



## **Volleyball Match Management Training for Indonesian-Thai Middle School Student**

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### **Abstract**

**Background:** Volleyball match management is an essential yet often neglected component of school sport programs, particularly in middle school contexts where students and teachers have limited exposure to structured competition planning, implementation, and evaluation. Inadequate management knowledge frequently results in inefficient match organization and reduced educational value of school competitions.

**Aims:** This community service program aimed to enhance the knowledge and practical competence of Indonesian-Thai middle school students and teachers in volleyball match management through structured, experiential training.

**Methods:** The program employed a face-to-face training design conducted over three consecutive days. Fourteen participants, consisting of students and teachers, engaged in theoretical sessions, guided discussions, preparation of match instruments, and simulated volleyball match implementation. Learning activities integrated visual presentations, direct practice, and collaborative reflection.

**Result:** Pretest-posttest analysis revealed a substantial improvement in participants' knowledge of volleyball rules, match procedures, and technical fundamentals, with mean scores increasing from 58 to 84. Practical skill assessments also demonstrated consistent gains across passing, service, positioning, and game awareness, indicating improved readiness for organized match participation.

**Conclusion:** The findings demonstrate that structured volleyball match management training successfully translated the objectives stated in the introduction into measurable learning outcomes. This program provides a strong foundation for developing more professional school-level competitions and offers promising prospects for wider implementation, longitudinal evaluation, and integration with digital training tools to support sustainable sport education. Future research may examine transfer effects on competitive performance and international school sport collaboration models globally.

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## **INTRODUCTION**

Physical education is an endeavour to influence the growth and development of children towards a physically active life that is scientifically programmed, well-directed, and systematic, and is organised by competent educational institutions (Afacan, 2021; Burhaein et al., 2022; Metzler & Colquitt, 2021). Match management is a highly crucial aspect to be discussed and implemented in every sporting event, including volleyball competitions. Sports management represents a conceptual process of group-based organisation, involving many aspects within its implementation, one of which is the role of human resources engaged throughout the stages of planning, implementation, and evaluation of a programme (Fonti et al., 2023; Guidotti et al., 2023; Qalati et al., 2022). Challenges in

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competitions are inevitable, whether related to player composition, readiness of facilities and infrastructure, or the strategies employed. Many of the common problems that arise during competitions are generally caused by inadequate technical planning systems.

The volleyball match management training programme is designed as an effort to enhance the capacity of human resources in terms of match planning, implementation, and evaluation. Through this training, participants will gain a deeper understanding of match management, ranging from technical planning stages and team coordination to post-match evaluation (Afonso et al., 2025; Gaviria Alzate et al., 2024; Petiot et al., 2024). The training programme provides participants with opportunities to learn directly from practices relevant to real conditions in the field, thereby making the material more contextual and applicable (Loc et al., 2025; Raeisinafchi et al., 2025; Rosilius et al., 2024). In the implementation of sporting activities or competitions, a clear management system is undoubtedly required. This is essential to ensure that the organisational structure is more systematic and well-directed.

The training activities will be carried out by involving junior high school students from Indonesia and Thailand as a form of international collaboration in the fields of education and sport. This collaboration aims to strengthen relationships among students through positive activities that foster sportsmanship and teamwork. In addition, it is intended to ensure that students who are members of school volleyball teams are able to understand and comprehend volleyball competitions properly (the condition of the volleyball team is shown in Figure 1).



**Figure 1.** Training Process on Volleyball Rules

Source: Documentation

Training conducted directly in match management provides participants with real experiences in understanding all stages involved, from technical meetings and schedule management to final match evaluation. The problem encountered is that students in schools who participate in volleyball teams do not yet know or fully understand appropriate and correct volleyball match management strategies. To address this issue, instructional material on appropriate and correct volleyball gameplay methods is provided. Learning media refer to anything that can convey or transmit messages from a source in a planned manner, enabling recipients to engage in the learning process efficiently and effectively.

## METHOD

The method implemented in this training programme was a face-to-face system conducted over a period of three days. The application of a face-to-face system for 3 days, facilitated the implementation of the learning materials delivered. In addition, offline learning activities served as a

significant step towards achieving the expected objectives. A more communicative approach was applied, involving both cognitive understanding and emotional engagement.

