

The Effect Of Paired And Wall Top Passing Exercises On Skill, Passing Over Volleyball Games

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ABSTRACT

This study aims to examine the effect of paired passing and wall passing exercises on students' overhead passing skills in volleyball extracurricular activities at SMP Negeri 2 Balaesang. The study employed a purposive sampling technique, involving 20 male students selected based on specific criteria. The research design used was a matching by subject design, in which participants with similar pre-test scores were paired using an ordinal pairing technique with an AB-BA format to ensure balanced group abilities. The participants were divided into two experimental groups: the first group received paired passing training, while the second group underwent wall passing training. The research method applied was a pre-test and post-test experimental design. The results showed that: (1) paired passing exercises had a significant effect on overhead passing skills, with a t-value of 15.213 exceeding the t-table value of 2.262; (2) wall passing exercises also showed a significant effect, with a t-value of 11.129 exceeding the t-table value of 2.262; and (3) there was a difference in effectiveness between the two training methods, where the paired passing group achieved a mean score of 25.8 with an improvement of 6%, while the wall passing group obtained a mean score of 25.7 with an improvement of 5.1%. In conclusion, both training methods significantly improve overhead passing skills, with paired passing exercises showing slightly higher effectiveness compared to wall passing exercises..

Keywords: training effect, paired passing, wall passing, overhead passing, volleyball.

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INTRODUCTION

Volleyball is a sport with a long history and rapid development in various countries. It was first invented in 1895 by William G. Morgan, a physical education instructor at the Young Men's Christian Association in Holyoke, Massachusetts, United States. Initially, the game was called "Mintonette," which had characteristics similar to badminton, particularly in terms of keeping the ball from hitting the floor (Reeser 2017). Over time, the game underwent various refinements until it became known as volleyball as it is today. The introduction of volleyball to Indonesia was inextricably linked to the influence of Dutch colonial rule around 1928. During this period, the colonial government brought in physical education instructors from the Netherlands to develop various sports in Indonesia, including volleyball. Since then, volleyball has become widely known and developed among the public, both as a recreational and competitive sport.

Physical education, sports, and health (PJOK) plays a crucial role in the school learning system, particularly at the junior high school level. This subject serves not only as a supplement

but also as a means to develop students' cognitive, affective, and psychomotor aspects in a balanced manner. Through PJOK learning, students are expected to gain meaningful learning experiences and demonstrate positive behavioral changes (Casey et al., 2021). PJOK learning is implemented through various systematically and structured physical activities. These activities aim to improve physical fitness, develop basic movement skills, and instill knowledge and attitudes about healthy living in students (Taqwim & Winarno, 2020). In practice, the success of PJOK learning is greatly influenced by the training methods used by teachers, particularly in teaching basic technical skills in a sport.

Based on observations at SMP Negeri 2 Balaesang, it was found that students' ability to perform overhead passing techniques in volleyball is still suboptimal. This is evident in the lack of ball control, accuracy of direction, and coordination of movements when passing. This condition is a problem that needs to be addressed immediately, considering that the sports facilities available at the school are actually quite adequate to support the volleyball learning process. This problem indicates that the training method factor plays a significant role in improving student skills. Therefore, an appropriate and effective training approach is needed. In this case, overhead passing training in pairs and overhead passing training against a wall are seen as alternative solutions that can be implemented to improve students' overhead passing skills. Pair training allows for direct interaction and feedback between students, while training against a wall provides an opportunity for intensive and independent repetition of movements.

This research is crucial to determine the effect of these two training methods on improving students' overhead passing skills in volleyball at SMP Negeri 2 Balaesang. The results are expected to contribute to the development of more effective and efficient physical education (PJOK) learning methods, particularly in improving mastery of basic volleyball techniques.

METHOD

The type of research that will be used in this study is experimental research, which is characterized by the presence of an initial test (pretest) and a final test (posttest). Finally, a final test will be carried out to measure the results. (Sahgal, 2024). Based on the explanation regarding the type of research used in this study is an experiment, the design or design that will be used is Matching by subject design or MS pattern (Pandis, 2019). Furthermore, to balance the two groups in this study, the researcher applied the subject matching method with an ordinal pairing approach, where subjects who had the same or almost the same results in the initial test were paired using the AB-BA formula (Suresh, 2020). In this way, two groups were obtained with a balanced level of ability. From these two equal groups, a lottery was conducted to provide a fair opportunity for each group, so that they could become experimental group 1 which participated in the overhead passing exercise in pairs, or experimental group 2 which did the overhead passing exercise against a wall (Tanious et al., 2024). This approach aims to avoid subjectivity from the researcher.

