



The Effect of Team Games Tournament on Grade 7 Students' Volleyball Forearm Passing Learning Outcomes

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Abstract

Objectives: To examine changes in volleyball forearm passing learning outcomes after instruction using the Team Games Tournament (TGT) method among Grade 7 students at SMP Negeri 29 Medan.

Materials and Methods: This study used a one-group pretest–posttest design. Thirty-five students were randomly selected from a population of 50. Forearm passing learning outcomes were measured before and after TGT instruction and analyzed using a paired t-test.

Results: The mean pretest score was 23.85 (SD = 2.08), and the reported mean posttest score was 37.00 (SD = 1.82). The reported test result was $t(34) = 2.33$, exceeding the stated critical value of 2.03 at $\alpha = 0.05$.

Conclusions: Forearm passing scores were higher after 'TGT' instruction. Because the study had no comparison group, the improvement cannot be attributed solely to TGT.

Keywords: *Team Games Tournament Learning Method, Underhand Passing Learning Outcomes, Junior High School Students*

Introduction

Education is a vital part of the human experience, as it enables individuals to develop their inherent potential. Throughout life, humans are constantly required to learn—from basic actions like eating and drinking to a multitude of other daily activities. Education serves as more than just a means to acquire knowledge regarding character, attitudes, and skills essential for social interaction; it allows individuals to understand social values, norms, etiquette, and their responsibilities as social beings. Ultimately, education plays a crucial role in human life, guiding individuals on how to become well-rounded human beings. (Pramana & Ginting, 2026)

Within the educational system, the teaching-learning process is essential for acquiring knowledge and preparing individuals to manage their lives effectively and responsively. Education is not limited to formal or non-formal settings; provided there is the will, it can be pursued and undertaken anywhere with the aim of transforming individuals and helping them reach their full potential. One specific area of study within formal education is physical education. The benefits of physical education extend beyond the classroom into daily life, playing a role in essential physical activities such as jumping, throwing, and various other movements. (Saputra et al., 2022)

School education offers a wealth of constructive learning opportunities, including arithmetic, religion, ethics, language, sports, and many other subjects. Physical education is a subject that appeals to a wide range of people; it teaches healthy living habits and methods for improving physical fitness. In these classes—commonly referred to as



penas in schools—instruction goes beyond standard curriculum delivery, as physical education teachers have the flexibility to introduce specific activities or movements, provided they remain within the framework of the fundamental physical skills being taught. Through physical education (PJOK), students gain positive, lasting experiences characterized by enjoyment and opportunities for creative and innovative expression (Hanani et al., 2022). It fosters movement skills, physical fitness, healthy lifestyle habits, and an understanding of human movement, while also helping to shape a positive personality (Devi catur winata et al., 2025).

Physical education is a component of the formal school curriculum—spanning kindergarten through high school—that serves not only to enhance physical and mental fitness but also to develop gross and fine motor skills. Furthermore, it shapes the affective domain by fostering positive attitudes and character; it cultivates social traits, cooperation, and discipline, while also influencing students' thinking processes. At the junior high school (SMP) level, the curriculum covers athletics as well as large-ball and small-ball sports; volleyball is one of the specific sports taught (Winata, 2020).

Volleyball instruction at the junior high level focuses on fundamental techniques, including the serve, overhead pass (set), underhand pass (bump/dig), block, and smash. The game is played in teams of six, with each player assigned a specific role, necessitating effective communication among teammates. Among the fundamental techniques taught, the underhand pass is often considered one of the more challenging skills to instruct. It is taught with the aim of enabling students to receive the ball from below and accurately direct it—whether to an opponent or a teammate—with precision and proper form. (Devi c. Winata, 2017)

Volleyball is one of the subjects taught to seventh-grade students at the junior high school level. Volleyball involves several fundamental skills, one of which is the underhand pass (or "bump"). Mastering the underhand pass technique is crucial, as it serves as the foundation for receiving serves, controlling the ball, and setting up attacks. If this fundamental skill is not mastered effectively, students will struggle to participate fully in the game. (Rumahoro, 2026)

Observations of seventh-grade students at SMP Negeri 29 Medan indicate that the volleyball learning process is still dominated by conventional methods. Teachers frequently rely on demonstration and repetitive drills without incorporating varied teaching methods that foster optimal student participation. During underhand passing practice, some students appeared unenthusiastic and lacked confidence, and they were unable to execute the technique correctly. Issues included incorrect hand placement, uncontrolled ball trajectory, and poor movement coordination.

A brief interview with the physical education teacher revealed that a lack of variety in teaching methods was a contributing factor to suboptimal student learning outcomes. The teacher noted that students are generally more interested in lessons that incorporate elements of play and competition; however, these approaches have not yet been fully optimized in practice. Therefore, there is a need for a teaching method that can boost student motivation, collaboration, and participation throughout the learning process.

