

Analysis of Learning Volleyball Passing Skills at SMAN 1 Muara Sugihan

Dia Anggraini¹, Dessy Wardiah¹, Muhsana El Cintami Lanos¹

¹Universitas PGRI Palembang, South Sumatra, Indonesia

Corresponding author e-mail: diaanggraini0406@gmail.com

Article History: Received on 19 July 2024, Revised on 7 September 2024,

Published on 30 September 2024

Abstract: This study aimed to find out the results of teaching basic techniques of bottom passing in volleyball games to students of SMAN 1 Muara Sugihan. This study was quantitative descriptive. The population in this study was class X students at State High School 1 Muara Sugihan, with sampling using purposive sampling techniques, by paying attention to the criteria of students who understand basic techniques in volleyball, totaling 30 students. The data collection technique used in this study is a volleyball bottom passing skill test. The data analysis technique used descriptive statistical analysis techniques. The results of the data analysis conducted in the study showed that of the 20 students who participated in volleyball learning at State High School 1 Muara Sugihan, the students' volleyball passing skills were in the sufficient category, with an average score of 40.50 and a percentage of 48%. It can be concluded that the skills in learning volleyball bottom passing in the students of State High School 1 Muara Sugihan were in the sufficient category, so there is a need for development in learning to pass under volleyball.

Keywords: Learning, Passing Skill, Volleyball

A. Introduction

The analysis of learning volleyball passing skills at SMAN 1 Muara Sugihan is essential for understanding how effectively students are being taught this fundamental aspect of the game. Volleyball passing, particularly the bottom passing technique, is a critical skill that forms the foundation for more advanced play, making it crucial for students to master. As a key component of physical education, volleyball not only contributes to the development of students' physical abilities but also enhances teamwork, communication, and strategic thinking. However, the effectiveness of volleyball instruction largely depends on the quality of teaching methods and the students' ability to grasp and execute these basic techniques. In the context of SMAN 1 Muara Sugihan, it becomes important to assess how well students are learning and applying the bottom passing technique to ensure that they are building the necessary skills for successful participation in the sport. This

analysis aims to provide insights into the current state of volleyball education at the school, identifying both strengths and areas for improvement. By examining the learning outcomes related to volleyball passing, educators can better understand the effectiveness of their instructional strategies and make informed decisions about how to enhance their teaching practices. Ultimately, this analysis serves as a stepping stone towards improving the overall quality of physical education at SMAN 1 Muara Sugihan, ensuring that students are not only competent in basic volleyball skills but are also prepared to advance to more complex aspects of the game.

Physical Education, is an essential aspect of education that aims to promote physical activity, health, and well-being among individuals (Committee on Physical Activity and Physical Education in the School Environment, 2013). It is an integral part of a comprehensive education system that helps students develop physically, mentally, and emotionally (Lanos, et al., 2023). Physical education is a complex and interesting subject. For many students, physical education subjects are highly anticipated. Physical education should be able to be carried out not only as a fun activity, but also must educate and be able to train the child's body. Physical education learning must be designed to comprehensively develop students' physical, psychomotor, cognitive, and affective domains, as emphasized (Siagian et al. (2022). This holistic approach ensures that students not only enhance their physical abilities and coordination but also engage in mental and emotional growth. The physical domain focuses on improving students' strength, flexibility, and overall fitness. The psychomotor domain involves the development of motor skills and coordination through various physical activities. The cognitive domain addresses students' understanding of movement concepts, strategies, and rules associated with different sports. Finally, the affective domain relates to students' attitudes, values, and emotional responses toward physical activity and teamwork. By integrating these domains into physical education, educators can foster well-rounded development and a positive attitude toward lifelong physical activity.

Developing a physical activity program requires not only a well-thought-out curriculum but also adequate sports facilities and infrastructure to support effective learning and engagement (Bouchard et al., 2012). Sports facilities play a crucial role in providing the necessary environment for students to participate in physical activities, ensuring that they have access to the resources and space needed to practice and improve their skills. The presence of appropriate infrastructure enhances the overall quality of physical education programs and supports students in their pursuit of physical fitness and athletic development.

