Empiricism Journal
https://journal-center.litpam.com/index.php/empiricism
email: empiric.journal@gmail.com

Vol. 7, No 2, June 2026
e-ISSN: 2745-7613
pp. 2183-2192

Improving Physical Fitness Learning Outcomes Through the Problem Based Learning (PBL) Model in Physical Education Learning for Grade IV of SDN 1 Landasan Ulin Selatan

Ahmad Ansari[1]*, Lazuardy Akbar Fauzan[2], Suadmaji[2]
[1]Teacher Professional Education Study Program, FKIP, Lambung Mangkurat University, Jl. Brigjend H. Hasan Basri Kayu Tangi, Banjarmasin, South Kalimantan, Indonesia 70123.
[2]SDN 1 Landasan Ulin Selatan, Jl. Ahmad Yani, Landasan Ulin Selatan, Banjarbaru, Indonesia 70722
Email Correspondence: peserta.42247@ppg.belajar.id

Abstract

The low physical fitness learning outcomes of fourth-grade students of SD Negeri 1 Landasan Ulin Selatan, characterized by an average score of 70.5 and only 50.0% completion of 24 students, became the background of this study. Although the Problem Based Learning (PBL) model has been widely applied in PJOK learning, classroom action research that specifically examines the progressive integration between video-based motion modeling in the first cycle and competitive motion games in the second cycle as a strategy to improve physical fitness learning outcomes is still very limited. This study aims to improve physical fitness learning outcomes that include aspects of knowledge, skills, and attitudes through the application of PBL with a progressively differentiated two-cycle design. The type of research is Classroom Action Research (CAR) model Kemmis and McTaggart. The subjects of the study were 24 fourth-grade students selected based on their low initial learning outcomes. The instruments used included an attitude observation sheet (indicators: mutual cooperation, independence, critical reasoning, discipline; scale 1–4), a skills observation sheet (indicators: running on the spot, squats, and push-ups; scale 1–4), knowledge test questions (4 descriptive items), and a student reflection sheet. All instruments were validated by two validators. Quantitative data were analyzed using a comparative descriptive technique with the final score formula: knowledge (30%) + skills (60%) + attitudes (10%), then compared with the Benchmark Reference Guide (PAP). In Cycle I, PBL assisted by learning videos increased the average final score to 74.8 with 66.7% completion. In Cycle II, the integration of fitness movements in competitive movement games increased the average to 82.4 with 83.3% completion, exceeding the 75% success indicator. The findings indicate that PBL supported by video-based stimulation and competitive movement games contributed to the holistic improvement of students' physical fitness learning outcomes in the classroom context studied.

Keywords: Classroom Action Research; Physical Education; Physical Fitness; Problem Based Learning.

How to Cite: Ansari, A., Fauzan, L. A., & Suadmaji, S. (2026). Improving Physical Fitness Learning Outcomes Through the Problem Based Learning (PBL) Model in Physical Education Learning for Grade IV of SDN 1 Landasan Ulin Selatan. *Empiricism Journal*, *7*(2), 2183-2192. https://doi.org/10.36312/ej.v7i2.5268

https://doi.org/10.36312/ej.v7i2.5268

INTRODUCTION

Physical Education, Sports, and Health (PJOK) is an integral part of the national education system which aims to develop the physical, psychological, and social aspects of students as a whole (Yulia Sari et al., 2024). Physical fitness is one of the core competencies that students must master from an early age because it is closely related to the quality of health and long-term physical abilities (Adam et al., 2025). Within the Merdeka Curriculum structure, Phase B covers students in grades III and IV of elementary school, with Learning Outcomes mandating that students be able to refine fundamental movement skills, apply them in new movement situations, adapt movement strategies, and demonstrate various movement concepts in meaningful sequences. The focus of this research is directed at fourth-grade students as representatives of the end of Phase B who have more optimal movement maturity than grade III, thus being more ready to integrate the cognitive dimension in movement learning (Rohmah & Muhammad, 2021).

However, in reality, PJOK learning in many elementary schools is still dominated by a conventional approach, where teachers only demonstrate movements without involving students in a deep understanding of the concept (Ardiasa et al., 2025). This situation results in low student learning outcomes, both in terms of knowledge, skills, and attitudes. Students

engage in physical activity without understanding why and how exercise benefits their bodies. This aligns with the view (Ansari et al., 2025) which emphasizes that although PJOK has made a significant contribution in addressing low levels of physical activity in the school environment, updates in the learning process and the development of more engaging initiatives are still needed to improve the overall effectiveness of learning.

