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. 2236-2250

Improvement of Rhythmic Movement Skills of Grade I Students at SDN 1 Landasan Ulin Selatan Through the Problem Based Learning Model

Gilang Akbar Saputra[1]*, Lazuardy Akbar Fauzan[1], Suadmaji[2]
[1]Physical Education Study Program, Faculty of Teacher Training and Education, Lambung Mangkurat University, Jl. A. Yani Km 36 Simpang Empat Banjarbaru, Banjarbaru City, South Kalimantan, Indonesia 70714.
[2]SDN 1 Landasan Ulin Selatan, Jl. Ahmad Yani, Landasan Ulin Selatan, Banjarbaru, Indonesia 70722
Email Correspondence: peserta.41521@ppg.belajar.id

Abstract

This research aims to support the improvement of rhythmic movement skills of grade I students of SDN 1 Landasan Ulin Selatan through the application of *the Problem Based Learning* (PBL) model. This research is a Class Action Research (PTK) which is carried out in two cycles, with each cycle consisting of planning, implementation, observation, and reflection stages. The research subjects amounted to 25 students in grade I. In the learning process, students were given simple problems related to rhythmic movements, such as harmonizing body movements with musical rhythms, maintaining movement balance, and coordinating hand and foot movements in group activities. Students work collaboratively in small groups through motion demonstrations, visual media, and teacher guidance to solve a given movement problem. Data collection techniques are carried out through observation, practice tests of rhythmic movement skills, and documentation. The assessment of rhythmic movement skills is carried out based on several indicators, namely rhythmic accuracy, movement coordination, agility, cohesiveness, and student confidence. The data was analyzed using quantitative descriptive techniques by calculating the average score and percentage of learning completeness in each cycle. The results of the study showed a gradual improvement in students' rhythmic movement skills during the implementation of *the Problem Based Learning* model. In the pretest stage (pretest), the average score of students was 65 with a learning completion percentage of 32%. After the action in Cycle I, the average score increased to 74 with a completion percentage of 48%. In Cycle II, the average score increased again to 85 with a completion percentage of 84%. These findings show that the application of the *Problem Based Learning model* contributes positively to the improvement of rhythmic movement skills of grade I students of SDN 1 Landasan Ulin Selatan.

Keywords: Problem Based Learning; Rhythmic Movement Skills; Elementary School; Classroom Action Research.

How to Cite: Saputra, G. A., Fauzan, L. A., & Suadmaji, S. (2026). Improvement of Rhythmic Movement Skills of Grade I Students at SDN 1 Landasan Ulin Selatan Through the Problem Based Learning Model. *Empiricism Journal*, *7*(2), 2236-2250. https://doi.org/10.36312/ej.v7i2.5253

https://doi.org/10.36312/ej.v7i2.5253

Copyright© 2026, Saputra et al.
This is an open-access article under the CC-BY-SA License.

INTRODUCTION

Physical Education, Sports, and Health (Pendidikan Jasmani, Olahraga, dan Kesehatan/PJOK) is an integral component of elementary education because it contributes not only to physical fitness and motor competence, but also to students' social, emotional, and character development. Through well-designed activities, PJOK provides opportunities for students to practice discipline, responsibility, cooperation, confidence, and sportsmanship. These outcomes are especially important in the early grades, when students begin to form basic movement patterns and learning habits. Therefore, PJOK instruction should not be limited to repetitive practice or teacher demonstrations, but should be systematically planned, varied, and student-centered so that learners can participate actively and develop movement skills in meaningful contexts (Watikasari et al., 2023).

One essential content area in elementary PJOK is rhythmic movement. Rhythmic movement refers to coordinated body movements performed in accordance with a particular beat, tempo, or musical pattern. It commonly combines stepping, arm swinging, clapping, changing positions, balancing, and moving in groups. Because students must connect auditory stimuli with physical responses, rhythmic movement requires timing, balance, coordination, agility, concentration, and body control. When taught appropriately, rhythmic

activities can support fundamental motor development and help students understand how their bodies move in relation to space, tempo, and other people. Previous studies show that rhythmic activities may improve learning outcomes and engagement when supported by suitable instructional models and media (Aulia Lita Pradina et al., 2024; Mahendra et al., 2023).

Rhythmic movement also has educational value because it provides space for creativity, self-expression, cooperation, and confidence. Students are not only expected to reproduce movements demonstrated by the teacher, but also to explore variations, adjust movements to music, and perform sequences with classmates. For lower-grade students, opportunities to move, imitate, experiment, and receive immediate feedback are particularly valuable because learning is closely connected with concrete experiences. Rhythmic movement learning can therefore integrate psychomotor, affective, and social development within a single activity.

Despite these benefits, rhythmic movement skills are not always developed optimally. Initial observations in Grade I at SDN 1 Landasan Ulin Selatan showed that many students had difficulty following the musical beat, coordinating arm and leg movements, maintaining balance, changing positions, and performing confidently in groups. Some moved too quickly or too slowly, while others stopped when the movement pattern changed. Group performance was also less cohesive because students focused only on their own movements and had not yet learned to adjust to their peers. Similar problems have been reported in elementary physical education, where insufficient practice and inappropriate learning design may hinder movement development (Kurniawan & Hanief, 2022).

These difficulties are related to the learning process. Conventional physical education instruction often places the teacher as the main source of information and movement examples, while students are positioned primarily as imitators. Although demonstration is necessary in teaching motor skills, excessive teacher-centered instruction may reduce students' opportunities to ask questions, identify movement problems, discuss possible solutions, and evaluate their own performance. Consequently, students may perform movements mechanically without understanding how they can be improved. Instructional models in physical education should therefore be selected not only for content delivery, but also for their capacity to promote participation, decision making, interaction, and reflection (Metzler, 2017).

Monotonous activities may also reduce motivation, particularly among young learners who need varied, enjoyable, and concrete experiences. When students repeatedly imitate the same movements without meaningful challenges, they may become bored, passive, or reluctant to perform. Low participation can affect psychomotor achievement, confidence, and social interaction. Active learning models can improve motivation and learning outcomes because students are more involved and assume greater responsibility for completing tasks (Wijaya et al., 2023). Therefore, innovation is needed to transform rhythmic movement learning from a one-way demonstration process into an interactive activity that encourages students to think, try, cooperate, and improve.

