and categorization.

5. Methods for Data Analysis

To guarantee data accuracy prior to analysis, the SPSS (Statistical Package for the Social Sciences) program will be used to process the gathered data. In addition, the following techniques are used for data analysis:

1. Analytical Description

In order to provide an overview of the current issues, descriptive analysis is a research method that involves gathering data in accordance with the actual data, organizing, processing, and analyzing the data (Toolkit et al., 2010).

2. Test of Normalcy

One of the necessary checks in data analysis is the normalcy test. The purpose of this normalcy test is to ascertain whether or not the data is normally distributed. Non-parametric calculations are used when the data is not normally distributed. If the p value is greater than 0.05, the data is considered to be regularly distributed; if it is less than 0.05, it is not.

3. T-test on paired samples

One technique for evaluating hypotheses when the data are not free (paired) is the paired t-test. The same sample is used in this test, but it receives different treatments. In order to do a paired t-test, both groups of paired data must be regularly distributed and the data must be interval or ratio data.

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 following was shown by the Kolmogorov-Smirnov (KS-Z) test findings for data normalcy:

- 1) The agility data were found to follow a normal distribution, with a KS-Z value of 0.149 ($P = 0.200 > \alpha 0.05$).
- 2) The KS-Z value for the foot-ankle coordination data was 0.111 ($P = 0.200 > \alpha 0.05$), indicating that the data are distributed normally.
- 3) The KS-Z value for the dribbling ability data in soccer games was found to be 0.112 ($P = 0.200 > \alpha 0.05$), indicating that the data is either normally distributed or follows a normal distribution.

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 2 demonstrates that each data group's significance level is higher than 0.05. Thus, it can be said that the sample used in this study is representative of a population that is regularly distributed. This conclusion suggests that the study's hypotheses can be tested using statistical analysis, meeting the first prerequisite for hypothesis testing.

3. Testing of Hypotheses

Further testing of the hypotheses was done to confirm their validity after data normalcy tests were performed for the hypotheses to be examined. The following is a description of the outcomes of the statistical computations proposed in this study.

a. Agility's Role in Soccer Dribbling Capability

"There is a contribution of running speed to dribbling ability in soccer for students at Mamajang Elementary School, Makassar" was the study's first premise. This hypothesis can be stated statistically as follows:

Ho: $\beta x1.y = 0$

H1: $\beta x1.y \neq 0$

The constant (a) was 6.463 with a regression direction coefficient (b) of 0.713 based on the findings of a basic linear regression analysis between the research data pairs of agility and soccer dribbling ability. Therefore, the regression equation for the association between agility and dribbling ability in soccer is $= 6.463 + 0.713 X1$.

Additionally, we can look at the correlation coefficient to find out how running speed affects pupils' ability to dribble during soccer matches at Mamajang Elementary School in Makassar. Table 3 shows a summary of the F-test and correlation coefficient computation results.

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 Coefficient (r_{y1})	Coefficient F_{hit}	F_{tab} $\alpha=0,05$
20	0,660	34.913**	4,16

Fcount = 34.913 is greater than Ftable = 4.16 at $\alpha = 0.05$, according to the correlation coefficient significance test calculation results. The correlation coefficient between agility and dribbling ability in soccer games (r_{y2}) of 0.660 is noteworthy, according to these findings. Therefore, the first hypothesis, which claims that children at Mamajang Makassar Elementary

School's dribbling ability is influenced by their agility, is approved. To put it another way, the ability to dribble in soccer matches increases with agility.

b. The Role of Foot-Eye Coordination in Soccer Dribbling Capability

"There is a contribution of foot-eye coordination to the dribbling ability in soccer games of students at Mamajang Elementary School, Makassar" is the second hypothesis examined in this study. This hypothesis can be stated statistically 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 $\hat{Y} = 21.825 + 0.309 X_2$.

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 Coefficient (r_{xy})	F_{hit}	F_{tab} $\alpha=0,05$
20	0,685	39,177**	4,16

According to the correlation coefficient significance test, at $\alpha = 0.05$, $F = 39,177$ was higher than $F = 4.16$. This finding shows that there is a strong correlation (r_{xy}) of 0.685 between agility and dribbling ability in soccer games played by pupils at Mamajang Elementary School in Makassar. This indicates that the notion that foot-eye coordination and dribbling abilities have a role in students' soccer games at Mamajang Elementary School in Makassar is approved. In other words, a player's ability to dribble during a soccer match increases with their level of foot-eye synchronization.

Students at Mamajang Elementary School in Makassar had a coefficient of determination of 0.685 for the importance of foot-eye coordination on dribbling ability during soccer games. Therefore, foot-eye coordination accounted for 68.50% of dribbling skills in soccer games.

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: $R_{x.1.2.3.y} = 0$

H1: $R_{x.1.2.3.y} \neq 0$

Based on the results of a multiple regression analysis between the research data pairs of running speed (X_1), agility (X_2), and dribbling ability in soccer, the constant (a) was 13.521, with a regression direction coefficient for running speed ($b_1 = 0.411$) and for agility ($b_2 = 0.192$). 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 $\hat{Y} = 13.521 + 0.411 X_1 + 0.192 X_2$.

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 Mamajangkassar Elementary School students, is shown by $R_{y.1.2.3} = 0.806$. 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 Coefficient (r_{y1})	Coefficient of Determination ($r_{y1.2.3}^2$)	of F_{hit}	F_{tab} $\alpha=0,05$
20	0,806	0,784	35,424**	4,16

At $\alpha = 0,05$, the F_{table} value is 4,16, and the F_{count} value is 34,424. The correlation coefficient ($R_{x.1.2.3.y}$) = 0,806 between agility, foot-eye coordination, and the ability to dribble the ball during a soccer match among students at Mamajang Makassar Elementary School is significant, as indicated by the F_{count} value > F_{table} . $R^2 = 0,806$ (80,60%) can be used to determine the determination coefficient with this correlation coefficient. This indicates that agility and foot-eye coordination account for 80,60% of the children's ability to dribble the ball during a soccer match at Mamajang Makassar Elementary School.

4 Discussion

Running speed's role on soccer dribbling ability The first hypothesis test's findings showed that Mamajang Elementary School, Makassar pupils' soccer dribbling skills are influenced by their running speed. The regression equation $= 6,463 + 0,713 X_1$ explains the correlation coefficient of 0,660 that was obtained from the calculation. According to this research, pupils at Mamajang Elementary School in Makassar have higher soccer dribbling skills the more agile they are. On the other hand, pupils at Mamajang Elementary School in Makassar have poorer soccer dribbling skills the less agile they are.

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.

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

The second hypothesis test's findings showed that pupils' dribbling skills at Mamajang Elementary School in Makassar are greatly influenced by their agility. The regression equation $= 21,825 + 0,309 X_2$ explains the correlation coefficient of 0,685 obtained from the computation. This result implies that improved ankle-foot coordination contributes to improved soccer dribbling ability ($21,825 + 0,309 X_2$). On the other hand, worse eye-foot coordination results in less effective dribbling.

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.

6 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 $\hat{Y} = 13,521 + 0,411 X_1 + 0,192 X_2$. 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

The following are the research conclusions derived from the data analysis and discussion: Dribbling skill is significantly influenced by agility. Dribbling skill is significantly influenced by foot-ankle coordination. Dribbling skill is significantly influenced by both foot-ankle coordination and agility.

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