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EFFECTS OF WALL-BOUNCE AND PAIRED PRACTICE ON OVERHEAD PASSING PERFORMANCE IN SCHOOL VOLLEYBALL

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Abstract

This study compared changes in overhead passing performance after wall-bounce practice and paired practice among male students participating in a school volleyball extracurricular program. A two-group pretest-posttest design was used. All 24 eligible participants were included through total sampling and allocated by ordinal pairing to wall-bounce practice or paired practice. Each group completed 16 training sessions, and performance was measured with a 60-second overhead passing test before and after the program. Data were examined using descriptive statistics, paired-samples tests, and an independent-samples test at the 5% significance level. Both groups improved from pretest to posttest. The wall-bounce group showed a larger descriptive mean gain, but the between-group difference was not statistically significant. Wall-bounce and paired practice were both associated with improved overhead passing performance. Neither method demonstrated clear statistical superiority, suggesting that coaches may select or combine them according to practice objectives, participant numbers, and available facilities.

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INTRODUCTION

The Overhead passing, commonly referred to as setting in volleyball, links ball control with the organization of an attack. At school level, the skill is often difficult to stabilize because successful performance requires players to position themselves under the ball, coordinate the lower and upper limbs, contact the ball with both hands, and control direction and force within a short time. A weak or inconsistent overhead pass interrupts the sequence of play and limits opportunities for teammates to attack. For this reason, repeated and purposeful practice remains a central part of volleyball instruction and extracurricular training.



Practice design matters because repetition alone does not ensure learning. Learners need enough successful contacts to refine movement coordination, but they also need information about the result of each attempt and opportunities to adjust the next response. Contemporary reviews of sport-skill acquisition show that learning is influenced by how tasks, instructions, feedback, and practice schedules are organized (Choo et al., 2024; Carnero-Diaz et al., 2025). Earlier volleyball studies similarly found that different arrangements of blocked, serial, and random practice can produce different acquisition and retention patterns, although the advantage of any single schedule is not consistent across learners and task difficulty (Bortoli et al., 1992; French et al., 1990; Jones & French, 2007). These findings support the need to evaluate accessible practice formats in the settings where they are actually used.

Wall-bounce practice is attractive in schools because it allows each learner to perform many contacts without waiting for a partner. The returning ball also provides immediate information about direction, height, and force: an inaccurate contact produces an observable rebound that can guide the next attempt. Studies conducted in school and extracurricular settings have reported gains in passing after wall-based practice, including overhead passing interventions (Putra et al., 2025; Widodo et al., 2025) and forearm-passing interventions (Alpandi et al., 2023; Pradana & Kusuma, 2025). However, wall practice is relatively predictable and does not fully reproduce the spatial and interpersonal demands of receiving a ball from another player.

Paired practice provides a different learning environment. The trajectory, pace, and placement of the ball vary with the partner's action, requiring the receiver to move, anticipate, and regulate the next pass. It can also provide immediate peer feedback and encourages continuity between successive contacts. Research on paired passing has generally reported improvements in volleyball skills (Kresnapati, 2020; Sepang et al., 2025). Direct comparisons of wall and paired practice for forearm passing have produced positive changes for both formats, with differences between them varying across samples and protocols (Budi, 2021; Ilhamdi et al., 2023; Mardian, 2020; Sudrajat, 2024). Evidence specific to overhead passing remains less extensive.

The practical question is therefore not simply whether either exercise can improve performance, but whether one produces a meaningfully greater change when training exposure is similar. A direct comparison is useful for teachers and coaches who must plan sessions with limited court space, equipment, and supervision. The present study addressed this gap among male vocational-school students participating in extracurricular volleyball. It aimed to examine changes after each format and compare the changes associated with the two methods. It was expected that both groups would improve, while the between-group analysis would indicate whether either format offered a clear advantage under the study conditions.

METHOD

Research Design

The study used a quantitative two-group pretest-posttest design. Both groups completed a baseline test, received a different overhead passing practice program,

and completed the same test after the intervention. Because all participants received an active practice condition and there was no no-training control group, the design estimates within-group change and relative differences between two practice formats rather than isolating the intervention from every possible external influence.

Participants and Group Allocation

The participants were 24 male students enrolled in the volleyball extracurricular program at SMK Islam Tahfizh Kerongkong. Total sampling was used because the eligible population was small and all members met the study requirements. Baseline scores were ordered and participants were allocated through ordinal pairing to create two groups with comparable initial performance. The wall-bounce group and the paired-practice group each included 12 students.

