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Learning Improvement in Elementary Physical Education Through the Use of PowerPoint-Supported Teaching Practices

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ABSTRACT

Background: Learning challenges in elementary physical education often result from limited instructional media and monotonous teaching practices that reduce student engagement. PowerPoint-supported teaching offers a simple and accessible approach to presenting learning materials more clearly and systematically.

Aims: This study aims to examine learning improvement in elementary physical education through the use of PowerPoint-supported teaching practices implemented in classroom instruction.

Methods: The study employed classroom action research conducted in two instructional cycles involving fourth-grade elementary students. Data were collected through learning outcome tests, classroom observations, and documentation. The analysis focused on identifying changes in learning mastery and classroom participation across instructional cycles using descriptive comparison.

Results: The findings show a gradual improvement in student learning outcomes after the implementation of PowerPoint-supported teaching practices. The proportion of students achieving learning mastery increased from the first cycle to the second cycle, accompanied by improved classroom engagement and more focused participation during learning activities. The reflective cycle-based approach also supported the refinement of instructional practices.

ConclusionThe study concludes that PowerPoint-supported teaching practices can contribute to learning improvement in elementary physical education when applied consistently through reflective classroom cycles. This approach provides a practical instructional option for teachers seeking to enhance learning outcomes using readily available digital media.

Keyword: Classroom Action Research; Elementary Physical Education; Learning Outcomes; PowerPoint-supported Instruction; Big Ball Games;

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INTRODUCTION

Physical education at the elementary school level is designed to support students' physical growth while simultaneously shaping basic movement skills and healthy habits (Abusleme-Allimant et al., 2023; Corbin, 2021). Learning in this subject does not only involve physical activity but also requires students to understand rules, techniques, and simple strategies. For young learners, these cognitive aspects are often as important as physical practice itself (Benoit & Gabola, 2021; Shearer et al., 2021). When students clearly understand what they are doing, they tend to participate more confidently. However, this balance between physical activity and understanding is not always easy to achieve in classroom practice. Instruction is frequently delivered through direct explanation and demonstration alone. Such approaches may work for some students but leave others struggling to follow lesson objectives. As a result, learning improvement in elementary physical education can be uneven.

These difficulties are often connected to the limited use of instructional media in physical education classes (Zheng et al., 2021). In many schools, learning activities still depend largely on verbal instruction without sufficient visual support. When explanations are given only once and without structured guidance, students may miss important information. This situation becomes more problematic when lessons involve game rules or coordinated movements. Students who do not fully understand instructions may hesitate or make repeated mistakes during activities. Over time, this can reduce students' motivation to participate actively. Passive participation limits opportunities for skill development and learning progress (Choi & Hur, 2023; McGarr, 2021). Consequently, learning outcomes may remain below expectations.

Learning improvement is closely related to how clearly instructional content is communicated to students (Stevanović et al., 2021; Tong et al., 2021). Clear instruction helps students understand learning goals and activity sequences. When expectations are well explained, students are more willing to engage in learning tasks. In contrast, unclear explanations can create confusion and reduce confidence. In physical education, confusion often appears during movement execution or group activities. Students may stop participating because they are unsure of what to do. This condition disrupts the learning process and reduces its effectiveness. Therefore, instructional clarity becomes a key factor in supporting learning improvement (Fryer & Leenknecht, 2023; Serki & Bolkan, 2024).

One way to enhance instructional clarity is through the use of simple digital presentation media (Riapina, 2021; Spicer & Coleman, 2022). PowerPoint is among the most accessible tools available to teachers in elementary schools. It allows learning materials to be arranged in a logical and visual sequence. Images, short text, and structured slides can support verbal explanations. In physical education, this visual support helps students grasp movement concepts and game rules before practice begins (Chow et al., 2021; Rudd et al., 2021). Importantly, PowerPoint does not replace physical activity but complements it. It functions as preparation and reinforcement within the learning process. This supportive role makes PowerPoint relevant for elementary physical education instruction.

