

## Efforts to Improve Learning Outcomes in the Game of Volleyball Through Modification of Learning Tools and Media

Dina Aliyah Nurshafa<sup>1A-E</sup>, Anggi Setia Lengkana<sup>2B-D\*</sup>, Entan Saptani<sup>3C</sup>

<sup>123</sup> Physical Education of Elementary Teacher Program, Universitas Pendidikan Indonesia, Bandung, Indonesia

### ABSTRACT

This research aims to determine the improvement in learning outcomes in the game of volleyball by modifying learning tools and media for class V SDN Gunung Sari. The type of research used is classroom action research (PTK). The research subjects were fifth-grade students at SDN Gunung Sari, totaling 23 students. The data collection techniques used are observation, tests, and documentation. Data analysis techniques include quantitative and qualitative descriptive analysis. The research results found that using modified learning tools and media can improve learning outcomes in the game of volleyball for class V students at SDN Gunung Sari. The analysis results obtained significant improvements from pre-cycle, cycle I, cycle II, and cycle III. The results of learning the volleyball game in the pre-cycle in the complete category were 39% or nine students. The results of learning the volleyball game in cycle I in the whole category were 65% or 15 students. The results of learning the game of volleyball in cycle II in the complete category were 82% or 19 students, and in cycle III in the whole category, it was 100% or 23 students. This research concludes that the application of modified learning tools and learning media in volleyball games can improve learning outcomes for class V students at SDN Gunung Sari.

**Keywords:** Learning Outcomes; Volleyball Games; Modification of Learning Tools and Media

### Correspondence:

\*Anggi Setia Lengkana, Physical Education of Elementary Teacher Program, Universitas Pendidikan Indonesia, Bandung, Indonesia  
Code. Email: [asetialengkana@upi.edu](mailto:asetialengkana@upi.edu)

### Article History:

Submitted: February, 2024  
Accepted: April, 2024  
Published: May, 2024

### Authors' contribution:

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

### Cite this article:

Nurshafa, D. A., Lengkana, A. S., & Saptani, E. (2025). Efforts to Improve Learning Outcomes in the Game of Volleyball Through Modification of Learning Tools and Media. *Indonesian Journal of Sport Management*, 4(2), 298-304.  
<https://doi.org/10.31949/ijsm.v4i2.8889>

## INTRODUCTION

Physical education is an overall educational process that refers to the cognitive, affective, psychomotor, and physical aspects listed in the academic curriculum, aiming to improve physical, mental, emotional, and social abilities (Alif et al., 2012). One of them is creating a learning atmosphere and learning process so that students actively develop their potential to have religious and spiritual strength, self-control, intelligent personality, and noble morals. In essence, schools' physical education, sports, and health learning are generally delivered through games and sports (Abrasyi et al., 2018). Learning materials and content should be provided in stages so that students can achieve the main learning objectives. For this reason, teachers should have a learning plan that contains knowledge, skills regarding strategies and teaching structures to improve children's learning (Saputra & Gusniar, 2019).

Many obstacles are currently encountered in the physical education teaching and learning process, especially in volleyball games for elementary school children (Hadi et al., 2020). These obstacles include the following: the tools and facilities used must be more appropriate to the child's stage of growth and development. For example, the field, ball, and net used are standard sizes, and the game rules are still the actual volleyball game rules (Yudiana, 2015). Many students complain of pain when touching the ball because the air



The Author(s). 2025 **Open Access** This article is licensed under a **Creative Commons Attribution-ShareAlike 4.0 International (CC BY-SA 4.0)**, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third-party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit: <https://creativecommons.org/licenses/by-sa/4.0/>

pressure on the ball feels heavy and hard; apart from that, the volleyball game learning given by the physical education learning teacher is oriented towards volleyball playing techniques, so the learning process is lacking. Interesting (Lubis & Agus, 2017). Children are considered like little athletes who have to train hard with physical training programs and mastery of techniques, which seem difficult for elementary school-age children. Therefore, physical education teachers must be more innovative in increasing student interest and motivating their students to be more active when learning the game of volleyball (Nurgiansah et al., 2021).