Problem Based Learning (PBL) offers a relevant alternative because it organizes learning around problems that students solve through investigation, discussion, practice, and reflection. PBL encourages learners to become active participants rather than passive recipients of information. The teacher presents a meaningful problem, guides students in identifying what they need to learn, facilitates group exploration, and supports them in evaluating solutions. PBL has been recognized as a model that promotes critical thinking, collaboration, self-directed learning, and meaningful understanding (Hmelo-Silver, 2004; Savery, 2006).

In rhythmic movement learning, a problem does not need to be abstract or verbally complex. For Grade I students, it can be presented as a simple and observable challenge, such as how to move together without losing the beat, coordinate hand claps with footsteps, maintain balance during a change of direction, or help a group perform a sequence cohesively. Students can discuss the challenge, observe examples, practice in groups, receive feedback, and demonstrate the solution. This adaptation makes PBL appropriate for young learners because the problem is concrete, visual, and directly connected with bodily experience.

The application of PBL to rhythmic movement learning also allows students to recognize movement errors and seek practical solutions. For example, when students cannot coordinate

their footsteps with hand movements, the teacher can encourage them to identify which part of the sequence causes difficulty, slow down the tempo, and practice each component gradually. When a group performs movements without cohesion, students can discuss starting positions, count the beats together, and determine signals for changing movements. Through such activities, movement practice becomes a problem-solving process rather than a mechanical repetition of teacher demonstrations. Students can develop greater awareness of their movements while learning to listen to, support, and cooperate with group members.

Previous research has demonstrated that PBL can improve critical thinking, motivation, participation, and learning outcomes (Rahmadana et al., 2023; N. K. Mardani et al., 2021). In physical education, models-based and problem-oriented instruction can create more meaningful learning because students are encouraged to understand movement purposes, make decisions, cooperate, and reflect on performance rather than simply imitate the teacher (Casey & MacPhail, 2018). PBL has also been reported to improve elementary students' physical education outcomes through collaborative problem-solving activities (Endrawan & Aliriad, 2023). These findings indicate that PBL has the potential to support both the learning process and students' movement development.

However, most previous studies have focused on upper-grade students, general physical education outcomes, or cognitive and motivational aspects. Research on rhythmic movement has also more frequently employed Project Based Learning, demonstration methods, and technology-assisted instruction. Studies specifically examining the adaptation of PBL to improve rhythmic movement skills among Grade I students remain limited. Furthermore, lower-grade students have distinctive learning characteristics and require concrete problems, concise instructions, visual demonstrations, repeated practice, and intensive teacher guidance. Consequently, PBL cannot be applied in exactly the same manner as it is applied to older students. Its stages must be simplified without eliminating the essential processes of problem identification, collaborative exploration, solution testing, presentation, and reflection.

This study addresses that gap by adapting PBL stages into simple movement-based problem-solving activities suited to lower-grade students. The adaptation emphasizes concrete movement problems, visual demonstrations, short group discussions, repeated practice, peer cooperation, and direct teacher feedback. Its contribution lies in showing how PBL syntax can be simplified and operationalized to develop five dimensions of rhythmic movement skills: beat accuracy, movement coordination, agility, group cohesiveness, and confidence. Accordingly, this classroom action research aims to improve the rhythmic movement skills of Grade I students at SDN 1 Landasan Ulin Selatan through the implementation of the Problem Based Learning model.

METHOD

Research Design

This study employed Classroom Action Research (CAR) to improve the rhythmic movement skills of Grade I students through the implementation of the Problem Based Learning (PBL) model. Classroom action research was selected because the study focused on solving an actual learning problem encountered during Physical Education, Sports, and Health instruction. Through a cyclical process, the teacher could identify instructional difficulties, design appropriate actions, implement the actions, observe their effects, and reflect on the results as the basis for subsequent improvement.

The classroom action research was conducted in two cycles. Each cycle consisted of four stages: planning, implementation of action, observation, and reflection. The stages were carried out continuously, meaning that the results of reflection in Cycle I were used to revise and strengthen the learning activities in Cycle II. Each cycle consisted of two meetings, and each meeting was conducted for 2 × 35 minutes. The action was continued to Cycle II because the results obtained in Cycle I had not yet achieved the predetermined indicators of research success.

Research Setting and Participants

The study was conducted at SDN 1 Landasan Ulin Selatan during the even semester of the 2025/2026 academic year. The research participants were all Grade I students, totaling

25 students, consisting of 13 male students and 12 female students. All students in the class were involved because the study was designed to improve the learning process and rhythmic movement skills in one intact classroom rather than to compare different groups.

The class was selected based on the results of preliminary observation, which indicated that students' rhythmic movement skills were still relatively low. The main difficulties were found in following musical rhythms accurately, coordinating hand and foot movements, performing movements agilely, maintaining cohesiveness during group activities, and demonstrating confidence when practicing in front of others. These initial conditions provided the basis for implementing the PBL model as an instructional improvement strategy.

Preliminary Assessment

Before the classroom actions were implemented, a preliminary assessment was conducted to identify students' initial rhythmic movement skills. The students were asked to demonstrate simple rhythmic movements that included basic steps, hand swings, clapping, movement combinations, and changes of position accompanied by music. Their performances were assessed using the same rhythmic movement assessment indicators applied during Cycle I and Cycle II.

The preliminary assessment served as diagnostic information for identifying students' specific movement difficulties. It also provided baseline data that could be compared descriptively with the results obtained after the implementation of PBL in Cycle I and Cycle II. The preliminary data were not intended as an experimental pretest because this study did not employ a control or comparison group.

Research Procedures

The research was carried out through planning, action implementation, observation, and reflection in each cycle. The research activities were conducted collaboratively by the researcher and the PJOK teacher. The researcher and teacher prepared the learning activities, assessed students' performance, observed the implementation of PBL, and discussed the results of each cycle.

Planning

During the planning stage, the researcher and the PJOK teacher identified the main learning problems based on the preliminary assessment. They then prepared lesson plans, rhythmic movement materials, musical accompaniment, movement demonstration media, student group arrangements, observation sheets, and rhythmic movement assessment instruments.