This problem was also clearly found based on field facts during the implementation of Field Experience Practice (PPL) at SDN 1 Landasan Ulin Selatan. The observation results showed that the physical fitness learning outcomes of fourth grade students were still below the set standards. Of the 24 students (13 boys and 11 girls), the average class score only reached 70.5 and only 12 students (50.0%) managed to achieve the Learning Objective Achievement Criteria (KKTP) score of 75. Students showed quite high enthusiasm for physical activity, but their understanding of the benefits of physical fitness and mastery of basic movement techniques such as jogging, squats, and push-ups were still far from the expected standard. This imbalance between movement motivation and conceptual understanding is the root of the problem that needs to be addressed through a more structured learning approach.

Physical fitness itself is defined as a person's body's ability to carry out daily tasks without causing significant fatigue, so that the body still has energy reserves to enjoy free time and deal with emergency situations (Sriratih & Muzaffar, 2022). Components of physical fitness relevant to fourth-grade elementary school students include cardiorespiratory endurance, muscle strength, flexibility, and motor coordination. The benefits of physical fitness for students are extensive, including improving concentration and academic achievement, strengthening the immune system, supporting optimal bone and muscle growth, and improving children's psychological well-being (Mulyana et al., 2024). Therefore, a learning model is needed that not only encourages students to be active, but also activates them cognitively so that their understanding of physical fitness develops meaningfully and sustainably (Rahmadhea, 2025).

The Problem-Based Learning (PBL) model was chosen as the solution in this research. PBL is a learning model that uses real-world, authentic problems as a context for students to learn critical thinking, acquire knowledge, and develop essential concepts from the material being studied (Zahroh et al., 2024). (Aisyah et al., 2025) emphasizes that PBL is characterized by the use of problems as a starting point for learning, where the problems presented must be contextual and challenging so as to encourage students to think divergently. In the context of Physical Education, PBL allows students to face trigger questions such as "Why does the body tire quickly when not exercising?" which encourages them to seek answers through discussion, exploration, and direct practice. The advantages of PBL in Physical Education learning include encouraging students to actively think and move simultaneously, increasing intrinsic motivation, and developing collaboration skills through group discussions (Syafruddin, 2024).

A number of previous studies have documented the positive contribution of PBL in physical education learning in elementary schools. (Firdaus, Widodo, et al., 2025) reported an increase in learning completion from 57% in cycle I to 77% in cycle II through the implementation of PBL in grade III of elementary school, with very positive student responses because they could be actively involved in a pleasant learning atmosphere. (Wulandari dan Surjono, 2023) proves that PBL significantly improves the learning outcomes of Physical Education (PJOK) in elementary school students because it integrates cognitive, affective, and psychomotor aspects in a series of meaningful learning activities. (Nugraha et al., 2022) also proved that the application of PBL in physical fitness learning resulted in an increase in student learning completion of up to 85% in the second cycle. (Jalil, 2023) also reported improvements in three domains of learning outcomes, cognitive learning from 52.94% to 88.24%, psychomotor learning from 47.06% to 88.24%, and affective learning from 74.86% to 90.34%. These findings consistently confirm that PBL can transform passive learning into active learning, encourage students to think critically, and create a pleasant learning atmosphere (Pangga et al., 2023).

However, there is a significant gap in the existing literature. Most previous studies treat PBL as a uniform learning model across classroom action cycles, without explicitly designing how cognitive stimulation, motor practice, and affective engagement are progressively integrated from one cycle to the next. Empirical evidence specifically examining the sequential

use of video-based movement modeling in the first cycle and competitive movement games in the second cycle as a strategy to improve physical fitness learning outcomes in fourth-grade elementary school students is still very limited. However, learning designs that consider cognitive and psychomotor development gradually across cycles have greater potential to achieve comprehensive learning outcomes than generic PBL implementations.

Therefore, this study contributes by adapting PBL into two progressively designed learning cycles. In Cycle I, learning begins with the display of a physical fitness video as a cognitive stimulus before students engage in physical activity, referring to Paivio's dual coding theory, which states that information is processed more effectively through a combination of verbal and visual representations (Listiyani et al., 2025). In Cycle II, as a follow-up to the reflection of Cycle I, the movements of running on the spot, push-ups, and squats were integrated into a competitive and interesting game format, in accordance with the principles of movement-based learning which have been proven to increase students' affective and psychomotor engagement simultaneously (Andrian et al., 2020). This stepwise approach distinguishes this research from previous PBL studies which generally do not elaborate explicitly on the mechanisms of inter-cycle progression.

