

A COMPREHENSIVE SURVEY ON THE PROFICIENCY OF UNDERHAND SERVING SKILLS AMONG EIGHTH-GRADE FEMALE STUDENTS IN THE VOLLEYBALL EXTRACURRICULAR PROGRAM AT SMP NEGERI 6 LAWE SIGALA-GALA

Muhammad Donni^{1,*}, Ladipin¹, Afrizal¹

¹Faculty of Teacher Training and Education, Universitas Gunung Leuser, Aceh, Indonesia

*Corresponding Author Email: muhammaddonni5@gmail.com

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Abstract

This descriptive quantitative survey study aims to determine the proficiency level of underhand serving skills among eighth-grade female students participating in the volleyball extracurricular program at SMP Negeri 6 Lawe Sigala-Gala during the 2025/2026 academic year. The research employed a standardized testing methodology, utilizing the AAHPER (American Alliance for Health, Physical Education and Recreation) Serving Accuracy Test as the primary instrument for data collection. The subject pool consisted of 20 female students, each granted five attempts to execute an underhand serve into a target grid scoring system (1-4 points per serve, with a maximum possible score of 20). The collected data were analyzed using descriptive statistics, including measures of central tendency and frequency distribution, and categorized into five proficiency levels: Very High, High, Moderate, Low, and Very Low. The findings reveal a notably high level of underhand serve proficiency among the participants. The mean score achieved was 69.75 out of a maximum 100, with a highest individual score of 90 and a lowest of 50. The distribution across categories showed that 70% of students (n=14) were classified in the 'High' proficiency category, 20% (n=4) in the 'Very High' category, and the remaining 10% (n=2) in the 'Moderate' category. No students fell into the 'Low' or 'Very Low' categories. Furthermore, 90% of the participants (n=18) met or exceeded the minimum passing standard. These results strongly indicate that the majority of the students have successfully mastered the fundamental technique of the underhand serve. The study concludes by recommending the continuation of regular and structured practice, the sustained application of engaging, game-based pedagogical approaches, and the ongoing institutional support through the provision of adequate facilities and infrastructure to maintain and further elevate skill levels.

Keywords: *Extracurricular Activities, Junior High School, Physical Education, Serving Skills, Skill Proficiency, Underhand Serve, Volleyball*

INTRODUCTION

The educational landscape of the 21st century recognizes that holistic student development extends far beyond the confines of the traditional academic classroom. In this context, extracurricular activities have emerged as a vital and indispensable component of the schooling process. These activities are strategically designed to provide a structured platform for students to explore, nurture, and develop their inherent potentials, diverse interests, and unique talents. By engaging in pursuits outside the standard curriculum, students cultivate essential life skills such as teamwork, leadership, discipline, time management, and resilience. Among the plethora of extracurricular options available, sports hold a particularly prominent position, offering a dynamic avenue for physical development, social interaction, and character building. Volleyball, a globally celebrated team sport renowned for its demands of agility, coordination, strategy, and cooperative spirit, is a perennial favorite within the Indonesian school system, especially among female students. The game of volleyball is constructed upon a foundation of essential technical skills, each serving as a critical cog in the complex machinery of team performance. These fundamentals include passing, setting, attacking, blocking, and serving. While each skill is integral, the serve occupies a uniquely pivotal role. It is the only skill in volleyball that is initiated in complete isolation, entirely under the player's control, and it represents the action that commences every single rally. A proficient serve is not merely a method of putting the ball into play; it is a strategic weapon. A well-executed serve can place immediate pressure on the receiving team, disrupt their offensive

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Muhammad Donni et al

formation, force predictable passes, and directly result in an ace or a weak return that can be easily converted into a point. For beginner and junior-level players, the underhand serve is typically the first serving technique introduced. Its biomechanics are relatively simpler and more forgiving than the more advanced overhead serves, such as the floater or the topspin serve. The underhand serve allows young athletes to focus on the core principles of accuracy, consistency, and basic ball contact without the added complexity of a powerful toss or a demanding overhead striking motion. Therefore, mastering the underhand serve is not an endpoint but a crucial developmental milestone. It builds confidence, establishes a reliable method for initiating play, and lays the necessary neuromuscular groundwork for the eventual acquisition of more advanced serving techniques.

