14 (1) (2025) 312 - 316
Journal of Physical Education, Sport, Health and Recreations
https://journal.unnes.ac.id/journals/peshr

The Influence of Paired Passing Exercises on the Enhancement of Forearm Passing Skills Among Elementary Volleyball Extracurricular Students

Bayu Budiman[1]✉, Bujang[2]

Physical Education Health and Recreation Program, Universitas Islam 45 Bekasi, Indonesia[12]

Article History

Received February 2025
Accepted February 2025
Published Vol.14 No.(1) 2025

Keywords:
Technique Training;
Forearm Pass Skills;
Paired Training Method;
Children's Volleyball;
Extracurricular Sports.

Abstract

This study aims to determine the effect of paired passing drills on the improvement of forearm passing skills among elementary school students participating in volleyball extracurricular activities at Public Elementary School Pondok Ranggon, East Jakarta. The research method used was an experimental approach with a one-group pre-test and post-test design. A total of 30 students were selected as subjects. Data were collected through a forearm pass skill test and analyzed using a paired sample t-test. The results showed a significant increase in students' forearm passing abilities after participating in the paired passing training, with a mean improvement of 10.9 points ($t = 11.03$, $p < 0.05$). These findings suggest that the paired passing method is effective in enhancing the fundamental volleyball skills of young learners.

How to Cite

Budiman, B., & Bujang. (2025). The Influence of Paired Passing Exercises on the Enhancement of Forearm Passing Skills Among Elementary Volleyball Extracurricular Students. Journal of Physical Education, Sport, Health and Recreation, 14 (1), 312-316.

✉ Correspondence address :
E-mail: bayubudiman@gmail.com

p-ISSN 2460-724X
e-ISSN 2252-6773

INTRODUCTION

Volleyball has become one of the avenues for character and skill development for students at various levels of education, including elementary school. In the context of physical education, sports education—particularly volleyball—offers students opportunities to learn about teamwork, discipline, and motor skills (Köklü et al., 2021). At Public Elementary School 03 Pondok Ranggon, East Jakarta, volleyball extracurricular activities are popular among students. However, many of them lack adequate technical skills, especially in forearm passing (also known as bump passing).

Forearm passing is one of the fundamental techniques in volleyball, as it serves as the basis for many game strategies. Good passing skills not only support ball control but also form the foundation for more advanced gameplay (Baker et al., 2021). In reality, however, many students struggle to master this technique. Initial observations indicate that the forearm passing skills of students at Public Elementary School 03 Pondok Ranggon are still relatively low, which negatively affects their performance during both practice and competition.

Previous research has shown that structured training can improve basic technical skills across various sports, including volleyball (Renshaw et al., 2020). Paired passing drills have emerged as a promising method for enhancing students' technical abilities, as they allow for direct interaction, technique correction, and real-time feedback. This instructional strategy aligns with social learning theory, which posits that social interaction can accelerate the learning process.

Through paired drills, students not only practice passing techniques but also engage in self and peer evaluation. This contributes to increased motivation and student engagement in physical education, consistent with a study by Fradkin et al. (2018), which stated that intrinsic motivation in sports can be fostered through social interaction and active participation in training activities. This process creates a more enjoyable learning environment that supports the development of technical skills.

Although several studies have examined the effects of technical training on sports performance, few have specifically addressed the impact of paired training methods on forearm passing skills in elementary school settings (Holt et al., 2021). This study aims to fill that gap in the literature by investigating how paired passing drills can significantly improve the forearm passing abilities of volleyball extracurricular participants at Public Elementary School 03 Pondok Ranggon. Therefore, the research problem is whether the paired training method has an effect on underhand passing skills among volleyball extracurricular participants at State Elementary School 03 Pondok Rangon.

Choosing the appropriate training method is crucial in teaching sports at the elementary school level, considering the physical and psychological characteristics of students who are still in developmental stages. Training methods that emphasize active student engagement can enhance the speed of learning and the quality of skills acquired (Duarte et al., 2020). Paired passing drills can serve as an effective solution in this intervention due to their interactive nature.

