



Underwear Passing Ability In Volleyball Games In Grade V Students of SD Negeri Mawas

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ABSTRACT

This study investigates the effectiveness of a structured underhand passing training program on the volleyball skills of Grade V students at Mawas State Elementary School. Utilizing a quasi-experimental design, 60 students were randomly divided into two groups: an experimental group (n = 30) that received specialized underhand passing training, and a control group (n = 30) that followed the standard physical education curriculum. Pretest and posttest evaluations were conducted using the Brumbach Forearm Pass Test. The pretest results showed similar baseline performance between groups, with mean scores of 55.23 for the experimental group and 54.87 for the control group. After six weeks of intervention, the experimental group showed a significant improvement to 68.47, while the control group improved slightly to 58.10. A paired sample t-test revealed a statistically significant difference in the experimental group ($p < 0.05$), while the control group's improvement was not significant ($p = 0.068$). An independent sample t-test confirmed a significant difference between the two groups in the post-test ($p < 0.05$). Qualitative data supported the quantitative findings, with students in the experimental group exhibiting higher enthusiasm, better discipline, and improved motor coordination. These results highlight the value of structured, age-appropriate training programs in enhancing basic volleyball skills in elementary school settings. The study suggests incorporating targeted skill development modules into physical education curricula to promote both performance and engagement.

ARTICLE HISTORY

Received: 2025/02/21

Accepted: 2025/02/26

Published: 2025/02/28

KEYWORDS

Underhand Passing;
Volleyball;
Elementary Students;
Physical Education;
Skill Development.

AUTHORS' CONTRIBUTION

- A. Conception and design of the study;
- B. Acquisition of data;
- C. Analysis and interpretation of data;
- D. Manuscript preparation;
- E. Obtaining funding

Cites this Article : Latuheru, Ricardo Valentino. (2025). Underwear Passing Ability In Volleyball Games In Grade V Students of SD Negeri Mawas. **Competitor: Jurnal Pendidikan Kepeleatihan Olahraga**. 17 (1), p.608-616

INTRODUCTION

Physical education plays a pivotal role in the holistic development of elementary school students, fostering not only physical health but also social skills, discipline, and cognitive growth. Among various sports introduced at this educational level, volleyball stands out due to its emphasis on teamwork, coordination, and strategic thinking. Fundamental to the game of volleyball is the skill of passing, particularly the underhand or forearm pass, which serves as the primary means of receiving serves and initiating



offensive plays. Mastery of this skill is essential for young learners to engage effectively in the game and to develop a foundation for more advanced techniques.

The underhand pass, commonly referred to as the forearm pass, involves using the forearms to direct the ball accurately to a teammate, typically the setter. This skill requires proper body positioning, timing, and coordination. For fifth-grade students, who are typically between 10 to 11 years old, developing proficiency in underhand passing is crucial. At this developmental stage, students are refining their motor skills and are capable of understanding and executing more complex movements. Effective instruction and practice in underhand passing can enhance their confidence and enjoyment of the game, leading to increased participation and physical activity levels.

Despite the recognized importance of underhand passing in volleyball, there is a noticeable gap in the proficiency levels among elementary school students. Observations at Mawas State Elementary School indicate that many fifth-grade students struggle with executing accurate and consistent underhand passes during volleyball games. This deficiency hampers the flow of the game and may lead to decreased motivation and interest in the sport. Several factors contribute to this issue, including limited instructional time, lack of specialized training programs tailored to young learners, and insufficient emphasis on fundamental skill development in the existing physical education curriculum.

While numerous studies have explored various aspects of physical education and sports skill development in children, there is a paucity of research focusing specifically on underhand passing skills in volleyball among fifth-grade students in the Indonesian context. Existing literature often addresses general motor skill development or examines older student populations. For instance, Fitriani et al. (2021) developed a passing learning model for students aged 11-12 years, highlighting the need for age-appropriate instructional strategies in volleyball. However, there remains a lack of targeted research that assesses the current proficiency levels of underhand passing among fifth-grade students and evaluates the effectiveness of specific training interventions designed for this age group.