PowerPoint-supported teaching practices also contribute to more organized learning experiences (Zimmermann et al., 2021). Structured presentation helps teachers manage lesson flow and time allocation. When students understand the sequence of activities, learning becomes smoother and more focused. Clear structure reduces repeated explanations and unnecessary interruptions. Students are better prepared to follow instructions during practice sessions. This

preparedness encourages more active participation in learning activities. As participation increases, opportunities for learning improvement also grow (Jayawickreme et al., 2021; Kaddoura & Husseiny, 2023). Thus, PowerPoint-supported instruction supports both teaching efficiency and student learning.

Improving classroom instruction requires teachers to reflect on their teaching practices (Goyibova et al., 2025; Zimmermann et al., 2021). Teachers need to identify what works well and what needs improvement. Classroom action research provides a systematic approach for this reflective process. Through instructional cycles, teachers can make gradual adjustments based on classroom conditions. This approach emphasizes improvement over time rather than instant success. In physical education, such reflection helps teachers adapt instructional strategies to students' needs. PowerPoint-supported teaching practices can be refined through this cycle-based process. As a result, instructional changes remain grounded in real classroom experience.

Although educational technology has received increasing attention, simple digital tools are often overlooked in research (An & Oliver, 2021). Many studies focus on advanced technologies that are not always practical for daily classroom use. This creates a gap between research findings and classroom realities. Teachers may find it difficult to apply complex technological solutions in their schools. PowerPoint-supported teaching practices offer a realistic and widely applicable alternative. Studying these practices can provide insights that are directly useful for teachers (Dignath et al., 2022; Sofianidis & Kallery, 2021). Classroom-based research allows instructional processes to be examined in authentic contexts. Therefore, this focus responds to practical needs in elementary physical education.

Overall, learning improvement in elementary physical education depends on instructional approaches that are clear, practical, and adaptable (Li et al., 2022). PowerPoint-supported teaching practices offer a means to enhance instructional clarity without demanding complex resources. When implemented consistently, these practices can support better understanding and participation among students. Learning improvement should be viewed as a continuous process shaped by reflective teaching. Classroom action research provides an appropriate framework for examining this process (Wright, 2021). Understanding how PowerPoint-supported teaching influences learning improvement can inform future instructional practice. This perspective aligns with efforts to strengthen teaching quality in elementary schools. Accordingly, this study positions PowerPoint-supported teaching as a meaningful approach to improving learning in elementary physical education.

Studies on elementary physical education indicate that learning improvement is closely linked to how instruction is structured and communicated to students. Wang (2025) show that well organized sport learning programs support both physical development and sustained attention, suggesting that clarity and sequencing matter in learning. At the institutional level, Howie et al. (2025) emphasize that school contexts influence students' opportunities to engage meaningfully in physical activity. Implementation oriented research by Peary et al. (2025) further demonstrates that effective learning depends on realistic instructional strategies that can operate within classroom constraints. From the teacher's perspective, Brunsdon (2025) highlights the role of communication and pedagogical awareness in shaping meaningful physical education experiences. Pedagogical design also emerges as a key theme in the literature. Nur et al. (2025) illustrate how structured instructional models contribute to student engagement and social learning, while Aldapit et al. (2025) stress the importance of systematic approaches in supporting student development. Research by Moliterno et al. (2025) suggests that learning outcomes are influenced by the coherence of instructional support systems, and Cheng et al. (2025) identify sustained participation as a marker of instructional effectiveness. In terms of evaluation, Saiz-González & Fernandez-Rio (2025)

underline the need for clear learning constructs and valid assessment, while Hiskya et al. (2025) show that learning outcomes in Indonesian elementary schools are shaped by instructional clarity, motivation, and learning environments. Together, these studies indicate that while instructional structure and clarity are critical, the role of simple, teacher friendly digital media remains underexplored, positioning PowerPoint supported teaching practices as a relevant focus for improving learning in elementary physical education.

