

The Effect of Groundstroke Training with One-to-One Pattern and Two-to-One Pattern Methods on Tennis Players' Groundstroke Hitting Ability

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ARTICLE INFO

Article history

Received 2024-06-06

Revised 2024-08-13

Accepted 2024-10-02

Keywords

Effect

Training

One-to-one pattern

Two-to-one

Tennis

ABSTRACT

Groundstroke is the dominant stroke made by tennis players during the match. This study aims to determine the effect of training with one-to-one pattern and two-to-one pattern models on the ability of groundstroke shots in Banjarmasin Tennis Center players. The research used experimental method. The subjects in this study were 16 tennis players from Banjarmasin Tennis Center. The sampling technique used was purposive sampling. The research instrument used the hewitt tennis achievement test to determine the ability of groundstroke. Analysis of research data using t-score analysis to test the effect of pre-test and post-test values. The results of this study indicate that both training methods can improve groundstroke ability. The results of data analysis on forehand groundstroke showed that one-to-one pattern training obtained a t-count greater than the t-table $37.80 > 2.36$. In the backhand groundstroke, the t-count is greater than the t-table $29.78 > 2.36$. The forehand groundstroke shows that the two-to-one pattern training obtained a t-count greater than the t-table $24.60 > 2.36$. In the backhand groundstroke, the t-count is greater than the t-table $13.75 > 2.36$. The conclusion of this study is that the one-to-one pattern and two-to-one pattern training methods can be used to improve the ability of tennis players' groundstroke shots. One-to-one pattern training has a significant influence in improving the forehand groundstroke of Banjarmasin Tennis Center tennis players.

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INTRODUCTION

Tennis is the fastest growing competitive sport in the world. In every country this sport has many fans. Field tennis is one of the sports that can be played by men and women of all ages, from children to adults. This game sport can be played in singles or doubles, by two people facing each other or four people facing each other using a net (net) and using a racket (Abdul, 2019; Fauzan, 2024; Irmantara Evita, 2016). The basic principle when playing tennis is to hit the ball by passing over the net and bouncing into the opponent's field (Fahada Zulvid & John Arwandi, 2019; Fauzan & Sarmidi, 2020; Sidik et al., 2023). Good shot quality is if when hitting the ball produces ball rotation that can make it difficult for the opponent to be able to return it (Fahada Zulvid & John Arwandi, 2019). To put pressure on the opponent, the player can equip himself to master various basic techniques of field tennis shots. These basic techniques are used to earn points in the match. The more basic techniques that are mastered by a player, the more complete the player has the opportunity to win the match. In general,

there are several basic techniques that tennis players need to master. These basic techniques include groundstrokes consisting of forehand and backhand (Rizal & Rahmat, 2023) volley also consists of forehand and backhand, serve, lob and overhead smash (Fauzan, 2022) .

Mastery of basic techniques can be used as a very important basic capital to be able to develop the quality of strokes in the sport of field tennis. In tennis matches to obtain achievements, good basic playing skills are needed. In the sport of field tennis requires players to master basic techniques and be proficient in the game (Irmantara Evita, 2016) . Players who have the ability to play techniques that are consistent and thorough can maintain the game well. In every practice, tennis players must do a complete and thorough exercise to improve the necessary aspects. complete and thorough training will produce the maturity level of the player (Nugroho, 2015) . The level of maturity of the player can be seen through the ability to master basic skills that are carried out precisely, correctly, effectively, and efficiently. Through the mastery of these capitals, the skill of mastering the basic techniques of field tennis is a determinant for obtaining increased achievement. Through this, a player to gain mastery of basic techniques and proficiency in playing tennis requires a structured and programmed approach in helping players improve their abilities (Iqbal Halomoan et al., 2023) . To master good basic techniques requires disciplined effort, so as to achieve the expected mastery. Players assisted by the coach must prepare a directed, regular, and programmed training program (Irfan Arifianto & Raibowo, 2020) .

In modern tennis games, this game has been competed into a prestigious match for achievement. Every club or team that competes will try to be able to show their best game and try their best to be able to get achievements (Safitri & Masykur, 2017) . Through field tennis, it is hoped that it will give birth to outstanding players who can bring the good name of the team and its contingent. In a tennis match, every player who competes in a certain event must want to win the match by trying to show his best game to win point after point by showing consistent hitting techniques in the game (Perdana, 2017) . An interesting tennis game will be presented in the form of a tactical, dynamic game, showing excitement, cheerfulness, upholding sportsmanship packaged in the form of an interesting match.