Based on the description above, this research was conducted to improve physical fitness learning outcomes which include aspects of knowledge, skills, and attitudes through the application of the Problem Based Learning model with a two-cycle progressive design in PJOK learning for class IV of SD Negeri 1 Landasan Ulin Selatan, with a target average class value of at least 75 and learning completion of at least 75% of all students.

METHOD

This research is a collaborative and participatory Classroom Action Research (CAR). CAR is research conducted by teachers in their own classrooms through self-reflection with the aim of improving the quality of learning processes and outcomes (Azis et al., 2023). The CAR model used is the Kemmis and McTaggart model, which consists of four components in each cycle: planning, acting, observing, and reflecting, as depicted in Figure 1. The approach in this research is descriptive-qualitative, supported by quantitative data in the form of student learning outcomes.

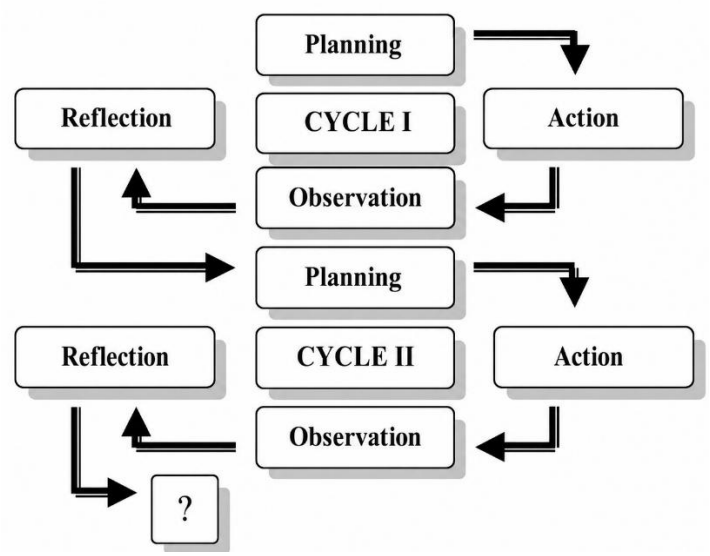

Figure 1. PTK Cycle Flow of the Kemmis and McTaggart Model (Astikajaya, 2022)

The research was conducted at SDN 1 Landasan Ulin Selatan, Liang Anggang District, Banjarbaru City, South Kalimantan Province, from April to May 2026, in the Even Semester of the 2025/2026 Academic Year. The subjects were 24 fourth-grade students, consisting of 13 male students and 11 female students. The selection of this class was based on initial observations that showed low physical fitness learning outcomes, with an average class score of 70.5 and learning completion of only 50.0% (12 students), so this class was deemed to be in greatest need of immediate learning intervention.

The study was conducted in two cycles with a time allocation of 3 JP (105 minutes), following the four stages of the Kemmis and McTaggart model. In Cycle I, PBL-based learning began with the screening of videos of running on the spot, squats, and push-ups as visual-cognitive stimuli, followed by the presentation of contextual problems, group discussions, and fitness exercises in a 30-30-30 format for three rounds. The results of the Cycle I reflection were then used as a basis for improvements in Cycle II, where the same fitness movements were integrated into a competitive movement game format — including Team Fitness Circuit, Rotating Movement Stations, and Choose a Letter Movement, to increase student motivation and reduce boredom.

The research instruments used include, PBL-based Lesson Plans/Teaching Modules for Cycle I and Cycle II, Attitude Observation Sheets with indicators of mutual cooperation, independence, critical reasoning, and discipline using a scale, Skill Observation Sheets with indicators of running on the spot, squats, push-ups, and overall technique suitability using a scale of 1–4, Knowledge Test Questions consisting of 4 descriptive questions about the concept and benefits of physical fitness, and Student Reflection Sheets containing 4 open-ended questions about experiences and understanding after training.

All instruments underwent content validation by two validators: one physical education lecturer and one experienced physical education teacher. Validation included the instrument's suitability to the learning objectives, clarity of wording, and the adequacy of indicators in measuring each domain of learning outcomes. Input from both validators was used to revise the instruments before use in the study. To maintain consistency of assessment between cycles, observations on the attitude and skills observation sheets were conducted collaboratively by the researcher and the physical education teacher as observer, so that the assessment did not rely on a single assessor. Agreement between the two assessors was verified through post-observation discussions to ensure alignment of interpretations of the rubric used.

