

Original Article Research

Implementation of Basic Volleyball Techniques Based on Traditional Games through Game-Based Learning at SDN 001 Rambah

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Abstract

This study aims to explore the application of basic volleyball techniques based on traditional games through the Game Based Learning method at SDN 001 Rambah, and to see its effect on student participation and skill mastery. This kind of study is called Classroom Action Research (CAR). The participants were students of grade V of SDN 001 Rambah totaling 29 people divided into 12 male students and 17 female students. The urgency of this research is to develop more engaging and culturally relevant learning models in physical education, especially for improving students' fundamental volleyball skills. The study involved 30 fifth-grade students aged 10–11 years. Data were collected through observation sheets, performance tests, questionnaires, interviews, and field notes, and analyzed using descriptive statistics and thematic analysis. The learning outcomes of students in the application of basic volleyball techniques based on traditional games through GBL at SDN 001 Rambah in cycle I were 41.38% and cycle II was 89.66%. Based on the percentage data, it shows that there is an increase in student learning outcomes in each cycle. The percentage increase from cycle I to cycle II is 48.28%. Students also showed increased motivation, cooperation, and enjoyment during the learning process. It concludes that incorporating traditional games into GBL effectively enhances students' technical and affective learning outcomes in volleyball while promoting cultural values. Future research is recommended to expand this approach to other sports and educational contexts to further explore its impact on physical literacy and student engagement.

Keywords: Basic Techniques, Volleyball, GBL

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1. INTRODUCTION

Physical education in elementary schools plays a vital role in fostering students' physical fitness, motor coordination, and social interaction; however, learning activities often remain conventional and less engaging, particularly in teaching basic volleyball techniques. Students frequently experience boredom and difficulty mastering fundamental skills due to repetitive and decontextualized instructional methods. Therefore, the urgency of this research lies in the need to develop more engaging and culturally relevant learning models in physical education, especially for improving students' fundamental volleyball skills. Integrating traditional games into a game-based learning (GBL) framework offers a solution that not only enhances students' technical abilities but also embeds cultural values such as teamwork, fairness, and cooperation. Through this approach, physical education becomes more enjoyable, meaningful, and aligned with students' developmental needs and cultural backgrounds. Education is a purposeful endeavor that is planned and carried out methodically to help students develop their potential, character, and competence to become self-sufficient and responsible adults (Susanto, 2019). The goal of education is to fully develop pupils' cognitive, emotional, and psychomotor capacities. In this regard, physical education plays a crucial role as an essential component of the entire educational system. Physical education promotes the development of motor skills, physical fitness, and character traits including sportsmanship, discipline, cooperation, and responsibility in addition to physical activity. Physical education uses a variety of sports and games to effectively inculcate life values and develop a person who is balanced betweenThe goal of education is to fully develop pupils' cognitive, emotional, and psychomotor capacities. In this regard, physical education plays a crucial role as an essential component of the entire educational system.

Physical education is a component of education that focuses on bodily activities and aims to promote both physical and spiritual health as well as growth, development, and motor abilities (Depdiknas, 2003). Physical education, according to Muhajir (2007), is a teaching approach that makes use of exercise to promote a person's whole physical, mental, and emotional health. Sukintaka (2004), on the other hand, contends that physical education is a crucial part of education in general, with the aim of using exercise to promote physical fitness, motor skills, knowledge, attitudes, and values. Through a variety of enjoyable activities, physical education instruction in primary schools seeks to improve kids' motor skills and physical capacities.

Volleyball is one of the subjects covered; it covers a number of fundamental skills like passing, serving, and smashing. The Game-Based Learning (GBL) method, which makes use of classic games, can teach fundamental volleyball skills like serving, passing, smashing, blocking, and setting up. This approach increases student motivation and comprehension by fusing enjoyable physical activities with aspects of local culture. For instance, serving can be used in the framework of the Bentengan game to train accuracy and strength, while passing techniques can be trained through the Gobak Sodor game, which emphasizes collaboration and precise movement. Games like rounders, blocking using hide-and-seek ball variations, and setting up with engklek balls that improve balance and coordination can all be used to teach smashing tactics. Through enjoyable and significant learning experiences, this method not only improves volleyball technique mastery but also fosters the development of character values like sportsmanship, cooperation, and responsibility. However, because the learning method is less engaging, many students really struggle to comprehend and apply these strategies.