Training Procedures

The intervention consisted of 16 sessions delivered three times per week. The first group practiced overhead passing by directing the ball against a wall and controlling the rebound for the next repetition. This arrangement emphasized individual repetition, consistent hand contact, body positioning, and regulation of ball height and direction. The second group practiced overhead passing with a partner. Participants alternated passes and adjusted their position and force to maintain the exchange. Both formats targeted the same fundamental skill but differed in environmental predictability and the source of the returning ball.

Instrument and Data Collection

Overhead passing performance was assessed with a 60-second skill test before the first training session and after completion of the program. The score was the number of successful overhead passes completed according to the test procedure during the allotted time. The same outcome and testing duration were used at pretest and posttest. Higher scores indicated better performance.

Statistical Analysis

Data were analyzed with IBM SPSS Statistics. Means and standard deviations summarized performance at each measurement. The original analysis assessed normality with the Kolmogorov-Smirnov test and homogeneity of variance with Levene's test. Within-group pretest-posttest changes were examined using paired-samples *t* tests. Post-intervention differences between practice conditions were examined using an independent-samples *t* test, with alpha set at .05. Results are reported as provided in the study dataset; raw participant-level scores were not available for recalculation of confidence intervals or standardized effect sizes.

RESULTS

All 24 participants were included in the reported analyses. The pretest means were similar, consistent with the ordinal-pairing procedure. Both groups recorded higher mean scores after 16 sessions (Table 1). The wall-bounce group increased from 41.17 to 45.25, a mean gain of 4.08 points (9.9% relative to baseline). The paired-practice group increased from 41.33 to 43.67, a mean gain of 2.34 points (5.7% relative to baseline).

Table 1.
Descriptive statistics for overhead passing performance

Practice condition	n	Pretest, M $\pm$ SD	Posttest, M $\pm$ SD	Mean change
Wall-bounce practice	12	41.17 $\pm$ 5.59	45.25 $\pm$ 4.31	+4.08
Paired practice	12	41.33 $\pm$ 5.23	43.67 $\pm$ 3.82	+2.34

The paired-samples analyses indicated statistically significant pretest-posttest changes in both conditions (Table 2). The wall-bounce group was reported as $t = 36.377$, $p = .001$, and the paired-practice group as $t = 39.580$, $p = .001$. The independent-samples comparison did not identify a statistically significant difference between the two practice conditions, $t = 0.952$, $p = .351$. Thus, the larger descriptive gain in the wall-bounce group did not constitute evidence of statistical superiority.

Table 2.
Inferential tests of within- and between-group differences

Comparison	Statistical test	t	p	Interpretation
Wall-bounce: pretest vs. posttest	Paired-samples t test	36.377	.001	Significant change
Paired: pretest vs. posttest	Paired-samples t test	39.580	.001	Significant change
Wall-bounce vs. paired practice	Independent-samples t test	0.952	.351	Not significant

DISCUSSION

The study found higher overhead passing scores after both wall-bounce and paired practice. The wall-bounce group showed the larger descriptive gain, but the difference between conditions was not statistically significant. The most defensible interpretation is therefore that both formats were associated with improved test performance during the 16-session program and that the available data do not establish one method as superior.

Improvement following wall-bounce practice is plausible because the task permits a high number of individual contacts and gives immediate outcome information through the rebound. Learners can see whether the ball returns at the intended height and direction and can adjust hand position, body alignment, or applied force on the next attempt. The finding is consistent with Widodo et al. (2025), who reported improved overhead passing after a wall drill among extracurricular participants, and with Putra et al. (2025), who found that wall-media practice combined with fingertip strengthening improved overhead-pass accuracy. Although studies of forearm passing address a different contact technique, their results also show that wall-based repetition can improve school-level passing performance (Alpandi et al., 2023; Pradana & Kusuma, 2025). Together, these studies suggest that a stable rebound surface can serve as a practical source of repetition and feedback when facilities or partner availability are limited.