The data in this study were collected through four techniques. First, observation, which involved direct observation of teacher and student activities using attitude and skills observation sheets in each cycle. Second, a knowledge test, in the form of an oral/written test on the concept and benefits of physical fitness, was administered at the end of each cycle. Third, a performance test was conducted to assess basic movement skills based on a validated rubric. Fourth, documentation, in the form of activity photos, score sheets, field notes, and student reflection sheets, served as supporting data.

Quantitative data were analyzed using comparative descriptive techniques, comparing the average scores and completion percentages between the pre-cycle, Cycle I, and Cycle II. Final scores were calculated using a formula that integrated all three domains of learning outcomes:

Final Score = (Knowledge Score × 30%) + (Skill Score × 60%) + (Attitude Score × 10%)

This weighting is based on the characteristics of Physical Education (PJOK) as a subject fundamentally oriented toward movement mastery, thus providing the largest portion of skill. Knowledge is given a moderate weighting because conceptual understanding remains the foundation of meaningful movement, while attitudes receive a smaller weighting but are still taken into account to reflect holistic learning objectives aligned with the principles of the Independent Curriculum. The percentage of completion obtained is then compared with the Benchmark Reference Guide (PAP) to determine the level of success of the action (Winarno, 2014), as shown in Table 1.

Table 1. Benchmark Reference Guide

Mastery Level	Final Score	Classification
90% - 100%	A or 4	Very Good
80% - 89%	B or 3	Good
65% - 79%	C or 2	Fair
55% - 65%	D or 1	Poor
Less than 55%	E or 0	Very Poor

Qualitative data in the form of the results of attitude observations and field notes were analyzed descriptively to describe the quality of the learning process in each cycle, including

the development of mutual cooperation behavior, independence, critical reasoning, and student discipline.

This research is declared successful if it meets the following three success indicators, at least 75% of students achieve a final score of ≥ 75 in the knowledge and skills aspect, at least 80% of students get an attitude score of ≥ 3 (Good) on the observation sheet, with data reported explicitly per indicator in the results section and there is an increase in the average class score from pre-cycle to Cycle I and from Cycle I to Cycle II.

RESULTS AND DISCUSSION

Before the action was implemented, initial observations showed that the physical fitness learning outcomes of grade IV B students at SD Negeri 1 Landasan Ulin Selatan were still below the established standards. Of the 24 students, the average final grade for the class only reached 70.5 with 50.0% completion (12 students). In the skills aspect, the average score for running on the spot was 73.5, squats 70.3, and push-ups 69.9 with push-ups being the movement with the weakest mastery. In the attitude aspect, the average overall score was 2.53 (scale 1–4), with critical reasoning as the lowest indicator (2.17). Complete data on pre-cycle conditions are presented in Table 2.

Table 2. Pre-Cycle Learning Outcomes

Description	Score
Average final grade for the class	70,5
Highest grade	80,1
Lowest grade	62,6
Number of students who completed the course	12 student (50,0%)
Number of students who did not complete the course	12 student (50,0%)
Average PAP classification for the class	Fair

It should be emphasized that the PAP classification in this study was applied to final scores, both at the individual level and the class average. With an average score of 70.5, the pre-cycle condition was in the range of 65–79, thus classified as "Fair" (Winarno, 2014). This condition served as the empirical basis for implementing corrective actions through the PBL model in the next cycle.

In Cycle I, learning began with a video demonstration of running on the spot, squats, and push-ups as a visual-cognitive stimulus before students began hands-on practice. The opening question, "Why does the body tire quickly when not exercising?" then prompted a group discussion aimed at constructing an understanding of the benefits of physical fitness. Following the group presentations, students performed three rounds of fitness training using the 30-30-30 format. Students demonstrated high enthusiasm during the video and discussion sessions, but most students' push-up technique did not meet the rubric standards, and several groups still required intensive guidance. The results of Cycle I are presented in Tables 3 to 5.