Volleyball is played by two teams, each consisting of six people. The ball is played in the air by passing over the net, and each team can only play the ball three times (JASMANI, 2020). The basic techniques in playing volleyball include lower passing, upper passing, upper serve, lower serve, block, and smash. This sport is also played with a team of 6 people, and they must wear uniforms when competing and play the ball three times (Maliki, 2018). Basic movements and volleyball games must be instilled and taught to students when learning volleyball. The purpose of fundamental movements in the game of volleyball, both related to playing the ball and when without the ball, are several basic movements that form the basis for implementing basic volleyball techniques. After mastering the basic techniques sufficiently meet the requirements, learning volleyball can be continued by providing playing techniques (Hidayah & Alsaudi, 2021).

Therefore, researchers want to research improving learning outcomes in the game of volleyball by modifying learning tools and media at Gunung Sari Elementary School to improve learning outcomes. One way to improve students' learning skills is by modifying the game rules, facilities, and infrastructure for learning the volleyball game (Nahid & Abrar, 2023). According to Bahagia (in Wijaya and Pardijono, 2014, p. 788), "The essence of modification is to analyze and develop lesson material by organizing it in the form of potential learning activities to facilitate students in their learning." So, modifying physical education learning can improve students' learning skills if the teaching materials and tools used have been modified in such a way (Tadesse, 2022). In modifying learning media, teachers need to know the components needed for modification so that using modified media or tools can provide maximum results for students in the learning process. However, some students are less interested in the learning provided by the teacher. Because it is too monotonous, the fundamental movement skills are performed less well (Gandasari, 2022). because assistive device modifications are implemented so children can improve their learning outcomes. Some students feel embarrassed when doing movements and lack self-confidence, so they do not want to do these movements. Additionally, inadequate school facilities, including invisible court lines, no longer usable balls, and damaged nets, reduce students' motivation to play volleyball (Kayode & Fayomi, 2022).

In this context, researchers see that the facts that occur in the field during physical education learning, especially at the Gunung Sari State Elementary School, are that teachers only provide monotonous physical education learning without any modification of learning and the infrastructure used does not support the learning process, thus making the learning process less attracting students' interest in volleyball. This causes the students' basic movement skills in playing volleyball to be poor and time wasted (Sahabuddin et al., 2023).

## **METHOD**

This research is a Classroom Action Research (PTK) model from Kemmis & Mc. Taggart was carried out over three cycles (Hunaepi et al., 2016). to determine the increase in student learning outcomes in learning the game of volleyball by modifying learning tools and media for class V SDN Gunung Sari. Classroom action research was carried out in 3 cycles. Kemmis

and Mc model research design. Taggart in the form of a cycle or round of activities, which includes four stages: action planning, action implementation, observation, and reflection. This research was conducted at SDN Gunung Sari, in Sumedang Regency.

The data collection techniques used in this research were observation, learning results tests, documentation, and field notes. The first step in research is planning (Lara, 2022). This planning stage includes initial observations, looking at initial conditions in the pre-cycle, discussing the results, and determining the material that will be provided when starting the research. The next step is action in providing action. This research was carried out in three cycles because, in the pre-cycle, the results obtained from students who completed the learning outcomes were only nine students who reached the KKM determined by the school.

The instrument used to obtain data on improving volleyball game results through modifying tools and learning media in research uses the GPAI (Game Performance Assessment Instrument) observation instrument. GPAI has seven assessment components, namely: decisions taken (Decision Marking), implementing skills (Skill Execution), adjustments (Adjustment), protecting (Cover), providing support (Support), guarding/marketing ( Guard/mark), and protection (Base ). Of the seven GPAI components, researchers identified which will be applied to volleyball games to improve skills resulting from learning to play volleyball. In this case, researchers focus on five components, namely: decisions taken ( Decision marking ), Implementing skills ( Skill Execution ), providing support (Support ), Guarding/marketing (Guard/Mark), and protection ( Base) (Abrasyi et al., 2018). Apart from that, some aspects are observed in the implementation of observations and implementation using IPKG (Teacher Performance Evaluation Indicators), as well as monitoring student activities in learning in the field using the results of observations of student activities.

