

The Effect of Agility and Balance Training on Dribbling Speed in Soccer Games

Muhammad Zaqi Yusuf^{1✉}, Rumini Rumini², Heny Setyawati³

^{1,2,3}Universitas Negeri Semarang, Indonesia

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Abstract

In terms of dribbling speed, the players are still not fast enough in dribbling. Objectives: (1) a more effective agility training method between zig-zag run and t-drill in increasing dribbling speed, (2) differences in the effect of high and low balance on increasing dribbling speed, (3) interaction between training methods agility with balance against increasing dribbling speed. This study uses an experimental method with a 2x2 factorial design. The independent variables in this study were zig-zag run and t-drill, high and low balance attribute variables, and the dependent variable was dribbling speed. The population is 40 players. The sampling technique used purposive sampling totaling 32 players. Data from the last test were analyzed with two-way ANOVA statistics. The results of calculations using SPSS 25 are obtained: 1) The first hypothesis is obtained $F_{count} > F_{table}$ or $86.532 > 3.33$ and a significance value of $0.000 < 0.05$. 2) The second hypothesis is obtained $F_{count} > F_{table}$ or $77.184 > 3.33$, and a significance value of $0.000 < 0.05$. 3) The third hypothesis is obtained by $F_{count} > F_{table}$ or $9.615 > 3.33$, and a significance value of $0.004 < 0.05$. Conclusion: the group treated with the zig-zag run agility training method was better than the t-drill agility training group on dribbling speed. the group that has high balance is better than the group with low balance on the speed of dribbling. There is an interaction between agility training and the level of balance on the speed of dribbling.

✉ Correspondence address:
Kampus Pascasarjana UNNES Jl. Kelud Utara 3, Gajahmungkur
Semarang
E-mail: mzaqi94@gmail.com

INTRODUCTION

Football is one of the favorite sports around the world, from the age of children to parents love this sport, this sport is a team game, each team consists of eleven core players, and one of them is a goalkeeper. According to (Riswanda Imawan, 2016) Football is a team game, in one team consisting of eleven core players, one of whom acts as a goalkeeper, all players use the feet, but specifically for the goalkeeper may use his hands in his area, the main goal of the game of football is to score as many goals as possible. According to (Erdem, Çağlayan, Korkmaz, Kızılet, & Özbar, 2015) Football is a game that requires high effort, where the participants are exposed to a lot of action, bringing many traits such as strength, speed, agility, balance, stability, flexibility and endurance levels appropriate to meet the requirements of the position they play. According to (Zouhal et al., 2019) In soccer, players are required to speed up, slow down, and change direction quickly throughout the game.

In addition to scoring goals against the opponent's goal, in playing soccer, every player must pay attention to several aspects that support the game of football. To achieve this goal, players need to be given several exercises, such as: physical exercise, technical training, good tactical and mental training so that with it will create a directed and regular exercise and by paying attention to the training program that has been prepared so far. One aspect that needs to be considered is the basic technique in playing soccer. There are several basic techniques in soccer that can all support cooperation between players. (Aprianova, 2016) states that the basic techniques of soccer include kicking, receiving, dribbling, heading, snatching, throwing techniques, ball tricks, and ball guarding techniques.

One of the basic techniques that must be mastered by soccer players in creating soccer achievements is the technique of

dribbling. Not all soccer players can dribble well. According to (Ardianda & Arwandi, 2018) Dribbling is a basic soccer technique that is not easy to master, because players must have the ability to control the ball while moving, standing, or preparing to pass or shoot. Likewise, the level of difficulty in dribbling is higher because players not only have the ability to keep the ball close to their feet, move with the ball and make passes, but also relate to physical conditions, emotional control, weather and mastery of the soccer field. Therefore, it is very important to pay attention to special exercises to improve basic dribbling techniques. According to (Arif Pratomo, Harry Pramono, 2020) dribbling it is a movement that must lead to the hoop. According to (Afrilliyana, Pramono, & Soenyoto, 2018) Proposes that dribbling is a basic technique in trying to bring the ball forward in attacking play and serves as an opening for players to score. According to (Ziko Fajar Ramadhan, Surisman, 2020) that dribbling is a method of moving the ball from one point to another on the field using the feet. Meanwhile, according to (Kurniawan, Nurrochmah, & H Paulina, 2016) namely there are three kinds of dribbling techniques, namely the technique of dribbling using the inside of the foot, dribbling the ball using the outside of the foot, and dribbling the ball using the side of the turtle's foot.