Table 3. Knowledge Results and Final Grades — Cycle I

Description	Score
Average knowledge score	75,6
Average final class score	74,8
Highest score	84,6
Lowest score	66,2
Number of students who completed the course	16 student (66,7%)
Number of students who did not complete the course	8 student (33,3%)
Average PAP classification of the class	Fair

Table 4. Average Skill Per Move — Cycle I

Movement	Pre-Cycle	Cycle I	Improvement
Running on the spot	73,5	77,9	+4,4
Squats	70,3	74,7	+4,4
Push-ups	69,9	74,3	+4,4
Average skill	71,3	75,6	+4,3

Table 5. Average Attitude Per Indicator — Cycle I

Attitude Indicators	Pre-Cycle	Cycle I	Improvement
Mutual Cooperation	2,71	2,88	+0,17
Independence	2,58	2,75	+0,17
Critical Reasoning	2,17	2,33	+0,16
Discipline	2,67	2,83	+0,16
Average Attitude	2,53	2,70	+0,17
Students with an Attitude Score of ≥ 3	12 (50,0%)	16 (66,7%)	+4 student

Based on Tables 3–5, there was an increase in all three domains of learning outcomes from the pre-cycle to Cycle I. The final average score increased by 4.3 points from 70.5 to 74.8, while the completion rate increased from 50.0% to 66.7%. All three skill movements showed equal improvement (+4.4 points each), indicating that visual modeling through video had a uniform impact on movement technique mastery. This is in line with Paivio's dual coding theory, which states that information is processed more effectively when presented verbally and visually simultaneously (Listiyani et al., 2025), and is supported by the finding (Dewi and Sari, 2022) that video media improves movement technique accuracy because students can repeatedly observe demonstrations before direct practice.

However, two key success indicators have not been met: learning completion has only reached 66.7% (target 75%) and students with an attitude score ≥ 3 have only reached 66.7% (target 80%). The moderate improvement in attitudes (2.53 → 2.70), particularly in critical reasoning (+0.16), is understandable because the repetitive 30-30-30 training format provides little room for students to engage in active problem-solving, students tend to follow instructions rather than construct movement strategies independently. Cycle I reflections also identified that push-up technique remained the most prominent weakness and the monotonous training format was starting to cause boredom. Based on this, Cycle II actions focused on integrating fitness movements in a competitive movement game format with more intensive individual guidance for push-up technique.

In Cycle II, jogging, push-ups, and squats were integrated into three competitive movement game formats: Team Fitness Circuit, Rotating Movement Stations, and Choose a Letter Movement. The discussion guide questions were structured to encourage more active student thinking, and individual guidance was provided specifically for push-up technique. Throughout the learning process, group discussions were more active, the competitive atmosphere encouraged students to move more enthusiastically, and students appeared more confident in their presentations and movement execution. Cycle II data are presented in Tables 6 through 8.

Table 6. Knowledge Results and Final Grades — Cycle II

Description	Score
Average knowledge score	81,2
Average final class score	82,4
Highest score	92,8
Lowest score	70,5
Number of students who completed the course	20 student (83,3%)
Number of students who did not complete the course	4 student (16,7%)
Average PAP classification of the class	Good

Table 7. Average Skill Per Movement — Cycle II

Movement	Cycle I	Cycle II	Improvement
Running on the spot	77,9	83,4	+5,5
Squats	74,7	80,3	+5,6
Push-ups	74,3	79,8	+5,5
Average skill	75,6	81,2	+5,6

Table 8. Average Attitude Per Indicator — Cycle II

Attitude Indicators	Cycle I	Cycle II	Improvement
Mutual Cooperation	2,88	3,83	+0,95
Independence	2,75	3,79	+1,04

Attitude Indicators	Cycle I	Cycle II	Improvement
Critical Reasoning	2,33	3,50	+1,17
Discipline	2,83	3,75	+0,92
Average Attitude	2,70	3,72	+1,02
Students with an Attitude Score of ≥ 3	16 (66,7%)	24 (100,0%)	+8 student

The results of Cycle II showed a more significant improvement compared to Cycle I across all domains. The final average score reached 82.4 with 83.3% completion (20 students), classified as "Good" based on the PAP, and all indicators of research success had been met. The rate of increase in the final score in Cycle II (+7.6 points) was greater than in Cycle I (+4.3 points), indicating that the modification of actions between cycles successfully accelerated the improvement of learning outcomes. (Nugraha et al. 2022) stated that exercises packaged in an interesting format within a PBL framework are effective in improving motor skills because they connect conceptual understanding with meaningful hands-on practice. In terms of skills, push-ups remained the movement with the lowest score across all cycles despite an increase from pre-cycle to Cycle II reaching 9.9 points, indicating that this movement requires a longer adaptation period due to its higher demands on upper-body muscle strength.