## RESULTS

The planning stage for Cycle I and II is creating a Learning Implementation Plan (RPP). In the RPP that the teacher has prepared, several components must be included, such as school identity, time allocation, core competencies, essential competencies, indicators, objectives, materials, learning sources/media, learning approaches and methods, learning models, learning steps, and assessment, planning space and time readiness for the learning process to be implemented. Time planning and processing activities are essential and primary to ensure that enough time is used to not exceed the specified time allocation.

Based on the results of the IPKG analysis and student activities above at the planning stage of cycle I, it has shown good assessment criteria with a percentage of 70% for IPKG 1 and IPKG 2, 75% and 72 achieved in student activity scores. Even though the learning planning in cycle I have received good criteria, it has yet to reach the target of 100%.

In the planning stage of Cycle II, there was a GPA of 1.2, and overall student activity planning and implementation prepared in Cycle II showed a percentage of 80% for a GPA of 1. IPKG 2 showed a percentage of 82% with excellent assessment criteria, and in assessing student activities, it scored 85. In learning planning in cycle II, the criteria were perfect but had yet to reach the specified target, namely 100%.

At the implementation stage of Cycle I, Cycle II, and Cycle II, the teacher at the beginning of learning before entering into the core activities, the first thing the teacher does is apperception to find out students' readiness to carry out learning, as well as find out students' initial knowledge of the material that will be presented. This is in line with what

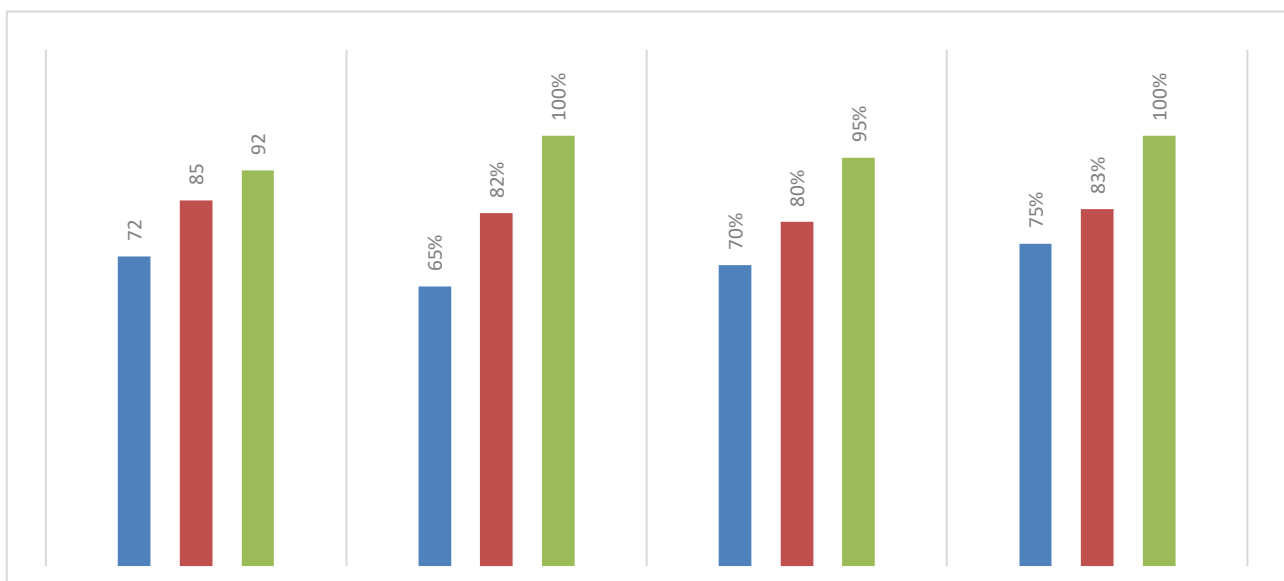
(Trianto, 2017) said: each student's knowledge in a lesson is a link to the student's abilities in the process of new knowledge that will be received