The problems that arise in the field both during training and playing the basic technical abilities mastered by players are still low. This is characterized by the lack of consistency in the basic technical strokes performed by the player. Occasionally the player can hit the shot well and directed, but occasionally the player also makes hitting mistakes that result in the ball being returned to responsibility and can become a counterattack tool from the opponent. In addition, players also make hitting mistakes that result in the ball not passing the net or the ball passing the net *out of the playing field (out)*. With conditions like this, some players who have a low level of basic techniques and playing maturity skills make players fall in the early rounds of the match.

During the match, the dominant stroke that is often used by players is the groundstroke (Saleh, 2019). Groundstroke is one of the techniques that can be used to attack and defend which must get special attention from coaches and players because groundstroke is the dominant stroke technique applied in every game and field tennis match. In the game, generally every player after serving will continue by hitting a groundstroke to run the game. This is also in accordance with what is stated by (Brown, 2016) that groundstroke is a form of stroke that is often done and must be learned because it will be a capital stroke in the game (Scharff, 2014). Why is it necessary to master the groundstroke because of the importance of the stroke and more than half of the whole in the game of tennis using a groundstroke.

Tennis players can hit groundstroke in 2 ways, namely backhand groundstroke and forehand groundstroke (Firdaus et al., 2024; Seff et al., 2017). Forehand groundstroke is a type of stroke that is performed shortly after the ball bounces on the field area where the ball is hit in an open stand or close stand position, and continued by swinging the racket backwards (backswing) followed by swinging the racket forward through the contact point that occurs in front of the body and ends with a followthrough movement by bringing the racket behind the head (finishing). Backhand groundstroke is a type of shot that is carried out after the ball bounces in the field area where the ball is hit with a racket in the position of the back of the hand facing the ball which begins with an openstand or closestand step by swinging the racket from behind the body towards the front so as to create a swing movement to the follow through with a contact point in the front of the body and with the completion of the racket swung to the back of the head.

According to (Robbert Scharff, 2015) groundstroke is a stroke that is hit after the ball bounces first on the playing field and returns the ball by hitting the ball into the opponent's field after the ball bounces. The ball is hit by waiting for the ball to bounce on the playing field by moving closer to the ball. At first the ball that will be hit by the opponent across the net must bounce into the playing field first followed by the player approaching the ball to get the right ball control before the ball bounces on the floor for the second time because the ball cannot bounce to the floor more than once in a tennis game (Fahada Zulvid & John Arwandi, 2019). Judging from the process of movement, the groundstroke technique is carried out when the ball is hit after bouncing first on the playing field, where when doing the player must make movements to the right, left and forward, backward, and sideways in an effort to return the ball (Brown, 2014). Groundstroke is one type of stroke used by each player to keep control and return the ball to the opponent's field so that the game will run. Groundstroke also helps a player to read the ball by looking at the bounce and direction of the ball.

In a tennis game, groundstroke is very important to be able to give pressure to the opponent or place the ball in areas that are difficult to reach by the opponent and placed in certain places as desired. Groundstroke strokes and can also be used to hit defense and attack in an effort to get points. (Jatra et

al., 2020) . Based on the explanation from (Brown, 2014) that the groundstroke is a very efficient stroke in the game of tennis and needs special attention as a major attack weapon to continue the onslaught against the opponent. In the game of tennis, groundstroke is now one of the most important techniques and needs to be well mastered by players, even this stroke is now a deadly stroke technique. The characteristics of this stroke that can push the opponent at difficult points to make mistakes and earn points. This blow is also always used as an opportunity to make a defense before continuing to attack. The use of this stroke is often done in single games and in doubles games (Seff et al., 2017) (Firja Mahardika, 2020) .

In tennis matches, many players lose points and make hitting mistakes because they do not master the backhand groundstroke and forehand groundstroke techniques well (Ngatman & Sulistyatna, 2017) . This is also in accordance with the observation data in the field. From the statistical data of the 2023 Banjarmasin Mayor's Tennis match which was attended by Banjarmasin Tennis Center players, it shows that players often lose points when making groundstroke shots. Match statistics can be observed in table 1 below.