Learning improvement in elementary physical education cannot be separated from how learning is introduced, explained, and reinforced in the classroom. Although physical activity is the core of the subject, students' understanding of instructions, rules, and movement sequences plays a decisive role in shaping meaningful participation. In many classroom situations, explanations are delivered briefly and verbally, leaving some students uncertain about what is expected during practice. This condition suggests that learning challenges do not always originate from the activity itself, but from the way learning is prepared and communicated. PowerPoint-supported teaching practices provide an opportunity to strengthen this preparatory stage by offering visual structure and clearer learning orientation. The rationale of this study lies in the belief that improving instructional clarity through simple, accessible media can support better learning processes without altering the essential nature of physical education. By embedding PowerPoint into routine teaching, teachers are able to reflect on and gradually improve their instructional practices.

The existing body of literature on elementary physical education has largely focused on instructional models, learning environments, student participation, and assessment frameworks. While these studies offer valuable insights, they often overlook the role of simple instructional supports that teachers can realistically apply in everyday classroom practice. Research tends to prioritize comprehensive interventions or sophisticated pedagogical approaches, which may not align with the practical constraints faced by elementary school teachers. Moreover, limited attention has been given to how instructional clarity can be enhanced through basic digital presentation tools within a classroom action research context. As a result, there is insufficient empirical discussion on the contribution of PowerPoint-supported teaching practices to learning improvement through reflective teaching cycles. This gap highlights the need for studies that examine small-scale, practice-oriented instructional strategies that are grounded in real classroom conditions.

The purpose of this study is to explore learning improvement in elementary physical education through the implementation of PowerPoint-supported teaching practices. Using a classroom action research approach, the study seeks to document changes in learning outcomes and student participation across successive instructional cycles. Rather than aiming to generalize findings or test causal relationships, this study focuses on understanding how instructional practices evolve and how learning improvement emerges through reflection and adaptation. The findings are intended to offer practical insights for teachers who wish to enhance instructional clarity and organization using accessible digital media. In doing so, this study contributes to a more grounded understanding of how simple teaching supports can foster meaningful learning improvement in elementary physical education.

METHOD

Research Design

This study adopted a classroom action research design to improve learning outcomes in elementary physical education through reflective instructional practice. The research was conducted in iterative cycles consisting of problem identification, planning, action, observation, and reflection.

Each cycle was designed to evaluate instructional implementation and guide subsequent improvement. PowerPoint-supported teaching practices were integrated during the instructional phase to enhance clarity in explaining learning objectives, rules, and activity sequences. The research emphasized continuous improvement rather than causal testing, allowing instructional adjustments to be made based on classroom realities. Through this cyclical approach, teaching practices were refined progressively in response to observed learning conditions. The overall research procedure is illustrated in Figure 1.

Figure 1. Classroom action research procedure for PowerPoint-supported teaching practices in elementary physical education.

The procedure begins with the identification of learning problems, followed by planning through the design of PowerPoint-supported teaching materials. Instruction is then implemented during the action stage, while observation focuses on student participation and learning outcomes. Reflection is conducted to evaluate instructional effectiveness and inform revised planning for the next cycle. The process is repeated until learning improvement is achieved.

Participants

The participants in this study were students from an elementary school physical education class where the research was conducted. The class was selected based on the researcher's direct involvement in the teaching process, which enabled sustained observation and reflection throughout the study. All students in the class participated in the learning activities implemented across the research cycles. The participants represented typical characteristics of elementary school learners in terms of age and learning abilities. No grouping or selection based on academic performance was applied, as the focus of the study was collective learning improvement. This inclusive approach allowed instructional changes to be examined within a natural classroom setting. Teacher–student interaction was maintained consistently during the research process.