Several studies relevant to this research topic include; First, a study titled "Development of the Papabov Game for Elementary School Students' Volleyball Learning" was carried out by Wibowo & Nurharsono in 2022. With an average expert assessment of 87.34% (excellent) and large group trial results of 93.23% (very good), the investigation's findings demonstrate the effectiveness of this game model for use in volleyball instruction in elementary schools. Second, a study titled "Implementation of Volleyball Like Games Activities to Increase Student Learning Motivation in Volleyball Games" was carried out by Gumati (2017). The results of the study show that adding volleyball-like games to grade V classes can increase students' desire to participate in the sport at SDN Gegerkalong 1 and 2, Bandung City. Third, a study titled "Implementation of the Playing Method in Volleyball Underhand Passing Learning in Elementary Schools" by Hambali & Sutiswo (2019). This study looks at how playing strategies affect the learning goals of fifth-grade elementary school students who play volleyball underhand passing. The study approach used was an experiment with a Randomized Pretest-Posttest Control Group Design. The results showed that the learning objectives for underhand passing in elementary school volleyball were greatly impacted by the employment of playing techniques in volleyball education.

Based on the results of observations at SDN 001 Rambah, it was found that students' basic volleyball technique skills were still relatively low. This is seen in the students' poor proficiency with fundamental skills including passing, serving, smashing, and blocking. Lack of organized instruction, inadequate facilities for support, and low student willingness to engage in sports education are some of the factors that contribute to this low skill. Additionally, students' interest in and comprehension of fundamental volleyball tactics have not been completely fostered by the teaching methods employed. Therefore, a more innovative and enjoyable approach is needed, such as the implementation of Game-Based Learning based on traditional games, to improve students' basic volleyball technique skills at SDN 001 Rambah.

Game-Based Learning, according to Zainuddin (2016), is a method of instruction that uses game elements to improve learning results, student motivation, and engagement. According to Kapp (2012), game-based learning is a method of teaching that uses games as a way to effectively and entertainingly teach concepts, abilities, and information. Gee (2003), on the other hand, describes game-based learning as the use of game elements and concepts to create dynamic, challenging learning environments that encourage proactive problem solving.

One of the many benefits of game-based learning (GBL) is that it can boost students' motivation and interest in learning by making the process more enjoyable and engaging. In order to allow students to engage directly with the content and gain knowledge through experience, this approach promotes active and exploratory learning. Additionally, GBL fosters critical thinking and problem-solving abilities through game challenges, as well as enhancing topic retention and comprehension. Additionally, GBL offers instant feedback that enables students to swiftly make adjustments, accommodate different learning styles, and develop social and cooperative skills through group activities. With these benefits, GBL is a successful strategy for fostering pleasant and meaningful learning.

Traditional games offer a lot of promise for use in physical education in the local context. In addition to being enjoyable, traditional games foster teamwork, cultural values, and the development of fundamental motor abilities that are applicable to fundamental volleyball tactics. In addition to developing their athletic abilities, students who use the GBL approach to teach fundamental volleyball skills also maintain a connection to the local knowledge in their

community. It is intended that by incorporating classic games into the instruction of fundamental volleyball skills, students will become more excited, engaged, and emotionally and physically invested in the learning process. Additionally, this method can enhance students' cooperation abilities and enhance their educational experiences with local cultural values.

The purpose of this study is to examine how the Game-Based Learning approach at SD 001 Rambah can be utilized to teach basic volleyball skills based on traditional games and to track its effects on student engagement and skill development.

2. METHOD

2.1 Participants

The subjects of this study were teachers and fifth-grade students of SDN 001 Rambah, with a total of 29 students consisting of 12 males and 17 females. The students, aged between 10 and 11 years, were selected purposively based on their participation in physical education classes, particularly in volleyball learning activities. The teacher acted as both the instructor and collaborator in implementing the learning model, while the students served as the main participants who experienced the application of basic volleyball techniques through traditional games using a game-based learning (GBL) approach. This composition allowed for direct observation of how the model influenced students' engagement, motivation, and mastery of fundamental volleyball skills within a real classroom setting.