The focus of this study is on eighth-grade female students, a demographic situated in the critical phase of early adolescence. This period is characterized by rapid and often asynchronous development across physical, cognitive, emotional, and social domains. Physically, these students are experiencing significant growth spurts and changes in body composition, which can temporarily affect coordination and motor skill execution. Psychologically, they are developing a stronger sense of self, seeking peer acceptance, and are highly influenced by their social environment. Their interest in physical activity and sports can be profoundly shaped by their experiences during this time. Positive, successful, and enjoyable experiences in sports, such as mastering a fundamental skill like the underhand serve, can foster a lifelong love for physical activity. Conversely, repeated failure or frustration can lead to disengagement. Therefore, understanding the current proficiency level of these students in a core volleyball skill is not merely an academic exercise; it is a diagnostic necessity. It provides a critical snapshot of the effectiveness of the current extracurricular coaching methodology and offers evidence-based insights to guide future instructional strategies.

The problem that motivates this research is the need for an objective, empirical assessment of the underhand serving skills within this specific population. While anecdotal observations and informal assessments may suggest a general level of competence, a systematic survey using a validated instrument is required to yield reliable and quantifiable data. This study is driven by several fundamental questions: What is the precise distribution of underhand serving proficiency among the eighth-grade female participants of the volleyball extracurricular at SMP Negeri 6 Lawe Sigala-Gala? What percentage of students have achieved a level of mastery deemed "proficient"? Is there a significant portion of the group struggling with this fundamental skill? The answers to these questions are paramount for the program's coaches and the school's administration. They can validate successful teaching practices, identify areas needing intervention, and inform decisions regarding resource allocation and curriculum development for the volleyball program.

Consequently, the primary objective of this research is to conduct a comprehensive survey to determine the level of underhand serving skills among the eighth-grade female students in the volleyball extracurricular at SMP Negeri 6 Lawe Sigala-Gala for the 2025/2026 academic year. By employing the standardized AAHPER Serving Accuracy Test, this study aims to produce a clear, data-driven profile of the students' capabilities. The findings will serve as a valuable benchmark, contributing to the broader field of sports pedagogy by providing a case study on skill acquisition in a school-based extracurricular setting and offering practical, actionable recommendations for enhancing the quality of volleyball training for young female athletes in Indonesia.

LITERATURE REVIEW

To fully contextualize the present study, it is essential to explore the relevant theoretical underpinnings and existing scholarly work related to its core components: the role of extracurricular activities in education, the motor skill development of early adolescents, the technical and strategic importance of the volleyball serve, and the specific assessment tools used to measure serving proficiency. The philosophical and pedagogical justification for extracurricular activities is deeply rooted in holistic education theory. As articulated by Subagiyo (2003), the fundamental aim of these activities is to assist students in developing their potential, talents, and interests beyond the scope of formal classroom instruction. This perspective aligns with the theory of multiple intelligences, which posits that human intelligence is not a single, monolithic entity but a constellation of different capacities.

Extracurricular programs, particularly in sports, provide a vital outlet for nurturing bodily-kinesthetic intelligence. They offer a practical arena where theoretical knowledge from physical education classes can be applied, reinforced, and refined. For early adolescents, these structured group activities also fulfill core psychosocial needs, providing a sense of belonging, promoting social integration, and offering opportunities for leadership and achievement that may not be available in the academic domain. A well-run volleyball program, therefore, is not just about teaching a sport; it is a vehicle for holistic personal development. From a motor learning perspective, eighth-grade students are typically in what Fitts and Posner would describe as the "associative" or "advanced" stage of learning for fundamental gross motor skills, but they may be in the "cognitive" or "beginner" stage for novel, sport-