Instrument

Data were collected using instruments aligned with the objectives of improving learning processes and outcomes. Learning outcome tests were administered at the end of each cycle to assess students' mastery of the instructional content. Classroom observation sheets were used to document student participation, attentiveness, and responses during learning activities. The PowerPoint materials served as instructional tools designed to structure explanations of learning objectives, rules, and activity sequences. Field notes were also employed to record classroom dynamics and instructional challenges encountered during implementation. Documentation supported the triangulation of data obtained from tests and observations. Together, these instruments provided a comprehensive picture of instructional effectiveness and learning improvement.

Data Analysis

Data analysis was conducted descriptively to examine changes in learning outcomes and classroom participation across research cycles. Student learning results were compared between cycles to identify patterns of improvement following the integration of PowerPoint-supported teaching practices. Observational data were analyzed by reviewing recorded indicators of participation and engagement during learning activities. Reflective analysis was applied at the end of each cycle to evaluate instructional strengths and identify aspects requiring improvement. The analysis focused on instructional progression rather than statistical generalization. Findings from each cycle informed the planning and implementation of subsequent instructional actions. Through this process, learning improvement was interpreted as a gradual outcome of reflective and adaptive teaching practice.

RESULTS AND DISCUSSION

Results

The implementation of PowerPoint-supported teaching practices was followed by a visible improvement in student learning outcomes across instructional cycles. The learning process initially showed limited mastery, reflecting difficulties in understanding lesson objectives and activity procedures. As instructional support was introduced and refined through classroom action research cycles, learning outcomes gradually improved. This pattern indicates that instructional clarity and structured explanation played an important role in supporting student learning. The progression of learning mastery is presented numerically in Table 1 and visually in Figure 2.

Table 1. Student Learning Outcomes Across Instructional Cycles

Instructional Stage	Mastery Percentage	Performance Criterion
Initial condition	46%	Less satisfactory
Cycle I	73%	Good
Cycle II	85%	Very good

Table 1 summarizes student learning mastery across instructional stages. The data show a steady increase in mastery levels following the implementation and refinement of PowerPoint-supported teaching practices. The initial condition showed that fewer than half of the students achieved the expected learning mastery. After the first instructional cycle, mastery increased to 73 percent, suggesting that clearer presentation of learning objectives and activity sequences supported better student understanding. Reflection on the first cycle informed adjustments in instructional

delivery, which were applied in the second cycle. As a result, mastery increased further to 85 percent, indicating more consistent learning achievement across the class.

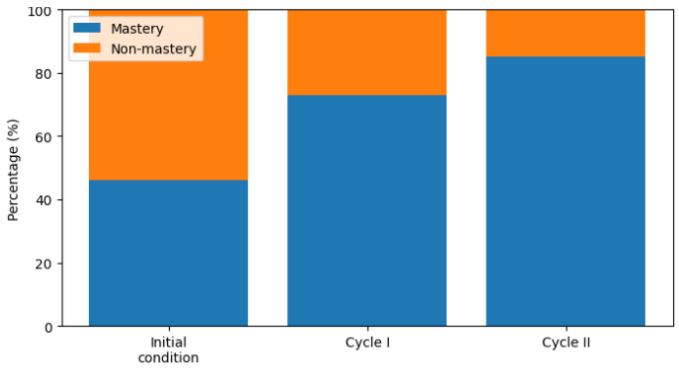

Figure 2. Learning Mastery Improvement Across Instructional Cycles

Figure 2 illustrates the progressive increase in learning mastery from the initial condition through Cycle II, highlighting the cumulative effect of instructional refinement. The upward trend illustrated in Figure 2 confirms that learning improvement occurred gradually rather than instantaneously. The results suggest that students benefited from repeated exposure to structured explanations supported by visual presentation. Fewer instructional interruptions were observed as students became more familiar with lesson flow and expectations. Overall, the findings indicate that learning improvement emerged through a reflective and cycle-based instructional process supported by PowerPoint as an instructional aid.