A sample is a part of a population selected to represent the overall characteristics of the population in a study, where the selection is made based on certain considerations according to the research objectives (Andrade, 2020). In this study, the sample taken were students from SMP Negeri 2 Balaesang. The sampling technique used was purposive sampling, namely selecting subjects based on a

specific purpose, not based on strata, randomness, or region. Thus, the sample in this study consisted of 20 students participating in extracurricular activities at SMP Negeri 2 Balaesang.

The sampling technique used was purposive sampling, which is a technique for determining samples by selecting subjects based on specific criteria or objectives that align with the research needs, rather than randomly or based on regional strata. Therefore, the sample in this study consisted of 20 students participating in extracurricular activities at SMP Negeri 2 Balaesang (Memon et al., 2025).

The data collection technique is in the form of a skills test conducted directly in the field to measure students' abilities before and after being given training treatment (Suhadi et al., 2023). The aim is to measure a particular object or obtain information related to the variables being studied. (Izzuddin & Widyanti, 2021). To take the score, students will be given 60 seconds to try the overhead pass. Some of the scoring processes for the overhead pass include:

Here is a rewrite of the text in a more polished style:

1. Test participants must stand in the center of an area measuring 4.5 x 4.5 meters.
2. The test begins with the participant throwing the ball himself after hearing the signal from the officer.
3. After the ball is thrown, the participant must make an overhead pass with a minimum height of 2.24 meters.
4. If a participant fails to make an overhead pass and the ball goes out of the area, they must immediately pick up the ball and continue making an overhead pass.
5. If both feet of the participant are outside the area, the first official will give the order to immediately return to the area, and balls that are bounced while both feet are outside will not be counted.
6. An overhead pass that is considered valid and counted is one that reaches a minimum height of 2.43 meters and is done within 60 seconds in the area.

Each time data collection is completed, the data obtained will be analyzed using statistics. In this study, the method used to process the data is the t-test formula. The t-test calculation in this study is guided by the t-test analysis technique used to compare the means of two groups in experimental research (Mishra et al., 2021).

RESULTS AND DISCUSSION

RESULTS

This study involved 20 students divided into two groups of 10. The groups were divided using a subject-by-subject matching technique using an ordinal pairing approach, ensuring that the initial abilities of both groups were relatively balanced.

Based on the results of descriptive analysis, the following data were obtained:

1. Paired overhead passing practice group
 - a) Average pretest score: 19.8
 - b) Posttest mean score: 25.8
 - c) There was an increase of 6 points

Table 1. Results of overhead passing skills in the paired overhead passing group

Source of Variation	Initial Test	Final Test
N	10	10
Amount	198	258
Average value	19.8	25.8
Standard deviation (std. Deviation)	2,044	2,530
The highest score	23	30
Lowest value	17	22
Range	6	8

2. Overhead pass training group against the wall

- a) Average pretest score: 20.6
- b) Posttest mean score: 25.7
- c) There was an increase of 5.1 points

Table 2. Results of the passing ability of the over the wall passing group

Source of variation	Initial test	final test
N	10	10
Amount	206	257
Average	20.6	25.7
Standard deviation (std.deviasi)	3,026	2,584
The highest score	25	30
Lowest value	16	21
Range	8	9

The data shows that both groups experienced improvements in their overhead passing skills after receiving the training. The distribution of the data suggests that the improvement in the paired group tended to be more stable than in the wall-based group. This is evident in the relatively small variation in scores between students in the paired groups.

Prerequisite Analysis Test

a) Normality Test

The results of the normality test showed that all pretest and posttest data in both groups had a significance value greater than 0.05. Thus, the research data was declared normally distributed.

Table 3. Results of normality testing of research data

Variables	Test	Upper Passing Class Paired	Overhead Passing Class Kedidning	Kest Status
		Sig.	Sig.	
Passing on	Initial test	0.990	0.974	p>0.05 Normal
Volleyball	Final Test	0.998	0.983	p>0.05 Normal

b) Homogeneity Test

The results of the homogeneity test indicate that the variances of both groups are homogeneous, with a significance value greater than 0.05. This indicates that both groups have comparable data characteristics. With the normality and homogeneity tests met, the analysis can proceed using parametric statistical tests.

