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The Effect of Agility Training On Football Dribbling Skills of Students At Tanjungsiang Elementary School

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ABSTRACT

This study aims to determine the effect of agility training on improving football dribbling skills in Tanjungsiang State Elementary School students. Dribbling is an important basic technique in the game of soccer, which requires ball handling, speed, and body balance. Agility exercises were chosen because they can improve motor skills and movement control when dribbling. The research method used was a one-group pretest-posttest using dribbling skill test instruments before and after the administration of agility training. The sample of this study was 30 students who met certain criteria. The results of the analysis showed a significant improvement in students' dribbling skills after participating in agility exercises, evidenced by a p-value of < 0.05 and an increase in average scores from pretest to posttest. These results state that agility training has a positive and significant effect on improving the soccer dribbling skills of elementary school students. Therefore, agility training can be used as an effective strategy in learning football technical skills at the elementary school level.

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INTRODUCTION

Sport is an activity that trains the human body, both physically and mentally, fostering spiritual development. According to various perspectives, sport is any organised and structured physical activity that incorporates repetitive body movements to improve a person's physical and mental well-being. In recent years, sport has become not only a way to maintain health but also a competitive sport that can boost the reputation of a nation or group. Soccer is a sport that is widely enjoyed by various groups, from children to adults. At the elementary school level, soccer serves not only as a means of exercise but also as a platform for developing students' motor skills, social skills, and character. Odahara and Jambi (2022) reviewed various aspects of sports and training in Indonesia, highlighting the importance of developing sports science and coaching in improving the quality of athlete performance and national sports development. One

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crucial component of soccer is dribbling skills, namely the ability to dribble the ball effectively to beat opponents and create opportunities in the game. Mastery of dribbling skills is crucial to a player's success in a match.

Football is a team sport played between two teams of eleven players each. The goal is to score goals by passing and kicking the ball into the opponent's goal this is supported by Football is the most popular hand sport in the world. Not only does it attract attention with its attractive visuals, but it also provides significant physical benefits for its players. Putra et al. (2023) explain the concept of physical training models applied in football, emphasizing the importance of structured and comprehensive training to improve the technical and physical performance of players. Football prioritizes cooperation, strategy and technical skills, and is the most popular sport in the world. In football, there are several training models designed to improve various aspects of player abilities. These training models are adjusted to the goals to be achieved to improve basic techniques, physical, tactical, and mental. In football, there are basic techniques including passing, shooting, heading, and dribbling. Dribbling is a basic skill in football that involves the ability to control the ball while moving quickly and agilely. This is reinforced by the fact that one aspect of physical health that is influenced by strength, flexibility, and speed is agility. Any sport that involves adapting to changing game conditions, agility, and the ability to increase speed while dribbling the ball in a soccer match requires agility. (Kusuma & Irawan, 2022).

Dribbling skills in soccer games are skills that are quite difficult to improve. To master the ball in dribbling techniques requires a good and appropriate training method that is carried out intensively and supported by good physical condition, so that the goal of soccer with good ball control can be achieved. (Mubarok & Mudzakir, 2020) Dribbling or dribbling the ball is a technique that must be mastered by every player to be able to control the ball well when the ball is at their feet. By mastering the basic dribbling techniques, a player will be able to provide space for other players, also provide opportunities to score points by passing opponents and opening space for shooting. Good basic dribbling techniques are greatly influenced by several factors, including good ball control, body balance when maintaining the ball, and good physical condition in dribbling speed when moving with acceleration. When soccer games are played by elementary school students, especially in dribbling techniques, they are still not seen well because when carrying the ball their feet are still stiff and the placement between the feet and the ball is still too far, with this in mind when the soccer game is not perfect and does not run well. In soccer, dribbling is crucial for determining the direction of play and creating opportunities that result in goals. Several other studies also indicate that every soccer player must possess and master dribbling skills, as these skills can influence the outcome of a soccer match (Putra et al., 2023).

Initial field observations revealed that most elementary school students struggled to master dribbling skills. They tended to have difficulty controlling the ball at speed and frequently lost the ball when faced with pressure from opponents. These observations suggest that basic dribbling skills need to be improved through appropriate training methods.