Physical activity is integrated into the educational system as a key component that contributes to shaping students' capabilities in various aspects of life. This includes the development of personal skills, social skills, academic skills, and vocational

skills. By engaging in structured and purposeful physical activities, students gain valuable lessons on the importance of maintaining health and fitness, the value of teamwork, and the benefits of regular exercise. These experiences contribute to holistic development, preparing students for both personal and professional success.

One specific skill taught within Physical Education is bottom passing, which is an essential technique in the game of volleyball. Volleyball, as one of the most popular and widely practiced sports in physical education programs, serves as a significant focus of instruction. The teaching of bottom passing is fundamental in helping students develop proficiency in handling the ball effectively during a game. This skill not only enhances their technical ability in volleyball but also fosters important qualities such as coordination, timing, and teamwork. Volleyball games, due to their engaging and dynamic nature, are frequently included as a core part of the physical education curriculum, providing students with opportunities to apply and refine their skills in a team-based setting (Vai et al., 2021).

In summary, the development of physical activities within educational programs is significantly supported by well-designed sports facilities and infrastructure. These activities, such as learning volleyball techniques, contribute to the overall development of students, equipping them with essential skills for their future endeavors. By emphasizing the importance of health, fitness, and teamwork through structured physical education programs, students are better prepared for various aspects of life, both personally and professionally.

One of the fundamental skills that is consistently taught in the game of volleyball is bottom passing, as detailed (Popular Mechanics, 2000). This essential technique involves using the forearms to accurately receive and direct the ball, making it a crucial component of effective play. Mastering bottom passing is vital for successful volleyball performance, as it enables players to handle the ball properly and set up subsequent offensive or defensive actions. Its importance in the game underscores the need for thorough instruction and practice to ensure players develop proficiency in this basic yet critical skill. Passing down is a basic technique in volleyball that is used to receive and control the ball coming from the opponent, as well as direct the ball to teammates with high accuracy (Hambali & Sutiswo, 2020). This is also strengthened by playing the ball with the inside side of the forearm (lower passing) is a fairly important playing technique Lower passing learning in Physical Education has a positive impact on student learning outcomes (Herawati et al., 2020). The wrong attitude of preparation in making a downward pass is such as standing with the feet not opened shoulder-width apart, knees that are not bent, and a body that is not leaning forward (Ilham et al., 2019).

Volleyball underpass learning at the high school level is fundamentally aimed at developing students' technical skills, enhancing their understanding of game

strategy, and fostering effective teamwork (Vanlandewijck & Thompson, 2016). To achieve these objectives, it is essential to adopt a well-structured approach to teaching and practice. This structured approach ensures that students receive clear instructions, ample practice opportunities, and constructive feedback, all of which are crucial for mastering the underpass technique and other fundamental skills. However, the implementation of these learning objectives often encounters several significant obstacles. One of the primary challenges is that students new to volleyball or those just beginning their introduction to the sport frequently lack a deep and comprehensive understanding of basic techniques, such as the bottom passing technique. This foundational technique is critical for effective gameplay, as it directly influences a player's ability to handle and control the ball during matches.

Observations of beginners often reveal that many students struggle with the bottom passing technique due to insufficient prior knowledge and practice. This lack of foundational understanding can severely affect their performance, leading to inaccuracies and inconsistencies in their technique. The initial learning phase is particularly crucial, as it establishes the groundwork for future skill development and overall game performance. Without a solid grasp of the basics, students may find it challenging to progress to more advanced aspects of the game or to work effectively as part of a team.