Several factors that affect the skills of soccer players in dribbling include agility and balance. according to (Amir Supriadi, 2015), soccer players must master the basic techniques of dribbling and good physical condition. Physical conditions in playing soccer that are indispensable include: strength, speed, flexibility, balance, coordination, agility, endurance, explosive power, accuracy and reaction. While agility and balance according to (Ilfan Akmal, 2019) is an important ability of soccer players to change direction or body position quickly which is done together with other movements.

Agility is the ability to change direction quickly while maintaining balance while moving (Maryono, Rahayu, & Rustiana, 2017). according to (Artanayasa, 2014) Agility is the ability to change the direction of body position or the direction of body movement quickly while moving quickly without losing balance or awareness of body position. This agility component includes elements of dodging quickly, changing body position quickly, moving and then stopping and continuing to move quickly. Similar opinion as expressed by (Jusran S Maifa, 2018) that agility is a person's ability to change position in a certain area. Someone who is able to change a different position in high speed with good coordination, means that his agility is quite good. According to (Firdaus Soffan Hadi, 2016), agility makes it easy for soccer players to make difficult movements and are not easy to fall or get injured due to the push or pressure of the opponent. The agility of players' movements supported by mastery of dribbling techniques can deliver the ball to the opponent's goal post easily.

In addition to having to pay attention to the agility aspect, the balance aspect also plays an important role in dribbling. Each player has a different level of balance. Balance is the body's ability to maintain a position, in a variety of movements. According to (Jaya & Nurkholis, 2017) Balance is the body's ability to maintain a position, in a variety of movements. The ability to maintain this body position is very clearly seen in the game of football where players must be able to defend the ball as well as possible. The interference from this opponent will force the player to be able to change direction or maintain body position so as not to fall so that he will lose control of the ball. Meanwhile, according to (Mappaompo & Silatulahmi, 2015) that "Balance is related to self-coordination, and in some skills, also to agility". Thus, to maintain balance in carrying out physical activities, the movements performed need to be well

coordinated in an effort to control all movements. according to (Rohman & Soegiyanto, 2013) Balance is the ability to maintain body balance when placed in various positions. This is in line with what was stated by (Nurtajudin, Tandiyono Rahayu, 2015) Balance is the body's ability to maintain proper posture at a certain point during movement.

The ideal reality as expressed above is that every soccer player must have the agility and balance to master the skill in dribbling speed. The ability to master skills in dribbling speed in soccer games, especially the attacker's position, is a powerful weapon in an effort to arrange attacks into the opponent's area or goal. Dribbling in a playing situation means bringing the ball from one line to another by controlling the ball from foot to foot in a narrow space of motion, because the opponent is closing his area. This requires good balance in an effort to control all movements and also requires agility to move forward dribbling and escape from opponent's obstacles.

Based on the above opinion, it can be concluded that each sport has a different energy system dominance, although in reality athletes often combine the two systems, where one energy has a balanced or dominant portion. This study aims to determine: (1) a more effective agility training method between zig-zag run and t-drill in increasing dribbling speed, (2) differences in the effect of high and low balance on increasing dribbling speed, (3) interaction between training methods agility with balance against increasing dribbling speed.

METHOD

The research used in this study is an experimental method using a 2 x 2 factorial design, using a pretest and posttest. The independent variables in this study were zig-zag run and t-drill, the attribute variables were high and low balance, and the influencing variable was dribbling speed.

