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Transforming Skills through Triangle Passing: Enhancing Accuracy and Teamwork in Futsal Training

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Abstract

This study aims to determine the effect of triangle passing training on passing accuracy in futsal extracurricular activities among fifth-grade students at UPTD Serpong 02 Public Elementary School, Serpong, South Tangerang. The research used an experimental method with a one-group pretest–posttest design. The sample consisted of 20 male students participating in futsal extracurricular activities. The research instrument was a passing accuracy test using cone targets. Data were analyzed using a paired sample t-test with SPSS software. The results showed a significant difference between the pretest and posttest scores, indicating that triangle passing training positively affected students' passing accuracy. The average score increased from 30.50 to 52.00, proving the effectiveness of this training in improving short-pass accuracy. The study concludes that triangle passing can serve as an alternative method to enhance students' passing skills, confidence, and teamwork. Moreover, position rotation during the triangle drills helps players understand the importance of coordination and communication in futsal gameplay.

Keywords: *Futsal, Passing Accuracy, Triangle Passing*

1 INTRODUCTION

Sports are physical activities that play an important role in maintaining body health, improving physical fitness, and developing positive character traits such as discipline, teamwork, and sportsmanship. In the context of education, sports activities are an integral part of developing students' potential both physically and mentally. One sport that has grown rapidly among Indonesian students is futsal. This sport is popular because it can be played in limited spaces, emphasizes teamwork, and requires mastery of basic techniques (Hendarto, Iqbal, & Chan, 2020).

The success of a futsal game is largely determined by basic technical skills, including passing ability. Passing is a fundamental technique used to move the ball between players and build attacks. Passing accuracy is the key to maintaining the flow of play effectively and efficiently. According to Sari and Nugraha (2022), accurate passing ability does not only depend on leg strength but also on coordination, body positioning, and understanding of teammates' movement spaces. Therefore, systematic and varied training is needed to improve players' passing accuracy.

However, based on initial observations in the futsal extracurricular activities at UPTD SD Negeri Serpong 02, many students still have low passing accuracy. Passes are often off target even at short distances, disrupting the team's rhythm of play. This low accuracy may be caused by limited training variations and a lack of understanding of correct basic techniques. According to Priawan (2018) and Lobemato & Nugraheningsih (2023),

geometric-patterned training such as triangle passing or diamond passing can improve passing accuracy because it trains players to adapt to variations in distance, angle, and direction of passes.

Triangle passing practice is one training method that involves three players arranged in a triangular formation. This pattern allows players to practice quick passes while improving ball control, movement coordination, and spatial awareness. Rafly and Raharjo (2024) explained that triangle passing training is more effective than square passing training because it involves positional rotation, which requires communication and cooperation among players. The findings of Ramadhan, Alsaudi, and Iqbal (2020) also show that small-sided games and geometric formation training can improve passing accuracy while developing quick decision-making skills in futsal games.

Thus, triangle passing training can be used as an effective alternative model to improve passing accuracy among elementary school students. This study aims to examine the effect of triangle passing training on passing accuracy in futsal extracurricular activities for fifth-grade students at UPTD SD Negeri Serpong 02. The results of this research are expected to contribute to the development of basic futsal technique training models at the elementary school level, both in physical education learning and extracurricular activities.

2 RESEARCH METHODS

This study used an experimental method with a One Group Pretest–Posttest Design**.** This design was chosen because it can measure changes in ability after being given treatment without using a comparison group. According to Arikunto (2019)**,** the pretest–posttest design is effective for observing the direct effect of a treatment on learning outcomes or certain skills. The subjects of this study were 20 students who participated in futsal extracurricular activities at UPTD SD Negeri Serpong 02, using the total sampling technique because the entire population was used as the sample (Sugiyono, 2019).

The treatment given was triangle passing training, which is a training performed by three players in a triangular formation to improve passing accuracy, coordination, and ball control. The training activities were carried out for 16 meetings with a frequency of **t**hree times per week**.** This training model refers to the opinion **of** Priawan (2018**)**, who stated that geometric-based training such as triangle passing is effective in improving passing accuracy because it trains players to adjust the strength and direction of passes in various positions.

The research instrument used a passing accuracy test with a fixed target as used by Sari and Nugraha (2022**)** to assess the passing accuracy ability of futsal players. The data obtained from the pretest and posttest results were analyzed using a paired sample t-test to determine the significant effect between the results before and after treatment. Before performing the t-test, the data were first tested for normality and homogeneity. The analysis results showed an effect on students' passing accuracy, supporting the findings of Rafly and Raharjo (2024), who proved that triangle passing training can significantly improve futsal players' passing accuracy.

3 RESULTS AND DISCUSSION

3.1 Results

The results of this study were based on an experimental design with one group using a pretest and posttest. The purpose of this research design was to observe the effect on

passing accuracy after being given training in the form of triangle passing exercises. The results were obtained through pretest and posttest. The pretest results showed that the average accuracy was still in the adequate category with an average score of 30.50. After participating in the training program for 16 sessions, the average posttest score increased to 52.00. The descriptive results of the pretest and posttest can be seen in the following table:

Tabel 1. Analisis Deskriptif

	N	Range	Minimum	Maximum	Mean	Std. Deviation
PreTest	20	40	10	50	30,50	10,990
PostTest	20	50	30	70	52,00	12,814