A COMPREHENSIVE SURVEY ON THE PROFICIENCY OF UNDERHAND SERVING SKILLS AMONG EIGHTH-GRADE FEMALE STUDENTS IN THE VOLLEYBALL EXTRACURRICULAR PROGRAM AT SMP NEGERI 6 LAWE SIGALA-GALA

Muhammad Donni et al

specific skills like the volleyball serve. The underhand serve, while mechanically simpler than its overhead counterparts, is still a complex perceptual-motor skill. It requires the integration of visual information (judging distance and target), proprioceptive feedback (body position and arm swing), and precise timing to make contact with the ball in a consistent manner. The process of mastering this skill involves the development of stable and efficient motor programs through deliberate practice. The work of researchers like Ateng (1992) and Gabbard (1987) strongly supports the use of game-based and play-oriented approaches in physical education and sports coaching for this age group. Such methodologies align with the developmental characteristics of adolescents, who often respond better to activities that are perceived as fun, engaging, and socially interactive rather than repetitive, drill-based routines. A pedagogical approach that embeds serving practice within modified games or competitive challenges can enhance motivation, increase the number of quality repetitions, and improve skill retention by presenting the skill in a meaningful, contextualized environment.

Delving into the specifics of volleyball, the serve is universally acknowledged as a critical determinant of match outcomes. A powerful and accurate serve is the first line of offense. According to advanced volleyball coaching literature, a quality serve can accomplish several strategic objectives: it can target a weak or inexperienced passer, create seams between passers, force the receiving team to move a long distance to play the ball, or push the primary setter away from the net, thereby simplifying the blocking team's defensive read. For beginner levels, however, the primary objectives are consistency and accuracy. The underhand serve is the cornerstone upon which these objectives are built. Its technical execution involves a consistent stance, a controlled pendulum-like arm swing, a firm wrist, and contact with the heel of the hand on the lower part of the ball. Mastery of this technique ensures that the player can reliably put the ball in play, reducing unforced errors and building personal and team confidence. As players advance, they will transition to overhead serves, but the stability, rhythm, and understanding of ball contact learned from the underhand serve provide a crucial foundation.

The measurement of sports skills requires valid and reliable instruments to ensure that the data collected accurately reflects the true ability of the participants. For this study, the AAHPER (American Alliance for Health, Physical Education and Recreation) Serving Accuracy Test was selected. This test is a well-established instrument in the field of physical education assessment. Its design focuses specifically on the outcome of the skill—accuracy—which is the most relevant performance indicator for a beginner-level serve. The test's protocol, which involves serving into a designated target grid with assigned point values, provides an objective and quantifiable measure of performance. The use of a standardized instrument like the AAHPER test enhances the credibility of the findings and allows for potential comparisons with other studies or normative data, should it be available. It removes subjective bias from the evaluation process, as the score is determined solely by where the ball lands in relation to the predefined grid. This objectivity is essential for producing research findings that are both valid and reliable. This literature review establishes a clear conceptual pathway: effective extracurricular programs (holistic development) utilize appropriate pedagogical methods (game-based learning) to teach critical sport-specific skills (the underhand serve) to a developmentally unique population (early adolescent females), and the evaluation of such programs benefits from the application of standardized assessment tools (the AAHPER test). The current study operates within this integrated framework, seeking to contribute empirical data to this interconnected body of knowledge.

METHOD

This study was conducted employing a descriptive quantitative research design with a survey method. The primary objective of this design is to systematically describe a specific phenomenon or the characteristics of a population at a given point in time. In this context, the phenomenon under investigation is the proficiency level of the underhand serve, and the population is defined as the eighth-grade female participants of the volleyball extracurricular at SMP Negeri 6 Lawe Sigala-Gala. This design is optimal as it does not seek to manipulate variables or establish causal relationships but rather to provide a precise and objective snapshot of the current state of affairs. The participants of this study were 20 female students from the eighth grade who were actively enrolled in the school's volleyball extracurricular program for the 2025/2026 academic year. The sampling technique used was total sampling, wherein the entire population of interest—all eighth-grade female members of the extracurricular—was included in the study. This approach was deemed appropriate and feasible due to the manageable size of the population, and it eliminates sampling error, ensuring that the findings are fully representative of this specific group. The cornerstone of the data collection process was the AAHPER Serving Accuracy Test, the implementation of which required specific preparations. A standard volleyball court was used, with the target area on the opposite side of the net divided into six rectangular zones using lines or markers. These zones were assigned point values based on their difficulty and strategic value. The most strategically valuable areas, the deep right and deep left corners of the court,