The movement problems were designed in simple and concrete forms appropriate to the developmental characteristics of Grade I students. The problems included how to perform movements according to the musical rhythm, how to coordinate hand and foot movements, how to maintain balance during movement transitions, and how to perform rhythmic movements cohesively with group members.

Implementation of Action

The learning activities were conducted by adapting the stages of Problem Based Learning proposed by Richard Arends. The stages consisted of orienting students to a problem, organizing students for learning, guiding investigation and group practice, presenting the results, and evaluating the problem-solving process.

At the problem-orientation stage, the teacher presented simple problems related to rhythmic movement. For example, students were asked to determine how group members could perform hand and foot movements together without losing the rhythm. The teacher demonstrated movements that contained coordination or rhythm errors and guided students to identify the observed problems.

Students were then organized into small groups. Because the participants were Grade I students, the discussion process was conducted briefly and supported by simple questions, movement examples, pictures, and direct teacher guidance. Students discussed and practiced possible solutions to the movement problems through basic steps, hand swings, clapping, movement combinations, and changes of position.

During the investigation and practice stage, students repeatedly tried the proposed movement solutions. The teacher observed their performance, provided assistance, and guided them to improve inaccurate or uncoordinated movements. Each group subsequently

demonstrated its rhythmic movement sequence. The teacher and students evaluated whether the movements had been performed according to the rhythm, cohesively, and confidently.

Observation

Observation was conducted simultaneously with the implementation of the action. The researcher and observer monitored the implementation of the PBL stages, students' participation in discussions and group practice, and the development of their rhythmic movement skills. The observation also focused on students' ability to understand movement problems, work with group members, attempt movement solutions, respond to feedback, and demonstrate their movements confidently.

The results of the observation were recorded in observation sheets and field notes. These records were used to support the quantitative results obtained from the rhythmic movement performance tests and to identify aspects of learning that required improvement.

Reflection

Reflection was conducted at the end of each cycle by examining students' assessment results, observation notes, and the implementation of PBL. In Cycle I, several students were still unable to follow the rhythm accurately, coordinate their movements, and perform cohesively. Some students were also passive during group discussions and lacked confidence when demonstrating their movements.

Based on these findings, improvements were made in Cycle II by providing clearer movement examples, implementing exercises gradually, increasing group guidance, using visual media, and selecting music with a tempo that was easier for students to follow. The teacher also provided more immediate feedback and repeated difficult movement sequences until students demonstrated better coordination and confidence.

Data Collection Techniques

The data were collected through practical tests, observation, and documentation.

1. Practical tests or demonstrations were used to assess students' rhythmic movement skills after participating in learning activities in the preliminary stage, Cycle I, and Cycle II.
2. Observation was used to examine student activities, the implementation of the learning process, and the application of the Problem Based Learning model during the classroom actions.
3. Documentation was used to support the research data in the form of photographs of learning activities, field notes, and records of students' assessment results.

Research Instrument

The main instrument used in this study was a rhythmic movement skills assessment rubric. The assessment covered five aspects: precision following the rhythm, coordination of movement, agility, compactness, and confidence. Each aspect was assessed using a scale of 1–4. The original assessment tables and criteria were retained without changing their indicators, scores, or descriptions.

Table 1. Rhythmic Movement Skills Assessment Rubric

Indicator	Score	Criteria
Precision Following the Beat	1	Unable to keep up with the rhythm
	2	Often not exactly following the beat
	3	Generally follows the beat with few mistakes
	4	Always follow the beat precisely
Motion Coordination	1	Uncoordinated movement
	2	Coordination of movements is still often wrong
	3	Movements are quite coordinated with few mistakes
	4	Highly coordinated movement
Agility	1	Slow and less agile movements
	2	Movements are quite agile but still stiff
	3	Agile movement with little resistance
	4	Very agile and flexible movement
Compactness	1	Not compact in a group
	2	Cohesiveness is still lacking

Indicator	Score	Criteria
	3	Compact enough with few errors
	4	Very compact in groups
Confidence	1	Lack of confidence in practice
	2	Lack of confidence and still shy
	3	Be confident enough in practice
	4	Very confident when making movements

The maximum score obtained by each student was 20, derived from five indicators with a maximum score of 4 for each indicator. The total raw score was converted into a value on a scale of 0–100 using the following formula:

$$\text{Individual Score} = \frac{\text{Score Obtained}}{\text{Maximum Score}} \times 100$$

A student was considered to have achieved individual learning mastery when the converted score reached at least 75.

Instrument Validation and Assessment Consistency

The research instrument was examined through content validation by two validators, consisting of a physical education lecturer and an elementary school PJOK teacher. The validation process assessed the suitability of the indicators with the learning objectives, rhythmic movement materials, scoring criteria, and developmental characteristics of elementary school students.

The validation results indicated that the instrument was feasible for use after minor revisions. The revisions focused on improving the clarity of the indicators and descriptions so that the scoring criteria could be understood and applied consistently. Because no numerical validity coefficient was reported, the validation results were described based on the validators' qualitative judgments.

To maintain assessment consistency and reduce scoring subjectivity, the students' rhythmic movement performances were assessed by two assessors, namely the researcher and the PJOK teacher. Both assessors used the same rubric, indicators, and scoring criteria. The assessment results were compared to maintain consistency in assigning scores. However, the study did not calculate a formal inter-rater reliability coefficient.

Indicators of Research Success

The indicators of research success were determined based on two criteria:

1. the minimum class average score was 75; and
2. the percentage of classical learning mastery reached at least 80% of the total number of students.

The research was considered successful when both criteria were achieved at the end of a cycle. When the indicators had not been achieved, the weaknesses identified through observation and reflection were used to improve the learning activities in the subsequent cycle.

Data Analysis

The research data were analyzed using quantitative descriptive techniques supported by qualitative descriptions of the observation results. Quantitative analysis was conducted to determine the development of students' rhythmic movement skills from the preliminary stage to Cycle I and Cycle II. The analysis involved calculating individual student scores, the class average, the number of students who achieved learning mastery, and the percentage of classical learning mastery.