The most striking increase in Cycle II occurred in the attitude aspect, where the average increased by 1.02 points (2.70 → 3.72) and all 24 students (100%) achieved a score of ≥ 3, exceeding the target of 80%. The critical reasoning indicator recorded the largest increase (+1.17), which was previously the weakest indicator in the pre-cycle (2.17). This finding is theoretically coherent, when movement is contextualized in a game with rules, challenges, and competitive consequences, students are required to make decisions quickly. The cognitive dimension embedded in this game is what distinguishes Cycle II substantively from mere activity variations. This aligns with the principle of movement-based learning, which asserts that cognitive and psychomotor engagement can be enhanced simultaneously through meaningful and challenging movement activities (Andrian et al., 2020)

Qualitative data from student reflection sheets and field observation notes corroborate these findings. In Cycle I, most students described the learning experience positively but also complained of fatigue, particularly near the third round of the 30-30-30 exercise. Observation notes also noted that some students independently reduced the intensity of their movements in the final round without being asked to stop, indicating a decline in motivation consistent with the less varied, repetitive training format. In contrast, in Cycle II, student reflections predominantly used playful language, most students described the session as fun and competitive, and field notes indicated that no students voluntarily reduced the intensity of their movements even though the actual volume of movement in Cycle II was objectively higher than in Cycle I. This phenomenon aligns with the concept of flow state in sport psychology, where full engagement in a challenging yet enjoyable activity suppresses the perception of fatigue and maximizes engagement.

Overall, the comparison of results between cycles shows a consistent pattern of improvement across domains, as summarized in Table 9.

Table 9. Comparison of Learning Outcomes Between Cycles

Aspects	Pre-Cycle	Cycle I	Cycle II
Average final grade	70,5	74,8	82,4
Learning completion	50,0% (12 student)	66,7% (16 student)	83,3% (20 student)
Average skill	71,3	75,6	81,2
Running on the spot	73,5	77,9	83,4
Squat	70,3	74,7	80,3
Push-up	69,9	74,3	79,8
Average attitude (scale 1–4)	2,53	2,70	3,72
Students' attitude ≥ 3	50,0%	66,7%	100,0%
PAP Classification	Fair	Fair	Good

The pattern of improvement in this study is comparable to a number of PBL-based CAR studies in physical education (PJOK) learning. (Jalil, 2023) reported an increase in cognitive

completion from 52.94% to 88.24% and psychomotor from 47.06% to 88.24%, while this study recorded a slightly lower but relatively comparable increase in completion from 50.0% to 83.3%. (Firdaus et al., 2025) reported 77% completion in cycle II through PBL in grade III of elementary school, while this study achieved 83.3% in grade IV, indicating that higher levels of cognitive maturity in grade IV may contribute to more optimal achievement. (Nugraha et al., 2022) reported completion above 85% in the second cycle, slightly higher than the findings of this study, which is likely related to the number of cycles and the type of fitness materials used. The most prominent difference between this study and previous studies lies in the explicitly progressive and differentiated cycle design. Cycle I utilized video-based visual modeling as a bridge between conceptual understanding and movement practice, while Cycle II integrated movement into a competitive game to strengthen affective engagement. Most previous studies did not elaborate on the mechanism of action differentiation between cycles explicitly, so the stepwise design in this study provides a more transparent analytical trace of the contribution of each action component to the improvement of different learning outcome domains.

This study has several limitations that need to be acknowledged. First, the subjects only involved 24 students from one class in one school, so the findings cannot be directly generalized to different contexts. Second, the CAR design did not use a control group, so it cannot be claimed that the improvements were entirely due to the PBL intervention; factors such as the novelty of the game format or students' familiarity with the repetitive tasks could not be fully controlled for. Third, the intervention was limited to two cycles, providing a relatively short time span to observe the sustainability of the improvements. Fourth, although the instrument was validated by two validators and the assessments were conducted collaboratively, observational assessments of attitudes and skills still contain an element of subjectivity that cannot be completely eliminated. These limitations do not diminish the validity of the findings in the CAR context, but they need to be taken into consideration in interpreting and applying the results of this study.

CONCLUSION

This study applies the Problem Based Learning model through five phases: orientation to contextual problems, organizing students into discussion groups, guiding investigations, presenting work results, and evaluating and reflecting on them, with variations in actions designed progressively between cycles. In Cycle I, physical fitness learning videos were used as visual-cognitive stimuli to build concrete movement technique references before direct practice. In Cycle II, jogging, push-ups, and squats were integrated into a competitive movement game format to address the boredom identified in Cycle I while strengthening students' affective engagement.

