



The Influence of Drill Practice And Suspended Ball Practice On The Accuracy of Service In Sila In The Game of Sepak Takraw Among Students of The Bala Keselamatan (BK) Palu High School Extracurricular

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ABSTRACT

This study aims to determine the accuracy of the sila service in Extracurricular students of SMA BK Palu. This type of research is quantitative research using experimental methods. The sample of this study was Extracurricular Students at SMA BK Palu, totalling 22 students, using a total sampling technique. This study uses a pretest-posttest design. The results of the initial t-test (pre-test) and posttest (post-test) obtained a t-count value in Drill practice of $19.39 > 2.228$ t-table with a significance level of $0.000 < 0.05$, meaning that there is a significant effect on the accuracy of sila service. The results of the t-test of the pretest data (pre-test) and the posttest (post-test) obtained a t-count value: in the Hanging Ball exercise of $13.38 > 2.228$ t-table with a significant level of $0.000 < 0.05$, meaning that there is a significant influence on the accuracy of the sila service. There is no difference in the influence between drill training and hanging ball training on the accuracy of the sila service in the sepak takraw game for Extracurricular Students at SMA BK Palu. Proven by the results of data analysis, t-count value = $2.17 < t\text{-table} = 2.228$. The results of the study showed that there was an influence of drill training and hanging ball training on the accuracy of the sila service in the sepak takraw game for Extracurricular Students at SMA BK Palu

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A. Conception and design of the study;
B. Acquisition of data;
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D. Manuscript preparation;
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INTRODUCTION

Sport is an activity that aims to train a person's body, both spiritually and physically. Sport comes from two words, "olah" meaning to cultivate, improve, perfect, and "raga" meaning body, physical, or bodily. So the word "olahraga" means to cultivate or perfect the physical or bodily (Sukirno & Pratama, 2019). According to Mirhan (2016), sport is not just an activity oriented towards physical factors; it can also train a person's attitude and



mentality. Meanwhile, according to (Maulana & Nurudin, 2018), sport is an effort to cultivate and train the human body to become healthy and strong to maintain and improve the quality of health after exercise.

Sepak takraw is a large ball sport that is quite popular in Indonesia. This game is a team game played by two teams of three people each, and players are not allowed to touch the ball with their hands. Sepak takraw is a sport that includes elements of movement from other branches such as soccer, badminton and gymnastics. This game is played by two opposing teams (Wulandari & Irsyada, 2019). Meanwhile, if observed, sepak takraw is a team game, played by three people (Hermanto, 2017). According to Zallaf (2021), sepak takraw is a sport that is acceptable to all levels of society, both men and women, adults and children. According to Indrawan (2018), sepak takraw is a sport that is not easy to play, because in playing sepak takraw, a person must have various skills such as dexterity, agility and flexibility, especially in the feet. After all, sepak takraw has acrobatic elements that can be seen from several movement techniques, such as when serving, smashing, and blocking.

Serving is a crucial aspect of sepak takraw, influencing the outcome of a match (Hidayat et al., 2020). The serve, or kickoff, is executed by the tekong towards the opponent's court and is a crucial technique for the team that executes it, as it can earn points. This is evident in the fact that serving is no longer the starting point of a game but rather the first attack to earn points (Mahandra & Ridwan, 2019). Serving also impacts the game. Observations have shown that in a match, a team that serves well can benefit from it, as it can dominate the game and effectively score points. A good serve requires programmed and disciplined training to maximize its effectiveness. Several methods exist for executing a good sila serve, but they often present difficulties, requiring a deeper understanding of the technique for athletes to master the sila serve.

According to Rosti (2020), serving requires mastery of several movement processes. Optimal performance requires several aspects of physical condition, one of which is flexibility. Meanwhile, according to Ibrahim & Nustan (2018), serving is a crucial first attack in winning a match. A team's error or failure to serve will result in a point for the opposing team.

Developing a sila service skill training model can help players and coaches improve the quality of their sila serves during training sessions and matches (Paosan et al., 2024). Sepak takraw game development must consider the principle of adaptation in game modifications. This principle is often referred to as body scaling, noting that physical aspects are important. According to Gunawan & Fardi (2020), basic sepak takraw technique training must be repeated repeatedly to achieve maximum results. According to Alfiandi & Ali (2018), training is also defined as a repetitive process that increases potential in order to achieve maximum performance and aims to improve athlete performance. According to Abdillah (2021), the model of sepak takraw training that was developed is very suitable for use in sepak takraw training in sepak takraw.