Nyoman et al. (2021) stated that a combination of shuttle runs and core stability exercises was as effective as a combination of shuttle runs and glute control exercises in improving agility, indicating that both training methods had an equal impact on improving agility.

The obstacles experienced by students in mastering dribbling skills can be caused by a lack of structured and enjoyable training, as well as a lack of understanding of effective training to improve agility and speed of movement. Furthermore, age factors, such as those still in the growth and development period, require an appropriate training approach so that they can learn and develop optimally. Based on these conditions, it is important to research the effect of agility training on the dribbling skills of elementary school students to find effective and enjoyable training methods that can improve the quality of their technical abilities in playing soccer. In response to the above research, this skill test training can affect dribbling ability in soccer. Therefore, this study focused on elementary school students because previous research was more directed at SSB clubs. Here, the researchers conducted an update and wanted to determine whether this skill test training can improve dribbling ability in soccer.

METHODS

The method used in this study is an experiment. According to Sugiyono (2015), experimental research can also be considered a method to determine the effect of a particular treatment or treatment in a controlled condition. Experiments according to Kerlinger in the journal (Setyanto, 2013) mean a scientific research in which a researcher manipulates and controls as many as one or more independent variables and conducts observations on related variables to find the various forms that arise together with the manipulation of the independent variables. This study uses an experimental method with a quantitative approach, specifically a quasi-experiment with a nonequivalent control group design. This design was chosen because it allows for comparing the effect of agility training on dribbling skills in two groups of students, namely the experimental group that received agility training treatment and the control group that did not receive the treatment. In this study, the researcher took participants from Tanjungsiang Elementary School, Cimanggung District, Sumedang Regency, totalling 30 students from grades 4-6, 1 teacher and 1 colleague to assist the researcher in terms of documentation during the study. The total number of participants involved in this research was 30 people.

A population is a subject or object with a unique character or specific qualities determined by the researcher to be observed and understood as research material (Hermawan, 2019). The conclusion here is that a population is not limited to humans or subjects; it can also be similar to objects or objects that can be used as research material. The population used in this study was elementary school students in grades 4, 5, and 6 of SDN Tanjungsiang, Cimanggung District, Sumedang Regency, totalling 30 students.

According to Sugiyono in his journal (Arifin & Asfani, 2019), a research instrument is a measuring tool commonly used in research to collect data to ensure good results and simplify the work. This study used a soccer dribbling agility test instrument. In this test,

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the researchers directly determined the impact of agility training on soccer dribbling skills. The test instrument was used to collect initial data, or a pre-test and also to obtain final data after receiving treatment using soccer dribbling skills. The researchers chose this test instrument because it aimed to measure the effect of agility training on soccer dribbling skills. The primary instrument in this study was a dribbling skills test, which comprised several procedures and measurement standards according to established guidelines. Additionally, agility training, including ladder drills, cone drills, and quick reaction drills, was administered as treatment.

The initial stage was a pre-test to measure students' dribbling skills before treatment. Next, the experimental group was given regular agility training for 4 weeks, three times per week, with a duration of approximately 30 minutes per session. The training was carried out in a structured and fun manner to keep students motivated. After the treatment period was completed, a post-test was administered to measure improvements in dribbling skills. The control group followed conventional training without additional agility training. Data obtained from the pre-test and post-test were analyzed using the SPSS version 20.0 application. The statistical analysis used was a paired sample t-test to determine the effect of training in each group, and an independent sample t-test to determine differences between the two groups. The significance level used was $\alpha = 0.05$.

RESULTS AND DISCUSSION

Result

Based on statistical testing, the results showed that agility training had a significant effect on improving students' dribbling skills. This test used a paired sample t-test to compare dribbling skill scores before and after agility training in the experimental group.

The analysis showed a t-value of -14.311 with 28 degrees of freedom (df) and a p-value <0.001. This p-value is well below the $\alpha = 0.05$ level of significance, thus concluding that the difference in dribbling skill scores before and after training is statistically significant. Thus, agility training did have a positive impact on students' dribbling skills.