The research findings indicate that the implementation of PBL with a progressive two-cycle design contributed to improving the physical fitness learning outcomes of grade IV B students at SD Negeri 1 Landasan Ulin Selatan in the classroom context studied. The final average score increased from 70.5 in the pre-cycle to 74.8 in Cycle I and 82.4 in Cycle II, with the percentage of completion increasing from 50.0% to 83.3%, exceeding the 75% success indicator set. This improvement occurred simultaneously in all three domains: knowledge of the concepts and benefits of physical fitness, basic movement skills, and attitudes including mutual cooperation, independence, critical reasoning, and discipline. The pattern of greater improvement in Cycle II (+7.6 points) compared to Cycle I (+4.3 points) indicates that combining video-based movement modeling with game-based physical exercises can support the development of knowledge and motor skills more optimally than visual stimulation alone. It should be emphasized that these findings are contextual and do not allow for strong causal inferences, given that the CAR design does not use a comparison group and involves one class with a limited number of students.

Pedagogically, this study implies that elementary school PJOK teachers can consider implementing PBL with explicit differentiation of actions between cycles, starting with visual modeling to build movement schemas, then continuing with movement games to consolidate skills and increase affective engagement as a more structured alternative to the implementation of uniform PBL. For future research, it is recommended that similar studies involve a wider sample of several schools, use instruments that have been validated more systematically, and consider comparative or quasi-experimental designs to generate stronger

evidence about the effectiveness of PBL-based progressive learning designs in physical fitness learning.

RECOMMENDATIONS

Future research should examine the effectiveness of progressive Problem-Based Learning in physical fitness education using larger and more diverse samples across several schools and grade levels to improve the generalizability of the findings. Comparative, randomized, or quasi-experimental designs involving control groups are recommended to determine whether improvements are attributable specifically to PBL, video-based movement modeling, competitive movement games, or their combined implementation. Researchers should also extend the intervention period and include delayed post-tests to assess the sustainability and transfer of students' knowledge, motor skills, attitudes, and physical fitness development. More systematically validated instruments, objective fitness measurements, blinded assessments, and statistical analysis of inter-rater reliability should be employed to minimize subjectivity in evaluating skills and attitudes. In addition, future studies could investigate moderating variables such as gender, initial fitness level, learning motivation, movement competence, and student engagement, while qualitative interviews or classroom observations may provide deeper insights into how progressive learning activities influence critical reasoning, collaboration, enjoyment, and perceived fatigue. These directions are particularly important because the present study involved only 24 students from one class, used no comparison group, lasted for only two cycles, and relied partly on observational assessments.

REFERENCES

Adam, M., Imran, M. M., Retno, H., Nurulita, F., Qasash, M., Ikadarny, H., Akbar, M., Irvan, S., Sahrul, A., Muhammad, J., & Miftahul Aziz, I. (2025). *Pendidikan Jasmani, Olahraga, Dan Kesehatan Akiopedia Press*.

Aisyah, S., Fatonah, U., Nuri, S., Munawarah, S., & Niarti, D. (2025). *Efektivitas Model Pembelajaran Problem-Based Learning (PBL) untuk Meningkatkan Kompetensi Peserta Didik Kelas V terhadap Materi Organ Pernapasan Manusia pada Pembelajaran IPAS* (Vol. 1). https://online-journal.unja.ac.id/jkomgi/index

Andrian, R., Suroto, S., Tuasikal, A. R. S., Dhani, S. S. S., & Setyorini. (2020). Efektivitas Model Pembelajaran Motorik Berbasis Movement Based Games Pada Siswa Sekolah Dasar. *JOSSAE : Journal of Sport Science and Education*, *5*(1), 64. https://doi.org/10.26740/jossae.v5n1.p64-74

Ansari, A., Hamid, A., & Rahmadi. (2025). Efektivitas Pembelajaran PJOK Pada Jam Pelajaran 4 5 6 Di SMP Negeri 1 Hulu Sungai Tengah. *STAND : Journal Sports Teaching and Development*, *6*(1), 12–21. https://doi.org/10.36456/j-stand.v6i1.10258

Ardiasa, K. P., Semarayasa, I. K., & Satyawan, I. M. (2025). Model Pembelajaran Teaching Games For Understanding Dalam Pendidikan Jasmani. *Jurnal Ilmu Keolahragaan Undiksha*, *13*(3), 229–238. https://doi.org/10.23887/jiku.v13i3.104096

