

Comparison Of Volleyball Skills Tests At State Vocational School 3 Palu, State High School 2 Palu, And State High School 3 Palu

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ABSTRACT

This study aims to analyze and compare the volleyball skill levels of students participating in extracurricular activities at SMK Negeri 3 Palu, SMA Negeri 2 Palu, and SMA Negeri 3 Palu. The research method used was quantitative with a comparative approach. The sample consisted of 45 extracurricular volleyball students from each school. Data were collected through a series of volleyball skills tests covering serving, passing, and smashing. Data analysis was performed using ANOVA to determine significant differences between groups. The results showed that SMK Negeri 3 Palu had varying average scores. Some students achieved high scores, particularly on the service skills test, but some students still fell into the fair and poor categories (27.78% - 33.33%). SMA Negeri 2 Palu had a lower score distribution, with more students falling into the fair and poor categories (13.33% - 40.00%), particularly in smash and passing techniques. However, several students scored in the good and fairly high categories (46.67%), and SMA Negeri 3 Palu showed the highest and most consistent scores. Almost all aspects (service, passing, smash) achieved the good category (50.00%).

Keywords: Comparison, Skills Test, Volleyball.

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INTRODUCTION

Physical education is a crucial part of school learning because it helps develop students' skills, health, and potential (Adhi et al., 2017). Physical education also plays a role in improving students' overall fitness and physical abilities (Wahyudi & Saputra, 2023). The learning process is crucial in education. This is because the learning process involves teachers and students sharing and processing information with the goal of adding to their knowledge. This leads to positive changes that lead to more effective and efficient learning.

Volleyball is a sport included in physical education and is widely enjoyed by all levels of society in Indonesia (Azzaky & Irsyada, 2019). Volleyball has developed rapidly and is often used as a learning activity in schools (Sistiasih et al., 2022). Volleyball is developing very quickly and is one of the most popular sports in Indonesia after soccer and badminton (Showab & Djawa, 2019). This sport can be played by everyone from children to adults, both men and women. Initially, volleyball was played for recreational purposes to fill free time or as a diversion after a tiring work or study session.

The principle of volleyball is quite simple: to hit the ball towards the opponent's court so that the opponent cannot return the ball (Rahman & Samuel, 2024). The goal of volleyball according to (Triandi & Hariyadi, 2021) is to win the game by stopping the ball in the opponent's area and keeping the ball from falling in your own court. Thus, volleyball is quite simple and does not require a lot of equipment, but this game is not easy for everyone to play, so players from each team must have adequate technique, physical, tactical and mental as well as good cooperation between players, which is essential for winning the game.

A comparison of volleyball skills tests between SMK Negeri 3 Palu, SMA Negeri 2 Palu, and SMA Negeri 3 Palu shows that some students are unable to perform basic techniques well. Problems that occur during volleyball extracurricular activities and during physical education lessons are that students perform basic techniques poorly, for example, when passing underhand, both to teammates and towards the opponent's area, the ball often fails or goes astray. Problems in volleyball learning indicate that many students have not mastered passing techniques well (Dogho et al., 2021). In addition, students' smashing abilities are still relatively low in the implementation of learning (Fitriani, 2021). Students' basic technical skills need to be improved through practice (Martadini & Winarno, 2024). Mastery of basic techniques greatly influences success in volleyball (Jamil et al., 2022). Then students pass carelessly, the important thing is that the ball goes over the net and lands in the opponent's area. In fact, the underhand pass is a fundamental and crucial technique in volleyball, according to (Widiyono & Zubaedi, 2024).

Volleyball is a fun, engaging, and inexpensive team game. Volleyball is played by two teams of six players each. The goal of volleyball is to keep the ball moving over a high net from one side of the court to the other. Volleyball can be played indoors or outdoors. Volleyball practice activities include various activities, ranging from basic skills, tactics, and actual volleyball match techniques. Mastering the basic techniques of volleyball requires a significant amount of practice. Each student takes a different amount of time to master a basic technique. Talent, interest, and discipline in practice are crucial in mastering basic volleyball skills.