Paired practice was also followed by improvement. Unlike a fixed wall, a partner produces naturally varying ball trajectories, so the receiver must continually

reposition and adapt the next action. This may reduce the number of perfectly controlled repetitions but makes practice more representative of interpersonal play. Sepang et al. (2025) reported a significant improvement in forearm passing after paired practice, while Kresnapati (2020) showed that paired formats with altered task constraints can differentiate passing outcomes. In overhead passing specifically, Fahima et al. (2023) reported improvements after both drill and paired methods, although the drill condition produced a slightly larger percentage increase. The present descriptive pattern is similar: the more repetitive wall condition gained more points, but the difference was not sufficiently clear statistically.

The absence of a significant between-group difference deserves equal attention. Direct comparisons in related passing research have not produced a single universal hierarchy. Ilhamdi et al. (2023) and Sudrajat (2024) found benefits from both wall and paired forearm-passing drills, with wall practice showing a larger descriptive improvement in their samples. Budi (2021), Fauzi (2020), and Mardian (2020) likewise showed that the relative benefit depends on how practice is structured and assessed. This variability is compatible with the broader motor-learning literature: changing practice organization can influence acquisition and retention, but effects depend on task complexity, learner experience, and the balance between repetition and variation (Bortoli et al., 1992; French et al., 1990; Jones & French, 2007). A predictable task may support early movement stabilization, whereas a variable partner task may support adjustment and transfer. A short performance test immediately after training may not capture all of these distinctions.

For practice, the two methods should be viewed as complementary rather than mutually exclusive. Wall-bounce work is efficient when many students need simultaneous repetitions, when court space is restricted, or when a learner needs to stabilize contact mechanics. Paired practice is useful when the objective shifts toward movement adjustment, communication, and continuity with another player. A progression from individual wall contacts to paired exchanges and then to small-sided play may combine repetition with increasing variability. Playing-based instruction has also been shown to improve basic volleyball skills among junior-high-school learners, supporting the value of connecting isolated technique work to more representative activities (Samsudin et al., 2023).

Several limitations constrain interpretation. The sample included only 24 male students from one extracurricular program, reducing generalizability. Ordinal pairing improved baseline comparability but was not random assignment. Without a no-training control group, maturation, regular extracurricular activity, test familiarity, or other concurrent experiences cannot be ruled out. The study assessed performance immediately after training and did not include retention or transfer tests. Raw scores were unavailable for independent verification, confidence intervals, or effect-size calculation; the reported *t* values should therefore be checked against the original SPSS output before submission. Future research should use random allocation where feasible, a comparison or usual-practice condition, preregistered analysis, validated test documentation, and retention and game-transfer outcomes. Larger samples would also provide more precise estimates of whether the descriptive advantage of wall practice is practically meaningful.



CONCLUSION

Overhead passing performance increased after both wall-bounce and paired practice in male students participating in school extracurricular volleyball. Wall-bounce practice produced a larger descriptive mean gain, but the difference between the two conditions was not statistically significant. Coaches may therefore use either method according to session goals and available resources, or combine them so that learners receive both high-repetition individual practice and variable partner-based practice. The findings should be treated as preliminary because the study used a small, non-randomized sample, lacked a no-training control group, and did not assess retention or transfer to game performance.

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REFERENCES

- Alpandi, D., Sukardi, S., & Oktariyana, O. (2023). Pengaruh latihan passing bawah menggunakan media dinding terhadap kemampuan passing bawah bola voli. *Jurnal JOLMA*, 3(2), 94–104. <https://doi.org/10.31851/jolma.v3i2.9669>
- Bortoli, L., Robazza, C., Durigon, V., & Carra, C. (1992). Effects of contextual interference on learning technical sports skills. *Perceptual and Motor Skills*, 75(2), 555–562. <https://doi.org/10.2466/pms.1992.75.2.555>
- Budi, A. S. (2021). Pengaruh latihan passing bawah ke dinding dan berpasangan terhadap keterampilan bola voli pada siswa ekstrakurikuler di SMP Negeri 13 Tanjung Jabung Timur. *Indonesian Journal of Sport Science and Coaching*, 3(2), 45–52. <https://doi.org/10.22437/ijssc.v3i2.15626>
- Carnero-Diaz, A., Pecci, J., Calvo-Lluch, A., & Camacho-Lazarraga, P. (2025). Use your imagination for better performance: Effects of analogy instruction in motor skills—A systematic review and meta-analysis. *Psychology of Sport and Exercise*, 76, 102766. <https://doi.org/10.1016/j.psychsport.2024.102766>
- Choo, L., Novak, A., Impellizzeri, F. M., Porter, C., & Fransen, J. (2024). Skill acquisition interventions for the learning of sports-related skills: A scoping review of randomised controlled trials. *Psychology of Sport and Exercise*, 72, 102615. <https://doi.org/10.1016/j.psychsport.2024.102615>
- Fahima, A. R. Z. Z., Irfan, M., & Darumoyo, K. (2023). Perbedaan pengaruh latihan metode drill passing atas dan passing atas berpasangan terhadap kemampuan passing atas dalam permainan bola voli pada tim bola voli putra SMP Muhammadiyah 5 Ngawi. *Global Education Journal*, 1(1), 287–297. <https://doi.org/10.59525/gej.v1i1.251>
- Fauzi, F. (2020). Pengaruh metode latihan dinding dan metode latihan berpasangan terhadap ketepatan passing. *Jurnal Muara Olahraga*, 2(1). <https://doi.org/10.52060/jmo.v2i1.242>
- French, K. E., Rink, J. E., & Werner, P. H. (1990). Effects of contextual interference on retention of three volleyball skills. *Perceptual and Motor Skills*, 71(1), 179–186. <https://doi.org/10.2466/pms.1990.71.1.179>