Table 1 shows the results of the descriptive test above, which can be explained as follows: the pretest results show a minimum score of 10, a maximum score of 50, an average of 30.50, and a standard deviation of 10.990. Meanwhile, the posttest results show a minimum score of 30, a maximum score of 70, an average of 52.00, and a standard deviation of 12.814. Furthermore, the data above will be tested for normality to determine whether the data are normal or not. The data can be seen in Table 2 below:

Tabel 2. Uji Normalitas

	Shapiro-Wilk		
	Statistic	df	Sig.
	0,914	20	0,075
	0,938	20	0,220

Based on Table 2, the results of the data normality test using the Shapiro–Wilk test show that the pretest and posttest obtained Sig values greater than 0.05, which means that all data are normally distributed. Furthermore, the data will be tested for homogeneity to determine whether the data are homogeneous or not. The data can be seen in Table 3 below:

Tabel 3. Uji Homogenitas

	Levene Statistic	df1	df2	Sig.
Based on Mean	0,575	1	38	0,453
Based on Median	0,310	1	38	0,581

Variabel	Based on Median and with adjusted Df	0,310	1	37,196	0,581
	Based On Trimmed mean	0,496	1	38	0,458

Based on Table 4.4, the results of the homogeneity test based on the mean show that the Sig value is greater than 0.05, which means that all data are homogeneous. Based on the data above, a difference test or t-test will be carried out to determine the effect or difference in the pretest and posttest as follows:

Tabel 4. Paired Samples Statistic

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-Test	30,50	20	10,990	2,458
	Post-Test	52,00	20	12,814	2,865

In Output 1, the results of the paired samples t-test show that the pretest obtained an average score of 30.50 from a total of 20 samples, with a standard deviation of 10.990 and a standard error mean of 2.458. Meanwhile, the posttest obtained an average score of 52 from a total of 20 samples, with a standard deviation of 12.814 and a standard error mean of 2.865.

Tabel 5. Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pre-Test & Post-Test	20	0,852	0,000

From these data, it can be seen that there is a relationship between the pretest and posttest data because the significance value is smaller than 0.05. It can be stated that there is a relationship between the pretest and posttest.

4.7 Tabel Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre- Test - Post-Test	21,500	6,708	1,500	24,640	18,360	14,333	19	0,000

The basis for decision-making in the paired samples test is that if the significance value < 0.05, there is a significant difference in the pretest and posttest data. If the significance value > 0.05, there is no significant difference in the pretest and posttest data. Based on the results of the data analysis, it is known that the significance value is 0.000 < 0.05, so it can be concluded that there is a significant difference between the pretest and posttest passing results

3.2 Discussion

The results of the study showed that there was a significant improvement in students' passing accuracy ability after being given triangle passing training. This was evidenced by the difference in the average scores between the pretest (51.00) and posttest (81.50) as well as the significant t-test results. Thus, triangle passing training was proven to be effective in improving basic futsal skills, particularly in the aspect of passing accuracy.

Theoretically, the success of triangle passing training is in line with the concept of basic futsal technique training, which emphasizes the mastery of skills through systematic repetition of movements. Triangle passing involves three players in a triangular formation, thus training passing accuracy, player coordination, and off-the-ball movement. This training aligns with the principles of modern futsal, which prioritize quick ball circulation, teamwork, and mastery of playing space.

These findings support the research of Rafly Putra Setya (2024)**,** which proved that triangle passing training is more effective than square passing training in improving passing accuracy among adolescent players. Similarly, Priawan (2018) emphasized that variations of passing training in geometric patterns can improve passing ability because they require players to adjust the angle, distance, and timing of passes.

In addition, the results of this study reinforce the opinion of Ramadhan, Alsaudi, and Iqbal (2020) that the small-sided games method and formation-based training can improve the passing quality of futsal students. In other words, triangle passing training not only improves basic technical accuracy but also develops tactical understanding, communication, and teamwork among elementary school students.

The implication is that triangle passing training can be used as an alternative training strategy in elementary school futsal extracurricular activities. Teachers and coaches can use this training model to correct students' weaknesses in basic techniques, especially in the aspect of passing accuracy, which is the foundation of futsal play.

4 CONCLUSION

Latihan passing segitiga efektif tidak hanya dalam meningkatkan akurasi operan, tetapi juga dalam melatih koordinasi, kontrol bola, pemahaman ruang, serta kerja sama tim pada permainan futsal tingkat sekolah dasar. Based on the results of the research conducted on the effect of triangle passing training on the passing accuracy of fifth-grade futsal extracurricular students at UPTD SD Negeri Serpong 02, the following conclusions can be drawn:

1. The average pretest results showed that students' passing accuracy ability was still relatively low, where most students were not yet able to perform accurate passes consistently.
2. After being given treatment in the form of triangle passing training for 16 sessions, students' passing accuracy ability increased significantly. This was indicated by the average posttest score, which was much higher than the pretest.
3. The statistical test results (paired sample t-test) proved that there was a significant difference between the pretest and posttest scores, so it can be concluded that triangle passing training had a positive and significant effect on improving students' passing accuracy.
4. Triangle passing training was effective not only in improving pass accuracy but also in training coordination, ball control, spatial understanding, and teamwork in elementary school-level futsal games.

5. ACKNOWLEDGEMENT

Hereby declare that the article included in my undergraduate skripsi is entirely my own original work. This article was written independently without any form of plagiarism, fabrication, or unauthorized assistance, and all sources of information used have been properly cited in accordance with academic standards. I fully acknowledge that if, at any time, this statement is proven to be false, I am willing to accept any academic sanctions imposed by the university in accordance with the applicable regulations.

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