The class average was calculated using the following formula:

$$\bar{X} = \frac{\sum X}{N}$$

where:
$\bar{X}$ = class average
$\sum X$ = total student score
N = number of students

The percentage of classical learning mastery was calculated using the following formula:

$$P = \frac{n}{N} \times 100\%$$

where:
$P =$ percentage of learning mastery
$n =$ number of students who achieved mastery
$N =$ total number of students

The results of the preliminary assessment, Cycle I, and Cycle II were compared to identify changes in the class average and the percentage of classical learning mastery. The average score for each rhythmic movement indicator was also compared between cycles to describe improvements in precision following the rhythm, movement coordination, agility, compactness, and confidence. Observation and documentation data were analyzed descriptively. The data were organized according to the implementation of the PBL stages, students' participation, cooperation, confidence, responses to movement problems, and involvement in group practice.

RESULTS AND DISCUSSION

This classroom action research was conducted in two cycles to improve the rhythmic movement skills of Grade I students at SDN 1 Landasan Ulin Selatan through the implementation of the Problem Based Learning (PBL) model. Each cycle consisted of planning, action implementation, observation, and reflection. The research data were obtained through performance assessments, observations of student and teacher activities, and documentation of the learning process. Students' rhythmic movement skills were assessed based on five indicators: precision in following the beat, movement coordination, agility, compactness, and confidence. Each indicator was scored on a scale of 1–4, and the total score was converted to a scale of 0–100.

Preliminary Conditions of Students' Rhythmic Movement Skills

Before the implementation of the PBL model, a preliminary assessment was conducted to determine students' initial rhythmic movement skills. Students were asked to perform a series of simple rhythmic movements involving basic steps, hand swings, clapping, movement combinations, and changes in position accompanied by music. The assessment results are presented in Table 2.

Table 2. Recapitulation of Pretest Learning Outcomes (Pre-Cycle)

No.	Description	Results
1	Number of students	25
2	Class average score	65
3	Number of students completed	8
4	Number of students incomplete	17
5	Completion percentage	32%

Table 2 shows that students' initial rhythmic movement skills had not yet met the predetermined success criteria. The class average was 65, while only 8 of the 25 students achieved the minimum mastery score. Thus, classical learning mastery reached only 32%, whereas the success criterion required at least 80% of students to achieve a score of 75 or higher.

The preliminary observations indicated that most students experienced difficulty synchronizing their footsteps and hand movements with the musical beat. Some students moved faster or slower than the given tempo, while others stopped when the movement sequence changed. Movement coordination was also limited because students had difficulty combining basic steps, hand swings, and clapping simultaneously. During group performance, students tended to focus on their own movements, causing the overall performance to appear less cohesive.

Students' confidence was another problem identified during the preliminary stage. Several students appeared hesitant, shy, or dependent on the movements of their classmates. They were reluctant to perform in front of the class and often stopped when they made

mistakes. These findings indicated that students needed a learning process that provided repeated practice, direct feedback, peer support, and opportunities to solve movement problems collaboratively.

The low preliminary results were also related to the learning approach previously used. Learning activities tended to emphasize teacher demonstrations followed by student imitation. Although demonstrations are important in teaching motor skills, students had limited opportunities to identify movement problems, discuss possible solutions, and improve their movements through collaborative practice. Therefore, the preliminary conditions became the basis for implementing PBL as a classroom improvement strategy.

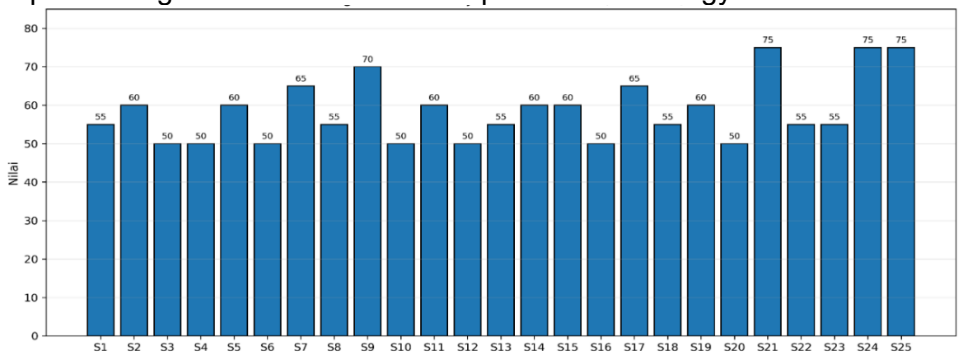

Figure 1. Pretest Student Learning Outcome Diagram (Pre-Cycle)

Figure 1 visually demonstrates the considerable difference between students who achieved mastery and those who did not. Of the 25 students, only 8 students achieved mastery, while 17 students remained below the minimum criterion. This result confirmed the need for systematic instructional action to improve students' rhythmic movement performance.

Results of Cycle I

Cycle I was conducted in two meetings. The learning activities began with the presentation of simple movement problems, such as how to perform hand and foot movements simultaneously, how to maintain movements according to the musical beat, and how to move cohesively with group members. Students were organized into small groups to discuss and practice possible solutions.

The teacher demonstrated basic rhythmic movements and guided students in identifying inaccuracies in rhythm, coordination, and group formation. Students subsequently practiced basic steps, hand swings, clapping patterns, movement combinations, and changes in position. At the end of the cycle, each group demonstrated its movement sequence, and students' performances were assessed using the prepared rubric. The results are presented in Table 3.

Table 3. Recapitulation of Learning Outcomes in Cycle I

No	Description	Results
1	Number of students	25
2	Average score	74
3	Students completed	12
4	Students incomplete	13
5	Completion percentage	48%

Table 3 shows an improvement in students' rhythmic movement skills after the implementation of PBL in Cycle I. The class average increased from 65 in the preliminary stage to 74 in Cycle I. The number of students achieving mastery increased from 8 to 12 students, while classical mastery increased from 32% to 48%.

The increase indicated that movement-based problem-solving activities began to produce positive changes in students' participation and performance. Students became more willing to practice with their groups and began to recognize errors in their movements. Some students were able to adjust their steps to the beat after practicing repeatedly and observing demonstrations from the teacher and their peers. Group activities also encouraged students to help one another remember movement sequences.