METHOD

This type of research is a quantitative approach with a descriptive comparative method (Description Comparison). This study aims to compare conditions in three locations, whether the three conditions are the same or there are differences. This study, sampling was carried out using a purposive sampling approach, in this method, samples are selected based on predetermined criteria. According to (Sugiyono 2019), total sampling is a sampling technique where all members of the population are sampled.

This study used a comparative design to analyze the results of volleyball skills tests. Data were collected during Physical Education (PJOK) class hours. Data analysis was conducted using a comparative test to compare the skills test results across the three locations.

RESEARCH INSTRUMENT

According to (Sugiyono 2018) An instrument is considered valid if the measuring tool used can measure valid data, thus ensuring the validity of the research and development of this tool. Research instruments are tools used to objectively measure student abilities (Jamaiah et al., 2018). The use of appropriate instruments will produce valid and reliable research data

(Widiyono & Zubaedi, 2024). This research data was collected by observing the implementation of the volleyball skills test, which will be documented in the form of photographs.

DATA COLLECTION TECHNIQUE

Data collection in this study involved taking data from volleyball skills tests. This study involved direct field visits to compare volleyball skills tests at SMK Negeri 3 Palu, SMA Negeri 2 Palu, and SMA Negeri 3 Palu.

Data collection techniques also use tests to find data. Tests are instruments used to obtain individual data. (Ismayanti 2018) Tests are used as a tool to obtain data on individual abilities through direct practical activities (Insan et al., 2024). Some procedures for data collection are as follows:

No	Category	State Vocational School 3 Palu	State Senior High School 2 Palu	State Senior High School 3 Palu
1	Good	38.89%	46.67%	50.00%
2	Enough	27.78%	13.33%	16.67%
3	Not enough	33.33%	40.00%	33.33%
4	Bad	0%	0%	0%
Number of Samples		18	15	12

a. Data Collection Preparation

Explaining the test procedures to students, preparing test equipment, and gathering all students in the field to take the test.

b. Test Implementation

After praying and warming up together with other students, students were instructed to carry out the test one by one so that researchers could see how students performed when carrying out the basic technical skills test in volleyball.

c. Test Data Recording

The data process is recorded systematically so that the data taken or recorded is valid.

DATA ANALYSIS TECHNIQUES

The data results from the research that have been obtained will be categorized using the categories of each basic technical skill category in volleyball.

RESULTS AND DISCUSSION

RESULTS

Based on the research data conducted on the basic skills test of service, passing, and smash in the men's volleyball game of extracurricular students at SMK Negeri 3 Palu, SMA Negeri 2 Palu, and SMA Negeri 3 Palu. The results obtained from the test comparison. And the number of samples in this study was 45 people as seen in Table 1.

Table 1. Comparison Results of Volleyball Skills Tests Between Schools

Comparative Analysis Between Schools

- 1) "Good" Category Highest: SMA Negeri 3 Palu (50%) Second place: SMA Negeri 2 Palu (46.67%) Lowest: SMK Negeri 3 Palu (38.89%) This means that SMA Negeri 3 Palu has the best quality of volleyball skills based on the number of students who fall into the Good category.
- 2) In the "Sufficient" category, SMK Negeri 3 Palu had the highest Sufficient score (27.78%), indicating that many students were at an intermediate level of ability. SMA Negeri 2 Palu had the lowest Sufficient score (13.33%).
- 3) In the "Less" category, SMA Negeri 2 Palu had the highest percentage of "Less" (40%). SMK Negeri 3 and SMA Negeri 3 both had a score of "Less" at 33.33%. This indicates that SMA Negeri 2 Palu faces the greatest challenges in basic volleyball skills compared to the others.