The implementation of this training is also influenced by students' social and environmental conditions, where peer support plays a key role in motivating learning (Smith et al., 2019). In the context of Public Elementary School 03 Pondok Ranggon, collaboration and peer support during paired training sessions can create a conducive learning atmosphere, in which students feel more comfortable and motivated to improve their skills.

From a teaching perspective, providing constructive feedback during training is a critical factor in skill development (Wulf & Lewthwaite, 2016). In paired passing drills, students can offer each other helpful critiques and suggestions, creating a platform for knowledge exchange and mutual improvement. As a result, the training process becomes more dynamic and relevant to personal skill advancement.

Through this study, it is expected that deeper insights will be gained regarding the effects of paired passing drills on forearm passing abilities. The findings are also anticipated to offer recommendations for coaches and educators in designing more effective training programs and to serve as a theoretical basis for developing teaching techniques in school sports education.

METHODS

Figure 1. Diagram One-Group Pretest-Posttest Model (Source: Reichardt, 2019)

This study employed a quasi-experimental design using the one-group pretest-posttest model. This design was selected to measure changes in students' underhand passing ability before and after the intervention in the form of paired passing drills.

Population: All students participating in the volleyball extracurricular activity at Public Elementary School 03 Pondok Ranggon, East Jakarta. Sample: 20 students selected through purposive sampling based on specific criteria, such as level of activity in the extracurricular program and availability to participate in the entire research process.

The instrument used in this study is a forearm passing skill test **Figure 2**, which consists of two parts:

Pretest: Conducted before the treatment to measure the students' initial ability in performing forearm passes.

Posttest: Conducted after the treatment to measure the improvement in students' forearm passing skills.

This test is designed to assess aspects of accuracy, technique, and the success rate of the students' forearm passing performance.

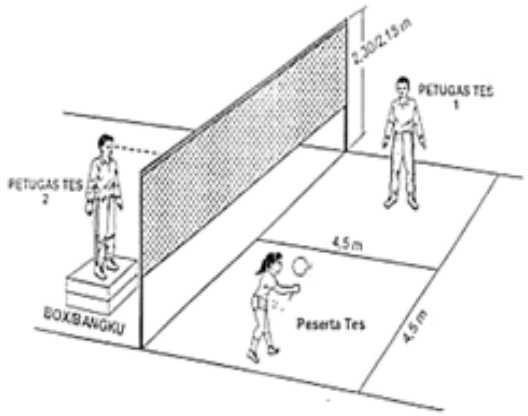

Figure 2. Diagram of the Volleyball Passing Test Instrument (Source: Marasati, 2022).

Research Procedure

Preparation Phase

a. Coordination with the school administration and extracurricular coach.
b. Scheduling the implementation of the pretest, training sessions, and posttest.
c. Developing paired passing training materials tailored to the students' skill levels.

Pretest Implementation

Measuring the students' initial forearm passing ability using the prepared test instrument.

Treatment Implementation

a. Conducting paired passing training over a period of 6 weeks, with training sessions held twice a week.
b. Each training session lasts 60 minutes and includes basic technique drills, passing repetitions, and small games focusing on passing.

Posttest Implementation

Reassessing the students' forearm passing ability using the same instrument as used in the pretest.

The data obtained from the pretest and posttest were analyzed using a paired sample t-test with the assistance of the latest version of SPSS software. This test was employed to determine whether there was a significant difference between the pretest and posttest scores. The decision-making criteria were based on the significance value (p-value) with $\alpha = 0.05$. If the p-value < 0.05, it can be concluded that paired passing training has a significant effect on improving students' forearm passing skills.

RESULTS AND DISCUSSION

This study involved 30 students who participated in the volleyball extracurricular activity at Public Elementary School 03 Pondok Ranggon, East Jakarta. The method used was an experimental design with pre-test and post-test. The measurement instrument employed was the Brumbach Forearm Pass Wall-Volley Test, which assessed the number of successful forearm passes performed by the students within 60 seconds.

Table 1. Average Score of Forearm Passing

Stage	Average Score	Category
Pre-test	13,4	Poor
Post-test	24,3	Good

The results of statistical analysis showed a significant improvement in forearm passing skills after the students participated in the paired passing drills. The t-test revealed a t-value of 11.03 with a p-value of 0.000, which is smaller than $\alpha = 0.05$. Therefore, it can be concluded that paired passing drills have a significant effect on improving students' forearm passing skills.