METHODS

Types of research

The type of research used by the researchers in this study was experimental. Experimental research is a research method that aims to determine the cause-and-effect relationship or influence of a particular treatment on another phenomenon by involving the control of relevant conditions or variables in the experiment. This research was conducted to test hypotheses through treatments administered under controlled conditions. According to (Sugiyono 2017), the experimental research method can be interpreted as a method used to find the effect of certain treatments on others under controlled conditions.

Research Design

The design used in this study is the Matching Only Pretest-Posttest Group Design (Riyanto, 2007). The design can be seen in the following table:

Table 1.
Research Design

Distribution Group	Pretest	Treatment	Posttest
M	O ₁	X ₁	O ₂
M	O ₃	X ₂	O ₄

Source: Riyanto (2007)

Population and Sample

The sampling technique used in this study was the total sampling method. Total sampling is a sampling technique in which the sample size is equal to the population (Sugiyono, 2017). Therefore, the sample taken in this study was 22 Sepak Takraw extracurricular students at SMA BK Palu.

The technique used to divide each sample into two training groups was the matched technique, ordinal pairing. According to Sugiyono (2017), ordinal pairing is a technique for dividing groups into two to have similar or equal abilities using the A-B-B-A pattern or formula. This resulted in two training groups: 11 students in the drill group and 11 students in the hanging ball training group. This research was conducted at SMA BK Palu from February 14, 2025, to March 15, 2025.

Data collection technique

The data collection technique used in this study was a high-level serve test to determine the abilities of extracurricular students at SMA BK Palu.

The procedure for conducting the high-level serve accuracy test is as follows:

1. The purpose is to measure service skills.
2. The equipment used for this test is:
 - a. Sepak takraw playing field
 - b. Several sepak takraw balls
 - c. Sepak takraw net
 - d. Score recording form, and
 - e. A ball thrower.
3. Implementation procedure:

- a. Subjects serve to the opponent's court, which has been scored.
- b. Each subject is allowed to serve 10 times.
4. The scoring method for this test is as follows:
 - a. The score is taken from the score in the target area where the ball lands.
 - b. If the ball lands exactly on the line separating the two target squares, the highest score is recorded.
 - c. Balls that hit the net or go out of play are not scored.
5. Scoring
 - a. Excellent serve: 5 points
 - b. Good serve: 4 points
 - c. Fair serve: 3 points
 - d. Poor serve: 2 points
 - e. Very poor service: 1 point
6. The total score is calculated from the total points earned from 10 serves. The maximum score is 50 points.
7. Scoring categories
 - a. Excellent: 41-50 points
 - b. Good: 31-40 points
 - c. Fair: 21-30 points
 - d. Poor: 11-20 points
 - e. Very poor: 0-10 points

Research Instruments

The research instrument, in principle, is to research by taking measurements, so it requires a good measuring tool (Sugiyono, 2015:147). The instrument in this research is a treatment instrument.

Data Analysis Techniques

Because this study uses an experimental method regarding causal relationships, data analysis in this study is done by comparing the pretest and posttest.

Normality Test

The normality test is a test conducted with the aim of assessing the distribution of data in a group of data or variables, whether the data distribution is normally distributed or not.

Hypothesis Testing

A hypothesis is a guess or temporary answer to a problem that still needs to be tested for its truth. After all the data has been collected, the next step is to analyze the data. The data analysis technique for analyzing experimental data is to use the t-test (table). The t-test (t-table) will be calculated using SPSS. To determine whether or not the passing is significant after the pretest and posttest, the t-test results are consulted with the t-table at a significance level of 95%.

After all the above requirements are met, then the statistical calculation using the t-test formula can be started. To find the mean difference (MD), use the formula:

$$MD = \frac{\sum D}{N}$$

The t-test calculation in research is guided by the t-test analysis technique by Arikunto (2018) with the following formula:

$$t = \frac{MD}{\sqrt{\frac{\sum d^2}{n(n-1)}}}$$

In order to be said to be significant at the level of similarity of characteristics, the t value must be equal to or greater than ttable. The degree of magnitude (dk) of this t-test is (n-1).