2.2 Research Design

This study employed a Classroom Action Research (CAR) design referring to the model developed by Arikunto (2010), which consists of four systematic stages: planning, acting, observing, and reflecting. This design was selected because it enables researchers and teachers to collaboratively identify problems that arise during the learning process, implement actions to address them, and evaluate the results to improve learning quality. The research was conducted in two cycles, each involving the implementation of basic volleyball techniques through traditional games within a game-based learning (GBL) framework. In the planning stage, the researcher and the teacher prepared lesson plans, learning materials, and assessment instruments. The acting stage involved the execution of learning activities that integrated traditional games with volleyball skill practice. During the observing stage, data were collected on students' activity, motivation, and mastery of basic techniques, while in the reflecting stage, the results were analyzed to identify strengths and weaknesses and to determine necessary revisions for the next cycle. This design allowed for a continuous and systematic process of improving both teaching effectiveness and student engagement in physical education learning.

2.3 Instruments

The instruments used in this study were designed to collect both quantitative and qualitative data to comprehensively assess the implementation of basic volleyball techniques through traditional games using a game-based learning (GBL) approach. The instruments included: (1) Observation sheets, used to record students' activeness, cooperation, enthusiasm, and interaction during the learning process; (2) Performance test rubrics, which assessed students' mastery of basic volleyball techniques such as underhand passing, serving, and spiking, based on accuracy, control, and body coordination; (3) Questionnaires, distributed to students to measure their motivation, interest, and perception of learning volleyball through traditional games; (4)

Field notes, utilized by the researcher and collaborating teacher to document classroom situations, challenges, and reflections during each cycle; and (5) Interview guides, used to obtain deeper insights from teachers and selected students regarding their experiences and opinions about the learning activities. These instruments complemented each other, ensuring data triangulation and supporting a more valid and reliable interpretation of the learning outcomes.

Table 1.

Interview Guidelines (Semi-Structured)

No	Domain / Aspect	Questions / Prompts	Notes / Probes
1	Teacher's Perspective on Learning Process	How do you perceive the integration of traditional games into volleyball learning?	Probe for advantages, challenges, and overall feasibility.
2	Student Engagement	In your opinion, how do students respond to learning volleyball through traditional games?	Explore motivation, participation, enthusiasm, and interaction.
3	Skill Development	Do you think this method helps students improve their basic volleyball skills (serving, passing, spiking)?	Probe for specific examples of improvement or difficulties.
4	Cultural Relevance	How relevant are the traditional games used to students' cultural background?	Probe for students' familiarity, enjoyment, and connection with culture.
5	Learning Challenges	What difficulties did you face while implementing game-based learning in volleyball?	Probe for logistical, instructional, or student-related challenges.
6	Suggestions for Improvement	What recommendations would you give to improve this learning model?	Probe for changes in methods, games, or assessment techniques.
7	Student Feedback	How do students describe their learning experience using traditional games in volleyball?	Probe for enjoyment, confidence, teamwork, and skill acquisition.

2.4 Procedures

In the planning stage, the researcher and the teacher prepared lesson plans, learning materials, traditional games adapted for volleyball skills, and assessment instruments. During the acting stage, learning activities were implemented, integrating traditional games to practice basic volleyball techniques such as serving, passing, and spiking. In the observing stage, data were collected on students' engagement, motivation, cooperation, and skill mastery using observation sheets, performance tests, questionnaires, and field notes. Finally, in the reflecting stage, the results were analyzed to evaluate the effectiveness of the learning model, identify strengths and

weaknesses, and make improvements for the next cycle. This systematic process allowed continuous enhancement of both teaching quality and students' technical and affective learning outcomes.

2.5 Data Analysis

The data analysis in this study combined both quantitative and qualitative approaches to comprehensively evaluate the implementation of basic volleyball techniques through traditional games using a game-based learning (GBL) approach. For quantitative data, collected from performance tests and questionnaires, descriptive statistics were used to measure students' skill mastery and learning outcomes. The analysis included calculating the mean scores, percentages, and improvement rates of students' performance in basic volleyball techniques (serving, passing, and spiking) across the two research cycles. This allowed the researcher to determine the extent of skill development and the effectiveness of the learning model. For qualitative data, collected from observation sheets, field notes, and interviews, thematic analysis was employed. This process involved identifying, categorizing, and interpreting recurring patterns related to students' engagement, motivation, cooperation, and perceptions of learning through traditional games.