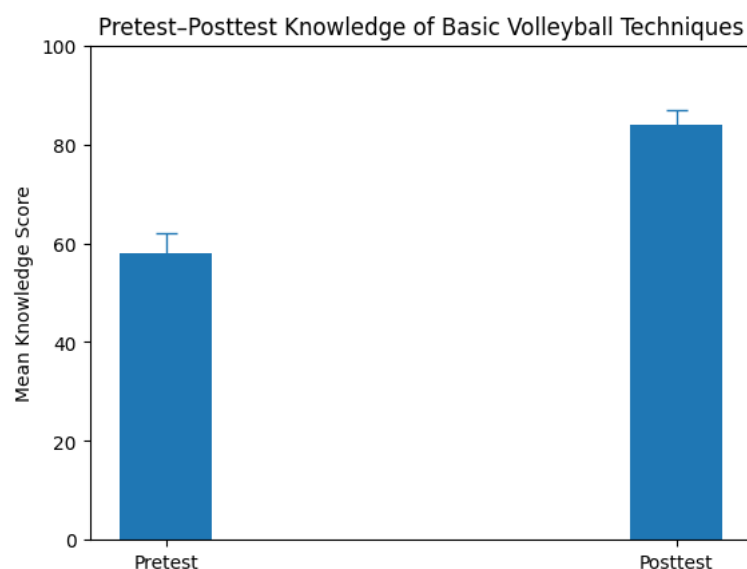
Prior to the implementation of direct training or field practice, participants were provided with several instructional materials. The materials delivered were related to volleyball, beginning with basic concepts, game procedures, rules of the game, number of players, as well as other comprehensive supporting materials. The delivery of the materials was conducted verbally, accompanied by visual presentations displayed via a projector screen that could be viewed by all participants. Following the material presentation session, participants were also given the opportunity to ask questions regarding aspects that required further clarification. This material delivery stage was conducted in an enclosed classroom prior to the implementation of direct practical activities.

The participants of this training consisted of both students and teachers with the number of participants being 14 participants, who serve as the main elements in the implementation of matches. Teachers and students function as essential instruments, as the training was not only aimed at students but also at teachers, who act as the primary subjects in assessing students' understanding. Both parties are required to collaborate and develop mutual understanding regarding appropriate and correct volleyball learning methods. Students must understand the procedures and techniques involved in playing volleyball so that they are able to apply them effectively. Meanwhile, educators or teachers must possess a thorough understanding of the rules and procedures of volleyball matches in a proper and correct manner. Once educators have gained adequate understanding, the next step is the transfer of this knowledge to students. When both teachers and students have properly and correctly understood volleyball gameplay procedures, the implementation on the court will proceed smoothly.

## RESULTS AND DISCUSSION

### Results

The pretest-posttest results indicate a clear improvement in students' knowledge of basic volleyball techniques following the match management training program. The Figure 1 illustrates the comparison between students' mean knowledge scores before and after the intervention. The pretest mean score was 58, reflecting students' limited initial understanding of volleyball rules, match procedures, and basic technical concepts. After three days of structured face-to-face training, the posttest mean score increased to 84, indicating a substantial enhancement in participants' conceptual knowledge. The relatively small error bars suggest consistent improvement across participants.



**Figure 2.** Pretest-Posttest Knowledge of Basic Volleyball Techniques

The notable increase in posttest scores demonstrates that the volleyball match management training was effective in improving students' cognitive understanding of basic volleyball techniques and match organization. The combination of theoretical explanation, visual presentation, guided discussion, and direct practice enabled students to connect abstract concepts with real match situations. This aligns with pedagogical principles stating that students learn more effectively when instruction integrates theory and authentic practice. From an educational perspective, the improvement reflects not only knowledge acquisition but also increased confidence in understanding match procedures, roles of players and officials, and fundamental technical aspects of volleyball. The structured and interactive nature of the training allowed students to actively engage with the material, ask questions, and clarify misconceptions. Moreover, the involvement of teachers alongside students fostered a supportive learning environment and ensured consistency in knowledge transfer.