Table 4. Results of homogeneity testing

Variables	Sig.	Note	Status
Combined initial test	0.173	$p > 0.05$	Homogeneous
Combined final test	0.952	$p > 0.05$	Homogeneous

c) Hypothesis Testing

a. The Effect of Paired Overhead Passing Practice

The t-test results show that the calculated t-value is 15.213, while the table t-value is 2.262. Since the calculated t-value $>$ table t-value, it can be concluded that there is a significant effect of paired overhead passing training on students' overhead passing skills. The high calculated t-value indicates that the improvement in skills that occurred was very strong and consistent after being given the training treatment.

b. Effects of Overhead Passing Practice against the Wall

The t-test results showed that the calculated t-value was 11.129, which was also greater than the t-table of 2.262. Thus, the overhead pass against the wall exercise also had a significant effect on improving students' overhead passing skills. Although significant, the calculated t-value in this group was lower than that of the paired group, indicating a slightly lower level of influence.

c. Comparison of the Two Training Methods

Based on the results of the comparison of the average posttest scores:

1. Paired groups: 25.8
2. Group to wall: 25.7

Difference in increase:

1. Pair: 6 points
2. To the wall: 5.1 points

DISCUSSION

The results of the study showed that both training methods, namely paired overhead passing training and overhead passing training against a wall, both had a significant effect on improving students' overhead passing skills. This is evident from the calculated t-values in both groups, which were greater than the t-table, indicating that the improvements were not coincidental but rather the result of the systematic training treatment.

These findings align with research showing that repeated basic volleyball technique training using a pre-test and post-test experimental approach has been shown to significantly improve passing skills. Research by Nasution & Siahaan (2024) demonstrated that structured drills significantly improved passing ability, as indicated by a calculated t-value greater than

the t-table. This confirms that the principle of programmed and repetitive training is a key factor in improving basic technique skills.

Furthermore, the improvement in overhead passing skills in this study was also supported by the concept of motor learning, which emphasizes the importance of repetition and variation in training. Continuous training will improve neuromuscular coordination and movement accuracy. This is reinforced by research by Handoyo & Adityatama (2025), who found that a modified training method significantly improved overhead passing skills from cycle to cycle.

Furthermore, the study results showed that pair overhead passing exercises were slightly more effective than wall exercises. This is explained by the direct interaction between players in pair training, which provides more varied and contextual feedback. In the context of sports skills learning, social interaction and varied training situations significantly influence technical performance improvement.

This finding aligns with research by A'la & Sukiyandari (2025), which states that passing practice using a wall or other variations of the practice can improve passing skills. However, its effectiveness is influenced by the type of practice and the context of the game situation. This means that practice that is closer to a real game situation tends to produce more optimal results.

Furthermore, previous research has shown a difference in the contribution of pair passing training and wall training to passing skill outcomes. Pair training tends to be superior because it involves teamwork, timing, and adapting to dynamic ball directions. This is supported by research by Siregar et al. (2021), who found that pair passing training had a greater impact than wall training in improving overhead passing outcomes. On the other hand, wall passing training still contributed significantly to skill improvement. This training has advantages in terms of high movement repetition and training consistency, as it does not rely on a partner. Research by Widodo et al. (2024) showed that wall passing training significantly improved overhead passing ability by improving ball control and directional accuracy. Thus, the results of this study confirm that both training methods have their respective advantages. Pair training is more effective in improving skills related to game situations, while wall training is more effective in improving basic technique consistency through high repetition.

Overall, the findings of this study reinforce the theory that improving basic technical skills in sports is strongly influenced by training principles, including repetition, variation, and specificity. A combination of individual and partner training may be an optimal strategy for maximizing students' overhead passing skills.

CONCLUSION

Based on the research results and data analysis, it can be concluded that pair-based overhead passing and wall-based overhead passing both significantly improved students' volleyball passing skills. Pair-based overhead passing proved to provide more optimal skill improvement than wall-based overhead passing. This suggests that training involving direct player interaction and situations more closely resembling real-life game conditions tends to be more effective in improving fundamental technical skills.

On the other hand, overhead passing against a wall still provides positive results, particularly in improving consistency and mastery of technique through independent repetition of the movement. Therefore, both training methods can be used as alternatives in the learning process, but partner training is recommended for maximizing overhead passing skills.

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