A COMPREHENSIVE SURVEY ON THE PROFICIENCY OF UNDERHAND SERVING SKILLS AMONG EIGHTH-GRADE FEMALE STUDENTS IN THE VOLLEYBALL EXTRACURRICULAR PROGRAM AT SMP NEGERI 6 LAWE SIGALA-GALA

Muhammad Donni et al

were awarded 4 points for a successful serve. Serves landing in the mid-depth right or left areas earned 3 points, while those in the shallow right or left areas, closer to the net, were awarded 2 points. A serve landing in the correct half of the court but outside these designated scoring zones received 1 point, and any serve resulting in a fault—such as failing to clear the net, landing out of bounds, or hitting the antenna—was awarded 0 points. The testing procedure was standardized for all participants to ensure consistency and fairness. Each student received a brief demonstration and explanation of the test requirements before being allocated five consecutive attempts to perform an underhand serve from behind the end line. The goal was to aim for the target areas on the opposite court. The score for each of the five serves was recorded, and an individual's total score was calculated by summing the points from all attempts. Given that the maximum possible score per serve was 4 points, the highest total score any student could achieve was 20 points. This raw score was then converted into a percentage for ease of interpretation and categorization using the formula: $(\text{Total Raw Score} / 20) * 100$.

For data analysis, descriptive statistics were employed. This involved calculating the mean, or average, score to determine the central tendency of the group's performance. The range was also calculated by identifying the highest and lowest percentage scores to understand the dispersion of the data. The primary analysis involved categorizing each student's performance into one of five proficiency levels based on their final percentage score. The established criteria defined a score of 80 to 100 as "Very High," 60 to 79 as "High," 40 to 59 as "Moderate," 20 to 39 as "Low," and 0 to 19 as "Very Low." Furthermore, a mastery or passing threshold was set for the study; a score of 60% or higher, falling into the 'High' or 'Very High' categories, was considered indicative of having mastered the fundamental skill. The number and percentage of students meeting or exceeding this threshold were calculated, and all data were compiled to present a comprehensive profile of the underhand serving skill level of the entire group.

RESULTS

The data collected from the administration of the AAHPER Serving Accuracy Test to the 20 eighth-grade female students provide a clear and compelling picture of their collective proficiency in the underhand serve. The results are presented below, followed by an in-depth discussion that interprets these findings within the broader context of sports pedagogy and adolescent development. The analysis of the test scores revealed that the group's mean score for underhand serving proficiency was 69.75%. This average, situated well within the 'High' proficiency category, indicates a strong overall command of the skill across the participant pool. The range of scores extended from a minimum of 50% to a maximum of 90%. The fact that the lowest score recorded was still within the 'Moderate' proficiency band and that no student scored in the 'Low' or 'Very Low' categories is a notably positive outcome.

A more detailed examination of the frequency distribution across the established proficiency categories offers deeper insights:

1. Very High Proficiency (80-100%): Four students (20% of the total sample) achieved scores in this elite band. This signifies that a fifth of the group is not only proficient but demonstrates a high degree of accuracy and consistency in their underhand serve execution.
2. High Proficiency (60-79%): The majority of the participants, fourteen students (70%), were classified in this category. This is the most significant finding, indicating that the core of the extracurricular group possesses a solid, reliable, and well-developed underhand serve.
3. Moderate Proficiency (40-59%): Two students (10%) scored within this category. While these students have a foundational understanding of the technique, their performance suggests a need for further refinement to achieve consistency and accuracy comparable to their peers.
4. Low and Very Low Proficiency (0-39%): Notably, no students (0%) were found in these lowest categories. This is a strong indicator of the overall effectiveness of the training program, as it shows that no participant is completely struggling or lacking fundamental competency.