Table 1. Match Statistics

1	Player	2
8	Score	5
7	Double Foul	8
80%	1 st Serve in play won	70%
50%	2 st Serve in play won	65%
12	Unforce error	21
14	Winner	10

From the results of the table above, it can be observed that the success of player 1 in winning points from the first service return by winning the groundstroke was 80% and player 2 was 70%. The success of player 1 winning points from the return of the second serve by winning the groundstroke by 50% and player 2 by 65%. Errors made by player 1 from the results of groundstroke and other strokes 12 times and player 2 21 times. The success of winning the groundstroke duel of player 1 14 times and player 2 10 times.

From these conditions, based on the importance of mastering groundstroke shots to win a tennis match and based on the results of match statistical data, the authors are interested in examining groundstroke shots on tennis players from Sentra Tennis Banjarmasin. Researchers will provide treatment through training programs with the One-to-One Pattern and Two-to-One Pattern Methods (Rive & Williams, 2012) . Through the use of these two methods, it is hoped that it can provide an increase in groundstroke shots on tennis players from Sentra Tennis Banjarmasin.

The *one-to-one pattern* (Rive & Williams, 2012) is practiced by alternating one shot to one half of the court and the next shot to the other half of the court. This pattern can be used to open up on the court to hit winners or to transition and play at the net (attack phase), to repeat the opponent's sprint on the baseline (rally phase), or to counter the opponent's aggression by shortening the reaction time or changing the attack pattern (counterattack phase). It can also be used with increased height and spin to buy more time when the player is rushed (defensive phase). The two-to-one pattern is practiced with two hits made to one side of the court followed by one hit to the other side. This pattern is generally used when the player is on the attack with the aim of getting the opponent on the wrong foot to create an opening, or rallying him to use shots to expose weaknesses. The best way to use this pattern is with two hits to the opponent's weak side followed by a surprise hit to the opponent's strong side. For example, against a left-handed player with a strong forehand shot, this pattern would hit a crosscourt shot to the backhand twice, followed by a shot to the forehand. If against the opponent's strength, the player may choose to hit two balls to the opponent's strength and then attack the opponent's weakness.

METHODS

This study uses experimental research. Experimental research is research to determine the effect of independent variables on the dependent variable (Sugiyono, 2016) . A variable is a research variable that is an attribute or value of an object or trait or of people, or activities that have various variations between one another and have been determined by the researcher with a purpose that will be studied and conclusions drawn (Ulfa, 2021) . This study has 2 variables. These variables consist of independent variables and dependent variables. The independent variables in this study are *one-to-one pattern* training and *two-to-one pattern* training. The dependent variable in this study is the ability to hit *groundstroke*. The research method used is experimental. Experimental research is research that has a meticulous, logical, and systematic nature, to exercise control over planned conditions. Researchers manipulate conditions, stimulate stimuli, experimental conditions, and observe the effects caused by the treatment (Rahmatullah Akbar et al., 2023) .

The determination of the design refers to the opinion of (Sudjana, 2014) that experimental units are grouped in a group in such a way that the experimental units in the group are relatively homogeneous and many experimental units in the group are equal to the number of treatments being studied. The treatment in the study was given as many as 16 meetings conducted over 8 weeks (Lavenia et al., 2020) . Of the 16 times the treatment was given, the researcher took the initial test data at the first meeting and took the final test data at meeting 16 to be able to analyze the effect resulting from the provision of the program. Training carried out for 6-10 weeks can have an impact on improving the tactical, technical, and physical aspects that are better than players who only practice 1-2 weeks (Fikrus Zaman Al Fatoni & David Agus Prianto, 2022) .

This study aims to see how much influence the training given to the variables through the experimental group and the control group based on the results of the initial test with the final test. Initial test data collection with the final test using the *Hewitt tennis achievement* test instrument through a 3-minute groundstroke test in pairs. The test instrument was written by James S. Bosco and Wiliam F. Gustafson (Jack E. Hewitt, 2013) . This test to measure groundstroke has a validity level of 0.63 and for the reliability level of 0.75.

