Journal of Football Research
Publisher: Sekolah Tinggi Olahraga dan Kesehatan Bina Guna
Journal Homepage: https://jurnal.stokbinaguna.ac.id/index.php/Jofr
e-ISSN: 3047-0862

Enhancing Students' Shooting Performance in Football through the Implementation of the Problem-Based Learning Model among Eighth-Grade Students of MTS Darul Ilmi

Safadil Zaman[1], Liliana Puspa Sari[2]
[1,2] Sekolah Tinggi Olahraga dan Kesehatan Bina Guna, Sumatera Utara, Indonesia

Received: 19-09-2025 Revised: 20-10-2025 Accepted: 21-10-2025

Abstract: This research investigates the effectiveness of the Problem-Based Learning (PBL) model in improving the shooting skills of eighth-grade students in football at MTS Darul Ilmi during the 2022/2023 academic year. The study applied a Classroom Action Research (CAR) method conducted in two cycles involving 27 students. Each cycle included the stages of planning, implementation, observation, and reflection. Data collection was carried out through lesson plans, observation sheets, and documentation, and analyzed using percentage-based descriptive statistics. The findings revealed a significant improvement in students' shooting performance: the average score increased from 75 in cycle I (59.26% mastery) to 86 in cycle II (88.89% mastery), surpassing the minimum learning target of 75%. Moreover, students showed higher engagement, focus, and confidence during learning activities. The implementation of PBL successfully created an interactive and enjoyable learning environment that positively influenced motivation and achievement. The study concludes that integrating the PBL model into physical education effectively enhances football shooting skills and fosters active learning behavior among junior high school students.

Keywords: Football, Problem-Based Learning, Shooting Skill, Physical Education

Correspondence author
Email: zamansafadil@gmail.com

INTRODUCTION

Education plays a vital role in shaping human potential and serves as a cornerstone of national development. The learning process is not merely a transfer of knowledge from teachers to students but a dynamic interaction that integrates cognitive, affective, and psychomotor dimensions. The quality of education largely depends on the teacher's ability to facilitate learning that is active, engaging, and student-centered. In this regard, innovative pedagogical approaches are essential to enhance students' motivation and learning outcomes across various disciplines, including physical education.

Within the context of Physical Education (PE), the primary goal is to develop students' motor skills, physical fitness, and character through movement-based learning. One of the most popular and educationally valuable sports taught in schools is football, which promotes not only physical competence but also teamwork, discipline, and decision-making skills. Among its technical components, shooting ability is a decisive skill that determines a player's effectiveness in scoring goals. However, preliminary observations at MTS Darul Ilmi indicated that students' football shooting performance remained below the expected competency standards. Many students struggled to execute accurate shots

due to a limited understanding of shooting mechanics and a lack of engaging instructional methods.

Previous research has demonstrated that traditional, teacher-centered approaches often fail to foster creativity and problem-solving skills among students. In contrast, the Problem-Based Learning (PBL) model offers a constructivist framework that positions students as active learners who explore real-world problems and apply critical thinking to develop practical solutions. Studies have shown that PBL can significantly improve both cognitive and psychomotor learning outcomes in sports education. For instance, a classroom action research study at SMP Negeri 11 Kota Gorontalo revealed that implementing PBL increased football shooting mastery from 61.91 % to 80.95 %, surpassing the school's performance indicator (Rasif, Said, & Podungge, 2024). Similarly, Pradipta, Budaya Astra, and Semarayasa (2023) found that PBL improved students' shooting skills and knowledge mastery in football from 58.3 % to 88.3 %, demonstrating its effectiveness in enhancing learning motivation and performance. In addition, Azzahra and Nurhayati (2024) reported that PBL outperformed conventional methods in improving football dribbling skills among high school students, emphasizing its pedagogical strength in physical education contexts.

The novelty of this study lies in the application of PBL to improve football shooting skills among junior high school students in Indonesia, an area that remains underexplored compared to academic subjects such as science and mathematics. While most previous studies have focused on cognitive outcomes, this research emphasizes psychomotor skill enhancement and student engagement in sports-specific learning environments.