The next step is to carry out analysis, reflection, and interpretation (meaning) of the data obtained from the observations to see whether the actions taken have achieved the goal. The results obtained in the observation stage are collected and analyzed in this stage. From the results of the observations, researchers can reflect on themselves by looking at the observation data to see whether the activities carried out have improved learning outcomes in the game of volleyball. The meaning of the results of this observation is used as a basis for evaluating so that steps can be prepared for the following action.

Based on the pre-cycle learning results, it was found to be 39% with a KKM score of 9 students. In the first cycle, the students who completed it were 15, with a percentage of 65%. In the third cycle, the students who completed were 19 students with a percentage of 82%, and in the third cycle, the students who completed were 23 students with a percentage of 100%; the target learning outcomes of students have been achieved, and even exceeded the targets set. There is a comparison of the percentage of completeness from initial data to cycle III on volleyball game material through modification of tools and learning media. The increase in learning outcomes for Cycle I, II, and Cycle III can be seen in Table 1 and Figure 1 below.

**Table 1.** recapitulation of learning outcomes for the game of volleyball

No.	Description	Pre-cycle.	Cycle I	Cycle II	Cycle III
1.	Average Student Score	66,78	70,82	77,43	84,13
2.	Highest Score	81,5	91,5	90	95
3.	Lowest Score	50	54	60	71,5
4.	Minimum Completion Score	9	15	19	23
5.	Incomplete Score	14	8	4	0
6.	Percentage	39%	65%	82%	100%



**Figure 1.** Research Result Data

Based on the figure 1, the results of learning the game of volleyball through modification of learning tools and media can improve student learning outcomes. This is because using modified learning tools and media aligns with understanding (Abdul, 2017).

Modification is one of the efforts teachers can make so that the learning process can reflect DAP (developmentally appropriate practice). This means that the teaching assignments must pay attention to changes in the child's abilities or conditions and can help encourage these changes.

## CONCLUSION

Teaching and learning activities in schools will run smoothly if they have learning media as supporting facilities. Elementary schools in the North Sumedang subdistrict still need to improve in learning media, namely tools and learning media. Volleyball learning media requires ball facilities balanced with the number of students. The problem at Gunung Sari Elementary School is the need for volleyball learning tools and media, which hampers teaching and learning activities. In cycle I, the percentage reached 65%. In cycle II, 82%, and in cycle III, 100% of students completed the criteria very well; students were able to master the game of Volleyball, supported by the results of observations of learning planning at IPKG and students as well as the implementation of learning and reflection stages. Researchers must do this to improve student learning outcomes in class V of SDN Gunung Sari.

## ACKNOWLEDGEMENT

Thank you to Allah SWT who has given mercy so that I can carry out this research, thank you to Drs. Entan Saptani, M.Pd, Dr. Anggi Setia Lengkana, as my supervisor, Thank you to SDN Gunung Sari who has been willing to be a partner in this research, not to forget to also thank my parents and friends who are always with me in every process of making this article, and thanks to all UPI Sumedang Campus Penjas Lecturers who have given me useful knowledge so that I can get to this point, hopefully this research can be useful for others.