Nevertheless, the results of Cycle I had not achieved the predetermined indicators of success. The class average of 74 remained below the target of 75, and classical mastery of

48% was substantially lower than the required 80%. Thirteen students still obtained scores below the minimum mastery criterion. Therefore, the classroom action needed to be continued and improved in Cycle II.

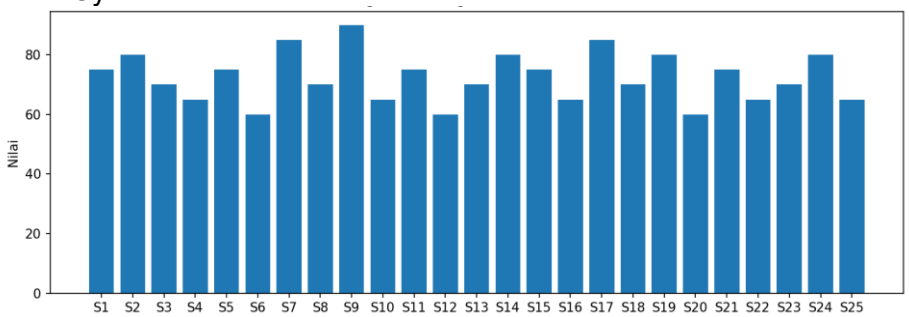

Figure 2. Diagram of Student Learning Outcomes in Cycle I

The observation results showed that several obstacles remained during Cycle I. Some students had difficulty maintaining the accuracy of movements according to the musical beat, particularly when the tempo changed or when two types of movement had to be performed simultaneously. Students could generally perform footsteps or hand movements separately, but several students experienced difficulty when both were combined.

Movement coordination and compactness also required further improvement. Some group members started movements at different times, forgot the agreed sequence, or changed positions without paying attention to the movements of their peers. Students' concentration tended to decrease when the movement sequence became longer. In addition, some students were still passive during group discussions and relied heavily on teacher guidance.

The implementation of PBL in Cycle I had therefore not yet operated optimally. Grade I students required more concrete instructions, shorter movement sequences, slower musical accompaniment, and more intensive support. The reflection results showed that the problems did not arise solely from students' abilities but also from the need to adapt the instructional actions more closely to their developmental characteristics.

Based on the reflection, several improvements were planned for Cycle II. The teacher would provide clearer demonstrations, divide complex sequences into smaller movement components, use music with a more accessible tempo, repeat beat counting, and offer more direct feedback during group practice. Group guidance would also be increased so that every student participated actively rather than depending on more capable classmates.

Results of Cycle II

Cycle II was conducted by implementing the improvements identified through the reflection on Cycle I. The teacher began the learning activities by reviewing the movement problems previously experienced by students. The movement sequence was then divided into simpler components, including footsteps, hand swings, clapping, and changes in position. Students practiced each component separately before combining them into a complete sequence.

The teacher used slower musical accompaniment and repeated beat counting to help students connect auditory cues with physical movements. Visual demonstrations were provided more clearly, and students were given additional opportunities to observe, imitate, practice, and correct their movements. During group practice, the teacher provided immediate feedback and encouraged group members to support one another.

Students' performances at the end of Cycle II were assessed using the same rubric and criteria applied during the preliminary stage and Cycle I. The assessment results are presented in Table 4.

Table 4. Recapitulation of Learning Outcomes in Cycle II

No	Description	Results
1	Number of students	25
2	Average score	85
3	Students completed	21
4	Students incomplete	4
5	Completion percentage	84%

Table 4 shows that students' rhythmic movement skills improved further in Cycle II. The class average reached 85, increasing by 11 points from Cycle I and by 20 points from the preliminary stage. The number of students achieving mastery increased to 21, while only 4 students remained below the minimum mastery criterion. Classical learning mastery reached 84%, exceeding the predetermined target of 80%.

The improvement was also visible in the learning process. Students demonstrated a better ability to follow the musical beat, combine hand and foot movements, and change positions without interrupting the movement sequence. They appeared more attentive to musical cues and were better able to correct their movements after receiving feedback. Group performance became more cohesive because students began to count the beats together, agree on starting positions, and observe the movements of other group members.

Students' confidence also improved. They were more willing to demonstrate their movements, repeat difficult sequences, and accept feedback from teachers and peers. Students who had previously been hesitant began to participate more actively because the group environment provided social support and reduced anxiety during performance.

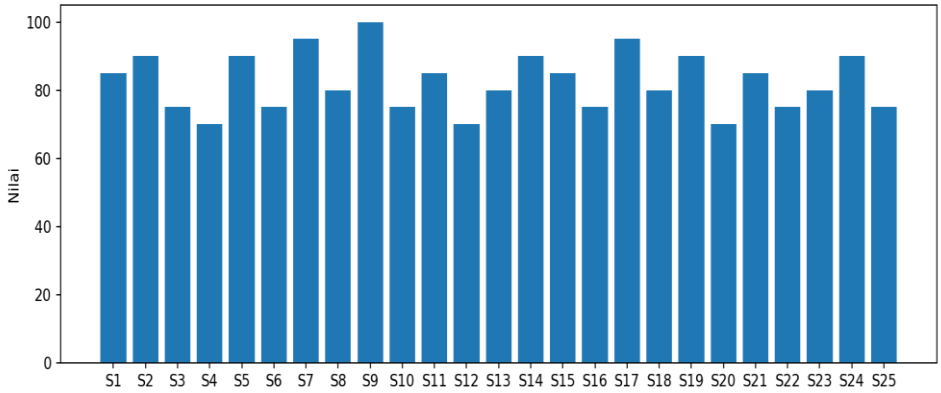

Figure 3. Cycle II Student Learning Outcome Diagram

The observation results indicated that the revised actions in Cycle II were more appropriate for Grade I students. Clearer demonstrations helped students understand the expected movements, while gradual practice reduced the cognitive and motor demands of performing several movements simultaneously. Slower music allowed students to identify and follow the beat more accurately. Intensive teacher guidance also ensured that students received feedback before movement errors became repeated habits.