Specifically, the average dribbling skill score before training was 2.73, while after training it increased to 4.87. This improvement indicates that agility training significantly improved students' dribbling skills, namely the ability to control the ball effectively around the court during play.

Furthermore, analysis using the N-Gain Score indicated that the effectiveness of this training fell into the "effective" category with an average score of 92.86%. This indicates that the majority of students experienced significant and significant improvements in their dribbling skills after participating in regular agility training.

Overall, the results of this study support the argument that agility training not only improves speed and agility but also significantly enhances technical skills in dribbling a soccer ball, a crucial aspect of the game at the elementary school level.

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Most students experienced an increase in scores after participating in regular agility training during the research period. This increase indicates that agility training can improve students' ability to control the ball when dribbling, turning, and maintaining possession of the ball. Seen in the implementation of the pretest-posttest control class, totalling 15 students before and after the test, in the first test (pretest), there were 3 students getting a score of 1, 5 students getting a score of 2 and 7 students getting a score of 3. Then, seen from the second test (posttest), 4 students were getting a score of 2 and 11 students were getting a score of 3. So we can see the total pretest score for all students is 36, while the posttest has a higher score of 41. We can conclude that there is an increase before being given treatment and after being given treatment. In the pretest-posttest experimental class, which consisted of 15 students, both before and after the test, five students scored 3 on the first test (pretest), nine students scored 4, and one student scored 5. The second test (posttest) showed that two students scored 4, and 13 students scored 5. Therefore, the total pretest score for all students was 56, while the posttest score was higher at 73. This indicates an improvement before and after the treatment.

The statistical analysis showed a significant difference between the pretest and posttreatment scores, supporting the research hypothesis that agility training positively impacts students' dribbling skills. The average pretest score in the control class was 2.26, representing 45.33% of the skill, while the average posttest score in the control class was 2.73, representing 54.66%. This improvement was observed in the control class. Meanwhile, in the experimental class, the average pretest score was 2.73 with a skill percentage of 74.66. In the posttest, the experimental class obtained an average score of 4.86 with a skill percentage of 97.33%. This proves that there is a difference in the increasing scores before and after the treatment was given.

The submission of homogeneity of variance of pre-test control and pre-test experimental data in this study, using the Levene test, is presented in the table below:

Table 1.
Results of the Homogeneity Test for the Control Class and Experimental Class Pretests

		Levene Statistic	df1	df2	Sig.
Hasil latihan kelincahan (Pretest)	Based on Mean	2,468	1	28	,127
	Based on the Median	2,154	1	28	,153
	Based on Median and with adjusted df	2,154	1	27,959	,153
	Based on the trimmed mean	2,390	1	28	,133

Based on the homogeneity test results obtained in Table 1, the Levene statistic value for soccer dribbling skills, based on the mean, is 2.468 with degrees of freedom between groups (df1) 1 and degrees of freedom within groups (df2) 28, and a significance value (Sig.) of 0.127. According to (Soewarno 1995) in (Sanusi, 2016) the testing criteria are if Sig < 0.05, then the data comes from a population that has unequal variance, while if Sig > 0.05, then the data comes from a population that has the same variance, then the result is Sig 0.127 > 0.05. Similar results were obtained when the test was conducted based on the median, with Levene statistics 2.154, df1 1, df2 28, and Sig. 0.153. Even when

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adjustments were made to the degrees of freedom (adjusted df 2.154), the significance value remained 0.153. The test based on the trimmed mean also showed consistent results, with a Levene statistic of 2.390, df1 1, df2 28, and a Sig. of 0.133.