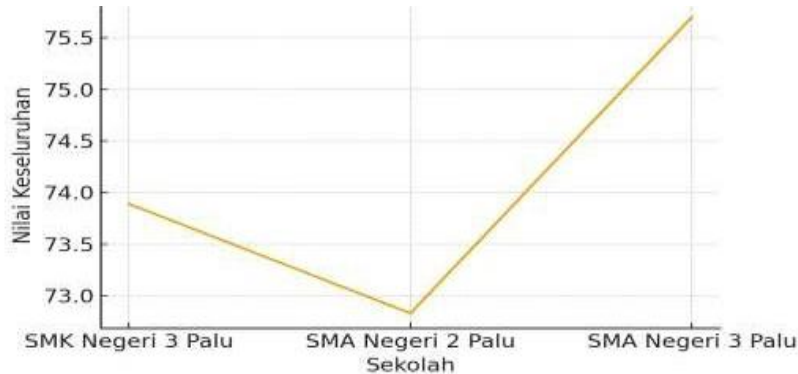


Figure 1. Comparison Chart of Overall Volleyball Skill Scores

DISCUSSION

Mastering basic volleyball techniques is crucial for success (Murtono & Panggalo, 2021). Basic techniques, such as smashes, play a crucial role in gaining points in the game (Saharullah et al., 2023). Research on basic volleyball skills, including serving, passing, and smashing, among extracurricular students from three schools: SMK Negeri 3 Palu, SMA Negeri 2 Palu, and SMA Negeri 3 Palu, revealed several important findings that warrant further analysis. Students' basic technical abilities are influenced by experience and training (Irwandi, 2015). Training and learning factors also influence student skill outcomes (Nurulita & Arfanda, 2024). SMK Negeri 3 Palu has varying average scores. Some students achieved high scores, particularly on the service skills test, while others were in the moderate and poor categories, with percentages ranging from 27.78% to 33.33%. SMA Negeri 2 Palu has a lower distribution of scores and more students fall into the sufficient and less category with a percentage (13.33% - 40.00%), especially in smash and passing techniques. However, there are several students who have scores in the good and quite high categories with a percentage (46.67%). And SMA Negeri 3 Palu shows the highest and most consistent scores in the majority of students. Almost all aspects (service, passing, smash) reach the good category with a percentage (50.00%).

Playing volleyball well requires mastery of basic techniques (Beutelsthl 2017) states that "Technique is a procedure developed based on practice and aims to find solutions to certain movement problems in the most economical and useful way." Volleyball is known to have two game patterns, namely attack and defense. Both patterns can be executed perfectly, players must truly master the basic techniques of volleyball well. The elements in the game of volleyball include physical condition, technique, tactics, mental maturity, cooperation and competition experience.

Supporting factors for achieving goals in playing volleyball are having good physical and mental health, having the body shape required for the volleyball branch, such as having long knuckles, having an ideal and athletic height, having talent in volleyball so that it is easy to develop tactics, techniques and physical, and finally having a strong mentality such as discipline, willingness to work together, work hard and be responsible. In the world of sports, especially in the field of volleyball, it is greatly influenced by the level of basic skills of the players. Meanwhile, to achieve the goal of playing quality volleyball, basic techniques in volleyball are very necessary for students to master.

According to (Rahmani 2014), each of the basic techniques mentioned above has a different function. The service serves to start the game, the pass serves to receive/play the ball coming from the opponent's or teammate's area, the smash serves to attack the opponent's area so that the ball that will be crossed into the opponent's area can be deadly or at least make it difficult for the opponent to play the ball perfectly. These techniques are basic techniques that support each other in a game.

In this study, the volleyball skills test focused on serving, passing, and smashing. These three skills were selected because they are the backbone of every ball exchange, representing the main flow of the game. These include initiating an attack (service), distributing the ball (passing), and finishing a point (smashing). Furthermore, all three encompass various components of motor and physical abilities, thus providing a comprehensive overview of the respondents' abilities. This selection is also supported by previous research showing that the combination of serving, passing, and smashing has high validity and reliability for measuring volleyball skills.