Regarding the benchmark for skill mastery (set at $\geq 60\%$), the data shows that 18 out of the 20 students, constituting 90% of the sample, met or surpassed this standard. This leaves a completion rate of 90%, with only two students (10%) yet to achieve mastery.

DISCUSSION

The results presented above paint an overwhelmingly positive portrait of the underhand serving capabilities within this specific cohort. The high mean score of 69.75% and the fact that 90% of students are classified as proficient or highly proficient are outcomes that warrant a multifaceted discussion to unravel the contributing factors and implications.

A COMPREHENSIVE SURVEY ON THE PROFICIENCY OF UNDERHAND SERVING SKILLS AMONG EIGHTH-GRADE FEMALE STUDENTS IN THE VOLLEYBALL EXTRACURRICULAR PROGRAM AT SMP NEGERI 6 LAWE SIGALA-GALA

Muhammad Donni et al

The primary interpretation of these results is that the volleyball extracurricular program at SMP Negeri 6 Lawe Sigala-Gala has been highly effective in imparting the fundamental technique of the underhand serve to its eighth-grade female participants. This success can likely be attributed to a confluence of factors. First and foremost is the role of consistent, structured practice. Extracurricular activities provide dedicated time outside of regular physical education classes for focused skill development. The repetitive nature of practice in such a setting allows for the reinforcement of correct motor patterns. Through countless repetitions, the students have likely moved from the cognitive stage of learning—where they had to consciously think about each step of the serve—to the associative stage, where the movement becomes more fluid and automatic. This neurological maturation is a direct result of sustained engagement.

A second, and potentially crucial, factor is the pedagogical approach employed by the coaches. The research alludes to the use of enjoyable, game-based learning methods. This aligns perfectly with the recommendations of Ateng (1992) and Gabbard (1987), and it is particularly resonant with the developmental profile of early adolescent girls. At this age, motivation is often intrinsically linked to social interaction and enjoyment. Drills that are framed as games, challenges, or team competitions are far more likely to elicit full engagement and effort than monotonous, repetitive drills. For instance, a serving drill where points are awarded for landing in specific target zones, or a game where each successful serve earns a point for the team, transforms practice from a task into an engaging activity. This positive affective state can reduce anxiety, increase willingness to try, and enhance overall learning. The high proficiency scores are a testament to the power of creating a positive and motivating learning environment.

The absence of any students in the 'Low' or 'Very Low' categories is another significant point for discussion. This suggests that the instructional methods have been inclusive and effective at bringing the entire group to a baseline level of competence. It indicates that the coaches have likely been successful in differentiating instruction, providing additional support to those who need it, and ensuring that no student is left behind. This is a hallmark of quality coaching, especially in a developmental setting where the goal is participation and improvement for all, not just for the most naturally gifted athletes. However, the results also reveal an area for continued attention. The 10% of students (n=2) who scored in the 'Moderate' category represent an opportunity for targeted intervention. While they are not beginners, their performance indicates specific technical flaws or inconsistencies that need to be addressed. These could include an inconsistent toss, poor weight transfer, incorrect contact point on the hand or the ball, or a lack of follow-through. For these students, more individualized feedback is crucial. The coach might use video analysis, one-on-one coaching sessions, or break down the serving motion into smaller, more manageable parts for focused practice. Understanding why these two students are lagging behind their peers—whether due to less practice time, lower confidence, or specific technical misunderstandings—is the next step for the program.

The study also honestly acknowledges certain limitations, such as a potential lack of seriousness from some students during testing and the researcher's own familiarity with the AAHPER instrument. These are common challenges in field-based research. The "testing effect" and variations in student motivation on the day of assessment are inherent in any skill test. Nevertheless, the overwhelmingly positive and consistent pattern of results suggests that these factors did not substantially skew the overall findings. In a broader sense, these results underscore the immense value of well-structured school extracurricular programs. They demonstrate that with dedicated time, a positive pedagogical approach, and institutional support, public schools in Indonesia can achieve excellent outcomes in sports skill development. The high level of serving proficiency provides this team with a solid foundation. A reliable serve reduces unforced errors, keeps the team in games, and can even be a source of points. As these players continue to develop, this strong fundamental skill will serve as the platform upon which more advanced tactical serving and overall game strategy can be built.