Addressing these challenges requires targeted instructional strategies that focus on building a strong technical foundation. By providing detailed explanations, demonstrating proper techniques, and offering consistent practice opportunities, educators can help students overcome these initial hurdles. Additionally, incorporating strategies that reinforce the importance of practice and persistence can support students in developing their skills and improving their overall performance in volleyball. In addition to student-related challenges, there are also obstacles related to the instructional environment. Some teachers or coaches may not possess adequate experience or specialized knowledge in teaching the intricacies of the bottom passing technique. This gap in expertise can lead to ineffective teaching methods, making it difficult for students to grasp and apply the correct technique. When instructors themselves are not fully versed in the nuances of the technique, they may struggle to provide clear, accurate, and constructive feedback, which is essential for skill improvement.

Furthermore, the process of learning and mastering the bottom passing technique involves not only physical practice but also cognitive understanding of its application within game scenarios. Students need to understand the strategic aspects of when and how to use this technique effectively during a match. Without a solid grasp of both the technical and strategic elements, students may find it challenging to integrate the technique into their overall gameplay. Addressing these challenges requires a multifaceted approach, including professional development for

instructors to enhance their teaching methods and a focused effort on building students' foundational skills through structured practice and feedback. By overcoming these obstacles, educators can help students achieve proficiency in volleyball techniques, improve their game strategy understanding, and develop stronger teamwork skills, ultimately contributing to a more successful and enriching learning experience in volleyball.

Learning is a plan or pattern that teacher can use to design face-to-face teaching patterns in the classroom (Marsiyem et al., 2018). Bottom passing learning in volleyball at the Senior High School (SMA) level faces various challenges that affect the effectiveness and efficiency of the learning process. To overcome this problem, a comprehensive and well-planned solution is needed. The learning environment is an important aspect in achieving effective, efficient and interesting physical education learning (Goh & Khine, 2002). In the physical education curriculum, the learning of various physical activities and sports is organized into six distinct study materials. These materials include: (1) Game and sports activities, which encompass a wide range of competitive and recreational sports; (2) Development activities, focusing on exercises and drills designed to enhance physical skills and abilities; (3) Self-test/gymnastics, involving individual assessments and gymnastic routines that promote flexibility, strength, and coordination; (4) Rhythmic activity, which integrates movement with rhythm and music to develop coordination and rhythm; (5) Water or aquatic activities, including swimming and other water-based exercises that improve overall fitness and water safety; (6) Out-of-class education, referring to physical activities and learning experiences that occur outside the traditional classroom setting; and (7) Health education, which provides important information on maintaining physical health and wellness through lifestyle choices and preventive measures. Each of these study materials is designed to provide a comprehensive and well-rounded physical education experience. (Republic & Indonesia, 2003). Learning bottom passing in volleyball at the high school level necessitates a thorough and comprehensive needs analysis to ensure that the learning process is both effective and efficient (Ariyanto et al., 2023). A detailed needs analysis helps identify the specific requirements and challenges that student face in mastering the bottom passing technique, allowing educators to tailor their instruction to address these needs effectively. This process involves evaluating students' current skill levels, understanding their learning styles, and identifying any gaps in their foundational knowledge.

To maximize the effectiveness of teaching the bottom passing technique, it is beneficial to integrate this skill with a range of other concepts in physical education and health. This approach not only helps students learn the specific techniques required for volleyball but also provides them with a broader understanding of how these skills fit into the overall context of the sport. For example, linking bottom passing to concepts such as body alignment, balance, and teamwork can enhance

students' appreciation of the technique's importance and application during actual games. Supporting this approach involves implementing continuous training programs for teachers. By keeping educators updated with the latest knowledge and advancements in teaching volleyball, these programs ensure that instructional methods remain current and effective. Professional development opportunities enable teachers to adopt new strategies, techniques, and technologies that can improve their teaching practices and better support student learning.

Additionally, employing a variety of interactive and engaging learning methods can significantly enrich the educational experience for students. Techniques such as live demonstrations, pair exercises, and small games create a dynamic learning environment that promotes active participation and hands-on practice. Live demonstrations allow students to observe proper technique and execution, while pair exercises provide opportunities for peer feedback and collaborative learning. Small games, on the other hand, offer practical applications of the bottom passing technique in a game-like context, helping students develop their skills in a more realistic and enjoyable manner.