3. RESULTS

Cycle I

1. Planning

Using the Game-Based Learning approach, the researcher created a lesson plan that combines fundamental volleyball skills with classic games. Learning objectives, resources, techniques, media, and tools for testing and observation are all decided upon throughout this planning process. Volleyball passing and serving skills are trained by modifying relevant traditional games like Gobak Sodor or Bentengan.

2. Implementation

a. Initial Activities

The instructor begins the class by introducing herself, giving a brief overview of volleyball and other traditional games, and outlining the day's learning goals. To encourage interest and participation, students are asked to connect volleyball activities with traditional playing experiences.

b. Core Activities

Through adapted versions of classic games, students engage in game-based learning exercises that help them perfect fundamental skills like serving and underhand passing. Correct procedures are guided, taught, and reinforced by teachers. Group exercises are used to hone abilities, collaboration, and sportsmanship.

c. Closing

Both the instructor and the pupils evaluate the educational exercises. Students get the chance to share their thoughts, challenges, and positive aspects of their education. The instructor wraps up the lesson, offers criticism, and inspires students to do better in the following meeting.

3. Observation

Observation sheets were used throughout the process by researchers and cooperating educators to document student participation, plan implementation adequacy, and emerging challenges. Student attitudes, proficiency in fundamental skills, and reactions to game strategies were all observed.

Table 2.

Interview Summary

No	Domain / Aspect	Key Points / Responses	Notes / Observations
1	Teacher's Perspective on Learning Process	Teacher observed that students' engagement improved when traditional games were integrated, but some students still struggled with mastering techniques.	Integration of games helped create an enjoyable and interactive learning environment.
2	Student Engagement	Most students were motivated and actively participated in learning volleyball through games, showing enthusiasm and cooperation.	Students who were initially less confident gradually became more involved in activities.
3	Skill Development	High-performing students improved in serving, passing, and spiking, while moderate and low-performing students still required guidance and practice.	Cycle 1 results: 48.28% "Not Enough", 10.34% "Very Little".
4	Cultural Relevance	Students felt familiar and comfortable with traditional games, which made learning more relatable and enjoyable.	Traditional games reinforced local cultural values such as teamwork and cooperation.
5	Learning Challenges	Some students experienced difficulty coordinating movements, maintaining focus, and applying techniques correctly during game situations.	Teacher noted that repetitive practice and peer support were needed for improvement.
6	Suggestions for Improvement	Teacher recommended using more step-by-step demonstrations, pairing students for peer support, and gradually increasing game complexity.	Aimed to enhance skill acquisition and student confidence in the next cycle.
7	Student Feedback	Students reported enjoying the traditional games and felt more motivated to learn volleyball; some low-performing students expressed nervousness and difficulty with techniques.	Highlighted the need for individualized guidance and supportive learning strategies.

4. Reflection

Following the completion of the task, the teacher and the researcher examine the outcomes of the skills test and observation. Planning for cycle 2 is improved if there are still issues, such as pupils not grasping the method or lacking enthusiasm.

Table 3.

Description of Student Learning Outcomes in Cycle 1

Score	Criteria	Number of students	Presentation	Information
90-100	Very well	3	10,34%	Complete
80-89	Good	7	24,14%	Complete
70-79	Enough	2	6,90%	Complete
61-69	Not enough	14	48,28%	Not Complete
<60	Very little	3	10,34%	Not Complete
Total		29	100%	

Cycle II

1. Planning

Teachers provide learning aids (light balls, whistles, small obstacles), modify classic games to make them more difficult, and clarify activity instructions and assessments of fundamental technical skills including overhead passes, smashes, and underhand serves.

2. Implementation

a. Initial activities

By going over the fundamental methods covered in the first cycle and outlining the customary games that will be played that day, the instructor facilitates perception. Additionally, the instructor communicates the learning objectives and stresses the value of sportsmanship and teamwork.

b. Core activities

Students engage in learning exercises utilizing modified versions of classic games, like practicing serving with more tangible target challenges or smashing in games like Bentengan Bola. In addition to giving direct assistance during practice and correcting students' technical faults, teachers also set an example of proper movement. Technique, participation, and adherence to volleyball game rules are emphasized.

c. Closing

Students are invited to talk on how they feel when studying, what they comprehend, and the challenges they face. The instructor wraps up the lesson for the day and offers guidance and inspiration for further practice.