Service, passing, and smash tests are often taken in volleyball research because they are fundamental techniques that determine the course of the game (service), build attacks (passing), and score points (smash), while blocking may not be prioritized because it focuses more on defense and response than on attack initiative or early game control, although it remains crucial.

According to (Rohendi & Suwandar, 2018) the game of volleyball was created in 1885 by William G. Morgan, he was a physical education instructor at a youth association, the Young Men Christian Association (YMCA) in the city of Holyoke, Massachusetts, United States. The initial name of the game was "Minotte" which is similar to badminton, and this game was initially played by many people, not limited according to its original purpose, namely: to develop the physical fitness of workers in addition to their mass exercise.

Developing the movement skills necessary to play volleyball proficiently requires a significant investment of time and effort from children. Therefore, it is crucial for students to

receive instruction to improve their competence in basic volleyball tactics, which are essential for all beginning volleyball players (Prima & Kartiko, 2021).

CONCLUSION

The results of the study indicate a significant difference in basic volleyball skills between the three schools. This difference is evident in the average scores of each student in each skill aspect and the final category achieved by the students. Increase support for extracurricular volleyball activities, including providing adequate training facilities such as suitable fields, sufficient balls, quality nets, and training aids. Provide coach development programs or bring in professional instructors to make the training system more focused and structured. Provide more regular practice time so that students receive sufficient training to improve basic skills.

Coaches need to provide a more varied training approach, such as gradual technique training, physical strengthening drills, and game simulations. The focus of training should be directed at passing and smashing techniques, as these techniques have been shown to be weaknesses for students at the two schools. Coaches can conduct regular evaluations, both individually and in groups, to systematically monitor student skill development. Students are expected to increase their self-motivation and actively participate in training to further develop their skills. Independent training outside of extracurricular hours should be conducted to strengthen basic techniques such as wall passing, light smashing, and target serving. Maintain physical condition through supporting exercises such as jogging, skipping, and strength training.

Bibliography

- Adhi, B. P., Sugiharto, & Soenyoto, T. (2017). Pengaruh Latihan dan kekuatan Otot Tungkai terhadap Power Otot Tungkai. *JPES (Journal of Physical Education and Sports)*, 6(1), 7–13.
- Beutelstahl, D. (2017). *Belajar Bermain Bola Voli*. Bandung: Pionir Jaya.
- Dogho, S., Wani, B., & Bile, R. L. (2021). Pengembangan Model Latihan Passing Atas Permainan Bola Voli Sebagai Aktivitas Belajar Siswa Dalam Pembelajaran Pjok Di Smp. *Jurnal Edukasi Citra Olahraga*, 1(3), 189–197. <https://doi.org/10.38048/jor.v1i3.495>
- Fitriani, A. (2021). Volley ball passing learning model for students age 11-12 years. *Gladi: Jurnal Ilmu Keolahragaan*, 12(02), 93-101.. <https://doi.org/10.21009/gjik.122.02>
- Insan, S. R., Putra, A. J., & Putra, C. P. (2024). Pengaruh Latihan Barbel Squat dan Maximum Exercise Terhadap Power Otot Tungkai Pada Pemain Bola Voli Klub Irtuha Jangga Baru. *Indonesian Journal of Sport Science and Coaching*, 6(1), 112-124.
- Iskandar, J. (2015). Perbandingan Kemampuan Teknik Dasar Service Atas Pada Permainan Bola Voli Siswa Kelas Xi Sma Negeri 1 Sibreh Dengan Sma Negeri 1 Ingin Jaya Kabupaten Aceh Besar. *Jurnal Penjaskesrek*, 2(1), 11-36..
- Jamaiah, J., Triansyah, A., & Puspa, F. UPAYA MENINGKATKAN HASIL BELAJAR PASSING BAWAH BOLA VOLI MELALUI VARIASI PEMBELAJARAN. *Jurnal Pendidikan dan Pembelajaran Khatulistiwa (JPPK)*, 7(5).