By integrating these methods into the teaching process, educators can significantly enhance the learning experience for high school students, making it both more comprehensive and engaging. Utilizing a variety of instructional strategies, such as hands-on practice, interactive drills, and targeted feedback, allows students to grasp complex concepts and techniques more effectively. For instance, incorporating practical exercises that mimic real-game scenarios helps students apply their skills in contexts that closely resemble actual gameplay, thereby deepening their understanding and improving their performance. Additionally, engaging students through interactive drills and team-based activities fosters a more dynamic learning environment, where students are motivated to participate actively and collaborate with peers. Providing timely and constructive feedback ensures that students can identify and correct mistakes, reinforcing correct techniques and promoting continuous improvement. As students become more proficient in these areas, their overall volleyball skills will advance, leading to enhanced performance in games and greater enjoyment of the sport. This holistic approach not only addresses the technical aspects of volleyball but also supports the development of teamwork, strategic thinking, and physical fitness. Ultimately, by adopting these methods, educators can create a more effective and enriching educational experience that prepares high school students for success both on and off the volleyball court.

B. Methods

This study uses a quantitative descriptive methodology. The purpose of this study is to assess students' underpass ability in Muara Sugihan high school volleyball under passing learning by using a survey technique with a posttest. To collect information

in down passing exercises, researchers conducted a Down Passing Ability Test (Brady test), which is by bouncing against a wall and requiring body preparation to perform down passing (Sitepu et al., 2024). Instructions for conducting the test are as follows.

Students should start by positioning themselves in front of a wall, ensuring they face the wall directly to maintain a straight trajectory. They need to hold the basketball securely with both hands. It is important that their grip is firm enough to maintain control but relaxed enough to allow for smooth movement and handling of the ball. To establish a stable and balanced base, students should position their feet shoulder-width apart. This stance helps to ensure proper balance throughout the exercise.

Next, students should slightly bend their knees and lean their torso slightly forward. This posture is essential for maintaining balance and stability, which are crucial for effectively executing the technique. Proper alignment of the body will support better control and accuracy when performing the task.

Once students are in this ready position, they should focus on their body alignment to ensure they are comfortably balanced and properly oriented. The next step involves throwing the ball towards the wall with controlled force. The goal is for the ball to rebound off the wall and come back towards them, simulating the motion of a volleyball pass. Students should aim to replicate the passing action as closely as possible to assess their technique effectively.

As the ball rebounds, students should carefully observe its trajectory and how it returns. They should make any necessary adjustments to their technique to ensure that the rebound mimics the motion of a real passing action. This will help in evaluating their control and proficiency in executing the skill, providing valuable feedback on their technique and execution.

It is crucial for students to focus on their form throughout the exercise to ensure they are practicing the passing technique effectively. They should maintain a forward-leaning posture and keep their knees slightly bent throughout the drill. This stance is essential for absorbing the impact of the ball and controlling its direction, as it helps in managing the force and ensuring the ball rebounds accurately. The slight forward lean, combined with bent knees, allows students to stay balanced and poised, which is vital for executing precise passes.

The throw should be executed with great attention to precision. Students should aim for a specific target spot on the wall, which will facilitate a controlled and accurate rebound. By directing the ball towards a predetermined spot, students can better simulate the conditions of a real volleyball pass, where accuracy and control are paramount. This focused aim helps in honing their skill to direct the ball with

precision, an important aspect of effective volleyball play.

The primary objective of this exercise is to provide students with a practical simulation of the passing action used in actual volleyball games. Regular practice with this drill helps students refine their technique by repeatedly performing the action in a controlled environment. This repetition is crucial for developing muscle memory, which enhances their ability to make accurate and consistent passes during real game situations.

Students should also pay attention to their follow-through and the manner in which they handle the ball upon its return. Proper follow-through ensures that the force applied to the ball is managed well, and it contributes to the smooth execution of the passing action. Observing the ball's rebound and adjusting their technique as needed will help students understand how different factors influence the ball's trajectory and control.