RESULTS AND DISCUSSION

Result

The results of this study are in line with previous findings showing that drills are effective in improving service skills in sepak takraw. For example, research by Pambudi and Sulendro (2022) showed that side serve drills improved service accuracy in sepak takraw athletes in Trenggalek. Furthermore, research by Nur et al. (2024) found that drills improved the serving ability of the sepak takraw team in Louk Village. Similarly, hanging ball training is effective in improving overhead serve skills in sepak takraw. Research by Kurnawan (2021) showed that hanging ball training affects the accuracy of the sila serve. Furthermore, research by Aji & Yudhistira (2023) showed that hanging ball training improves kedeng smash skills in sepak takraw athletes.

A comparison of these two training methods shows that both are effective in improving the accuracy of the sila serve. Research by Hadjarati and Haryanto (2021) found that both service training models significantly influenced the accuracy of the flash serve in sepak takraw. Furthermore, research by Nizam and Sugiyanto (2018) showed that ball modifications can improve learning outcomes in sepak takraw serves.

This study places itself within the context of current research examining the effectiveness of various training methods in improving serving skills in sepak takraw. Most previous research has emphasized the effectiveness of drills and suspended balls separately. However, this study contributes by comparing the two methods in the same context, demonstrating that both have a significant effect on improving the accuracy of the sila serve. These findings are important for developing more effective training programs in sepak takraw, particularly at the extracurricular level.

Normality Test

The normality test is used to determine whether the variables have a normal distribution. This normality test uses the Kruskal-Wallis method with the Kolmogorov-Smirnov technique, processed using SPSS. The summary results are as follows:

Table 2.

Summary of the Results of the Normality Test for the Service Accuracy Data

Variable	Group 1		Group 2		Sig	Information
	Beginning	End	Beginning	End		
Kolmogorov Smirnov	0,754	0,884	0,754	0,815	0,05	Normal
Asymp. Sig. (2-tailed)	0,621	0,415	0,621	0,519		Normal

From the results of the normality test above, it was found that the Kolmogorov value and the Asymp. Sig. Value (2-tailed) had a value greater than sig or $\alpha = 0.05$. This means that the Kolmogorov-Smirnov value (z) obtained is smaller than the table, so all variables are normally distributed. Because all data are normally distributed, data analysis can be continued.

Table 3.

Data on the Results of the Initial and Posttests of the Accuracy of Service Sila

No	Sample	Service Sila Accuracy			
		Pretest Score	Assessment Categories	Skor Posttest	Assessment Categories
1	Mv	19	Poor	24	Enough
2	le	18	Poor	24	Enough
3	In	18	Poor	24	Enough
4	Jn	17	Poor	24	Enough
5	Da	17	Poor	22	Enough
6	Gb	17	Poor	22	Enough
7	Si	17	Poor	21	Enough
8	Kk	16	Poor	20	Enough
9	Rf	16	Poor	22	Enough
10	Kd	16	Poor	22	Enough
11	St	16	Poor	22	Enough
Total		187		247	
Maximum		19		24	
Minimum		16		20	
Average		17		22,45	
Median		17		22	
Std. Deviation		1		1,36848	

The table above shows that the accuracy of the sila service in the sepak takraw game for extracurricular students of SMA BK Palu in the pretest before the implementation of the drill exercise obtained a total of 187, maximum value = 19, minimum value = 16, average value = 17, median value = 17, with a standard deviation value = 1. While in the implementation of the posttest after the implementation of the drill exercise obtained a total of 247, maximum value = 24, minimum value = 20, average value = 22.45, median value = 22, with a standard deviation value = 1.3684.

Table 4.

Data on the Results of the Initial and Posttests of the Accuracy of Sila Service

No	Sample	Service Sila Accuracy			
		Pretest Score	Assessment Categories	Skor Posttest	Assessment Categories
1	Aa	19	Poor	24	Enough
2	Ee	18	Poor	23	Enough
3	Rh	18	Poor	22	Enough
4	Rv	17	Poor	23	Enough
5	Rd	17	Poor	22	Enough
6	Pt	17	Poor	21	Enough
7	Rn	17	Poor	19	Poor
8	Im	17	Poor	22	Enough
9	Ge	16	Poor	22	Enough
10	DI	16	Poor	20	Enough

11	GI	15	Poor	19	Poor
Total		187		237	
Maximum		19		24	
Minimum		15		19	
Average		17		21,54	
Median		17		22	
Std. Deviation		1,09545		1,63485	

The table above shows that the accuracy of the sila service in sepak takraw games for extracurricular students of SMA BK Palu in the pretest before the implementation of hanging ball training obtained a total of 187, maximum value = 19, a minimum value = 15, an average value = 17, a median value = 17, with a standard deviation value = 1.09545. While in the implementation of the posttest after the implementation of hanging ball training, a total of 237 was obtained, maximum value = 24, a minimum value = 19, an average value = 21.54, a median value = 22, with a standard deviation value = 1.63485.