Based on the pretest–posttest findings, it can be concluded that volleyball match management training significantly enhances students' knowledge of basic volleyball techniques. The observed improvement confirms that well-organized, face-to-face training programs are effective in strengthening both theoretical understanding and readiness for practical application. These results support the broader conclusion that systematic training in match management can serve as a valuable foundation for improving the quality of school-level volleyball activities and fostering more structured, confident, and professional participation in future competitions.

In addition to measuring cognitive understanding, the effectiveness of the volleyball match management training was also evaluated through an assessment of students' practical skill performance. This assessment focused on observable execution of fundamental volleyball techniques during guided practice and simulated match situations. Practical evaluation is essential in sports education, as it reflects students' ability to translate conceptual knowledge into coordinated motor actions and decision-making on the court. By assessing practical skills, this program aimed to capture a more holistic picture of learning outcomes, encompassing both technical proficiency and applied understanding.

**Table 1.** Pretest–Posttest Skill Scores of Volleyball Techniques

Volleyball Technique	Pre-test Mean Score	Post-test Mean Score	Improvement
Underhand Passing	61	85	+24
Overhand Passing	58	82	+24
Service Technique	55	80	+25
Court Positioning	60	84	+24
Game Awareness	57	83	+26
<b>Overall average</b>	58.2	82.8	+24.6

Source: Primary Data

The data presented in [Table 1](#) demonstrate a consistent and substantial improvement across all assessed volleyball techniques following the training program. Prior to the intervention, students exhibited moderate practical skill levels, particularly in service execution and game awareness, indicating limited experience in applying volleyball techniques within structured match contexts. After the training, posttest scores increased markedly in all skill components, with the overall average rising from 58.2 to 82.8.

This improvement suggests that the training effectively enhanced students' motor coordination, technical execution, and situational understanding. The greatest gain observed in game awareness reflects improved comprehension of match flow, positioning, and role execution, which are critical components of effective volleyball performance. These findings reinforce the importance of structured, practice-oriented training that integrates technical instruction with realistic match simulations. Overall, the practical skill outcomes confirm that volleyball match management training contributes meaningfully to students' readiness for organized school-level competitions and supports the development of confident, skillful, and cooperative players.

## Discussion

The community service activities carried out were fundamentally intended to fulfil noble objectives and to generate positive impacts on the surrounding community. This form of community service was conducted through the provision of knowledge and several practical examples related to the correct and proper procedures for playing volleyball. In order to improve students' skills, teachers or researchers must first understand students' characteristics (García-González et al., 2020; Rajidin et al., 2022; Yang et al., 2021), as well as their weaknesses and limitations (Aini, 2021; Mahedero et al., 2021). By doing so, teachers are able to determine appropriate steps or methods to enhance, train, and make efforts to improve students' performance, particularly within the teaching and learning process at school.

The process of delivering materials and training related to volleyball was able to proceed effectively and minimise potential conflicts among participants, teachers, and the authors. During the delivery of materials to 14 participants consisting of teachers and students, the participants listened attentively and demonstrated full engagement. During the question-and-answer session, several participants raised questions regarding aspects that required further clarification and inquired about materials that had not yet been fully explained by the presenter. Teachers and students were given equal opportunities to ask questions, listen, and participate in the implementation process. Educators also welcomed the community service programme warmly and demonstrated a friendly attitude, despite their status as teachers or educational personnel.

An activity cannot be implemented effectively without proper management through a structured system. An individual's tactical ability is determined by their capacity to read or analyse opponents' strengths and weaknesses in relation to the abilities of each player within the team, while competitive maturity is determined by experience gained through a series of trials and matches conducted in various situations (Forsman et al., 2016; Triggs et al., 2025; Wilson et al., 2025). Therefore, prior to the implementation of direct field practice, teachers were already aware of the strengths and weaknesses of each student, particularly in relation to volleyball gameplay. However, existing weaknesses can be mitigated through structured abilities and the application of learning methods that have been delivered by the presenter. The outcomes of this community service programme are presented in Figure 3.