Discussion

The improvement in learning outcomes found in this study underscores the role of instructional organization in elementary physical education. The increase in mastery across instructional cycles indicates that students responded positively to clearer learning orientation. PowerPoint-supported teaching practices helped transform abstract explanations into more understandable learning guidance. This outcome aligns with the work of Wang (2025), who highlight the importance of structured learning arrangements in supporting attention and performance. When instructional stages are clearly communicated, students experience less uncertainty during activities. Reduced uncertainty encourages greater willingness to participate. Participation becomes more purposeful rather than hesitant. Over time, these conditions contribute to observable learning improvement.

Following this pattern, instructional preparation emerged as a critical factor in shaping learning effectiveness. In the early stage, many students struggled not with physical ability but with understanding task requirements. Visual explanations provided through PowerPoint helped clarify rules and movement sequences before activities began. Howie et al. (2025) emphasize that instructional conditions influence how students experience physical activity at school. Improved preparation reduced confusion during practice. As confusion declined, students demonstrated better focus on skill execution. Learning time was used more efficiently as fewer interruptions occurred. These changes supported more consistent learning progress.

The findings also reflect the value of instructional strategies that are adaptable to everyday classroom contexts. Rather than introducing complex interventions, the study relied on a simple instructional adjustment. Peary et al. (2025) argue that instructional effectiveness depends on feasibility within real teaching conditions. PowerPoint-supported teaching practices met this

requirement by fitting naturally into routine lessons. The gradual improvement across cycles suggests that meaningful change does not always require large-scale reform. Small adjustments can produce cumulative benefits. Reflection after each cycle allowed teachers to respond directly to classroom needs. Learning improvement thus developed through continuous instructional adaptation.

As instructional clarity improved, teacher communication also became more effective. The use of PowerPoint encouraged more deliberate and structured explanations. Brunsdon (2025) highlights that teacher communication is central to meaningful learning in physical education. Clear explanations reduced the need for repeated clarification during activities. Students appeared more confident in following instructions independently. This confidence supported smoother lesson flow. Improved communication also contributed to a more positive classroom atmosphere. A supportive learning environment further encouraged engagement. Together, these factors reinforced learning improvement.

The improvement observed in this study also reflects principles associated with structured pedagogical design. Nur et al. (2025) demonstrate that organized instructional approaches enhance student engagement. Although no formal instructional model was applied, PowerPoint-supported teaching introduced consistency and structure into lessons. This structure helped students recognize learning objectives more clearly. Aldapit et al. (2025) emphasize systematic approaches in physical education development. The steady improvement in mastery supports this perspective. Systematic guidance allowed students to progress at a more stable pace. Learning improvement therefore emerged through intentional instructional organization.

Learning outcomes in this study were also influenced by the coherence of instructional support. Moliterno et al. (2025) associate learning outcomes with the alignment of instructional components. PowerPoint-supported teaching contributed to this alignment by linking explanations, activities, and assessment. Cheng et al. (2025) identify sustained participation as an indicator of instructional success. Increased participation was observed as students became familiar with lesson structure. Familiarity supported continuity in learning engagement. Sustained engagement contributed to cumulative learning improvement. These findings highlight the importance of instructional coherence.

Assessment results further clarify the nature of learning improvement. Saiz-González & Fernandez-Rio (2025) stress that meaningful learning requires clear evaluative constructs. In this study, learning mastery functioned as a practical indicator of instructional effectiveness. The increase in mastery across cycles reflected improved understanding rather than short-term performance. Assessment outcomes corresponded closely with instructional refinements. This correspondence strengthens the interpretation of learning improvement. Clear instruction supported more accurate assessment of student learning. The findings emphasize the relationship between instructional clarity and evaluative outcomes.

Within the Indonesian elementary school context, the findings are particularly relevant. Hiskya et al. (2025) note that learning outcomes are shaped by instructional clarity and classroom conditions. PowerPoint-supported teaching practices addressed instructional clarity without requiring additional infrastructure. The study demonstrates that effective instructional improvement can be achieved using accessible tools. Teachers can adapt simple digital media to enhance learning processes. This approach aligns with practical classroom realities. The discussion confirms that learning improvement in elementary physical education can be supported through reflective, structured, and accessible instructional practices.