Table 5.

Difference Test Results of Pretest and Posttest of Sila Service Accuracy Drill Practice

No	Pretest (X ₁)	Posttest (X ₂)	D (X ₂ -X ₁)	d (D-MD)	d ²
1	19	24	5	-0,45	0,2025
2	18	24	6	0,55	0,3025
3	18	24	6	0,55	0,3025
4	17	24	7	1,55	2,4025
5	17	22	5	-0,45	0,2025
6	17	22	5	-0,45	0,2025
7	17	21	4	-1,45	2,1025
8	16	20	4	-1,45	2,1025
9	16	22	6	0,55	0,3025
10	16	22	6	0,55	0,3025
11	16	22	6	0,55	0,3025
∑	187	247	60	0,05	8,7275
Mean	17	22,45			

The analysis results in the table above show the overall results of the pretest or ($\sum X_1 = 187$) the overall results of the posttest or ($\sum X_2 = 247$) with the difference value of the pretest (X₁) and the posttest (X₂) of ($\sum d = 60$) and the variance value of the initial and posttests of ($\sum d^2 = 8.7275$). The calculation to find the mean deviation (MD) value is as follows:

$$MD = \frac{\sum D}{N} \quad MD = \frac{60}{11} \quad MD = 5,45$$

Then continue with the t-test calculation using the formula:

$$t = \frac{MD}{\sqrt{\frac{\sum d^2}{N(N-1)}}} = \frac{5,45}{\sqrt{\frac{8,7275}{11(11-1)}}} = \frac{5,45}{\sqrt{\frac{8,7275}{110}}} = \frac{5,45}{0,281} = 19,39$$

Based on the results of statistical calculations, the t count was 19.39 with a significance of 5% ($\alpha = 0.05$) from d.b = (N-1) = 11 - 1 = 10, the t table value was obtained = 2.228, this means that the t count value is greater than the t table or 19.39 > 2.228. From the results of the analysis above, it can be concluded that the hypothesis stating, There is an effect of drill training on the accuracy of sila service in sepak takraw games for extracurricular students of SMA BK Palu, is accepted.

Table 6.
 Difference Test Results of Pretest and Posttest of Hanging Ball Exercise for Sila's Service Accuracy

No	Pretest (X ₁)	Posttest (X ₂)	D (X ₂ -X ₁)	d (D-MD)	d ²
1	19	24	5	0,45	0,2025
2	18	23	5	0,45	0,2025
3	18	22	4	-0,55	0,3025
4	17	23	6	1,45	2,1025
5	17	22	5	0,45	0,2025
6	17	21	4	-0,55	0,3025
7	17	19	2	-2,55	6,5025
8	17	22	5	0,45	0,2025
9	16	22	6	1,45	2,1025
10	16	20	4	-0,55	0,3025
11	15	19	4	-0,55	0,3025
∑	187	237	50	-0,05	12,7275
Mean	17	21,54			

The analysis results in the table above show the overall results of the pretest or (∑ X₁= 187) the overall results of the posttest or (∑ X₂= 237) with the difference value of the pretest (X₁) and the posttest (X₂) of (∑d= 50) and the variance value of the initial and posttests of (∑d²= 12.7275). The calculation to find the mean deviation (MD) value is as follows:

$$MD = \frac{\sum D}{N} \quad MD = \frac{50}{11} \quad MD = 4,55$$

Then continue with the t-test calculation using the formula:

$$t = \frac{MD}{\sqrt{\frac{\sum d^2}{N(N-1)}}} = \frac{4,55}{\sqrt{\frac{12,7275}{11(11-1)}}} = \frac{4,55}{\sqrt{\frac{12,7275}{110}}} = \frac{4,55}{0,340} = 13,38$$

Based on the results of statistical calculations, the t count was 13.38 with a significance of 5% (α = 0.05) from d.b = (N-1) = 11 - 1 = 10, the t table value was obtained = 2.228, this means that the t count value is greater than the t table or 13.38 > 2.228. From the results of the analysis above, it can be concluded that the hypothesis stating, There is an effect of hanging ball training on the accuracy of the sila service in sepak takraw games for extracurricular students of SMA BK Palu, is accepted.