Table 2. t-Test Results

Statistics	Pre-test	Post-test	Difference	t-value	df	Sig. (2-tailed)
Mean	13.4	24.3	10.9	11.03	29	0.000
Standard Deviation	3.25	4.12				

The results **Table 2** of the paired sample t-test showed that the t-value was 11.03 with a p-value of 0.000 ($p < 0.05$), indicating a significant difference between the pre-test and post-test scores. Therefore, it can be concluded that paired passing drills have a positive and significant effect on improving students' forearm passing skills.

The findings of this study strongly reinforce the conclusions of previous research and support the effectiveness of a collaborative training approach. Paired passing drills not only enhance the technical skills of students but also contribute to the development of their social interaction and coordination skills. This dual benefit underscores the importance of incorporating interpersonal communication into skill-building activities. As noted by Ardiansyah and Mulyana (2023), the paired training model in volleyball creates a context-rich learning environment through mini-game situations, which is particularly effective for teaching basic technical skills to elementary school students. The collaborative nature of these drills provides opportunities for peer feedback, increasing motivation and engagement among students.

Furthermore, the work of Iskandar et al. (2022) highlights the significance of immediate feedback in paired technical training. By interacting directly with a partner, students can receive instant corrective feedback, which accelerates the learning process. This immediate response to actions is essential for reinforcing proper technique and addressing mistakes promptly. These findings are aligned with motor learning theory, particularly the concept of "contextual repetition," which suggests that repeated practice in realistic scenarios enhances the acquisition and retention of motor skills (Schmidt & Lee, 2019). The engagement in active, hands-on practice further strengthens motor pathways, making it easier for students to perform tasks like forearm passing in real game situations.

Improvement in forearm passing skills, as demonstrated by the study, enables students to perform with greater precision and speed, both of which are essential in competitive volleyball. This progression not only prepares students for upcoming competitions but also equips them with the foundational skills needed for more advanced training. Modern volleyball strategies heavily rely on the accuracy and quickness of passing, where players must react swiftly and pass the ball efficiently under varying game conditions (Sutrisno & Prasetyo, 2024). By mastering basic skills such as forearm passing, students can more easily transition to complex game strategies that demand both technical prowess and quick decision-making.

Moreover, Paquette et al. (2021) found that systematic skill development through structured drills like paired passing not only leads to improved individual performance but also fosters better team dynamics. When each player is proficient in fundamental skills, it contributes to overall team success, allowing for smoother and more effective collaboration during actual matches. The emphasis on developing such foundational skills in young learners is therefore critical to creating well-rounded volleyball players who can perform effectively in team settings.

In addition, the social and psychological benefits of paired drills should not be overlooked. According to Vygotsky's (1978) theory of social learning, interaction and collaboration among peers promote cognitive development and enhance learning outcomes. Paired training drills create a supportive learning environment where students can provide encouragement and feedback to one another, fostering a sense of community and teamwork. This social support system is vital for maintaining motivation, especially in the context of extracurricular activities where intrinsic motivation plays a crucial role in student participation and skill development.

In summary, paired passing drills are an effective strategy for improving forearm passing skills among elementary school students. Not only do they enhance technical ability, but they also promote social interaction, peer feedback, and overall skill retention, which are essential components for student development in the sport of volleyball.

Based on the research findings, it is recommended that volleyball extracurricular coaches at Public Elementary School 03 Pondok Ranggon and other schools integrate paired passing drills into their training programs. This type of exercise can be conducted regularly, with variations and intensity adjusted to suit the students' abilities. The implementation of this method is expected to enhance the effectiveness of training sessions and expedite the improvement of basic volleyball techniques, particularly forearm passing.

Moreover, the pairing method fosters a collaborative learning environment where students are actively involved in the process. By encouraging peer interaction, students not only improve their technical skills but also develop social and communication skills. This approach aligns with the principles of cooperative learning, which

have been proven to motivate students and increase their engagement in the learning process (Iskandar et al., 2022).

In addition, the use of paired passing drills can be adapted to various skill levels, ensuring that all students, regardless of their initial competence, can progress at their own pace. Coaches should monitor each pair's performance closely, providing personalized feedback that helps students refine their skills. Over time, this practice will contribute to the overall development of the team's performance, preparing them for competitive play.