Consistent practice with this drill will lead to improvements in several areas: accuracy, consistency, and overall skill in performing effective volleyball passes. As students become more adept at controlling the ball and targeting their passes, they will be better prepared for the fast-paced and dynamic nature of actual volleyball games. By integrating this exercise into their regular training routine, students can enhance their passing skills, build confidence, and contribute more effectively to their team's performance on the court.

For the test and measurement of the bottom passing technique, the wall used should have specific dimensions. The target width of the wall is 1.52 meters, and the height of the wall is 3.35 meters from the floor. Students should stand at a distance ranging from 1 to 2 meters away from the wall. It is crucial that the wall surface be flat and smooth to ensure accurate results. These guidelines are based on the parameters outlined by Alwahhab (2023), which aim to standardize the testing environment and provide a consistent basis for evaluating students' bottom passing skills. The research uses data analysis procedures that have been established or determined well. After that, a brief explanation is given in a format that is easier to read from the data collected.

C. Results and Discussion

The research was carried out at 1 Muara Sugihan Senior High School with a total of 30 students. The implementation of the research began with the collection of Brady Test results data to determine the ability of students. then to the descriptive statistical method, which produces the score. The data shows that of the 30 students of SMAN 1 Muara Sugihan, the level of mastery of volleyball underpassing techniques is low. This could be the cause of the low passing learning results of SMA

Negeri 1 Muara Sugihan volleyball.

Table 1. The Level of Mastery of Volleyball SMA Negeri 1 Muara Sugihan Volleyball

No	Interval	Criterion	Frequency	Persentase
1	86%-100%	SPECIAL	0	0%
2	69%-85%	VERY GOOD	0	0%
3	52%-62%	GOOD	0	0%
4	35%-51%	KEEP	9	75%
5	18%-34%	LESS	0	0%
6	0%-17%	VERY LESS	3	25%
			12	100%

Based on the results of the study, there were 22 students in the “Medium” category with a presentation of 73.3% and 8 students in the “Very Poor” category with a presentation of 26.6%. As for the “Special”, “Very Good” and “Good” categories, no students were able to achieve these categories. Of the thirty students who were the sample of the volleyball bottom passing assessment study, the students had done a good assessment within the allocated sixty seconds. Based on the results of the research presented, it shows that students in learning volleyball underpassing at SMA Negeri 1 Muara Sugihan are still very low with the categories of “Medium” and “Very Lacking” and need to practice in fun learning to improve the learning outcomes of volleyball underpassing techniques.

Based on the research and data analysis conducted, it can be concluded that the volleyball passing ability of students at SMAN 1 Muara Sugihan was characterized by two distinct performance levels: “Medium” and “Very Poor.” Specifically, 73.4% of the students fall into the “Medium” category, indicating a moderate level of proficiency in volleyball passing skills. Meanwhile, 26.6% of the students are classified as “Very Poor,” reflecting a significant deficiency in their passing abilities. These conclusions are derived from a meticulous research process and a comprehensive evaluation of the students’ performance data.

The assessment involved analysing students’ scores on passing tests and closely examining their execution of basic volleyball passing techniques. The low scores observed on these tests highlight a considerable gap in the students’ proficiency. The detailed analysis of their passing techniques further confirms this disparity, indicating that a substantial portion of students struggle with fundamental skills required for effective volleyball passing (Aini, 2021; Sumantri et al., 2023; Juhrodin et al., 2023).

The findings reveal a pronounced variation in passing abilities among the students, emphasizing the necessity for targeted interventions to address these deficiencies. The high percentage of students in the “Medium” category suggests that while many students possess some level of passing skill, there is still room for improvement. Conversely, the significant proportion of students classified as “Very Poor” underscores a critical need for focused instructional strategies and support to enhance their volleyball passing skills.

To bridge this gap and improve overall skill levels in volleyball passing, it is essential to implement targeted training programs and personalized coaching interventions. These efforts should aim to address the specific weaknesses identified through the assessment and provide students with the tools and techniques needed to advance their skills. By focusing on these targeted interventions, the goal is to elevate the proficiency of all students and ensure a more uniform level of skill across the student population.