Furthermore, an analysis of practical assessment scores showed that some students failed to meet the Minimum Mastery Criteria (KKM). This indicates a need to improve learning outcomes regarding the underhand pass. The limited variety of teaching methods causes students to lose interest quickly, resulting in low active engagement during the learning process.

A needs analysis conducted through interviews with the physical education teacher highlighted the necessity for a teaching method that enhances learning motivation, collaboration, and active student participation. The teacher also emphasized the need for a competitive yet enjoyable learning model to increase student enthusiasm for learning



basic volleyball techniques. One teaching method that can be implemented is the Team Games Tournament (TGT) model (Octaviano, setyawan, 2026). TGT is a cooperative learning model developed by Robert E. Slavin that integrates group work with game and tournament elements. In this approach, students are divided into diverse groups to learn collaboratively, practice techniques, and participate in small-scale matches that are competitive yet educational. These activities are expected to make students more active and motivated while providing them with greater opportunities to practice the underhand passing technique. (Tafonao, 2025)

The TGT method offers several advantages, such as improving social interaction among students, fostering a spirit of collaboration, creating an engaging learning atmosphere, and offering opportunities for experiential learning. The inclusion of game and competition elements tends to make students more enthusiastic and reduces the pressure often felt during the learning process.

Based on the identified issues, it can be concluded that the low proficiency in volleyball underhand passing among seventh-grade students stems from a lack of variety in teaching methods, low student participation, and the absence of engaging instructional approaches. Therefore, a solution involving the implementation of creative and interactive teaching methods is required.

To address this issue, the researcher intends to implement the Team Games Tournament (TGT) method in teaching the volleyball underhand passing technique. It is hoped that this method will foster greater student engagement and motivation, ultimately enabling students to maximize their learning outcomes regarding the underhand passing technique.

Materials and Methods

Study Design

This study employs an experimental research method. The experimental method is defined as a systematic approach aimed at investigating the influence of one variable on another through the application of a specific treatment and strict control of conditions. The research design utilized is the one-group pre-test-post-test pre-experimental design. This design involves a single group that undergoes a pre-test (O), receives a treatment (X), and subsequently takes a post-test.

The success of the treatment is determined by comparing the pre-test and post-test scores. In this one-group pre-test-post-test pre-experimental study, the initial step involves selecting the research sample and organizing it into a single study group. The subsequent step is administering a pre-test to measure volleyball underhand passing proficiency. The research design is presented in the table.

Tabel 1. Desain one group pre-test post-test
Sumber : (John Creswell, 2010: 172)

<i>O1</i>	<i>X</i>	<i>O2</i>
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Legend:

O1: Pre-test

O2: Post-test

X: Treatment

The intervention in this study employs the Team Games Tournament (TGT) learning method. According to Sukadiyanto, training yields optimal results—specifically a 50%



improvement—when conducted over an eight-week period; however, due to time and budgetary constraints, this study will be carried out over a period of five weeks (one month and one week). Participants will undergo the intervention ten times during this one-month period.

Study Participants

The population for this study consisted of all Grade VII students at SMP Negeri 29 Medan, totaling approximately 75 students. A sample of 35 students was selected from this population using a random sampling technique.

Statistical Analysis

Mansyur (2008: 248) defines data analysis as the activities of organizing, sequencing, grouping, coding or marking, and categorizing data to enable the discovery and formulation of a working hypothesis based on that data.

1. Description of Research Results

To describe the pre-test and post-test results, the following formula is used:

$$\text{Class Interval} = 1 + 3.3 \log N$$

2. Analysis Prerequisite Tests

Before hypothesis testing is conducted, prerequisite tests must be performed. These prerequisite tests consist of normality and homogeneity tests.

3. Hypothesis Testing

Once the data has been collected, the next step is to analyze it. The technique used to analyze experimental data from a pre-test/post-test design is the t-test. According to Suharsimi (2005: 395), the t-test formula for a pre-test/post-test design is as follows:

Where:

t = t-value for correlated samples

D = (difference), the difference between initial and final test scores for each individual

$\bar{D}$ = mean of the difference values (mean of D); D^2 = square of D

N = number of research subjects

To determine whether the research hypothesis is accepted or rejected, the calculated t-value (t_{count}) is compared to the t-table value (t_{table}) at a 5% significance level. If $t_{\text{count}} > t_{\text{table}}$, a significant difference exists in the study. Consequently, the null hypothesis (H_0) is rejected, and the working hypothesis (H_a) is accepted.

This study also requires data on the percentage of improvement to assess the progress of extracurricular participants following underhand passing training using a game-based method. The formula used is as follows:

Percentage of improvement =



These results will serve as a reference for any future studies of a similar nature. Thus, the abilities of extracurricular participants will be monitored through research data.