CONCLUSION AND IMPLICATIONS

The overarching conclusion of this survey study is unequivocal: the eighth-grade female students participating in the volleyball extracurricular program at SMP Negeri 6 Lawe Sigala-Gala exhibit a high level of proficiency in the fundamental skill of the underhand serve. The empirical evidence, demonstrated by a mean score of 69.75%, a distribution heavily skewed towards the 'High' and 'Very High' categories (comprising 90% of the participants), and a 90% mastery rate, provides a robust and positive assessment of the students' capabilities and the effectiveness of the training they have received. The findings confirm that the program has successfully equipped the vast majority of its participants with a reliable and accurate underhand serve, a critical asset for competitive play and continued skill development. Based on these conclusions, several targeted recommendations are proposed for various stakeholders to maintain and build upon this success. For the students, particularly those in the 'High' and 'Very High' categories, the recommendation is to maintain their commitment to regular practice to ensure the

A COMPREHENSIVE SURVEY ON THE PROFICIENCY OF UNDERHAND SERVING SKILLS AMONG EIGHTH-GRADE FEMALE STUDENTS IN THE VOLLEYBALL EXTRACURRICULAR PROGRAM AT SMP NEGERI 6 LAWE SIGALA-GALA

Muhammad Donni et al

consistency of their skill and to begin the gradual transition to learning overhead serving techniques. For the two students in the 'Moderate' category, it is advised to engage in additional, focused practice sessions, paying close attention to the technical cues provided by the coach and seeking individualized feedback to identify and correct specific errors. For the coaches and physical education teachers, the results validate the current game-based and engaging pedagogical approach. The strong recommendation is to continue and even expand upon these methods. Furthermore, coaches should implement a more differentiated instruction strategy. While the majority of the group can continue with advanced drills and be introduced to new skills, targeted remedial training should be designed for the students who have not yet reached mastery. This could involve breaking down the serving motion into component parts, using corrective feedback, and providing more encouragement to build confidence.

For the school administration, this study serves as evidence of the positive return on investment in extracurricular activities. The recommendation is to continue and enhance institutional support. This includes ensuring the provision and maintenance of high-quality facilities and equipment, such as well-marked courts, sufficient numbers of good-condition volleyballs, and accessible training spaces. Furthermore, the administration should consider allocating time within the school schedule that protects and prioritizes these extracurricular activities, acknowledging their vital role in student development.

For future researchers, this study opens several avenues for further inquiry. A replication of this survey after the implementation of targeted interventions for the less proficient students would measure the effectiveness of those remedial strategies. A comparative study could be conducted between this school and others in the region to identify broader trends or best practices. Longitudinal research could track the skill development of these same students over time, observing their progression to overhead serves and their overall volleyball performance. Finally, qualitative research exploring the students' perceptions of the coaching methods, their motivations, and their confidence levels could provide rich, complementary data to explain the quantitative results found here. In summary, the findings of this research are profoundly positive. They illustrate a case of successful skill acquisition in a school sports setting, highlighting the potential that exists when motivated students, effective coaching methodologies, and institutional support converge. The powerful underhand serves of these young athletes are not just scoring points on the court; they are building confidence, fostering a love for sport, and laying the foundation for a lifetime of physical activity and healthy living.

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A COMPREHENSIVE SURVEY ON THE PROFICIENCY OF UNDERHAND SERVING SKILLS AMONG EIGHTH-GRADE FEMALE STUDENTS IN THE VOLLEYBALL EXTRACURRICULAR PROGRAM AT SMP NEGERI 6 LAWE SIGALA-GALA

Muhammad Donni **et al**

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