- Ilhamdi, I., Rahmat, A., & Daryanto, Z. P. (2023). Effect of drill passing down with walls and pairs against accuracy of underpass in volleyball game. *INSPIREE: Indonesian Sport Innovation Review*, 4(3). <https://doi.org/10.53905/inspiree.v4i03.119>
- Jones, L. L., & French, K. E. (2007). Effects of contextual interference on acquisition and retention of three volleyball skills. *Perceptual and Motor Skills*, 105(3), 883–890. <https://doi.org/10.2466/pms.105.3.883-890>
- Kresnapati, P. (2020). Perbedaan latihan passing berpasangan dengan perubahan tinggi net berat bola terhadap kemampuan passing bawah. *Edu Sportivo: Indonesian Journal of Physical Education*, 1(1), 9–15. [https://doi.org/10.25299/es:ijope.2020.vol1\(1\).5116](https://doi.org/10.25299/es:ijope.2020.vol1(1).5116)
- Mardian, R. (2020). Pengaruh latihan mengumpan ke dinding dan berpasangan terhadap keterampilan passing bawah bola voli. *Jurnal Cerdas Sifa Pendidikan*, 9(1). <https://doi.org/10.22437/csp.v9i1.10975>
- Pradana, T. C., & Kusuma, A. I. (2025). Pengaruh latihan pasing bawah menggunakan media dinding terhadap peningkatan kemampuan pasing bawah. *Jurnal Porkes*, 8(1). <https://doi.org/10.29408/porkes.v8i1.29764>
- Putra, W. S., Hariadi, Daniyantara, D., Suryadi, L. E., & Suryansah. (2025). The effect of wall media and fingertip push-up training on the accuracy of overhead passing technique in volleyball. *Musamus Journal of Physical Education and Sport*, 7(2), 140–152. <https://doi.org/10.35724/mjpes.v7i2.6983>
- Samsudin, Setiawan, I., & Dwi, D. R. A. S. (2023). The playing-based learning model to improve basic volleyball skills of junior high school students. *Jurnal Cakrawala Pendidikan*, 42(1). <https://doi.org/10.21831/cp.v42i1.52231>
- Sepang, R. M., Hidayat, R., & Pribadi, I. (2025). Pengaruh latihan berpasangan terhadap keterampilan passing bawah bola voli. *Jurnal Porkes*, 8(1). <https://doi.org/10.29408/porkes.v8i1.27485>
- Sudrajat, M. F. (2024). Kontribusi latihan passing bawah berpasangan dan passing bawah ke dinding terhadap ketepatan passing bawah. *Movement and Education*, 4(1), 10–17. <https://doi.org/10.37150/mae.v4i1.2581>
- Widodo, P., Hasan, A., & Priyanto, A. A. (2025). Pengaruh latihan passing ke dinding terhadap kemampuan passing atas bola voli pada ekstrakurikuler MTs Negeri 4 Kebumen tahun ajaran 2024/2025. *Jurnal Pengabdian Masyarakat dan Riset Pendidikan*, 3(3), 300–307. <https://doi.org/10.31004/jerkin.v3i3.401>