## CONFLICT OF INTEREST

The authors declare no conflict to interest

## REFERENCES

- Abrasyi, R., Hernawan, H., Sujiono, B., & Dupri, D. (2018). RETRACTED: Model Latihan Passing Bawah Bola Voli Pada Siswa Sekolah Menengah Pertama. *Journal Sport Area*, 3(2), 168–178. [https://doi.org/10.25299/sportarea.2018.vol3\(2\).2135](https://doi.org/10.25299/sportarea.2018.vol3(2).2135)
- Alif Edo Yuniawan, Heny Setyawati, C. Y. (2012). Modifikasi Model Pembelajaran Bola Voli Melalui Permainan Bola Voli Mini Berlapis. *ACTIVE: Journal of Physical Education, Sport, Health and Recreation*, 1(4), 1–5.
- Bule, J., & \_ D. (2020). Perbedaan Latihan Passing Target dan Rangkaian Latihan Passing terhadap Kemampuan Passing Bawah Atlet Bolavoli SMAN 8 Padang. *Jurnal Performa Olahraga*, 5(1), 26–31. <https://doi.org/10.24036/jpo136019>
- Gandasari, M. F. (2022). *Application of physical education subjects to the development of student character values*. 162–169.
- Hadi, A., Nasaruddin, N., & Husniati, H. (2020). Pengaruh Model Pembelajaran Kooperatif Tipe Stad Terhadap Hasil Belajar Pendidikan Jasmani, Olahraga Dan Kesehatan Kelas V Sdn 4 Pringgabaya Tahun Ajaran 2020/2021. *Jurnal Ilmiah Pendas: Primary Education Journal*, 1(2), 124–133. <https://doi.org/10.29303/pendas.v1i2.64>



- Hambali, S. (2016). Pembelajaran Passing Bawah Menggunakan Metode Bermain Pada Permainan Bola Voli. *Jurnal Pendidikan Olahraga*, 5(1), 58–70.
- Hidayah, F. N., & Alsaudi, A. T. B. D. (2021). Upaya Meningkatkan Hasil Belajar Passing Bawah Bola Voli dengan Metode Latihan Berpasangan. *Prosiding Seminar Nasional Pendidikan STKIP Kusuma Negara II*, 70–75.
- Hunaepi, Prayogi, S., Samsuri, T., Firdaus, L., Fitriani, H., & Asy'ari, M. (2016). PELATIHAN PENELITIAN TINDAKAN KELAS (PTK) DAN TEKNIK PENULISAN KARYA ILMIAH BAGI GURU DI MTs. NW MERTAKNAO. *Lambung Inovasi*, 1(1), 38–40.
- JASMANI, P. (2020). Faktor Penghambat Siswa Kelas V Di Sdn Sendangadi I Kecamatan Mlati Sleman Terhadap Pembelajaran Permainan Bola Voli. *Eprints.Uny.Ac.Id*. [https://eprints.uny.ac.id/69779/1/fulltext\\_wildan satrio firdaus\\_16604224024.pdf](https://eprints.uny.ac.id/69779/1/fulltext_wildan%20satrio%20firdaus_16604224024.pdf)
- Jumadi, F., Agung, A., & Putra, N. (2021). Efektivitas Pembelajaran PJOK pada Teknik Dasar Passing Bawah Permainan Bolavoli Melalui Media Daring pada Masa Pandemi Covid-19. *Jurnal Pendidikan Kesehatan Rekreasi*, 7(2), 423–440.
- Kayode, F. E., & Fayomi, O. (2022). *Dynamism of Sports Diplomacy and Foreign Policy as Correlate of Sports Development in North-Central State , Nigeria*. 1, 181–188.
- Kemmis, S., McTaggart, R., & Nixon, R. (2014). *The action research planner: Doing critical participatory action research*. Springer.
- Lara. (2022). No Titleהאָרץ העינים לבגד שבאמת את מה לראות את מה קשה לראות את מה שבאמת לבגד העינים. IX(8.5.2017), 2003–2005. [www.aging-us.com](http://www.aging-us.com)
- Lubis, A. E., & Agus, M. (2017). Peningkatan hasil belajar passing atas pada permainan bola voli melalui variasi pembelajaran siswa SMP. *Jurnal Pendidikan Jasmani Indonesia*, 13(2), 58–64.
- Maliki, T. S. (2018). Mengembangkan Model Latihan Servis Atas Bola Voli. *Jurnal Siliwangi*, 3(2), 226–231.
- manan abdul, B. (2017). PENGGUNAAN MEDIA MODIFIKASI BOLA PLASTIK UNTUK MENINGKATKAN HASIL BELAJAR TEKNIK DASAR PASSING BAWAH DALAM BOLAVOLI Abdul Manan Bachtiar. *Seminar Nasional Pendidikan 2017*, 1, 20–25.
- Muchtar, D., & Suryani, A. (2019). Pendidikan Karakter Menurut Kemendikbud. *Edumaspul: Jurnal Pendidikan*, 3(2), 50–57. <https://doi.org/10.33487/edumaspul.v3i2.142>
- Nahid, M. H., & Abrar, A. (2023). Commercial Sports Facilities in Big Cities: A Case Study. *Indonesian Journal of Sport Management*, 3(2), 136–151.
- Nurgiansah, T. H., Pratama, F. F., & Iman Nurchotimah, A. S. (2021). Penelitian Tindakan Kelas Dalam Pendidikan Kewarganegaraan. *Jurnal Pendidikan PKN (Pancasila Dan Kewarganegaraan)*, 2(1), 10. <https://doi.org/10.26418/jppkn.v2i1.41752>
- Rasman, L., Sari, T. P., & Aini, L. (2018). 3 1,2,3. 06(September), 109–113.
- Refleksi, L. K. (n.d.). *Refleksi Pembelajaran dan Tindaklanjutnya melalui PTK*. 1–5.
- Sahabuddin, S., Hakim, H., Syahrudin, S., & Sofyan, D. (2023). Disciplinary Levels of Student Volleyball Athletes. *Indonesian Journal of Sport Management*, 3(2), 242–260.
- Saputra, D. I. M., & Gusniar, G. (2019). Meningkatkan Hasil Belajar Passing Bawah Bola Voli melalui Bermain Melempar Bola. *Gelanggang Olahraga: Jurnal Pendidikan Jasmani Dan Olahraga (JPJO)*, 3(1), 64–73. <https://doi.org/10.31539/jpjo.v3i1.862>