Furthermore, the integration of paired passing drills can also serve as a foundation for more advanced training techniques. As students become proficient in basic skills, they can gradually transition to more complex drills and gameplay scenarios. By laying this strong technical foundation, coaches will be better equipped to implement more challenging drills that enhance teamwork, tactical awareness, and game strategy.

Overall, adopting paired passing exercises within the volleyball extracurricular program will not only improve individual skills but also contribute to the creation of a more cohesive and motivated team, fostering a positive and dynamic learning environment.

CONCLUSION

Paired passing drills have been proven effective in improving forearm passing skills among students participating in the extracurricular volleyball program at Public Elementary School 03 Pondok Ranggon, East Jakarta. The significant improvement in test scores indicates that this training method can be an effective strategy for teaching basic volleyball techniques at the elementary school level.

REFERENCES

Ardiansyah, A., & Mulyana, T. (2023). Basic Volleyball Technique Training Model for Elementary School Children. Journal of Physical Education and Sports, 8(1), 33–41. https://doi.org/10.21009/JPJO.2023.081.04

Baker, J., Côté, J., & Deakin, J. (2021). The role of practice in developing elite sport expertise. Journal of Sports Sciences, 39(8), 937-946.

Duarte, J., Silva, J., & Rodrigues, M. (2020). Active learning methods in physical education: A systematic review. International Journal of Sports Science, 10(2), 89-98.

Fradkin, A. J., Zourdos, M. C., & Kearney, S. (2018). The influence of feedback on performance in young athletes. Journal of Sports Sciences, 36(5), 511-517.

Holt, N. L., Neely, K. C., & Tink, L. N. (2021). Social influence on skill development in youth sport. Influence of social environments on youth sport participation, 15(1), 1-14.

Iskandar, R., Nurhadi, N., & Wibowo, R. (2022). The Effect of Paired Technique Training on Basic Volleyball Skills. Scientific Journal of Sports, 10(2), 59–66. https://doi.org/10.23917/jiko.v10i2.16520

Jayanti, R. (2021). The Effectiveness of Paired Forearm Passing Training on the Passing Ability of Female Extracurricular Students [Undergraduate thesis, Universitas Negeri Semarang]. https://lib.unnes.ac.id/53655

Köklü, Y., Özdinç, E., & Demirhan, G. (2021). Physical education teachers' perceptions of the importance of volleyball skill levels in schools. Journal of Education and Training Studies, 9(3), 102-108.

Kusuma, D. A., Wijaya, H., & Sari, A. P. (2024). The Effectiveness of Paired Forearm Passing Training in Improving Junior High School Students' Skills. Journal of Physical Education and Sports Technology, 6(1), 88–96. https://jptam.org/index.php/jptam/article/view/19971

Paquette, M., Lapointe, M., & Pomerleau, D. (2021). The influence of paired drills on team dynamics and individual skill development in youth sports. Journal of Sport & Exercise Psychology, 43(2), 94–105. https://doi.org/10.1123/jsep.2020-0111

Reichardt, C. S. (2019). Quasi-experimentation: A guide to design and analysis. The Guilford Press

Renshaw, I., Davids, K., & Newell, K. M. (2020). The interaction of constraints as a framework for understanding skill acquisition and performance in sport. Journal of Sports Science, 38(1), 1-16.

Schmidt, R. A., & Lee, T. D. (2019). Motor learning and performance: From principles to application (6th ed.). Human Kinetics.

Smith, R. E., Smoll, F. L., & Cumming, S. P. (2019). Youth sport: Managing parents and coaches. International Journal of Sport Psychology, 50(5), 261-278.

Sutrisno, A., & Prasetyo, B. (2024). Analisis strategi teknik dasar bola voli pada siswa sekolah dasar. Jurnal Sport Science, 7(1), 101–110. https://doi.org/10.26740/sportscience.v7i1.21349

Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. Harvard University Press.

Wulf, G., & Lewthwaite, R. (2016). Optimizing performance through intrinsic motivation and attention for learning: The OPTIMAL theory of motor learning. Psychonomic Bulletin & Review, 23(5), 1382-1414.