Therefore, the objectives of this study are to (1) determine the effectiveness of the Problem-Based Learning model in improving football shooting skills among eighth-grade students of MTS Darul Ilmi, and (2) analyze the extent to which PBL fosters students' activeness, motivation, and confidence during physical education sessions. The findings are expected to contribute to the development of innovative, evidence-based teaching strategies in sports pedagogy and support the integration of student-centered learning models into physical education curricula in Indonesia.

METHOD

This study employed a Classroom Action Research (CAR) design, aimed at improving students' learning outcomes through the systematic application of the Problem-Based Learning (PBL) model. The CAR design followed the cyclical process introduced by Kemmis and McTaggart (1988), consisting of four interconnected stages: planning, action, observation, and reflection. Each stage was implemented continuously and iteratively to identify and address issues arising during the learning process. The choice of the CAR design was based on its suitability for educational settings, as it enables teachers and researchers to collaboratively refine instructional practices and enhance student performance (Harahap, 2019; Muchlisin Riadi, 2019).

The research was conducted at MTS Darul Ilmi, located in Medan, North Sumatra, Indonesia. The study took place during the 2022/2023 academic year, specifically between March and October 2023. The physical education classes were held on the school's football field, which provided adequate space and facilities for the practical implementation of the football shooting lessons.

The population of this research included all eighth-grade students enrolled at MTS Darul Ilmi. From this population, one class consisting of 27 students (15 male and 12 female) was selected as the research sample. The participants were chosen based on

purposive sampling, a non-probability sampling technique commonly used in educational action research (Creswell & Plano Clark, 2018). This sampling method was deemed appropriate because the selected class had demonstrated low initial achievement in football shooting skills, making it suitable for intervention-based improvement.

The sampling technique applied was purposive sampling, determined collaboratively with the physical education teacher. The selected class was representative of typical eighth-grade students in terms of age, skill level, and participation in physical education activities. Prior to data collection, the students were informed about the objectives of the study, and ethical approval was obtained from the school administration. Parental consent was also secured to ensure voluntary participation.

The collected data were analyzed descriptively using percentage-based statistical analysis to determine the improvement in students' football shooting performance from Cycle I to Cycle II. The formula for learning mastery followed the model proposed by Sudjana (2010) where KKM (Kriteria Ketuntasan Minimal) was set at a minimum score of 70. In addition, qualitative data from observations and reflections were analyzed through narrative analysis, emphasizing changes in student behavior, motivation, and activeness during the learning process (Miles, Huberman, & Saldaña, 2014).

The combination of quantitative and qualitative data allowed for a triangulated interpretation, thereby increasing the validity and reliability of the findings. Improvements across both psychomotor (skill performance) and affective (motivation and engagement) domains were used as indicators of successful intervention.

RESULT AND DISCUSSION

Result

The study was conducted in two cycles, each consisting of the stages of planning, action, observation, and reflection. The main objective was to evaluate the improvement in students' football shooting skills after the implementation of the Problem-Based Learning (PBL) model. The data were collected from pre-cycle, Cycle I, and Cycle II through performance tests, observation sheets, and documentation.

Table 1. Comparison of Shooting Skill Results

Learning Stage	Average Score	Number of Students Achieving ≥ 70	Percentage (%)
Pre-Cycle	67	9	33.33%
Cycle I	75	16	59.26%
Cycle II	86	24	88.89%

The results presented in Table 1 confirm that each learning cycle contributed to a steady increase in students' football shooting mastery, from 33.33 % in the pre-cycle to 88.89 % in Cycle II.

Discussion

The findings of this research demonstrate that the Problem-Based Learning (PBL) model significantly improved students' football shooting performance, reflected by the steady increase in average scores and mastery levels from the pre-cycle to Cycle II. The increase from 33.33 % mastery in the pre-cycle to 88.89 % in Cycle II indicates that PBL effectively enhanced students' understanding and execution of shooting techniques. These results confirm that the PBL model serves as a powerful pedagogical strategy in physical education (PE) for developing both technical skills and learning motivation.