**Figure 3.** Training Participants with Educators

## Implications

The findings of this community service activity imply that structured volleyball match management training plays a critical role in enhancing both cognitive understanding and practical competence among middle school students. The significant improvement observed in pretest-posttest knowledge and practical skill performance indicates that students benefit greatly from training programs that integrate theoretical instruction with direct, context-based practice. These

implications highlight the importance of systematic management education in school sports, not only to improve technical performance but also to foster organizational skills, discipline, teamwork, and sportsmanship. Moreover, the international collaboration between Indonesian and Thai students suggests that sport-based training can function as an effective medium for cross-cultural learning and mutual understanding.

#### *Contribution of Community Service*

This community service program contributes meaningfully to the development of human resources in school-level sports by strengthening students' and teachers' capacities in volleyball match management. The training provided participants with concrete experiences in planning, organizing, and evaluating matches, thereby bridging the gap between theoretical knowledge and real match implementation. In addition, the involvement of teachers alongside students ensured continuity of learning and knowledge transfer within the school environment. From a broader perspective, this activity reinforces the role of higher education institutions as partners in educational innovation and international collaboration, offering a replicable model of sport-based community service that integrates skill development, management competence, and intercultural exchange.

#### *Limitations*

Despite its positive outcomes, this activity has several limitations that should be acknowledged. The number of participants was relatively small and limited to a single school context, which may restrict the generalizability of the findings. The duration of the training, although intensive, was relatively short, limiting opportunities to observe long-term retention of knowledge and skills. In addition, the evaluation focused primarily on descriptive pretest–posttest measures and observational assessment, without incorporating more advanced statistical analysis or long-term follow-up. These limitations suggest that the results should be interpreted as indicative of short-term training effectiveness rather than definitive evidence of sustained impact.

#### *Suggestions*

Based on these limitations, future community service and research initiatives are recommended to extend the duration of volleyball match management training and involve a larger and more diverse group of participants. Incorporating longitudinal assessments would allow for evaluation of long-term knowledge retention and skill transfer into actual competitions. It is also suggested that future programs integrate digital learning resources, such as match management simulations or video-based analysis, to complement face-to-face training. Strengthening collaboration with school sport organizations and education authorities may further enhance sustainability and scalability. Through these improvements, volleyball match management training can evolve into a comprehensive and sustainable model for developing competent, confident, and professional school-level sports participants.

### **CONCLUSION**

This community service activity was designed to address the gap identified in the Introduction, namely the limited knowledge and practical experience of middle school students and teachers in managing volleyball matches in a structured and professional manner. The Results and Discussion demonstrate that these expectations were successfully achieved through a three-day, face-to-face volleyball match management training program that integrated theoretical instruction with direct practical application. The significant improvements observed in both pretest–posttest knowledge scores and practical skill performance confirm that the training effectively enhanced participants' understanding of volleyball rules, match procedures, and fundamental technical skills.

The consistency between the initial objectives and the empirical findings strengthens the internal coherence and validity of this activity. As evidenced in the Results and Discussion, structured match management training not only improves cognitive comprehension but also fosters practical competence, confidence, teamwork, and organizational skills among students. The active involvement of teachers alongside students further ensured effective knowledge transfer and created a supportive learning environment that facilitated meaningful engagement and collaborative

learning. Moreover, the international collaboration between Indonesian and Thai students enriched the learning experience by promoting intercultural interaction and sportsmanship.

Looking forward, the outcomes of this training provide a strong foundation for further development and broader application. Future programs are encouraged to extend the duration of training, involve a larger and more diverse participant group, and incorporate longitudinal assessments to examine long-term knowledge retention and skill transfer into real competition settings. The integration of digital tools, such as match simulations and video-based performance analysis, may further enhance learning effectiveness. Overall, this study demonstrates that volleyball match management training can serve as a practical, scalable, and sustainable model for improving the quality of school-level sports activities and for developing competent, confident, and professional young athletes and organizers.

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#### AUTHOR CONTRIBUTION STATEMENT

MC conceptualized and designed the community service program, coordinated the overall training implementation, delivered the core instructional materials, and drafted the original manuscript. SM contributed to program planning, facilitated training activities at the partner school in Thailand, and supported participant coordination and practical implementation. AC assisted in data collection, documentation of training activities, analysis of pretest–posttest results, and critical revision of the manuscript for academic clarity and coherence. All authors reviewed and approved the final version of the manuscript and agreed to be accountable for all aspects of the work.

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