Population

Population can be interpreted as all elements in the research including objects and subjects with certain characteristics and characteristics which are not just the number of subjects studied but include all the properties or characteristics possessed by the subject (Amin et al., 2023; Astriani et al., 2023) . The population in this study were tennis players from Sentra Tenis Banjarmasin, totaling 22 people. After determining the research population, the next step is to determine the research sample. Samples according to (Sugiyono, 2016) part of the number and characteristics possessed by the population. Meanwhile, according to (Arikunto, 2016) the sample is a representative or part of the population to be studied.

Sample

Based on certain considerations, researchers did not take all members of the Banjarmasin Tennis Center tennis players. The sampling used in this study was purposive sampling technique. Purposive sampling is a technique for determining samples through certain considerations (Sugiyono, 2016) . Meanwhile, according to (Lenaini, 2021) purposive sampling is a procedure carried out by researchers to ensure the criteria or characteristics possessed by which respondents can be selected as samples. What the researcher considers in determining the sample in this study is 1) active players who are members of the Banjarmasin Tennis Center tennis team, 2) active players practicing, 3) members are still actively participating in championships at least at the city / district level, The number of samples in this study were 16 players. The location in this study was at the Mulawarman Tennis Court on Jalan Batu Besar, Teluk Dalam Village, Central Banjarmasin District, Banjarmasin City, South Kalimantan Province. The field used in this study has good condition and is routine for practicing.

Procedure

This research is an experimental research. The pattern used in this study uses the Match Subject Design Pattern procedure. The Match Subject Design pattern is matching through subjects and subjects. In grouping groups, researchers made two groups, namely the experimental group and the control group. The pairing used is ordinal pairing. The step used to balance the experimental group and the control

group is done by subject matching ordinal pairing. This step is a subject whose results are the same or almost the same in the initial test, ranked then paired with the AB-BA formula. The method aims to form two groups that have a balanced level of ability. This aims to provide equal opportunities for both groups to become experimental groups and control groups, so that there is no subjectivity from researchers in determining groups. Researchers determined that those in the experimental group would do *one-to-one pattern* training and those in the control group would do *two-to-one pattern* training.

The steps taken in group formation are:

1) Conduct an initial test to determine the ability of *groundstroke*. The data from this initial test is used by researchers as a basis for determining the experimental group and control group. The test instrument used to collect initial data is using the *Hewitt Tennis Achievement Test*. This initial test is carried out with the sample procedure determining the pair. Each pair prepares in the baseline area to hit a *groundstroke* for 3 minutes. Data acquisition is taken from the number of appropriate strokes successfully performed by each pair.

2) Divide the groups into two, namely the experimental group and the control group. The treatment in this study was the experimental group doing *one-to-one pattern* exercises and the control group doing *two-to-one pattern* exercises. The training was done 3 times a week and lasted for 5 weeks. This training frequency is in accordance with the consideration of (M.L Fox, 2013) .

3) After the experiment was completed, the final test data was collected with the same test instrument as the initial test. The final test was carried out with the aim of knowing the development of the training results that each sample had achieved from each group (Fauzan, 2022; Wanli, 2011) after carrying out the training program for 14 meetings.

Data Design and Analysis

The treatment carried out by researchers through the provision of programs and tests has been completed. The next step taken by the researcher is to tabulate the data which aims to calculate descriptive statistics. Hypothesis testing is carried out by testing the requirements, namely the data normality test and homogeneity test using Kolmogorov Smirnov and chi-square. The next step is to conduct a paired t-test. The analysis of the experimental results is based on the matching subject (M-S) using the t-test on the correlated sample (Hadi, 2015) . Research hypothesis testing is carried out with the provisions on the initial test results if the t-count value is equal to or greater than the t-table then the hypothesis is declared null or rejected. If the result of the t-count value is smaller than the t-table value, the hypothesis is declared null or accepted. If the results of the initial test at the time of the final test the t-count value is greater than the t-table then the hypothesis is declared null accepted. If the t-count value

is smaller than the t-table, the hypothesis is rejected. This data processing uses computerization with the Statistical Product and Service Solutions (SPSS) system.