The following is a factorial design in this study:

Tabel 1. 2x2 Factorial Design

Agility Training (A)	Balance (B)	
	High (B1)	Low (B2)
Zig-Zag Run (A1)	A1B1	A1B2
T-Drill (A2)	A2B1	A2B2

(Source: Researcher Design)

Note :

A1B1 : The groups of players who have high balance are trained using the Zig-Zag Run exercise.

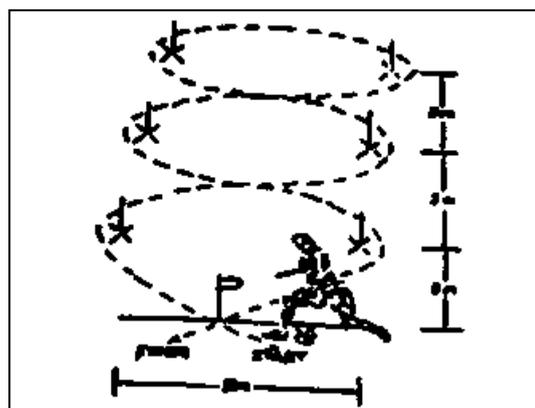
A2B1 : The group of players who have high balance are trained using the T-Drill exercise.

A1B2 : The group of players who have low balance are trained using the Zig-Zag Run exercise.

A2B2 : The group of players who have low balance are trained using the T-Drill exercise.

The sample that will be used in this study is 40 players. Of the 40 players, a test and measurement of balance was carried out and obtained by the Standing Balance Test, the data from the balance test results were used to classify the samples with high balance and samples with low balance. The middle group of players is eliminated, so that the difference between the high and low balance groups becomes clear. 8 players who have moderate balance were not included, so the sample size used in this study was 32 players consisting of 16 players who had high balance and 16 players who had low balance. Each 16 players were assigned to two training groups to perform the Zig-Zag Run and T-Drill training methods to form four training groups with the same number.

The dribbling speed test instrument aims to measure the speed of dribbling.



Picture 1. Dribbling Speed Test

Source : Nurhasan (2007:212)

Balance is the body's ability to maintain a position in various movements. In this case the player will be given a balance test using a standing balance test.



Picture 2. Balance measurement test

Source : Widiastuti, (2015:171)

Recording the time the player has the speed and the speed of dribbling which will later be categorized as follows:

Table 2. Dribbling Speed Norm

No	Norm	Time/Second
1	Excellent	Down – 18.00
2	Good	19.00 – 21.00
3	Average	22.00 – 23.00
4	Less	24.00 – 26.00
5	very less	27.01 – Up

Source: (Lalu Sukmawan Eka Wiguna, 2020)

RESULT AND DISCUSSION

The data from this study include: agility training methods, balance effects and dribbling speed were analyzed using a 2-way design analysis of variance (ANOVA) test with the help of SPSS 25. The way of presentation can be seen in table 3. In this study divided into 2 groups namely the high

group and the low group. Both high and low groups will conduct research in the form of applying agility exercises. The tall group was divided into 2 groups, the high group 1 performed agility zigzag running and the tall group 2 performed t-drill agility exercises. Likewise with the low group, low group 1 will do zigzag running agility exercises and low group 2 will do t-drill agility exercises.

Table 3. Summary of Two-Factor ANOVA

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	1.371 ^a	3	.457	57.777	.000
Intercept	167.537	1	167.537	21180.821	.000
Agility	.684	1	.684	86.532	.000
Balance	.611	1	.611	77.184	.000
Agility* Balance	.076	1	.076	9.615	.004
Error	.221	28	.008		
Total	169.13	32			
Corrected Total	1.59	31			

a. R Squared = ,861 (Adjusted R Squared = ,846)

Source: SPSS 25.0

Based on the results of the analysis of variance, it can be concluded: hypothesis (1), there is a difference in the effect between the agility training method of zig-zag running type and t-drill type agility on the speed of dribbling in soccer games at Aljabbar Fc U-17 Cirebon Regency tested using ANOVA test and obtained Fcount = 86.532 with a significance value of 0.000.