Students began to understand movement problems as concrete challenges that could be solved through repeated practice and cooperation. For example, when a group performed movements at different times, its members counted the rhythm together and repeated the sequence from the beginning. When students had difficulty coordinating hand and foot movements, they practiced each component separately before combining them. These activities represented a simplified form of problem solving that was appropriate for lower-grade students.

Comparison of Learning Outcomes Between Cycles

The comparison of students' learning outcomes from the preliminary stage to Cycle II is presented in Table 5.

Table 5. Comparison of Learning Outcomes Between Cycles

Aspects	Pretest	Cycle I	Cycle II	Improvement
Average score	65	74	85	+20
Completeness of learning	32%	48%	84%	+52%

Table 5 shows a consistent increase in both the class average and classical learning mastery. The class average increased from 65 in the preliminary stage to 74 in Cycle I and 85 in Cycle II. Thus, the cumulative improvement reached 20 points. Classical mastery increased from 32% to 48% and finally reached 84%, representing a cumulative increase of 52 percentage points.

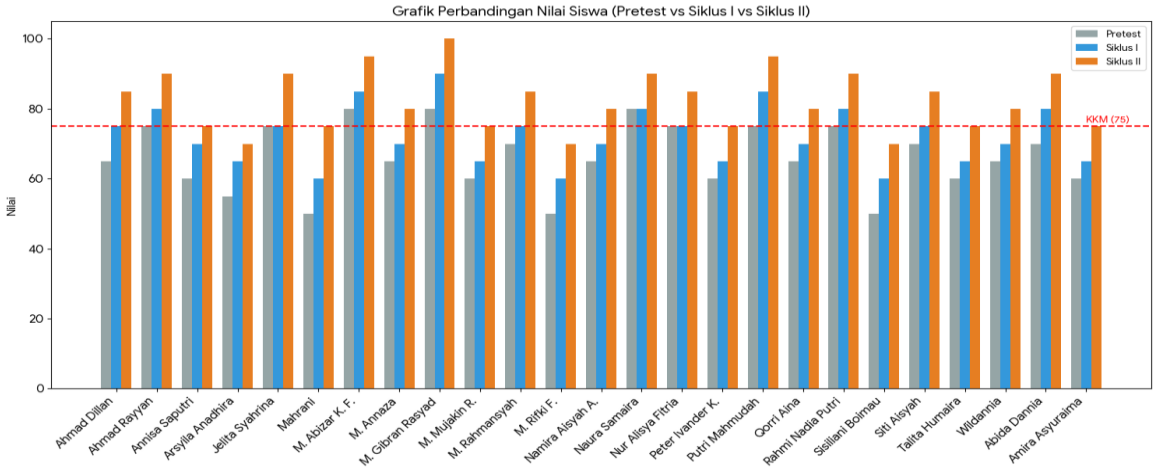

Figure 4. Comparison Chart of Learning Outcomes Between Cycles

The progressive improvement indicates that the learning actions implemented in each cycle contributed to better rhythmic movement performance. However, the increase should be interpreted as a descriptive improvement within the participating class. Because the study did not employ a control group or inferential statistical testing, the findings should not be described as statistically significant evidence of causal effectiveness.

The improvement from the preliminary stage to Cycle I reflects students' initial adaptation to the PBL process. Students began to experience learning activities in which they were required to identify movement difficulties, practice possible solutions, and work collaboratively. However, they still needed considerable support because problem-solving activities and group discussions were relatively new for Grade I students.

The larger improvement from Cycle I to Cycle II was closely related to the revisions made after reflection. The use of clearer demonstrations, gradual movement exercises, slower musical accompaniment, direct feedback, and more intensive group guidance made the PBL activities more accessible. Therefore, the improvement was not merely the result of repeating the same action but of systematically revising the instructional process based on the difficulties identified in Cycle I.

Improvement in Each Rhythmic Movement Indicator

The development of each rhythmic movement indicator is presented in Table 6.

Table 6. Improvement of Each Indicator of Rhythmic Movement Skills

Indicator	Cycle I	Cycle II	Category
Precision to the beat	2.8	3.5	Increase
Motion coordination	2.7	3.4	Increase
Agility	2.6	3.3	Increase
Compactness	2.5	3.4	Increase
Confidence	2.9	3.6	Increase

Table 6 demonstrates that all five indicators improved from Cycle I to Cycle II. Confidence obtained the highest average in Cycle II, increasing from 2.9 to 3.6. This improvement was associated with repeated performance opportunities, peer support, and positive feedback. Students became more comfortable performing movements because they practiced in small groups before demonstrating them in front of the class.

Precision in following the beat increased from 2.8 to 3.5. The use of slower music and repeated beat counting helped students recognize the relationship between musical rhythm and bodily movement. Rather than immediately performing a complete sequence, students first practiced individual movements according to the beat. This gradual approach made it easier for them to maintain consistent timing.

Movement coordination increased from 2.7 to 3.4. Students showed an improved ability to combine footsteps, hand swings, and clapping. The improvement occurred because difficult movements were separated into smaller components and practiced repeatedly before being integrated into complete sequences.

Agility increased from 2.6 to 3.3. Although it remained the lowest-scoring indicator in Cycle II, the improvement showed that students had become more flexible and responsive during movement transitions. Agility may require a longer period of practice because it is closely related to the development of basic motor abilities, balance, and body control.

Compactness increased from 2.5 to 3.4, representing one of the clearest changes between the cycles. In Cycle I, students often started and ended movements at different times. In Cycle II, they became more accustomed to counting together, observing group members, and using common signals when changing positions. PBL group activities therefore supported not only individual motor performance but also cooperation and collective responsibility.

Distribution of Student Scores

The distribution of students' scores at each research stage is presented in Table 7.

Table 7. Distribution of Student Scores

Grade Categories	Pretest	Cycle I	Cycle II
85–100	0	4	12
75–84	8	8	9
<75	17	13	4

Table 7 shows a clear shift in the distribution of student scores. During the preliminary stage, no student achieved a score between 85 and 100. In Cycle I, 4 students entered this category, and the number increased to 12 students in Cycle II. Meanwhile, the number of students scoring below 75 decreased from 17 in the preliminary stage to 13 in Cycle I and only 4 in Cycle II.