RESULTS AND DISCUSSION

Data analysis is carried out with the aim of processing data from research so that the data can be interpreted validly. Through data analysis, researchers will obtain answers to the problems that have been studied and obtain answers to hypotheses. Data processing is carried out through predetermined procedures with statistical formulas so that conclusions are obtained in accordance with the research objectives.

Based on the results of statistical data processing, after the researcher ranks the sample scores from the highest score to the lowest score. The next step is to group through the AB-BA category. After grouping, group A and group B were obtained. Group A is the experimental group given *one-to-one pattern* training and group B is the control group given *two-to-one pattern* training. The next step taken by researchers is to find the average score and standard deviation. These values are useful for testing normality, homogeneity, improvement, and hypothesis testing. The results of data analysis are presented in table 2.

Table 2. Results of Forehand Groundstroke Data Analysis

Group	Test	X	Sd
Group A (<i>One-to-one pattern exercise</i>)	Initial Test	44,75	7,22
	Final Test	53,50	7,36
	Improved	8,75	
Group B (<i>Two-to-one pattern exercise</i>)	Initial Test	44,81	6,26
	Final Test	51,38	6,35
	Improved	6,57	

Based on the table above, it can be seen that the results of group A in the initial test amounted to 44.75 the final test amounted to 53.50 an increase of 8.75 the results of group B in the pre-test amounted to 44.81 the final test amounted to 51.38 an increase of 6.57.

Table 3. Results of Backhand Groundstroke Data Analysis

Group	Test	X	Sd
Group A (<i>One-to-one pattern exercise</i>)	Initial Test	39,75	7,22
	Final Test	46,63	7,46
	Improved	6,88	
Group B (<i>Two-to-one pattern exercise</i>)	Initial Test	39,81	6,26
	Final Test	44,75	6,74
	Improved	4,94	

Based on the table above, it can be seen that the results of group A in the initial test amounted to 39.75 the final test amounted to 46.63 an increase of 6.88 the results of group B in the pre-test amounted to 39.81 the final test amounted to 44.75 an increase of 4.94.

Normality Test of Preliminary and Final Test Data

The next step of data analysis is to test the normality of the data using the Lilliefors statistical test. The results of testing the normality of the initial and final test data for both groups can be seen in Table 3.

Table 4. Results of Normality Test Data for Forehand Groundstroke Preliminary and Final Tests

Group	Test	Counter	Llabel	Interpretation
Group A (<i>One-to-one exercise</i>)	Initial Test	0,1483	0,285	Normal
	Final Test	0,1070	0,285	Normal
Group B (<i>Two-to-one exercise</i>)	Initial Test	0,1440	0,285	Normal
	Final Test	0,1272	0,285	Normal

Based on Table 2 above, it is known that the calculated L value (L₀) of the initial test and final test for both groups is smaller than the L table at the real level of 0.01 with the number of samples (N) 8. Thus, it means that the data is normally distributed. This refers to the Lilliefors normality test criteria that if L count (L₀) < L table, then the data is normally distributed. Meanwhile, if L count (L₀) > L table, then the data is not normally distributed.

Table 5. Normality Test Results of Initial Test Data and Final Test Backhand Groundstroke

Group	Test	Counter	Llabel	Interpretation
Group A (<i>One-to-one exercise</i>)	Initial Test	0,1483	0,285	Normal
	Final Test	0,1121	0,285	Normal
Group B (<i>Two-to-one exercise</i>)	Initial Test	0,1440	0,285	Normal
	Final Test	0,1249	0,285	Normal

Based on Table 2 above, it is known that the calculated L value (L₀) of the initial test and final test for both groups is smaller than the L table at the real level of 0.01 with the number of samples (N) 8. Thus, it means that the data is normally distributed. This refers to the Lilliefors normality test criteria that if L count (L₀) < L table, then the data is normally distributed. Meanwhile, if L count (L₀) > L table, then the data is not normally distributed.

Hypothesis Test

The hypotheses in this study are (1) *One-to-one pattern* training has a significant effect on the *backhand* skills of JPOK ULM tennis players. (2) *Two-to-one pattern* training has a significant effect on the *forehand* skills of JPOK ULM tennis players. Hypothesis testing of group A and group B training results is presented in Table 5 below.