The improvement in shooting performance aligns with the theoretical foundation of constructivist learning, which emphasizes active engagement, problem-solving, and contextual learning experiences (Piaget, 1970; Vygotsky, 1978). In the context of PE, PBL provides learners with opportunities to analyze real-life game scenarios, identify problems, and devise practical solutions through teamwork and reflection. This process fosters not only psychomotor development but also cognitive and affective growth, making learning more meaningful and sustainable.

Similar findings have been reported by Pradipta, Budaya Astra, and Semarayasa (2023), who concluded that the application of PBL in football improved both knowledge mastery and skill performance by more than 30 %. Likewise, Rasif, Said, and Podungge (2024) found that PBL increased students' shooting accuracy from 61.91 % to 80.95 % in middle school settings. These studies, consistent with the current research, highlight the effectiveness of inquiry-driven and student-centered learning in improving technical sports performance. The present study therefore strengthens previous empirical evidence by confirming that PBL enhances psychomotor outcomes and student engagement in junior secondary physical education.

Moreover, this research contributes a novel insight into the integration of PBL with football-specific motor learning, an area that remains relatively underexplored in Indonesian secondary schools. Most earlier PBL studies focused on academic domains such as science or mathematics (Azzahra & Nurhayati, 2024), while the current research extends its application to movement-based learning. The novelty lies in the use of authentic football problems such as analyzing shooting errors, positioning, and teamwork as learning stimuli. This contextualized approach encouraged learners to critically reflect on their actions, improving both accuracy and confidence.

From a pedagogical perspective, the successful outcomes of this study support the argument that PBL can transform the role of the PE teacher from a direct instructor to a facilitator of inquiry-based learning. This shift fosters active student participation, as observed through increased seriousness, cooperation, and enthusiasm during practice sessions. The results also indicate that the PBL environment enhances intrinsic motivation by providing students with autonomy and opportunities to make tactical decisions, echoing findings by Deci and Ryan (2017) on self-determination theory.

Another significant implication of this research is its contribution to the improvement of student-centered physical education in Indonesia. By aligning with the goals of the 2013 Curriculum, which emphasizes critical thinking and problem-solving, PBL provides a framework for developing not only physical proficiency but also character and cognitive skills. The increase in shooting proficiency demonstrates that when students are placed in authentic learning contexts, their performance improves through active discovery rather than rote repetition.

Despite its positive outcomes, this study acknowledges several limitations. First, the research was conducted in a single school with a relatively small sample size (n = 27), which may limit the generalizability of findings to other settings. Second, the research duration covered only two cycles of classroom action, which may not fully capture long-term retention or transfer of learning. Third, external variables such as weather conditions, student fitness levels, and equipment quality could have influenced the performance results. Future studies should consider larger sample groups, longitudinal designs, and comparative experiments involving control classes to validate the sustained impact of PBL in sports education.

CONCLUSION

The implementation of the Problem-Based Learning (PBL) model in football instruction effectively enhanced students' shooting performance, learning motivation, and active participation among eighth-grade students of MTS Darul Ilmi. The consistent improvement from pre-cycle to Cycle II demonstrated that PBL not only strengthened students' technical skills particularly in accuracy, foot coordination, and shooting power but also fostered critical thinking, collaboration, and confidence during learning activities. These findings affirm that student-centered, inquiry-based instruction provides a more meaningful and sustainable approach to psychomotor skill development in physical education. Consequently, the integration of PBL into school sports curricula is recommended as an innovative pedagogical strategy to promote higher learning outcomes, align with constructivist educational goals, and prepare students to become independent and reflective learners.

ACKNOWLEDGEMENTS

The authors sincerely thank MTS Darul Ilmi for their invaluable support and cooperation throughout the research process.

CONFLICT OF INTEREST

Clearly explain whether there are any conflicts of interest related to the reported research.

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