The distribution indicates that the improvement did not occur only among students who had initially demonstrated stronger skills. The number of students in the lowest category also decreased substantially. This suggests that the gradual exercises, demonstrations, and group guidance provided additional support for students who initially experienced greater difficulty.

Nevertheless, four students remained below the mastery criterion at the end of Cycle II. These students may have required more individualized assistance, additional practice time, or simpler movement sequences. Their results show that the same instructional action does not necessarily produce identical outcomes for all learners. Differences in motor development, concentration, confidence, and learning pace should therefore be considered in future implementation.

Minimum and Maximum Scores

The minimum and maximum student scores at each stage are presented in Table 8.

Table 8. Minimum and Maximum Scores

Stages	Minimum Score	Maximum Value
Pretest	50	80
Cycle I	60	88
Cycle II	70	95

Table 8 shows that both the minimum and maximum scores increased across the research stages. The minimum score increased from 50 in the preliminary stage to 60 in Cycle I and 70 in Cycle II. The maximum score increased from 80 to 88 and finally reached 95.

The increase in the minimum score is particularly important because it indicates progress among students with the lowest initial performance. Although several students had not yet reached the mastery criterion, their scores were closer to the target after Cycle II. Meanwhile, the increase in the maximum score shows that the learning activities also allowed higher-performing students to further develop their rhythmic movement skills.

Discussion

The findings demonstrate that the implementation of an adapted PBL model was followed by gradual improvement in students' rhythmic movement skills. The improvement occurred in the class average, percentage of mastery, score distribution, and all five assessed indicators. These results can be explained through several characteristics of the learning process.

First, PBL transformed movement learning from a predominantly imitative activity into a guided problem-solving process. Students were not only asked to reproduce the teacher's movements but were encouraged to recognize specific problems, such as movements that did not correspond to the rhythm, uncoordinated hand and foot movements, or group members who moved at different times. By identifying concrete movement problems, students developed greater awareness of the quality of their performance.

This finding is consistent with the principle that PBL promotes active engagement through the process of identifying problems, exploring possible solutions, testing ideas, and evaluating outcomes. Hmelo-Silver (2004) explains that PBL enables learners to construct understanding through active investigation, while Savery (2006) emphasizes the importance of student responsibility and collaborative problem solving. In this study, these principles were adapted into simple physical activities suited to Grade I students.

Second, group practice provided opportunities for peer interaction and cooperative learning. Students could observe their classmates, compare movements, provide simple reminders, and repeat sequences together. These interactions contributed particularly to improvements in compactness and confidence. Students who were initially hesitant received support from their group members and did not have to perform independently at the beginning of the activity.

The findings are in line with Endrawan and Aliriad (2023), who reported that problem-based collaborative learning can improve physical education learning outcomes among elementary school students. Collaborative activities allow students to participate directly in the learning process and learn through social interaction. In rhythmic movement learning, cooperation is particularly relevant because group performance requires synchronization, shared timing, and awareness of other students' movements.

Third, direct practice and feedback enabled students to correct errors immediately. Motor skills cannot be developed through verbal explanation alone; students need opportunities to perform, observe, receive feedback, and repeat movements. In this study, the teacher guided students in identifying inaccurate movements and provided concrete suggestions for improvement. Peer feedback also encouraged students to evaluate movement performance from an observer's perspective.

The results support the view of Casey and MacPhail (2018) that models-based physical education can provide more meaningful learning experiences when students are actively involved in decision making, cooperation, and reflection. The use of a learning model does not eliminate the teacher's role. Instead, the teacher acts as a facilitator who organizes appropriate challenges, demonstrates movements when necessary, and provides support according to students' needs.

Fourth, the improvement in Cycle II shows the importance of adapting PBL to students' developmental characteristics. Grade I students are still developing their ability to understand verbal instructions, maintain concentration, and coordinate complex movements. Therefore, PBL problems need to be concrete, visual, brief, and directly demonstrable. The teacher's use of clearer demonstrations, slower music, shorter sequences, and gradual exercises helped students engage with the problem-solving process without being overwhelmed.

The improvement also demonstrates the essential role of reflection in classroom action research. The shortcomings identified in Cycle I became the basis for revising the actions in Cycle II. The teacher did not simply repeat the same instruction but modified the learning environment and guidance according to observed student difficulties. This cyclical process contributed to the achievement of the success indicators in Cycle II.

The findings are also consistent with research showing that appropriate learning models and media can improve students' participation and outcomes in rhythmic movement learning. Aulia Lita Pradina et al. (2024) reported improvement in rhythmic movement learning through Project Based Learning, while Mahendra et al. (2023) demonstrated the role of media-supported project learning in improving students' rhythmic movement outcomes. Although those studies employed different instructional approaches, they similarly emphasize active participation, movement exploration, and appropriate learning support.

Rahmadana et al. (2023) found that PBL can support students' critical-thinking skills, while Wijaya et al. (2023) reported that active learning models can increase learning motivation. In the present study, the problem-solving process was manifested in concrete

motor tasks rather than complex verbal or academic problems. Students identified movement errors, tried alternative solutions, and evaluated their performance through direct practice. This indicates that problem-solving principles can be adapted to psychomotor learning when tasks are designed according to students' developmental levels.

Overall, the findings indicate that adapted PBL supported the improvement of beat accuracy, movement coordination, agility, compactness, and confidence among Grade I students. However, the results should be interpreted within the context of classroom action research. The study involved only one class with 25 students, did not include a comparison group, and relied on descriptive analysis. Therefore, the findings demonstrate improvement within the participating class but do not establish statistical causality or broad generalizability.

Despite these limitations, the study provides practical evidence that PBL can be adapted for lower-grade rhythmic movement instruction. Concrete movement problems, visual demonstrations, guided group practice, repeated exercises, and direct feedback appear to be important components of its implementation. These elements enabled students to participate actively while receiving the structured support required for early motor development.

CONCLUSION

Based on the results of the research, it can be concluded that the implementation of *the Problem Based Learning* (PBL) model supports the improvement of rhythmic movement skills of grade I students of SDN 1 Landasan Ulin Selatan. This increase can be seen from the increase in learning outcomes at each stage of learning, starting from pretest (pretest), Cycle I, to Cycle II. The average grade of the class increased from 65 in the pretest stage to 74 in Cycle I and again increased to 85 in Cycle II. The percentage of learning completeness also increased from 32% in the pretest stage to 48% in Cycle I, then increased to 84% in Cycle II.