3. Observation

In order to document skill growth, greater student participation, and the efficacy of using traditional games, researchers and teachers re-conducted observations using updated observation sheets. Additionally, movement techniques that had been deficient in the first cycle were the focus of attention.

Table 4.

Interview Summary

No	Domain / Aspect	Key Points / Responses	Notes / Observations
1	Teacher's Perspective on Learning Process	Teacher noted that most students showed better understanding and smoother execution of volleyball techniques after integrating more structured traditional games and step-by-step guidance.	Learning process became more effective, with students more confident and engaged.
2	Student Engagement	Students were highly motivated, participated actively in all activities, and demonstrated enthusiasm and cooperation.	Even previously low-performing students showed improved involvement and willingness to try.
3	Skill Development	Significant improvement in serving, passing, and spiking skills; most students met or exceeded the minimum competency standards.	Cycle 2 quantitative results showed more students in "Good" and "Very Good" categories compared to Cycle 1.
4	Cultural Relevance	Students expressed enjoyment and familiarity with traditional games, which reinforced teamwork and cultural values.	The combination of cultural games and volleyball enhanced learning relevance and engagement.
5	Learning Challenges	Minor challenges remained for a few students in coordinating complex movements, but peer support and repeated practice mitigated most difficulties.	Teacher observed that individualized guidance helped students overcome remaining obstacles.
6	Suggestions for Improvement	Teacher suggested maintaining the integration of traditional games with progressive skill complexity and continuing peer-assisted learning.	This approach was seen as sustainable and effective for long-term skill development.
7	Student Feedback	Students reported increased confidence, enjoyment, and satisfaction; even those previously struggling felt they could	Feedback indicated higher motivation and positive

No Domain / Aspect	Key Points / Responses	Notes / Observations
	perform volleyball techniques successfully.	attitudes toward learning volleyball.

4. Reflection

Compared to cycle 1 results, students' enthusiasm, level of exercise, and proficiency with fundamental volleyball techniques have all grown. If most of the success markers have been reached, there is no need to move on to the next cycle.

Table 5.

Description of Student Learning Outcomes in Cycle 2

Score	Criteria	Number of students	Presentasion	Information
90-100	Very well	7	24,14%	Complete
80-89	Good	15	51,72%	Complete
70-79	Enough	4	13,80%	Complete
61-69	Not enough	2	6,90%	Not Complete
<60	Very little	1	3,44%	Not Complete
Total		29	100%	

The results indicates that game-based learning exercises can improve students' learning outcomes in the Basic Volleyball Techniques Based on Traditional Games course at SDN 001 Rambah. When compared to learning outcome data from the pre-cycle, student learning outcomes during the learning process increased. The following table illustrates the rise in learning outcomes:

Table 6.

Recapitulation of Student Assessment Cycle 1 & 2

Score	Criteria	Cycle	
		I	II
90-100	Very well	10,34%	24,14%
80-89	Good	24,14%	51,72%
70-79	Enough	6,90%	13,80%
61-69	Not enough	48,28%	6,90%
<60	Very little	10,34%	3,44%
Total		100%	100%

Table 3 demonstrates how game-based learning can enhance students' learning outcomes in cycles I and II of Basic Volleyball Techniques Based on Traditional Games SDN 001 Rambah. According to the table, the learning outcomes for the 29 students enrolled in SDN 001 Rambah were 41.38% in cycle I and 89.66% in cycle II. The percentage data indicates that student learning outcomes are improving with each cycle. From cycle I to cycle II, there was a 48.28% increase.

4. DISCUSSIONS

The implementation of basic volleyball technique learning based on traditional games through the Game-Based Learning (GBL) approach shows significant results in improving students' skills. In cycle 1, students still have difficulty in passing, serving, and smashing correctly. However, after the strategy was improved in cycle 2, an overall increase in ability was seen. The use of games such as Gobak Sodor for passing and Bentengan for serving provides a more concrete and enjoyable experience for students, so that the techniques taught are easier to understand and apply.

Students' active engagement in the learning process has increased thanks to the GBL method's traditional game approach. In the second cycle, nearly every student participated completely in every modified game, but in the previous cycle, some students remained inactive or too ashamed to take part in activities. Familiar and fun games make students more motivated, not feel burdened, and even compete to show their abilities. This shows that a fun learning atmosphere greatly influences students' motivation and success in PJOK learning.