This study aims to fill the identified research gap by assessing the underhand passing abilities of fifth-grade students at Mawas State Elementary School and implementing a tailored training program to enhance this fundamental skill. The novelty of this research lies in its focus on a specific age group within a particular educational setting, providing insights into the effectiveness of customized instructional approaches. By employing a combination of observational assessments, skill drills, and feedback mechanisms, the study seeks to identify best practices for teaching underhand passing to young learners. The findings are expected to inform physical education teachers and curriculum developers, contributing to improved instructional strategies and enhanced student performance in volleyball.

In light of the aforementioned considerations, this study sets out to evaluate the current state of underhand passing skills among fifth-grade students at Mawas State Elementary School and to determine the impact of a structured training program on skill

improvement. The research will employ a mixed-methods approach, combining quantitative assessments of skill proficiency with qualitative observations of student engagement and instructional effectiveness. Through this comprehensive analysis, the study aims to provide evidence-based recommendations for enhancing volleyball instruction in elementary schools, ultimately fostering greater student participation and enjoyment in the sport.

METHODS

Type of Research

This study employed a quantitative research approach utilizing a quasi-experimental design with a pretest-posttest control group. This method was chosen to assess the effectiveness of a structured underhand passing training program on the volleyball skills of fifth-grade students. The quasi-experimental design allows for the comparison between an experimental group receiving the intervention and a control group receiving standard instruction, thereby determining the impact of the training program.

Variables and Research Design

The research focused on two primary variables: (1) Independent Variable: Implementation of the underhand passing training program, and (2) Dependent Variable: Students' underhand passing ability in volleyball.

The study's design involved administering a pretest to both groups to establish baseline performance levels. Subsequently, the experimental group participated in the specialized training program, while the control group continued with the standard physical education curriculum. After the intervention period, a posttest was conducted to evaluate any changes in underhand passing skills. This design facilitates the measurement of the training program's effectiveness by comparing pretest and posttest results between the two groups.

Population and Sample

The population for this study comprised all fifth-grade students at Mawas State Elementary School during the 2024/2025 academic year. A total of 60 students were selected using cluster random sampling, ensuring each class had an equal chance of being chosen. The sample was divided into two groups: (1) the Experimental Group: 30 students who received the underhand passing training program, and (2) the Control Group: 30 students who continued with the standard physical education curriculum.

This sampling technique was chosen to maintain the integrity of existing class structures and to facilitate the implementation of the intervention within the school's operational framework.

Test Instruments

To assess the underhand passing ability of the students, the study utilized the Brumbach Forearm Pass Test, a standardized instrument designed to evaluate volleyball passing skills. This test measures the accuracy and consistency of underhand passes by

having students perform a series of passes toward a target area, with scores assigned based on precision and control. The Brumbach test has been validated in previous studies and is recognized for its reliability in assessing volleyball passing skills among school-aged children.

Data Collection Techniques

Data collection was conducted in three phases:

1. Pretest: Both the experimental and control groups underwent the Brumbach Forearm Pass Test to establish baseline underhand passing abilities.
2. Intervention: The experimental group participated in a structured underhand passing training program over a period of six weeks, with sessions held twice a week. The training included drills focusing on technique, accuracy, and consistency, incorporating feedback and peer assessment to enhance learning. The control group continued with the standard physical education curriculum without additional volleyball-specific training.
3. Posttest: Following the intervention period, both groups retook the Brumbach Forearm Pass Test to assess any improvements or changes in underhand passing skills.

Throughout the study, observations and field notes were recorded to capture qualitative data on student engagement, motivation, and adherence to the training program.

Data Analysis Techniques

The collected data were analyzed using descriptive and inferential statistical methods.

1. Descriptive Statistics: Means, standard deviations, and percentage scores were calculated to summarize the performance of each group in the pretest and posttest phases.
2. Inferential Statistics: A paired sample t-test was conducted to determine the significance of differences within each group between pretest and posttest scores. Additionally, an independent sample t-test was employed to compare the post-test scores between the experimental and control groups. A significance level of $p < 0.05$ was set for all statistical tests.

These analyses aimed to ascertain the effectiveness of the underhand passing training program and to evaluate whether any observed improvements were statistically significant.