The results of these calculations are then consulted with table F with dk in the numerator = 2 and dk in the denominator = 29, and at a significance level of 0.05, Ftable = 3.33 is obtained, because Fcount > Ftable or 86.532 > 3.33 and a significance value of 0.000 < 0, 05 . then H0 which reads: "there is a different effect between the agility training method of zig-zag running type and t-drill type agility on the speed of dribbling in soccer games at Aljabbar Fc U-17 Cirebon Regency" is accepted. This is very relevant to the results of research (Ardianda & Arwandi, 2018) which concluded that "The application of zigzag running exercises can improve dribbling ability" and the results of research

(Nashrullah & Andi Sultan Brilin, 2018) which concluded that "There is an effect drill on increasing dribbling ability". Based on the posttest average value, it shows that the group that received the treatment of the zig-zag running agility training method had a higher level of improvement than the group that was given the treatment of the t-drill agility training method on the speed of dribbling in the game. football at Aljabbar Fc U-17 Cirebon Regency.

Analysis of variance test to test hypothesis (2) which states that there is a difference in influence between players who have high balance with low balance in increasing the speed of the Aljabbar Fc U-17 soccer game in Cirebon Regency was tested using the ANOVA test and obtained Fcount = 77,184 with a significance value 0.000.

The calculation results are consulted with table F with dk in the numerator = 2 and dk in the denominator = 29, and at a significance level of 0.05, Ftable = 3.33 is obtained, because Fcount > Ftable or 77.184 > 3.33, and a significance value of 0.000 <

0.05 then H0 which reads: "There is a difference in influence between players who have high balance with low balance in increasing the speed of the Aljabbar Fc U-17 football game in Cirebon Regency" is accepted. This is very relevant to the results of research (Hartati, Soleh Solahuddin, 2020) which concludes that "agility and training have an effect on improving soccer dribbling". Based on the posttest average value, it shows that the balance group has a higher level of improvement than the low balance group in terms of the speed of the football game at Aljabbar Fc U-17 Cirebon Regency. (Sudirman, 2018) said "Several factors that affect agility are muscle strength, speed, muscle explosive power, reaction time, balance, and coordination".

Analysis of variance test to test hypothesis (3) which states that there is an interaction between agility and balance training methods on dribbling speed in soccer games at Aljabbar Fc U-17 Cirebon Regency, tested using ANOVA test and obtained Fcount = 9.615 with a significance value of 0.004 . The results of these calculations are then consulted with table F with dk in the numerator = 2 and dk in the denominator = 29, and at a significance level of 0.05, Ftable = 3.33 is obtained, because Fcount > Ftable or 9.615 > 3.33, and a significance value of 0.004 < 0 .05, then H0 which reads: "there is an interaction between agility and balance training methods on the speed of dribbling in a soccer game at Aljabbar Fc U-17 Cirebon Regency" is accepted.

The results of testing the third hypothesis show significant results between the agility training method and the level of balance on the speed of dribbling in football games, which means that there is an interaction between the agility training methods and the level of balance on the speed of dribbling in soccer games at Aljabbar Fc U-

17 Cirebon Regency. according to (Alfi, Kurniawan, & Amiq, 2019) namely "zig-zag is a running agility exercise by changing direction as soon as possible and balance control is needed".

The comparison of the estimated marginal means test results can be seen in tables 4 and 5 below:

Table 4. The effect of zig-zag run and t-drill exercises on dribbling speed.