This method not only enhances technical proficiency but also positively influences students' character development. Students learn to cooperate, appreciate friends, and maintain sportsmanship through classic group games. When kids play in groups, wait for their turn, and support one another, these values are subtly incorporated into educational activities. As a result, learning emphasizes the development of positive character and social attitudes in addition to physical talents.

Inter-cycle reflection demonstrates how crucial it is to enhance learning processes in order to enhance learning results. The findings from the first cycle's skill assessments and observations served as a guide for creating more successful activities in the second cycle. For instance, the teacher changed the game to be more structured, gave students immediate feedback, and demonstrated skills more clearly in cycle 2. As a result, student engagement during learning and proficiency of fundamental volleyball methods significantly increased.

This finding supports the principles of constructivism (Piaget, 1972; Vygotsky, 1978), which emphasize that students construct knowledge through meaningful experiences and social interaction. By using traditional games familiar to the local culture, students were able to learn through direct practice, develop motor coordination, and enhance social skills.

These findings also align with Game-Based Learning theory, as proposed by Prensky (2001), which asserts that incorporating elements of games—challenges, fun, and feedback—can enhance intrinsic motivation and student engagement. In this study, traditional games served as an enjoyable and interactive medium, allowing students to repeatedly practice volleyball skills such as serving, passing, and spiking in a more engaging manner. Interviews indicated that students who were previously less confident became more active, demonstrating that GBL effectively improved both learning motivation and motor skills. Recent studies further support

this, showing that integrating game elements in physical education improves motor skill mastery and student engagement (Vlachopoulos & Makri, 2017).

Moreover, the use of Classroom Action Research (PTK), as explained by Arikunto (2010), emphasizes that teaching can be continuously improved through cycles of planning, action, observation, and reflection. In this study, Cycle 1 identified weaknesses in skill mastery and student engagement, while Cycle 2 applied improvements such as step-by-step instruction, peer-assisted learning, and integration of traditional games. The significant improvements observed demonstrate the effectiveness of PTK in enhancing learning quality through continuous evaluation and reflection.

Furthermore, dynamic systems theory (Davids, Button, & Bennett, 2008) posits that motor skills develop through interactions among the individual, the task, and the environment. Traditional games provided varying environmental constraints, requiring students to adapt their movements—for example, when passing or spiking in different game conditions. This facilitated the development of motor adaptability, which was evident from improved coordination and accuracy in Cycle 2. The concept of implicit learning also supports these findings, as motor skills can be acquired unconsciously through meaningful experiences (Poolton, Maxwell, & Masters, 2006). Through repeated practice in the context of traditional games, students internalized volleyball movement patterns implicitly, without always relying on formal instructions. Finally, cultural relevance played a crucial role. According to Ladson-Billings (1995), pedagogical approaches that are contextual and culturally relevant increase motivation and engagement. Integrating traditional games familiar to the students made learning more enjoyable and comfortable, while also fostering social skills such as cooperation and communication.

In conclusion, these findings support both classical and contemporary theories, including constructivism (Piaget, 1972; Vygotsky, 1978), GBL (Prensky, 2001; Vlachopoulos & Makri, 2017), dynamic systems theory (Davids, Button, & Bennett, 2008), implicit learning (Poolton, Maxwell, & Masters, 2006), culturally relevant pedagogy (Ladson-Billings, 1995), and PTK (Arikunto, 2010). Overall, integrating traditional games into volleyball instruction provides an enjoyable, effective, and culturally meaningful learning experience, while improving students' basic motor skills, motivation, and active participation.

5. CONCLUSIONS

5.1 Conclusion

Overall, the Game-Based Learning approach based on traditional games has proven to be effective in the context of elementary schools, especially in SD 001 Rambah. Learning becomes more fun, easy to understand, and meaningful for students. Traditional games that are modified according to learning objectives have succeeded in bridging the material on basic volleyball techniques with the world of children's play. Thus, this approach can be used as an alternative strategy for PJOK learning that not only improves students' motor skills, but also forms positive characters and fosters a sense of love for local culture.