The submission of homogeneity of variance of control posttest and experimental posttest data in this study using the Levene test is presented in the table below:

Table 2.
Results of the Homogeneity Test for the Control Class Posttest and the Experimental Class Pretest

		Levene Statistic	df1	df2	Sig.
Agility training results (Posttest)	Based on the Mean	3,422	1	28	,075
	Based on the Median	,800	1	28	,379
	Based on Median and with adjusted df	,800	1	26,263	,379
	Based on the trimmed mean	3,422	1	28	,075

Based on the results of the homogeneity test obtained, the Levene statistical value for soccer dribbling skills, based on the mean, is 3.422 with degrees of freedom between groups (df1) 1 and degrees of freedom within groups (df2) 28, and a significance value (Sig.) of 0.75. According to (Soewarno 1995) in (Sanusi, 2016) the testing criteria are if Sig < 0.05, then the data comes from a population that has unequal variance, while if Sig > 0.05, then the data comes from a population that has the same variance, then the result is Sig 0.75 > 0.05. Similar results were obtained when the test was conducted based on the median, with Levene statistics 0.800, df1 1, df2 28, and Sig. 0.379. Even when adjustments were made to the degrees of freedom (adjusted df 0.800), the significance value remained 0.379. The test based on the trimmed mean also showed consistent results, with a Levene statistic of 3.422, df1 1, df2 28, and a Sig. of 0.75.

Table 3.
N-Gain Test for Control and Experimental Classes: Pre-test and Post-test

	Kelas			Statistic	Std. Error
N_GainPersen	Eksperimen	Mean		92,86	4,853
		95% Confidence Interval for Mean	Lower Bound	82,37	
			Upper Bound	103,34	
		5% Trimmed Mean		94,84	
		Median		100,00	
		Variance		329,670	
		Std. Deviation		18,157	
		Minimum		50	
		Maximum		100	
		Range		50	
		Interquartile Range		0	
		Skewness		-2,295	,597
		Kurtosis		3,792	1,154
	kontrol	Mean		13,89	4,039
		95% Confidence Interval for Mean	Lower Bound	5,23	
			Upper Bound	22,55	
		5% Trimmed Mean		13,58	
		Median		,00	
		Variance		244,709	

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	Std. Deviation	15,643	
	Minimum	0	
	Maximum	33	
	Range	33	
	Interquartile Range	33	
	Skewness	,260	,580
	Kurtosis	-2,090	1,121

Based on the results of the N-Gain score test, the average N-Gain score for the control class (without agility training) was 13.89, categorised as ineffective. The minimum N-gain score was 0, and the maximum was 33. Meanwhile, the experimental class (with agility training) was 92.86, categorised as effective. The minimum N-gain score was 50, and the maximum was 100. Therefore, it can be concluded that the use of agility training is effective in improving soccer dribbling skills in students in grades 4 through 6 at Tanjungsiang Elementary School.

The homogeneity test previously conducted showed that the gain scores from the pre-test and post-test of the experimental class came from the same population and variance. The results of the t-test calculation are presented in the following table:

Table 4.
Hypothesis Testing (T-Test)

	Kelas	N	Mean	Std. Deviation	Std. Error Mean
Nilai	Postest_Kontrol	15	2,73	,352	,091
	Postest_Eksperimen	15	4,87	,458	,118

Based on data obtained from dribbling skill testing before and after treatment, there was a significant improvement in the experimental group that received agility training. Analysis using a paired t-test showed a t-value of -14.311 with df = 28 and a p-value <0.001. This indicates that agility training had a very significant positive effect on improving the dribbling skills of Tanjungsiang Elementary School students.

Meanwhile, in the control group, which did not receive agility training, there was a smaller and statistically insignificant improvement. This difference indicates that agility training has a more significant impact on dribbling ability than conventional training. Kusuma and Irawan (2022) stated that agility training significantly improves dribbling quality in children aged 15-17 years. It is known that the Sig value (p-value) data is <0.001, which is smaller than $\alpha = 0.05$, so the hypothesis (H_0) is rejected. So in this case, it can be concluded that the significance value data of the t test = 0.001 is smaller than 0.05 (0.001 <0.05), so Ho is rejected and Ha is accepted. This means that there is an influence of agility training on dribbling skills tests in soccer at SDN Tanjungsiang.