In conclusion, the research highlights the pressing need for a strategic approach to improving volleyball passing abilities at SMAN 1 Muara Sugihan. The observed disparity in performance levels calls for a concerted effort to enhance instructional methods, provide additional support, and implement effective training programs to address the deficiencies and promote overall skill development in volleyball passing (Azizah et al., 2022; Hermaya et al., 2024).

The basic passing technique will be less than ideal because the student’s body is still standing upright, the legs are not bent, and the gaze is not focused on the ball. Their ability to accurately pass a ball in sports such as soccer or basketball. Proper body positioning not only helps with accuracy, but also with power and control in passing. By focusing on the positioning of their feet, hips, and shoulders, athletes can improve their passing technique and ultimately contribute to the success of their team. In this section, we will delve deeper into the specific ways in which body positioning can make a significant difference in passing performance. It is based on the idea that basic technique is the most important aspect of playing volleyball, and students should continue to practice honing their bottom passing technique. Students can play volleyball in a thrilling way if they are able to learn to pass down correctly.

Learning in a fun and engaging manner can be effectively facilitated through various playful activities, as highlighted by Saputra & Gusniar (2019). In the context of teaching volleyball passing under the ball, this approach can be further innovated by integrating unique and interactive learning media alongside enjoyable and stimulating teaching methods. By utilizing creative and unconventional tools, such as interactive digital platforms or visually appealing aids, educators can capture

students' interest and make the learning process more captivating. Additionally, incorporating fun and dynamic methods, such as game-based drills or collaborative exercises, can enhance students' enthusiasm and participation. This approach not only helps students grasp the fundamental techniques more effectively but also increases their overall engagement with the learning process. Consequently, these strategies contribute to better learning outcomes, as students are more likely to practice diligently and apply the skills they have learned in a meaningful way.

D. Conclusions

The volleyball passing ability of students at SMAN 1 Muara Sugihan was characterized by two distinct performance levels: "Medium" and "Very Poor." the research highlights the pressing need for a strategic approach to improving volleyball passing abilities at SMAN 1 Muara Sugihan.

E. Acknowledgement

We thank to all parties who help us in this article. We also thank to the editorial team of PPSDP International Journal of Education.

References

- Aini, K. (2021). Improving passing skills on volleyball using target games approach. *Journal Sport Area*, 6(1), 22–28. [https://doi.org/10.25299/sportarea.2021.vol6\(1\).5288](https://doi.org/10.25299/sportarea.2021.vol6(1).5288)
- Alwahhab, D. D. (2023). The Effect of Practice Using Net Games on the Improvement of Passing Volleyball Extracurricular Volleyball Athletes at SMK Kozinatul Ulum, Todanan District, Blora Regency. *National Seminar on Indonesian's (FPIPSKR)*, 8(1).
- Azizah, A. R., Fadillah, I., & Susanto, A. (2022). The Influence of Exercise with Target Wall Media on Volleyball's Under-Passing Ability in Middle High School Students. *JUMORA: Jurnal Moderasi Olahraga*, 2(1), 53–66. <https://doi.org/10.53863/mor.v2i1.225>
- Ariyanto, F., Dlis, F., & Asmawi, M. (2023). *Development of Volleyball Bottom Passing Model*. <https://doi.org/10.31851/hon.v6i2.11365>
- Bouchard, C., Blair, S. N., & Haskell, W. L. (2012). *Physical Activity and Health*. Human Kinetics.
- Committee on Physical Activity and Physical Education in the School Environment; Food and Nutrition Board; Institute of Medicine. (2013). *Educating the Student Body: Taking Physical Activity and Physical Education to School*. Kohl HW III, Cook HD, editors. Washington (DC): National Academies Press (US). PMID: 24851299.
- Goh, S. C., & Khine, M. S. (2002). *Studies in Educational Learning Environments*. World

Scientific.