5.2 Implication

The findings of this study indicate several important implications for teaching, curriculum development, classroom research, student development, and future research. **First**, the integration of traditional games based on Game-Based Learning (GBL) in teaching basic volleyball skills

demonstrates that culturally relevant and engaging learning methods can significantly enhance students' motor skills, motivation, and active participation. This suggests that physical education teachers should adopt creative and contextually meaningful teaching strategies to facilitate skill mastery while fostering collaboration and enjoyment. **Second**, the results highlight the value of incorporating culturally familiar activities into the physical education curriculum, not only to improve technical skills but also to instill local cultural values and strengthen students' engagement, making learning more meaningful and enjoyable. **Third**, this study underscores the effectiveness of Classroom Action Research (PTK), as described by Arikunto (2010), as a method for continuously improving learning quality through cycles of planning, action, observation, and reflection, emphasizing the importance of reflective and evidence-based teaching practices. Additionally, the research demonstrates that applying traditional game-based learning promotes social and character development, as students learn teamwork, communication, and strategic thinking in a fun and culturally relevant context. Finally, the findings offer opportunities for future research, such as exploring the effectiveness of traditional game-based GBL in other sports, examining its long-term impact on intrinsic motivation and character development, or comparing it with conventional or digital learning methods. Overall, this study implies that integrating culturally relevant, game-based learning approaches in physical education can holistically develop students' technical, social, and motivational capacities while providing a framework for continual pedagogical improvement.

The novelty of this study lies in its integration of traditional games with Game-Based Learning (GBL) to teach basic volleyball techniques in a primary school context. Unlike conventional physical education methods that often rely on repetitive drills and standard exercises, this study combines culturally familiar games with structured learning objectives, creating a learning environment that is both engaging and culturally relevant. Furthermore, the study addresses a gap in the literature by emphasizing the role of local cultural elements in physical education, which has been rarely explored in the context of elementary school volleyball instruction. This combination of cultural relevance, game-based pedagogy, and action research constitutes the main novelty, offering both theoretical and practical insights for educators seeking innovative approaches to skill development in physical education.

5.3 Limitation

Despite its promising findings, this study has several limitations that should be considered. First, the research was conducted only at SDN 001 Rambah with a single class of 29 fifth-grade students, which limits the generalizability of the results to other schools, grades, or student populations. Second, the study focused solely on basic volleyball skills, leaving out other motor skills or physical education competencies, which may restrict the applicability of the findings to broader physical education programs. Third, the data collection relied primarily on observations, interviews, and test scores, which may introduce subjective biases, particularly in assessing students' skill improvement and engagement. Fourth, the implementation of Game-Based Learning through traditional games depended heavily on students' prior familiarity with local games, which may not be replicable in regions with different cultural contexts. Finally, the study was conducted over two cycles in a relatively short timeframe, limiting the ability to assess long-term retention of skills, motivation, or behavioral changes.

5.4 Contributions To Future Research

This study offers several contributions for future research in physical education and pedagogy. First, it provides empirical evidence that integrating traditional games with Game-Based Learning (GBL) can effectively enhance students' motor skills, motivation, and engagement, serving as a reference for researchers seeking to explore innovative and culturally relevant teaching methods. Second, it highlights the effectiveness of Classroom Action Research (PTK) in systematically improving learning outcomes through iterative cycles of planning, action, observation, and reflection, encouraging future researchers to adopt similar reflective and evidence-based approaches in other subjects or educational contexts. Third, the study identifies potential areas for expansion, such as examining the impact of traditional game-based learning on other sports or physical activities, assessing long-term retention of skills and motivation, and comparing culturally familiar games with digital or modern game-based approaches. Finally, the study underscores the importance of cultural context in designing effective learning experiences, suggesting that future research should consider local cultural practices and student backgrounds when developing educational interventions.

5.5 Implementation

According to the study's findings, the use of the Game-Based Learning approach at SD 001 Rambah to implement basic volleyball skills based on classic games has proven effective in improving students' skills. Students find it easier to understand and practice basic techniques like passing, serving, and smashing through games like Gobak Sodor, Bentengan, and other appropriate game modifications. This enjoyable and contextual learning has successfully increased students' motivation, active participation, and learning outcomes from cycle 1 to cycle 2. In addition to improving motor skills, this approach helps pupils develop character traits including self-assurance, teamwork, responsibility, and sportsmanship. PJOK instruction gains interest and significance from local culture-based game-based learning. Therefore, this approach can be used as an alternative novel and relevant learning strategy to be applied in primary schools, notably in enhancing learning outcomes of basic volleyball techniques.

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