

Dribbling Ability is Influenced by Speed, Agility and concentration: A Study of Soccer Players

Angga Nofrendiko¹, Khairuddin¹, Yendrizal¹, Padli¹, Fiky Zarya^{2*}

¹Department of Sport Education, Universitas Negeri Padang, Padang, Indonesia

²Department of Sports Science, Universitas Negeri Padang, Indonesia

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Corresponding Author:

Fiky Zarya

fikyzarya160416@gmail.com

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Abstract: This study investigates the problem of low dribbling ability in soccer players at the Special Sports School (SKO) SMA 4 West Sumatra. The main objective of this study was to determine the influence of speed, agility and concentration on dribbling performance. A quantitative approach with descriptive methods was used, involving 34 student-athletes from SKO SMA 4 West Sumatra. Data was collected using a 30-meter dash test for speed, Illinois Agility Test for agility, Grid Concentration Exercise for concentration, and Dribbling Test for dribbling ability. Path analysis was used to evaluate the relationship between variables. The results showed that speed ($\beta = 0.435$, $p < 0.01$) has a significant direct effect on dribbling ability, indicating that higher speed improves dribbling ability. Agility ($\beta = 0.403$, $p < 0.01$) also significantly improved dribbling performance, as more agile players showed better dribbling ability. Concentration ($\beta = 0.435$, $p < 0.01$) directly affected dribbling, with focused players maintaining better control and stability while dribbling. These findings suggest that a training program targeted at improving these attributes is essential for improving dribbling ability in soccer players.

Keywords: Speed, Agility, Concentration, Dribbling Ability, Soccer Players, Special Sports School

Introduction

Exercise is an activity needed by everyone to maintain health and physical fitness (Pangestu, 2024; Putra et al., 2024). With sports people can be fresh physically, fresh thinking, mentally and can also excel in their work so as to increase work productivity. Furthermore, sports can be used as a competition to race in achieving an achievement as a form of maintaining achievement both individually, in groups, and in the event of defending the State (Feng et al., 2024; Selin et al., 2024). Educational sports are organized as part of the process carried out in the educational environment, the implementation of sports in education in schools has been clearly regulated by law, both in elementary schools, junior high schools, and high schools (Sumaryadi, 2024; Sutrisno et al., 2023). There are several sports that are favored by the community and students, including soccer. Football is one of the sports education subject matter that is always found at every level of the education unit (Pambudi et al., 2021; Prantori et al., 2023).

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School is one of the places where students can develop their potential, schools are also a place to increase the potential of students in developing interests and talents, especially in sports achievement breeding. In another sense, children who are talented and have a high desire for a sport can be channeled in a coaching (Amra & Soniawan, 2020; Kebede et al., 2023). It is hoped that sports coaching in schools can be a forum for students who are talented and passionate about a sport to achieve achievements (Gidu et al., 2022; Ramadhan, 2023).

Scientific achievement sports coaching should be the foundation in the process of breeding and coaching players from a program to achieve high achievement,

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both regional, regional and national in nature and organizing tiered and sustainable competitions (Hassan et al., 2022; Shapie et al., 2023). This is as contained in the Law of the Republic of Indonesia Special sports school (SKO) SMA 4 West Sumatra is a school that has been coaching football. Based on data and interviews with coaches, the achievements achieved by players of the SMA 4 West Sumatra Special Sports School (SKO) in recent years have been less than optimal, because there are several obstacles that hinder the training process or cannot sparring friendships, due to covid 19 in 2020-2022 and greatly affecting athletes (SKO) SMA 4 West Sumatra.

One of the coaching with training and technical development that has been carried out by soccer players at the Special Sports School (SKO) SMA 4 West Sumatra. Dribbling ability is one of the techniques that every player must master in order to achieve high achievement. However, based on observations, observations and interviews with the soccer coach of the special sports school (SKO) SMA 4 West Sumatra, it can be concluded that the achievements achieved so far are not optimal. The most prominent weakness is that the basic technique of dribbling or dribbling players is still low, the ball is not well controlled, easily released and often snatched by opponents, so the ball is not always in the player's control. In addition, when controlling the ball, the player's movements are relatively slow and less agile, which ultimately shows an ineffective level of productivity. These problems are the main basis for the author in raising research that is directly related to the dribbling ability of soccer players which is influenced by speed, agility and concentration.