Implications

The learning improvement identified in this study carries several implications for elementary physical education practice. The findings suggest that instructional clarity is not a peripheral element, but a core component of effective learning, particularly for younger students. PowerPoint-supported teaching practices helped strengthen this clarity by organizing explanations, rules, and activity sequences in a more accessible form. This implies that simple instructional supports can meaningfully enhance student understanding without altering the physical nature of learning activities. The results also underline the importance of reflective teaching, where instructional decisions are continuously evaluated and refined. For teachers, the study highlights the value of integrating basic digital media into lesson preparation rather than relying solely on verbal instruction. At the institutional level, the findings imply that supporting teachers' instructional planning skills can contribute to improved learning outcomes. Overall, this study reinforces the idea that practical and accessible teaching strategies can support learning improvement in elementary physical education.

Limitations

While the findings offer useful insights, they should be interpreted in light of several limitations. The study was conducted within a single classroom context, which restricts the extent to which the results can be generalized to other settings. As a classroom action research study, the focus was on instructional improvement rather than on establishing causal relationships. Learning outcomes were primarily assessed through mastery levels and classroom observations, which may not capture all aspects of student learning. The research was limited to two instructional cycles, so longer-term learning effects could not be examined. In addition, the study concentrated on one type of instructional support, namely PowerPoint, without comparison to alternative media. The dual role of the teacher as researcher may also influence interpretation, despite the use of reflection and observation. These limitations indicate that the findings should be viewed as context-specific and exploratory.

Suggestions

Considering the implications and limitations, several directions can be suggested for future practice and research. Teachers may consider adopting simple digital presentation tools to support instructional clarity and lesson organization in physical education. Future studies could involve multiple classes or schools to examine whether similar learning improvement patterns emerge in different contexts. Extending the number of instructional cycles may help capture longer-term effects of reflective teaching practices. Comparative research involving different instructional media could provide deeper insight into effective learning supports. Additional indicators, such as student motivation or learning perception, may also be explored to enrich understanding of learning processes. For professional development, training programs could emphasize reflective use of instructional media rather than technical complexity. These suggestions aim to strengthen the application and understanding of instructional support strategies. Ultimately, such efforts may contribute to more effective and sustainable learning improvement in elementary physical education

CONCLUSIONS

This study demonstrates that learning improvement in elementary physical education can be supported through instructional practices that emphasize clarity and organization. The progressive increase in learning mastery across instructional cycles indicates that students benefited from clearer explanations and more structured lesson preparation. PowerPoint-supported teaching practices contributed by helping teachers present learning objectives, rules, and activity sequences in a form that was easier for students to understand. Rather than replacing physical activity, PowerPoint functioned as an instructional aid that strengthened the preparatory and explanatory stages of the lesson. The findings suggest that learning difficulties in physical education often arise from how instruction is communicated, not from the activities themselves. Through the reflective classroom action research process, teaching practices were refined in response to classroom conditions, allowing learning improvement to emerge gradually rather than instantly. This highlights the importance of teacher reflection and iterative adjustment in improving learning outcomes. Overall, the study shows that meaningful instructional improvement does not require sophisticated technology, but can be achieved through purposeful use of simple, accessible tools such as PowerPoint within a reflective teaching framework.

AUTHOR'S CONTRIBUTION

Heriati Nasution conceived the study, developed the research design, conducted classroom implementation, collected the data, performed the data analysis, and prepared the original manuscript draft. Dr. Mariam Nasution, M.Pd supervised the study by providing methodological direction, strengthening the research framework, and critically reviewing the interpretation of the findings. Nursyaidah, M.Pd supported the supervision process by reviewing the research procedure, providing feedback on data analysis and reporting, and improving the organization and academic clarity of the manuscript.

All contributors provided substantive feedback on the final manuscript and approved the version for submission.

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