Table 7.
 Difference Test Results Between the Two Posttest Groups

No	(X ₁)	(X ₂)	D (X ₁ -X ₂)	d (D-MD)	d ²
1	24	24	0	-0,90	0,81
2	24	23	1	0,1	0,01
3	24	22	2	1,1	1,21
4	24	23	1	0,1	0,01
5	22	22	0	-0,90	0,81
6	22	21	1	0,1	0,01
7	21	19	2	1,1	1,21
8	20	22	-2	-2,9	8,41
9	22	22	0	-0,90	0,81
10	22	20	2	1,1	1,21
11	22	19	3	2,1	4,41
∑	247	237	10	0,1	18,91
Mean	22,45	21,54			

The analysis results in the table above show the overall results of the posttest in the drill training group or ($\sum X_1 = 247$) the overall results of the posttest in the hanging ball training group or ($\sum X_2 = 237$) with the difference value of the posttest (X_1) and (X_2) of ($\sum d = 10$) and the variance value of ($\sum d^2 = 18.91$). The calculation to find the mean deviation (MD) value is as follows:

$$MD = \frac{\sum D}{N} \quad MD = \frac{10}{11} \quad MD = 0,90$$

Continued with the t-test calculation process using the t-test formula as follows:

$$t = \frac{MD}{\sqrt{\frac{\sum d^2}{N(N-1)}}} = \frac{0,90}{\sqrt{\frac{18,91}{11(11-1)}}} = \frac{0,90}{\sqrt{\frac{18,91}{110}}} = \frac{0,90}{0,414} = 2,17$$

The results of the different test calculations obtained a t-value of 2.17 at a significance level of 5% ($\alpha = 0.05$) from d.b = ($N-1$) = $11 - 1 = 10$, obtained a t-table value of 2.228. From these results, it is stated that the t-value is smaller than the t-table or $2.17 < 2.228$. So it can be concluded that the hypothesis that states, there is a difference in the effect of drill training and hanging ball training on the accuracy of sila service in sepak takraw games in extracurricular students of SMA BK Palu, is rejected.

Discussion

The results of this study are in line with previous findings showing that drills are effective in improving service skills in sepak takraw. For example, research by Pambudi and Sulendro (2022) showed that side serve drills improved service accuracy in sepak takraw athletes in Trenggalek. Furthermore, research by Nur et al. (2024) found that drills improved the serving ability of the sepak takraw team in Louk Village. Similarly, hanging ball training is effective in improving overhead serve skills in sepak takraw. Research by Kurnawan (2021) showed that hanging ball training affects the accuracy of the sila serve. Furthermore, research by Aji & Yudhistira (2023) showed that hanging ball training improves kedeng smash skills in sepak takraw athletes.

A comparison of these two training methods shows that both are effective in improving the accuracy of the sila serve. Research by Hadjarati and Haryanto (2021) found that both service training models significantly influenced the accuracy of the flash serve in sepak takraw. Furthermore, research by Nizam and Sugiyanto (2018) showed that ball modifications can improve learning outcomes in sepak takraw serves.

This study places itself within the context of current research examining the effectiveness of various training methods in improving serving skills in sepak takraw. Most previous research has emphasized the effectiveness of drills and suspended balls separately. However, this study contributes by comparing the two methods in the same context, demonstrating that both have a significant effect on improving the accuracy of the sila serve. These findings are important for developing more effective training programs in sepak takraw, particularly at the extracurricular level.

CONCLUSION

Based on the findings of the research and data analysis conducted by the researcher, the proposed hypothesis was proven to be accepted. Therefore, the following conclusions can be drawn:

Drill training affects the accuracy of the sila serve in sepak takraw for extracurricular students at SMA BK Palu. This is evidenced by the results of the data analysis, which showed a calculated t-value of $19.39 > t\text{-table} = 2.228$.

Hanging ball training affects the accuracy of the sila serve in sepak takraw for extracurricular students at SMA BK Palu. This is evidenced by the results of the data analysis, which showed a calculated t-value of $13.38 > t\text{-table} = 2.228$. This means that H_0 is rejected.

There is no difference in the effect of drill training and hanging ball training on the accuracy of the sila serve in sepak takraw for extracurricular students at SMA BK Palu. This is evidenced by the results of the data analysis, which showed a calculated t-value of $2.17 < t\text{-table} = 2.228$.

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