Table 8. Hypothesis Testing of Group A and B Forehand Groundstroke Training Results

Group	X	t hit	t table	Interpretation
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A	51,38	37,80	2,36	Significant
B	53,50	29,78	2,36	Significant

Based on the results of the t test calculation, it shows that there is no difference in the two test groups, at a real level of 0.01. This shows that *one-to-one pattern* training (Group A) and *two-to-one pattern* training (Group B) have the same effect on *backhand* ability. Thus the null hypothesis is accepted, and the alternative hypothesis is rejected.

Table 9. Hypothesis Testing of Group A and B Backhand Groundstroke Training Results

Group	X	t hit	t table	Interpretation
A	39,75	24,60	2,36	Significant
B	44,75	13,75	2,36	Significant

Based on the results of the t test calculation, it shows that there is no difference in the two test groups, at a real level of 0.01. This shows that *one-to-one pattern* training (Group A) and *two-to-one pattern* training (Group B) have the same effect on *backhand* ability. Thus the null hypothesis is accepted, and the alternative hypothesis is rejected.

The results of this study indicate that one-to-one pattern and two-to-one pattern training can improve the ability of groundstroke. The results of data analysis on forehand groundstroke show that one-to-one pattern training gets t-count greater than t-table $37.80 > 2.36$. In the backhand groundstroke, the t-count is greater than the t-table $29.78 > 2.36$. The forehand groundstroke shows that the two-to-one pattern training obtained a t-count greater than the t-table $24.60 > 2.36$. In the backhand groundstroke, the t-count is greater than the t-table $13.75 > 2.36$. *One-to-one pattern* training and *two-to-one pattern* training are *backhand* tennis skills training that can contribute to improving the achievement of training goals. This is in accordance with (Rive & Williams, 2012) that *one-to-one pattern* training has an influence on improving *groundstroke* ability. Both of these exercises require players to be able to control the ball that is directed at the opponent's field. The more the player can direct the ball to the desired destination, the player will be able to hit groundstrokes consistently. *One-to-one pattern* training in its application is easier because the player is assigned to direct the ball to *one* target field (one pair), while *two-to-one pattern* training in its application is more difficult because the player is assigned to be able to direct the ball to two target fields. In other words, the *two-to-one pattern* training exercise focuses more on the player's ability to divide the direction of the ball to the right and left of his partner.

In the *two-to-one pattern* exercise, a player needs body agility to be able to change the direction of the target to the right and left. Before having good agility, players must master ball control first. One of the training stages that can be used to improve control over the ball is to

use *one-to-one pattern* training. Groundstroke shots made during the match really require players to be able to reach the direction of the ball from various sides. This reach can be obtained if the player has good agility. The direction of the ball during the match is very difficult to guess so players need to have good agility. Because in every match the player must be able to master the field by moving to the right, left, forward, and backward quickly to be able to move quickly in the direction of the ball, hit the ball and return to chase the ball hit by the opponent (Ade Ros Riza, 2018) . Agility is one of the important aspects in a field tennis game. With good agility, players can reach wherever the ball is coming from by closing each side of the field.

This study applied the one two one method in the tennis groundstroke training process. Through this exercise, the sample practiced one with one to try to return the ball to their partner well. Samples with a good response can direct the ball and manage the power of the ball consistently. This research has relevant research testing the one two one model. From this relevant research there is a comparison of research with the results of research (Muliana & Mahmud, 2018) applying the one two one method in the learning process. Researchers identified the process and response of feedback given in learning. From the results of this study obtained a learning process that runs with an organized and active and enthusiastic sample so as to obtain an effective increase in learning outcomes.

From the results of this study, the novelty of this research is that there is no similar research that compares the effect of training methods one-to-one pattern and two-to-one pattern in field tennis. The limitation in the study is that the sample used through purposive sampling technique where the researcher selects the sample using certain criteria so that the sample has the same initial ability of basic techniques. Recommendations for further research are to apply this exercise through a more homogeneous sample in mastering basic techniques.

CONCLUSION

Based on the results of data analysis in this study, it can be concluded that the one-to-one pattern and two-to-one pattern training methods can be used to improve the groundstroke ability of tennis players. One-to-one pattern training is known to have a significant influence in improving the ability of forehand groundstroke shots of Banjarmasin Tennis Center tennis players.

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