- Suprpti, E. (2016). Peningkatan Pembelajaran Matematika Anak Usia Dini Dengan Microsoft Powerpoint Ispring Pada Materi Pengenalan Konsep Bilangan. *Jurnal Pedagogi*, 2(1), 27–33.
- Suyuti, H. A., & Hakim, H. (2018). Upaya Peningkatan Hasil Belajar Passing Atas Pada Permainan Bola Voli Melalui Modifikasi Alat Pembelajaran Murid SD Negeri Kumala. *SPORTIVE: Journal Of Physical Education, Sport and Recreation*, 2(1), 41. <https://doi.org/10.26858/sportive.v2i1.9500>
- Tadesse, S. (2022). *Incentives and Compensation in Ethiopian Football*. 152–161.
- Tanjung, Z., & Amelia, S. (2017). Menumbuhkan Kepercayaan Diri Siswa. *JRTI (Jurnal Riset Tindakan Indonesia)*, 2(2), 2–6. <https://doi.org/10.29210/3003205000>
- Usman, J., & Argantos. (2020). Jurnal Performa Olahraga. *Jurnal Performa Olahraga*, 5(1), 18–25.
- Wibowo, D. H. (2015). Pembelajaran Passing Atas Bola Voli Melalui Permainan Sasaran Tembak. *ACTIVE: Journal of Physical Education, Sport, Health and Recreation*, 4(9).
- Widarto, Pardjono, & Widodo, N. (2012). Pengembangan model pembelajaran. *Cakrawala Pendidikan*, XXXI(3), 409–423.
- Yudiana, Y. (2015). Implementasi Model Pendekatan Taktik dan Teknik dalam Pembelajaran Permainan Bola Voli pada Pendidikan Jasmani Siswa Sekolah Menengah Pertama. *Jurnal Kajian Pendidikan*, 5(1), 95–114.