- Sumantri, R. J., Afandi, R., Wati, Y. E. R., Mudayat, M., & Syarif, A. (2023). Improving Volleyball Bottom Passing Learning Results Through Playing Ball Throwing. *Champions: Education Journal of Sport, Health, and Recreation*, 1(3), 24-30. <https://doi.org/10.59923/champions.v1i3.34>
- Hambali, S., & Sutiswo, S. (2020, February). Under-Passing Learning Using a Playful Approach in Volleyball Game. In 4th International Conference on Sport Science, Health, and Physical Education (ICSSHPE 2019) (pp. 119-121). Atlantis Press. <https://doi.org/10.2991/ahsr.k.200214.033>
- Herawati, A., Abduloh, & Resita, C. (2020). Student Learning Motivation in Improving Lower Passing Volleyball Learning in Class VIII SMPN 1 Pondoksalam Purwakarta. *Journal of Sports Literacy*, 2(1), 1-9.
- Hermaya, A. D., Muslimin, M., Septiliza, D., Fikri, A., & Prastio, D. S. (2024). Does drill training improve volleyball overhead passing results in volleyball players 14-15 years old?. *Jurnal SPORTIF: Jurnal Penelitian Pembelajaran*, 10(2), 335-348. https://doi.org/10.29407/js_unpgri.v10i2.23220
- Ilham, Oktadinata, A., & Kholidman, I. (2019). Analysis of Bottom Passing and Top Passing Skills of Extracurricular Participants of SMA Negeri 2 Kota Sungai Penuh. *Cerdas Sifa*, 1(1), 58.
- Juhrocin, Yudha Munajat Saputra, Amung Mamun, & Yunyun Yudiana. (2023). Integrating Life Skills into Volleyball Training for Positive Youth Development (PYD). *Kinestetik: Jurnal Ilmiah Pendidikan Jasmani*, 7(2), 318-325. <https://doi.org/10.33369/jk.v7i2.26918>
- Marsiyem, M., Destriana, D., & Pratama, R. R. (2018). Development of a Volleyball Bottom Service Learning Model. *Sebatik*, 22(2), 161-166. <https://doi.org/10.46984/sebatik.v22i2.323>
- Lanos, M. E. C., Lestari, H., & Iswana, B. A. O. (2023). Development Of Short Story Basic Movement Throw-Catch at Elementary School. 10270. <https://doi.org/10.31851/hon.v6i1.6819>
- Popular Mechanics. (2000). *Popular Mechanics*. Hearst Magazines
- Saputra, D. I. M., & Gusniar, G. (2019). Improving Volleyball Bottom Passing Learning Outcomes through Playing Throwing the Ball. *Sports Court: Journal of Physical Education and Sports (JPJO)*, 3(1), 64-73. <https://doi.org/10.31539/jpjo.v3i1.862>
- Siagian, R. C., Wibowo, R. T., Fadhilah, D. I., Lubis, P. R., Simamora, U. D. O., Isnani, M. A. R., & Silalahi, C. (2022). *Learning Physical Education, Sports, and Early Childhood*. *JUDIKDAS Jurnal Ilmu Pendidikan Dasar Indonesia*. <https://doi.org/10.51574/judikdas.v1i3.460>
- Sitepu, R. S., Anggara, N., & Perdinanto. (2024). Analysis of Volleyball Bottom Passing in Volleyball Extracurricular Students of SMA Negeri 1 Marabahan. *Scientific Journal of Penjas (Research, Education and Teaching)*, 10(2), 202-211.
- Vai, A., Jawak, J. F., Wijayanti, N. P. N., & Gusdernawati, A. (2021). Development of learning media for bottom passing techniques using deep image media in

volleyball games at Santa Veronica Junior High School. *Journal of Sport Education (JOPE)*, 3(2), 127. <https://doi.org/10.31258/jope.3.2.127-136>
Vanlandewijck, Y. C., & Thompson, W. R. (2016). *Handbook of Sports Medicine and Science*. John Wiley & Sons.