Method

This research was conducted at SMA 4 West Sumatra by involving a population of 34 people from 2 study groups (Rombel). The sampling technique is the Total sampling technique. The sample in this study were 34 people from class X and class XI soccer players special sports school (SKO) SMA 4 WEST SUMATERA.

Table I. Research Sample

Class	Sum
X	17 people
I	17 people
Sum	34 people

Football special sports school (SKO) SMA 4 WEST SUMATERA, 2023

This study used pre-designed instruments,

1. Concentration

Athlete concentration can be taken by means of tests and measurements using instruments by Tammet Grid Concentration Test.

2. Speed

Instrument to measure speed test by Albertus.

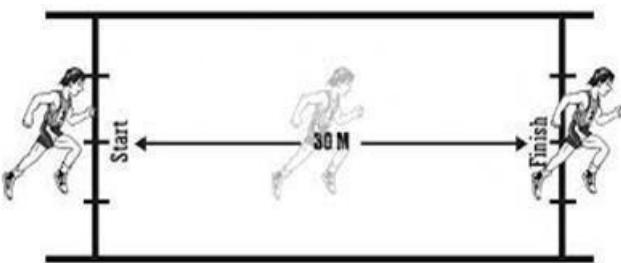


Figure 1. 30 Meter Running Speed

3. Agility

Illinois Agility Run Test, The purpose of this test is to determine the level of agility of athletes.

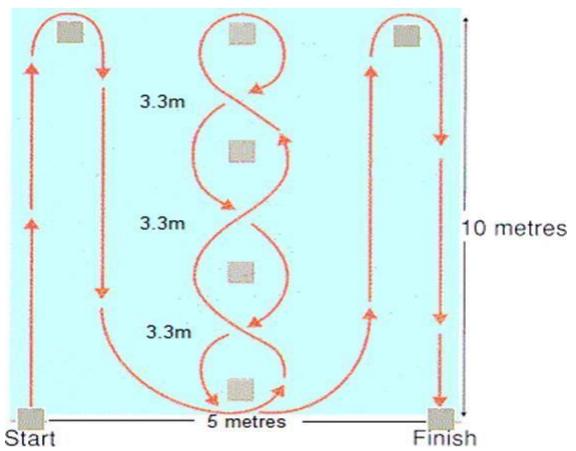


Figure 2. Illinois Agility Run Test

4. Dribbling test

The test used for this study is by dribbling. The purpose of dribbling is to approach the target distance, pass opponents, and inhibit the game.

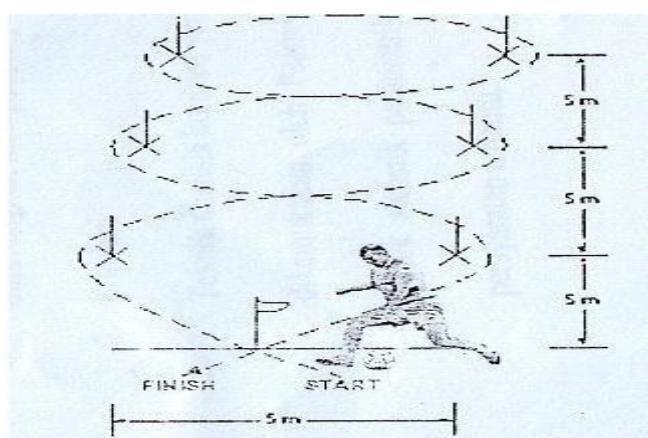


Figure 3. Dribbling test form

Data analysis using path analysis is an analytical technique used to study the causal relationship between independent and independent variables.