RESULTS AND DISCUSSION

Result

Table 1.

Descriptive Statistics of Pretest Scores

Group	N	Mean Score	Std. Deviation	Minimum	Maximum
Experimental Group	30	55.23	6.45	43	67
Control Group	30	54.87	6.18	44	66

The pretest results indicate that both the experimental and control groups had relatively similar initial abilities in underhand passing. The experimental group had a mean score of 55.23 with a standard deviation of 6.45, while the control group recorded a mean of 54.87 with a standard deviation of 6.18. The minimum and maximum scores also showed comparable ranges. These findings suggest a balanced starting point for both groups before the intervention. The homogeneity in baseline skills supports the validity of subsequent comparisons, allowing for an accurate evaluation of the training program's effectiveness on underhand passing improvement.

Table 2.

Descriptive Statistics of Posttest Scores

Group	N	Mean Score	Std. Deviation	Minimum	Maximum
Experimental Group	30	68.47	5.82	58	78
Control Group	30	58.10	6.27	46	68

The posttest results show a clear improvement in underhand passing performance among the experimental group. Their average score increased to 68.47 with a standard deviation of 5.82, compared to 55.23 in the pretest. The control group showed only a slight increase to 58.10 with a standard deviation of 6.27. The experimental group also achieved higher maximum scores. This substantial difference suggests that the training program had a significant effect on skill development. The data supports the effectiveness of targeted instruction in enhancing volleyball passing abilities in Grade V students at Mawas State Elementary School.

Table 3.

Paired Sample t-Test (Pretest vs Posttest)

Group	Mean Diff.	t	df	p-value
Experimental Group	13.24	9.12	29	0.000
Control Group	3.23	1.89	29	0.068

Table 4.

Independent Sample t-Test (Posttest Comparison)

Groups Compared	Mean Diff.	t	df	p-value
Experimental vs Control	10.37	6.45	58	0.000

The paired sample t-test revealed a significant improvement in the experimental group ($p = 0.000$), indicating the effectiveness of the intervention. The control group showed no statistically significant change ($p = 0.068$). The independent sample t-test comparing post-test scores between groups demonstrated a significant difference ($p = 0.000$), confirming that the experimental group outperformed the control group. These findings suggest that the training program had a substantial impact on underhand passing ability, supporting the hypothesis that targeted practice enhances volleyball skills in elementary school students.

Table 5.
 Summary of Qualitative Observations

Observation Focus	Experimental Group	Control Group
Enthusiasm	High: students eager to participate	Moderate: routine engagement
Discipline	Improved over time with structured feedback	Inconsistent, frequent need for reminders
Motor Coordination	Noticeable improvement in footwork and timing	Minimal change
Teacher's Note	"Students were focused and excited to practice."	"Students needed frequent motivation."
Student Quote	"I love doing the passing drills in pairs!"	"I like volleyball but it's sometimes boring."

Qualitative observations revealed increased enthusiasm and discipline in the experimental group, with students showing significant improvement in motor coordination. Teachers noted heightened focus and consistent participation. In contrast, the control group displayed routine involvement and required more motivation. One facilitator stated, "Students were focused and excited to practice." A student remarked, "I love doing the passing drills in pairs!" This feedback highlights the impact of structured training on engagement and learning outcomes.

Table 6.
 Average Score Trend (Pretest to Posttest)

Group	Pretest Mean	Posttest Mean	Mean Increase
Experimental Group	55.23	68.47	+13.24
Control Group	54.87	58.10	+3.23

Table 7.
 Group Comparison Summary

Group	Final Mean Score	Improvement	Statistical Significance
Experimental Group	68.47	High	Significant ($p < 0.05$)
Control Group	58.10	Low	Not Significant

The score trend reveals a substantial improvement in the experimental group, with a mean increase of 13.24 points, compared to only 3.23 in the control group. This growth reflects the effectiveness of the targeted underhand passing training. Comparative analysis confirms statistically significant gains in the experimental group. Qualitative observations also support these findings, with students showing improved motor coordination, focus, and enthusiasm. Together, the quantitative and qualitative results demonstrate that structured training enhances basic volleyball skills, validating the method's effectiveness and affirming the observed increase in student competence.