The application of *the Problem Based Learning* (PBL) model provides opportunities for students to actively discuss, solve movement problems, work together in groups, and improve movements through practice and feedback during the learning process. Thus, the *Problem Based Learning model* can be one of the alternatives to PJOK learning to support the improvement of rhythmic movement skills in elementary school students, especially in the lower grades. This study has several limitations, including the relatively small number of samples, the implementation of research that was only conducted in one class, the absence of a comparison group, and the possibility of subjectivity in the assessment of students' movement skills even though the assessment has been carried out using observation sheets and assessment rubrics.

RECOMMENDATIONS

Based on the results of the research that has been conducted, there are several recommendations that can be given. First, PJOK teachers are advised to apply the Problem Based Learning (PBL) model in rhythmic movement learning and other PJOK materials because it has been proven to be able to increase students' activeness, motivation, and movement skills. This model can create a more fun, interactive, and student-centered learning atmosphere so that students can more easily understand the material being studied.

Second, schools are expected to support the implementation of innovative learning models by providing adequate facilities and infrastructure, such as learning media, audio devices, and sufficient space to support PJOK learning activities. School support is very important so that the learning process can take place optimally.

Third, for future researchers, it is recommended to develop similar research with a wider scope, both at different grade levels and in other PJOK materials. Further research can also add other variables such as learning motivation, creativity, or student cooperation so that the research results become more comprehensive. In addition, the use of more varied learning media such as interactive videos or educational games can be studied to increase the effectiveness of the Problem Based Learning model in PJOK learning.

ACKNOWLEDGMENT

The author expresses gratitude for the presence of Allah SWT because by His grace and grace this research can be completed properly. The author also expressed his gratitude

to all parties who have provided assistance, support, and guidance during the research process until the preparation of this article.

Special thanks are expressed to the supervisor who has provided direction, advice, and motivation in the preparation of this research. The author also expressed his gratitude to the principal, PJOK teachers, and all grade I students of SDN 1 Landasan Ulin Selatan who had helped and participated during the implementation of the research.

In addition, the author also expressed his gratitude to family, friends, and close people who always provide support and enthusiasm during the research process. In particular, the author expresses his gratitude to Nor Hanifah for providing prayers, motivation, attention, and support so that this research can be completed properly.

REFERENCES

Aulia Lita Pradina, Latifah, N. M., Prianggi, Y. N., Prakoso, B. B., & Purasara, A. (2024). Improvement Of Learning Outcomes Of Pjok Rhythmic Movement Activity Material Through The Implementation Of Project Bases Learning (PJBL). *Journal of Physical Health and Sports, 9*(1), 112–119. https://doi.org/10.36526/kejaora.v9i1.3731

Casey, A., & MacPhail, A. (2018). Adopting a models-based approach to teaching physical education. *Physical Education and Sport Pedagogy*, *23*(3), 294–310. https://doi.org/10.1080/17408989.2018.1429588

Endrawan, I. B., & Aliriad, H. (2023). Problem-Based Collaborative Learning Model Improves Physical Education Learning Outcomes for Elementary School Students. *MIMBAR PGSD Undiksha*, *11*(1), 9–17. https://doi.org/10.23887/jjpgsd.v11i1.59758

Hmelo-Silver, C. E. (2004). Problem-Based Learning: What and How Do Students Learn? *Educational Psychology Review*, *16*(3), 235–266. https://doi.org/10.1023/B:EDPR.0000034022.16470.f3

Kurniawan, A. W., & Hanief, Y. N. (2022). Development of basic movement learning models of the concept of play and games modification elementary school level. *Journal Sport Area*, *7*(2), 246–261. https://doi.org/10.25299/sportarea.2022.vol7(2).8589

Mahendra, Muh. Y., Mochamad Ridwan, & Juheri. (2023). Improving Learning Outcomes of Rhythmic Movement Activity Learning through Utilization of the TikTok Media Model Project Based Learning. *Journal of Physical Education (JPJ), 4*(1), 145–155. https://doi.org/10.55081/jpj.v4i1.1030

Metzler, M. (2017). *Instructional Models in Physical Education*. Routledge. https://doi.org/10.4324/9781315213521

N.K. Mardani, N.B. Atmadja, & I.N.Suastika. (2021). The effect of the problem based learning (pbl) learning model on social studies motivation and learning outcomes. *Indonesian Journal of Social Studies*, *5*(1), 55–65. https://doi.org/10.23887/pips.v5i1.272

Rahmadana, J., Khawani, A., & Roza, M. (2023). Application of the Problem Based Learning Model to Improve the Critical Thinking Skills of Elementary School Students. *Journal of Basic Education*, *7*(1), 224–230. https://doi.org/10.31004/basicedu.v7i1.4278

Reza Abrillian Firdaus, Atmojo Prayogo Widodo, & Vega Chandra Dinata. (2025). Problem Based Learning Model In An Effort To Improve Pjok Learning Outcomes In Grade Iii Students Of UPT SD Negeri 222 GresIK. *Scientific Journal of Penjas (Research, Education and Teaching), 11*(1), 196–213. https://doi.org/10.36728/jip.v11i1.4135

Savery, J. R. (2006). Overview of Problem-based Learning: Definitions and Distinctions. *Interdisciplinary Journal of Problem-Based Learning*, *1*(1). https://doi.org/10.7771/1541-5015.1002

Watikasari, S. U., Iyakrus, I., & Destriani, D. (2023). Development of Web-based PJOK learning media in Grade IV of Elementary School. *Indonesian Journal of Physical Education*, *19*(2), 17–28. https://doi.org/10.21831/jpji.v19i2.67377

Wijaya, R. G., Pamungkas, O. I., & Ubaedi, U. (2023). Implementation of Problem Based Learning and Discovery Learning in increasing learning motivation. *Indonesian Journal of Physical Education*, *19*(2), 68–76. https://doi.org/10.21831/jpji.v19i2.73702