Result and Discussion

Descriptive statistics describe the basic characteristics of the data, such as average, minimum,

maximum, sum, and range. It provides an overview of the distribution and spread of the data of the variables under study.

Table 2. Characteristics of Research Data

Category	Speed	Agility	Concentration	Dribbling Ability
Excellent	44%	0%	0%	0%
Good	9%	3%	26%	3%
Medium	41%	94%	74%	18%
Deficient	3%	0%	0%	9%
Very poor	3%	3%	0%	71%

Path analysis with SPSS begins with ensuring valid and normally distributed data. The next step is to create a path model that connects the independent, mediating, and dependent variables. Perform multiple regression

analysis for each path in the model, noting the regression coefficient values and significance. Significant regression results indicate a strong causal relationship. Here are the results of the analysis.

Table 3. SPSS output of data processing Hypotheses

Influence	R Square	Standardized Coefficients Beta	Asymp. Sig.(2-tailed)	Alfa	Conclusion
Immediately					
X1 Towards Y	18.9%	0.435	0.010	0.05	Ha Accepted
X2 Towards Y	16.2%	0.403	0.018	0.05	Ha Accepted
X3 Towards Y	18.9%	0.435	0.010	0.05	Ha Accepted

Based on the results of hypothesis testing regarding the direct effect of variables X1, X2, and X3 on Y in path analysis, it is found that the three variables have a significant effect on Y. The direct effect of variable X1 on Y is indicated by the R^2 value of 18.9%, which means that X1 explains 18.9% of the variation in Y. Standardized Coefficients Beta for X1 is 0.435. With an alpha significance level of 0.05, the alternative hypothesis (Ha) is accepted, indicating that the effect of X1 on Y is significant, likewise, variable X2 has a direct effect on Y with an R^2 value of 16.2%, indicating that X2 explains 16.2% of the variation in Y. Standardized Coefficients Beta.

West Sumatra. The beta coefficient value of 0.435 indicates that increasing speed significantly increases the player's dribbling ability. This research is in line with the results of previous studies which show that speed is an important factor in dribbling ability. For example, a study by Çetin & Danaci (2015) found that soccer players who have high speed are better able to control the ball and avoid opposing players. Another study by Duncan [6] also emphasized the importance of speed in improving dribbling performance among young players. Increased speed not only assists players in moving faster but also improves ball control and the ability to avoid opponents during matches (Pangestu, 2024).

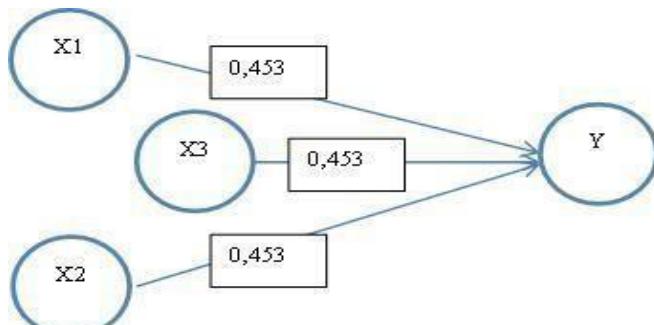


Figure 4. Analysis of the Direct Effect of Speed, Agility, Concentration on Dribbling Ability

The direct influence of speed on the ability to dribble football players of special sports schools (SKO) SMA 4 West Sumatra.

Based on the results of the study, speed has a significant direct influence on the dribbling ability of soccer players at the Special Sports School (SKO) SMA 4

The direct effect of agility on dribbling ability of soccer players of special sports school (SKO) SMA 4 West Sumatra.