Agility Training	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Zig-Zag Run	2.434	.022	2.389	2.480
T-Dril	2.142	.022	2.096	2.187

Table 4 above shows that the zig-zag run agility training is better than the t-drill agility training to increase the speed of dribbling, judging from the mean in table 4 the zig-zag run group has a mean of 2.434, while the t-drill group has a mean of 2,142.

Table 5. The effect of players who have a high and low level of balance on the speed of dribbling.

Balance level	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
High	2.426	.022	2.381	2.472
Low	2.150	.022	2.104	2.196

Table 5 above explains that the mean for the level of balance in the high category for dribbling speed is 2,426, while the mean for the level of balance in the low category for dribbling speed is 2,150. The group that has a high level of balance is in a better category than the group that has a low category of height.

Table 6. Interaction between agility and balance training methods on dribbling speed.

TrainingAgility	Balance Leve	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Zig-Zag Run	High	2.621	0.31	2.557	2.686
	Low	2.248	0.31	2.183	2.312
T-Drill	High	2.231	0.31	2.167	2.296
	Low	2.053	0.31	1.988	2.117

Table 6 above explains that the treatment group using the zig-zag run training method experienced an average increase in dribbling speed of 2,621 for players who had a high level of balance and 2,248 for players who had a low level of balance. The treatment group using the t-drill training method experienced an average increase in dribbling speed of 2,231 for players who had a high level of balance and 2,053 for players who had a low level of balance. Giving the zig-zag run and t-drill training methods that are interacted with balance causes the body to undergo physiological adaptation, resulting in an increase in the results of dribbling speed.

Agility training is very important for players who want to increase their dribbling speed. According to (Sekulic et al., 2019) Agility is one of the most important components for soccer athletes. Without agility, athletes will not be able to bring achievements in the field of sports. Agility is the ability to change direction quickly while maintaining balance while moving (Maryono, Rahayu, & Rustiana, 2017). Several factors that affect agility are muscle strength, speed, muscle explosive power, reaction time, balance, and coordination (Sudirman, 2018)

The purpose of dribbling speed is to build an attack, break free from the opponent's control, to get past the opponent and open up space to be able to make passes or shots. Other agility training methods that are considered effective for increasing dribbling speed are the zig-zag run and t-drill.

The zig-zag run and t-drill agility training methods have an effect on changes in dribbling speed in fc-u17 algebra, but the t-drill agility training method only has less effect when compared to zig-zag run agility

training because this type of agility training has less movement in different directions and in the exercise movement just run straight and shift to the side only. Researchers are aware that agility is influenced by changes in motion during exercise.

Balance plays an important role in soccer games, in this case is the speed of dribbling or dribbling. Dribble movements are characterized by moving from one point to another and when under pressure from opposing players (body contact), the player who is dribbling the ball must still be able to maintain his body balance. In addition, good balance makes movement more effective and efficient. From the explanation above, it is explained that the balance with high and low categories has an influence on the speed of dribbling. Aljabbar Fc U-17 players who have a high level of balance are better than players who have a low level of balance in improving their dribbling skills.

In the game of soccer, it is dominated by running movements. The role of balance in the movement of running is very large. A soccer player if he has good balance, then the player will be able to maintain his body when in possession of the ball. For this reason, the balance group is the main supporting factor for successful dribbling in soccer games. This is in line with what was stated by (Nurtajudin, Tandiyo Rahayu, 2015) Balance is the body's ability to maintain proper posture at a certain point during movement. The ability to maintain this body position is very clearly seen in soccer games where players must be able to defend the ball that is controlled as well as possible. The interference from this opponent will force the player to be able to change direction or

maintain body position so as not to fall so that he will lose control of the ball. Therefore, improving balance can affect skill performance in sports by increasing agility.

CONCLUSION

The results of the analysis and discussion above, it can be seen that the group that was given zig-zag run agility training was better than the t-drill agility training at dribbling speed. the group that has a better level of balance than the group with a low level of balance on the speed of dribbling. There is an interaction between agility training methods and the level of balance in dribbling speed.

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