- Jamil, Y., Nugraheni, W., & Bachtiar, B. (2022). Keterampilan teknik dasar bermain bola voli pada siswa peserta ekstrakurikuler bola voli. *Jurnal Educatio*, 8(4), 1309-1317.. <https://doi.org/10.31949/educati>
- Martadini, M. H., & Winarno, M. E. (2024). Survei Keterampilan Teknik Dasar Service Atas, Passing Atas, Passing Bawah Siswa Peserta Ekstrakurikuler Bola Voli di SMA Negeri 1 Paiton Kabupaten Probolinggo. *Jurnal Prestasi Olahraga*, 7(2), 37-42.
- Murtono, T., & Panggalo, V. N. (2021). Perbandingan Teknik Dasar Permainan Bola Voli Siswi Ekstrakurikuler Sman 3 Kota Palu Dengan Sma Gkst Imanuel Palu. *Tadulako Journal Sport Sciences and Physical Education*, 09(02), 19–26.
- Triandi, N. A., & Hariyadi, K. (2021). Pengembangan Media Pembelajaran Berbasis Multimedia Interaktif Materi Teknik Dasar Bola Voli. *SPRINTER: Jurnal Ilmu Olahraga*, 2(3), 256-261.. <https://doi.org/10.46838/spr.v2i3.136>
- Nurulita, R. F., & Arfanda, P. E. (2024). Analisis Kemampuan Passing Atas Pada Permainan Bola Voli Siswa Kelas X SMA Negeri 22 Gowa (Ditinjau dari Kekuatan Otot Lengan dan Kekuatan Otot Tungkai). *Jurnal Dunia Pendidikan*, 4(3), 1465-1470.
- Prima, P., & Kartiko, D. C. (2021). Survei kondisi fisik atlet pada berbagai cabang olahraga. *Jurnal Pendidikan Olahraga Dan Kesehatan*, 9(1), 161-170..
- Rahman, D., & Samuel, V. (2024). *Meningkatkan Smash Dalam Bola*. 7, 15033–15041.
- Rahmani, M. (2014). Buku super lengkap olahraga. Jakarta: Dunia Cerdas.
- Rohendi, A., & Suwandar, E. (2018). Metode latihan dan pembelajaran bola voli untuk umum. Bandung: Alfabeta.
- Saharullah, S., Arsy, A. Z., Saripin, S., & Muhammadong, M. (2023). Analisis Kemampuan Smash Bola Voli Ditinjau dari Kelentukan Pergelangan Tangan Permainan Bola Voli di SMAN 5 Barru. *EDUKASIA Jurnal Pendidikan dan Pembelajaran*, 4(1), 701-708.. <https://doi.org/10.62775/edukasia.v4i1.341>
- Showab, A., & Djawa, B. (2019). Pengaruh Modifikasi Permainan Bola Voli Terhadap Kegembiraan Belajar Siswa. *Jurnal Pendidikan Olahraga Dan Kesehatan*, 07(03), 307–312.
- Sistiasih, V. S., Digdaya, S., Dewi, P. A., & Rumpoko, S. S. (2022). Analisis Keterampilan Teknik Dasar Bolavoli Mahasiswa Pendidikan Olahraga. *Jurnal Ilmiah SPIRIT*, 22(2), 87-100.
- Wahyudi, A., & Saputra, A. (2023). Pengaruh Variasi Latihan Pola Permainan Terhadap Sistem Pertahanan Tim Sepak Bola Buana Putra FC. *Indonesian Journal of Sport Science and Coaching*, 5(1), 28-37.
- Widiyono, I. P., & Zubaedi, A. (2024). Analisis Tingkat Keterampilan Passing Bawah Bola Voli Usia 16-19 Tahun. *Jurnal Ilmiah STOK Bina Guna Medan*, 12(1), 1-11.