Agility was also found to have a significant direct influence on dribbling ability with a beta coefficient of 0.403. The data showed that the majority of players (94%) were in the "Fair" category in terms of agility, with an average agility time of 174 seconds. These results are consistent with previous research showing that agility plays an important role in dribbling ability Bafirman et al., (2023); Humairoh et al., (2023) stated that agility allows players to make changes in direction quickly and effectively, which is very important in dribbling. Research by Zarya & Welis, (2021) also found that higher agility correlated with dribbling performance among soccer players. The rapid response theory in sport states that agility, which involves the ability to change direction quickly without losing balance, is essential in sports that require dynamic movements such as soccer. This theory is supported by biomechanical principles that suggest

that agility allows players to maintain ball control while moving through tight spaces and avoiding opposing players. This study confirms that agility has a significant influence on the dribbling ability of soccer players at SKO SMA 4 West Sumatra. Good agility allows players to move quickly and effectively, maintain ball control, and avoid opponents.

Therefore, coaches should integrate agility drills in their training programs to improve players' dribbling ability. Drills that focus on dribbling through obstacles and cone drills as well as quick change of direction drills will help players improve their agility. As such, players will become better able to cope with dynamic game situations and maintain better ball control during matches. Regular integration of agility training in the training program is expected to improve the players' overall dribbling performance.

The direct effect of concentration on dribbling ability of soccer players of special sports schools (SKO) SMA 4 West Sumatra.

Player concentration also has a significant direct influence on dribbling ability with a beta coefficient of 0.435. The data showed that the majority of players (74%) were in the "Medium" category in terms of concentration. This study supports previous findings that concentration has a significant effect on sports performance. The study by (Nur et al., 2023) showed that players with higher levels of concentration were better able to maintain focus during the game, which improved their performance in dribbling. Research by Turner & Comfort (2022) also found that good concentration correlated with improved ball control and better decision-making on the field.

Cognitive theory in sport states that concentration is the ability to maintain focus on a specific task in the face of distractions. Good concentration allows players to control the ball better and make quick and correct decisions during the game. This theory is supported by the principles of sport psychology which show that concentration can improve performance by reducing errors and improving consistency. This study shows that concentration has a significant effect on the dribbling ability of soccer players at SKO SMA 4 West Sumatra. Good concentration allows players to maintain ball control and make the right decisions on the field.

Therefore, coaches should include concentration exercises in their training programs to improve players' dribbling ability. Mental exercises such as meditation, visualization, and games that require high concentration should be part of a player's daily training program. By improving concentration, players will be better able to maintain focus during games and improve their dribbling performance. Effective integration of concentration training will help players become more consistent and skillful in controlling the ball during matches.

Simultaneous and significant influence between speed, agility and concentration on dribbling ability of soccer players of special sports school (SKO) SMA 4 West Sumatra.

Multiple regression analysis shows that speed, agility, and concentration simultaneously have a significant influence on dribbling ability. The R Square value of 31.4% indicates that 31.4% of the variation in dribbling ability can be explained by the three independent variables together. The F value of 4.584 and p-value of 0.010 confirmed the significance of this regression model. These results emphasize the importance of speed, agility and concentration in the development of dribbling ability of football players at SKO SMA 4 West Sumatra. This finding is consistent with previous research which shows that a combination of various physical and mental aspects affect a player's dribbling performance Dos'Santos & Jones (2023) showed that players with a combination of speed, agility, and good concentration tend to have superior dribbling performance.

Conclusions

The conclusion in this study is that speed, agility, and concentration of players have a significant influence on dribbling ability in soccer. Speed and concentration each had a strong influence with a beta coefficient of 0.435, while agility also made a significant contribution with a beta coefficient of 0.403. Analysis showed that these three factors collectively explained 31.4% of the variation in players' dribbling ability, confirming the importance of these three elements in improving dribbling performance. The significance of this model was confirmed by an F value of 4.584 and a p-value of 0.010. These results emphasize the importance of speed, agility, and concentration in the development of dribbling ability of football players at SKO SMA 4 West Sumatra.

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Author Contributions

Each author contributes in some way to the completion of this research activity. The main author provides basic ideas and provides research materials and the second, third, fourth authors design research methods and furthermore, all authors share responsibility for data collection, data tabulation and analysis, review process, and article writing.

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Conflicts of Interest

Regarding this study, the author declares that there is no conflict of interest

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