Astikajaya, I. M. (2022). Model Pembelajaran Kooperatif Tipe Talking Stick untuk Meningkatkan Hasil Belajar Agama Hindu pada Siswa Kelas VI Sekolah Dasar. *Journal of Education Action Research*, *6*(4), 499–504. https://doi.org/10.23887/jear.v6i4.52109

Azis, M., Tikollah, M. R., Sahade, Azis, F., & Samsinar. (2023). Penelitian Tindakan Kelas (PTK). *Jurnal Informasi Pengabdian Masyarakat*, *1*(4), 53–59. https://doi.org/10.47861/jipm-nalanda.v1i4.544

Firdaus, R. A., Widodo, A. P., & Dinata, V. C. (2025). Model Pembelajaran Problem Based Learning Dalam Upaya Meningkatkan Hasil Belajar Pjok Pada Siswa Kelas III UPT SD Negeri 222 Gresik. In *Jurnal Ilmiah Penjas* (Vol. 11, Number 1).

Jalil, A. (2023). Peningkatan Hasil Belajar Kebugaran Jasmani melalui Penerapan Model Pembelajaran Problem Based Learning pada Siswa Kelas V SD Negeri Gading Wetan Kecamatan Gading. *Jurnal Pembelajaran Dan Riset Pendidikan* |, *284*. https://doi.org/10.28926/jprp.v3i4.11112

Listiyani, L. A., Hidayah, A., Nisa, M. K., Handayani, F., Athoillah, M. A., Efendy, M., & Atmaja, D. H. (2025). Pengaruh Metode Pembelajaran Dual Coding dalam Bentuk Audiovisual terhadap Tingkat Pemahaman Belajar pada Siswa Kelas V & VI di SDN 2

Korowelanganyar. *ASPIRASI : Publikasi Hasil Pengabdian Dan Kegiatan Masyarakat*, *3*(5), 128–135. https://doi.org/10.61132/aspirasi.v3i5.2250

Mulyana, A., Salsabil, A. M., Muthmainah, A., Aulia, N. F., Syifa, N. Al, Noviyanti, N. S., & Ristianti, R. (2024). Pentingnya Meningkatkan Kebugaran Jasmani pada Anak Sekolah Dasar Melalui Olahraga dan Aktivitas Fisik. *Indo-MathEdu Intellectuals Journal*, *5*(3), 2705–2712. https://doi.org/10.54373/imeij.v5i3.1151

Pangga, D., Ferianto, B., & Kuntjoro, T. (2023). Meningkatkan Hasil Belajar PJOK melalui Model Pembelajaran Problem Based Learning (Pbl) pada Siswa Kelas III UPT SDN 223 Gresik. In *Jumper: Jurnal Mahasiswa Pendidikan Olahraga* (Vol. 4, Number 1).

Rahmadhea, S. (2025). Penerapan Model TGfU (Teaching Games for Understanding) dalam Pendidikan Jasmani. *JPKO Jurnal Pendidikan Dan Kepelatihan Olahraga*, *3*.

Rohmah, L., & Muhammad, H. N. (2021). *Tingkat Kebugaran Jasmani Dan Aktivitas Fisik Siswa Sekolah*. https://ejournal.unesa.ac.id/index.php/jurnal-pendidikan-jasmani

Sriratih, A., & Muzaffar, A. (2022). *Survei Tingkat Kebugaran Jasmani Pada Siswa Kelas VIII SMP Negeri 11 Muaro Jambi Pasca Pandemi* (Vol. 11, Number 2). https://online-journal.unja.ac.id/csp

Syafruddin, M. A. (2024). *Penerapan Metode Pbl (Project Based Learning) Dalam Pendidikan Jasmani* (Vol. 11, Number 8148).

Yulia Sari, Y., Putri Ulfani, D., Ramos, M., & Padli. (2024). *Pentingnya Pendidikan Jasmani Olahraga Terhadap Anak Usia Sekolah Dasar* (Vol. 6, Number 2). https://ejournal.ummuba.ac.id/index.php/pgsd/login

Zahroh, L., Susanti, M., Utami Widayati, T., Yulita, H., & Ariyani. (2024). *Analisis Model Pembelajaran Problem Based Learning pada Jenjang Pendidikan Dasar*. https://doi.org/10.22437/jptd.v9i2.38108