Discussion

Based on the results of this study, it can be concluded that agility training significantly improved the dribbling skills of elementary school students at Tanjungsiang Elementary School. This aligns with the first research question, "Does agility training affect the soccer dribbling skills test in elementary school students?" The statistical analysis, with a p-value <0.001, showed a significant difference between the scores

before and after the agility training treatment. This improvement indicates that agility training can improve and enhance dribbling skills, including control, speed, and accuracy in executing dribbling skills. Furthermore, the significant increase in scores from a pre-test average of 2.73 to 4.87 in the post-test confirms the effectiveness of the training. The N-Gain value of 92.86%, which falls into the "effective" category, indicates that agility training significantly contributed to improving students' dribbling skills. Previous research supports these findings, such as that by Putra and Suryadi (2022), which showed that a group that participated in agility training that included quick reactions, foot coordination, and changes of direction experienced significant improvements in dribbling skills. They stated that agility is a key factor in mastering dribbling skills in soccer. Meanwhile, research by Rodríguez and Velastequí (2019) showed that agility training based on zigzag running also had a positive effect on high school students' dribbling abilities. This research confirms the finding that various forms of agility training can positively impact technical skills in soccer.

Furthermore, research by Hakim and Pratama (2024) conducted on elementary school students also showed that exercises such as T-drills and cone dribbling significantly improved dribbling speed and accuracy, suggesting that structured and programmed agility training can improve young players' technical skills. However, it is important to note that skill improvement is not solely influenced by agility training; other factors, such as ball control and coordination, also play a role. Therefore, training that integrates agility with other technical aspects will produce more optimal improvements. Overall, the results of this study and previous research provide a scientific basis for the belief that agility training is a crucial factor in improving students' dribbling skills. Therefore, elementary school soccer coaches and educators should incorporate agility training into their training programs to effectively support young players' mastery of technical skills.

These results are consistent with previous research that suggests agility training can improve fine and gross motor skills in children. Significant improvements in the experimental group indicate that agility training specifically improved students' dribbling technique and ball control speed. The four-week training program effectively improved students' ball control skills during soccer. Furthermore, the use of fun and varied drills, such as cone drills and ladder drills, increased students' motivation and focus during the training process. This enabled optimal development of agility and speed, the foundations of dribbling skills. These results demonstrate the importance of implementing agility training routinely as part of the soccer learning program at the elementary school level. This training not only improves technical skills but also boosts students' confidence in playing soccer.

CONCLUSION

Based on the results of the research that has been conducted, it can be concluded that the effect of agility training on the dribbling skills of Tanjungsiang Elementary School students is proven to be significant. This is indicated by the increase in students' dribbling skill scores after participating in agility training regularly during the research

period. The results of statistical analysis using the t-test showed that the p-value <0.05, which means that agility training significantly contributed to improving students' dribbling skills. The increase in students' dribbling skill scores indicates that agility training effectively improves aspects of speed, control, and dribbling accuracy. The large increase with a high N-Gain value (92.86%) confirms that the training has a significant influence on improving students' skills. Previous research supports this finding, namely that agility training, which includes quick reactions, foot coordination, and changes of direction, can improve dribbling skills in elementary school and adolescent soccer players. Research by Putra and Suryadi (2022), Rodríguez and Velastequí (2019), and Hakim and Pratama (2024) showed consistent results that agility training is effective in improving technical dribbling skills. However, other factors such as ball control and coordination training also play a role in improving dribbling skills. Therefore, a combination of agility training with other technical training is recommended for optimal results. The results of this study also showed that agility training significantly influenced the improvement of dribbling skills of Tanjungsiang Elementary School students. The results of statistical analysis showed a very significant increase in students' dribbling skill scores after participating in regular agility training during the study period, with a p-value <0.001 and an N-Gain of 92.86%, which is considered high. Furthermore, this increase indicates that agility training is effective in improving aspects of speed, control, and accuracy when dribbling. These findings are also supported by previous studies showing that agility training can improve technical dribbling skills in children and adolescent soccer players. Based on these results, it is recommended that agility training be an integral part of soccer learning and skills training programs at the elementary school level to optimally improve students' dribbling abilities. This training not only improves physical aspects but also positively impacts mastery of soccer techniques.

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