Discussion

The present study aimed to evaluate the effectiveness of a structured underhand passing training program on the volleyball skills of fifth-grade students at Mawas State Elementary School. The results demonstrated a significant improvement in the

underhand passing abilities of the experimental group compared to the control group. This enhancement underscores the efficacy of targeted training interventions in developing fundamental volleyball skills among elementary school students.

The findings align with previous research emphasizing the importance of age-appropriate training models in physical education. For instance, Fitriani et al. (2021) developed a passing learning model tailored for students aged 11-12 years, which effectively improved their volleyball passing skills. Similarly, Endriani et al. (2022) introduced a lower passing model based on the umbrella learning approach, resulting in significant enhancements in students' cognitive, psychomotor, and affective domains.

Moreover, the implementation of varied training methods is beneficial. Nirmawati et al. (2025) utilized a distance variation approach, leading to improved underhand passing skills among elementary students. Additionally, the use of hanging ball exercises, as explored by Hikmawati et al. (2023), significantly enhanced students' hand-eye coordination and underhand passing abilities.

The quantitative improvements observed in the experimental group were complemented by qualitative data from observations and field notes. Students exhibited increased enthusiasm, discipline, and motor coordination during the training sessions. These behavioural changes suggest that the training program not only improved technical skills but also positively influenced students' attitudes towards physical education.

This holistic development aligns with the findings of Zetou et al. (2022), who demonstrated that integrating life skills into volleyball training programs enhanced both technical abilities and personal development among children aged 9-11 years.

The success of the training program has several implications for physical education curricula. Firstly, it highlights the importance of incorporating structured, age-appropriate training modules to develop fundamental sports skills. Secondly, the positive behavioural changes observed suggest that such programs can foster a more engaging and disciplined learning environment.

Furthermore, the study supports the adoption of innovative teaching methods in physical education. For example, the reciprocal teaching model, as utilized by Abbas and Reflianto (2018), has been effective in enhancing students' participation and skill acquisition in mini-volleyball games. Similarly, the play approach, investigated by Nurfazri and Sobarna (2025), significantly improved underhand passing skills and student motivation.

While the study provides valuable insights, certain limitations must be acknowledged. The sample was limited to a single elementary school, which may affect the generalizability of the findings. Additionally, the study focused solely on underhand passing skills, without assessing other fundamental volleyball techniques.

Future research should consider larger, more diverse samples to enhance the applicability of the results. Moreover, longitudinal studies could provide insights into the long-term effects of such training programs on students' overall physical development and interest in sports. Exploring the integration of technology, such as augmented feedback systems, may also offer innovative avenues for skill enhancement, as suggested by Asadipour et al. (2020).

The study confirms that a structured underhand passing training program significantly enhances the volleyball skills of fifth-grade students. The integration of quantitative and qualitative data provides a comprehensive understanding of the program's effectiveness. These findings advocate for the incorporation of tailored

training modules in physical education curricula to promote skill development and positive behavioural outcomes among elementary school students.

CONCLUSION

This study concludes that a structured underhand passing training program significantly improves volleyball passing skills among Grade V students at Mawas State Elementary School. The experimental group, which received targeted intervention, showed a marked improvement from a pretest mean score of 55.23 to a posttest mean of 68.47, with a mean gain of 13.24 points. In contrast, the control group, which followed the standard curriculum, showed only a marginal increase from 54.87 to 58.10, a gain of 3.23 points.

Statistical analysis supports these findings. A paired sample t-test indicated a significant improvement within the experimental group ($p < 0.05$), while the control group did not show significant change ($p = 0.068$). An independent sample t-test further confirmed the difference between the post-test scores of both groups ($p < 0.05$).

Qualitative data revealed enhanced enthusiasm, discipline, and motor coordination among students in the experimental group, aligning with the quantitative outcomes. These results affirm that age-appropriate and structured volleyball training can effectively enhance students' basic technical skills.

The findings advocate for the integration of skill-specific modules into physical education programs to support both physical and behavioural development in young learners.

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