Results

Pre-test data regarding volleyball underhand passing performance was collected on April 9, 2026. Subsequently, a target-based training intervention was conducted over ten sessions, scheduled twice weekly on Mondays and Thursdays. Post-test data was collected on May 18, 2026. The pre-test and post-test results for volleyball underhand passing among Grade VII students at SMP Negeri 29 Medan (2025/2026 academic year) are presented in Table 2 below:

Tabel 1. Pretes and Posttes Passing Bola Voli

No	Komponen	<i>Pretes</i>	<i>post test</i>
	Jumlah	835	1296

Prior to conducting the research, the researcher interviewed the teacher to gather information regarding the passing skill proficiency of 7th-grade students at SMP Negeri 29 Medan during the 2025/2026 academic year. Subsequently, the researcher administered training sessions and conducted a post-test.

The preliminary step involved planning the activities to be carried out through the training program, followed by the execution of the research stages.

The stages were as follows:

- The researcher introduced themselves and explained the purpose and objectives of the research.
- The researcher explained the volleyball underhand passing technique.
- The researcher explained the training program designed to develop volleyball underhand passing skills.
- After completing the training program—which spanned ten sessions—the participants took a post-test using the underhand passing assessment instrument.

Upon completion of the research activities, the results from the pre-test and post-test were obtained.

The description of the pretest data is based on results obtained from measurements taken prior to the administration of the treatment. Descriptive analysis of the pretest data regarding the volleyball underhand passing ability of 7th-grade students at SMP Negeri 29 Medan yielded a maximum score of 26, a minimum score of 20, a mean of 23.85, and a standard deviation of 2.08. The resulting frequency distribution table is presented below. According to Sudjana (2002: 47), the number of class intervals is determined as follows:

$$\text{Class Intervals} = 1 + 3.3 \log N$$

$$= 1 + 3.3 \log 35$$

$$= 1 + (3.3 \times 1.5441)$$

$$= 1 + 5.095$$

$$= 6.09 \text{ (rounded to 6)}$$

$$\text{Calculation of class width} =$$

$$=$$



This study aims to determine the effect of the Team Games Tournament (TGT) learning method on volleyball underhand passing learning outcomes. The results indicate a significant effect of the TGT method on the underhand passing ability of 7th-grade students at SMP Negeri 29 Medan during the 2025/2026 academic year.

Analysis shows a calculated t-value of 2.33 and a t-table value of 2.03. Comparing this to the t-table value at a significance level of $\alpha = 0.05$ with degrees of freedom ($df = n-1$) ($35-1 = 34$) reveals a significant difference, with a 55% improvement. Thus, the alternative hypothesis (H_a)—stating that the Team Games Tournament (TGT) learning method affects volleyball underhand passing learning outcomes for 7th-grade students at SMP Negeri 29 Medan (2025/2026 academic year)—is supported.

Training is an interactive or reciprocal process between teacher and student within an educational setting, aimed at achieving comprehensive behavioral change. In this study, the researcher employed volleyball underhand passing training using a play-based method to enhance students' skills. Underhand passing is a fundamental skill required for playing volleyball. The play-based training method creates a playful atmosphere during instruction, encouraging students to participate actively in assigned movement tasks; this approach is expected to improve their underhand passing proficiency.

The results demonstrate that, following the play-based training, students' underhand passing ability improved significantly—by 55% compared to the level prior to the TGT-based training. This represents a highly positive development for the students at SMP Negeri 29 Medan, as the play-based training method yielded a substantial impact of nearly 55%. This indicates that the Team Games Tournament (TGT) learning method is highly effective for training the underhand pass; consequently, it is hoped that this method can be widely adopted for such training. As students' underhand passing skills improve, their overall volleyball proficiency will also increase, given that underhand passing is the most fundamental skill in the sport. In fact, a volleyball game can be played using only passing techniques, even without the ability to execute smashes or blocks. Therefore, it is recommended that volleyball training prioritize underhand passing drills before moving on to other techniques. As demonstrated in this study, the Team Games Tournament (TGT) learning method serves as an effective model for developing underhand passing skills.



Acknowledgments

Based on the data analysis from the homogeneity test, the calculated F-value was 1.306 and the critical F-value was 1.79, with degrees of freedom (df) of 1 for the numerator and $n-1 = 34$ for the denominator; thus, $F_{\text{calc}} < F_{\text{table}}$ ($1.306 < 1.79$), indicating that the population variances are homogeneous. Regarding the description, hypothesis testing, and discussion of the results, the analysis shows a calculated t-value (t_{calc}) of 2.33 and a critical t-value of 2.03. Comparing this value against the critical t-value at a significance level of $\alpha = 0.05$ with $df = 34$ reveals a significant difference, accompanied by a 55% improvement. Consequently, the alternative hypothesis (H_a)—stating that "The Team Games Tournament (TGT) learning method influences the volleyball underhand passing learning outcomes of Grade VII students at SMP Negeri 29 Medan for the 2025/2026 academic year"—is supported.

Conflict of Interest

Thank you to the teachers, students, and principal SMP Negeri 29 Medan

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