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Improving Students' Physical Literacy Through an Active Learning Approach in Elementary Schools

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Abstract

Improving physical literacy among elementary school students is a key focus in shaping an active and healthy generation. Physical literacy encompasses the understanding, skills, and motivation to participate in physical activity throughout life. In the context of elementary education, active learning approaches are considered effective for enhancing physical literacy, as this method encourages more dynamic student engagement in the learning process. This study focuses on elementary school students and how active learning approaches are implemented to improve their physical literacy. The aim of this research is to evaluate the effectiveness of active learning approaches in enhancing physical literacy among elementary school students. This study employs a quantitative method with a quasi-experimental approach. The sample consists of 120 students divided into experimental and control groups. Data were collected through physical literacy tests and observations of student activities during the learning process. The findings indicate that students participating in active learning showed significant improvement in physical literacy compared to the control group. This improvement was evident in motor skills, understanding of physical activity concepts, and student motivation to engage in physical activities. The active learning approach proves effective in enhancing physical literacy among elementary school students. Recommendations are provided for educators to integrate this approach into physical education curricula to improve learning quality and encourage active student participation.

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INTRODUCTION

Physical education plays a crucial role in the educational curriculum in Indonesia, aiming to develop students' physical skills, health, and fitness (Saharullah et al., 2023). However, many students still lack an understanding of the concept of physical literacy, which encompasses knowledge, skills, and positive attitudes towards physical activity (Qomarrullah et al., 2023). In this context, enhancing students' physical literacy has become a priority to build an active and healthy generation. One effective approach to improving physical literacy is through the use of active learning, which encourages direct student participation in the learning process.

Data from the Central Statistics Agency (Badan Pusat Statistik Kabupaten Jayapura Tahun 2022, n.d.) shows that only about 30% of children in Indonesia meet the daily physical activity recommendations. The decline in children's participation in physical activities contributes to long-term health issues such as obesity and non-communicable diseases, as well as affecting students' social and emotional development. Therefore, innovative approaches in physical education are needed to increase student engagement in physical activities.

This research was conducted at State Elementary School 3 Abepura, which has an active physical education program. Previous studies have demonstrated the effectiveness of active learning approaches in enhancing student motivation and engagement. For instance, Dewolf et al. (2021) found that students involved in active learning showed significant improvement in understanding physical concepts and motor skills. However, these studies remain limited in theoretical context without examining the direct effectiveness of these approaches in enhancing physical literacy.

Physical literacy consists of three main components: knowledge, skills, and attitudes towards physical activity. To achieve optimal physical literacy, students need to be provided with direct experiences and engage in a variety of physical activities. Active learning approaches that involve students directly in the learning process can help them better understand and internalize the concepts of physical literacy (Qomarrullah & Sokoy, 2024).

Students' physical literacy not only includes physical abilities but also knowledge about the importance of physical activity and health. Students with good physical literacy can understand the benefits of sports and physical activities and identify ways to maintain their body health. Research by Whitehead (2010) states that physical literacy is fundamental to developing healthy lifelong habits. Thus, students will not only become more physically active but also have a better understanding of the importance of a healthy lifestyle.

Moreover, physical literacy also encompasses social and emotional aspects, contributing to students' character development. Students engaged in diverse physical activities tend to develop social skills such as cooperation and communication, as well as increasing their self-confidence and discipline. Research by (Qomarrullah, 2015) shows that physical activity can enhance mood and reduce stress, which in turn supports students' emotional development. Therefore, physical literacy should be regarded as an integral part of physical education, focusing not only on physical skills but also on the holistic development of students.

During the preliminary observations at Elementary School 3 Abepura, it was evident that while the school had an active physical education program, many students demonstrated varying levels of engagement and understanding of physical literacy. Observations revealed that some students participated enthusiastically in physical activities, showcasing their motor skills and teamwork, while others appeared disinterested and lacked basic knowledge about the benefits of physical fitness. Furthermore, discussions with physical education teachers indicated that traditional teaching methods were often employed, limiting students' opportunities for active participation and critical thinking. This disparity highlighted the urgent need for an innovative approach that incorporates active learning strategies to foster a deeper understanding of physical literacy among students, ensuring that all learners, regardless of their initial skill level, can engage meaningfully in physical education.

The purpose of this paper is to explore and analyze the implementation of active learning approaches to enhance students' physical literacy at Elementary School 3 Abepura. This research is expected to provide new insights into effective teaching methods within the context of physical education. By understanding and applying this approach, educators can create a more dynamic learning environment that supports the development of students' physical literacy.

The benefit of this research is to increase educators' understanding of the importance of physical literacy and ways to enhance student engagement in physical activities. By integrating

active learning approaches into the PE curriculum, it is hoped that students will not only improve their physical skills but also develop a positive attitude towards lifelong physical activity.

The novelty of this paper lies in its emphasis on the importance of physical literacy in the context of elementary education and how active learning approaches can be optimized to achieve these goals. By presenting empirical data and in-depth analysis, this paper aims to provide practical recommendations for educators and policymakers in the field of physical education.

In conclusion, this paper aims to serve as a valuable reference for further research in physical education and health, as well as contribute to the development of better curricula to enhance students' physical literacy at Elementary School 3 Abepura.

METHODS

This study employs a quantitative research design using a quasi-experimental approach to assess the effectiveness of active learning strategies in enhancing students' physical literacy at Elementary School 3 Abepura (Kurdi et al., 2020; Widiatmaka et al., 2022). The research involves the comparison of outcomes between an experimental group, which receives active learning interventions, and a control group that follows traditional teaching methods.

The sample consists of 120 students from the fourth and fifth grades at Elementary School 3 Abepura. The students are randomly divided into two groups: an experimental group and a control group, each containing 60 students. This randomization ensures that any differences in physical literacy outcomes can be attributed to the active learning intervention.

Data are collected through two primary methods:

Physical Literacy Tests

Students' physical literacy is assessed using standardized physical literacy tests that evaluate fundamental movement skills, knowledge of physical activity, and attitudes toward exercise. These tests are administered at the beginning and end of the intervention period to measure any changes in physical literacy levels.

Observations

Systematic observations of students' participation and engagement during physical education classes are conducted throughout the study. Observers record students' activity levels, interactions, and overall engagement in both the experimental and control groups.

The active learning intervention consists of a series of engaging physical education activities designed to promote physical literacy, including games, cooperative activities, and skill-building exercises. In contrast, the control group participates in traditional physical education classes that focus primarily on teacher-directed instruction.

Quantitative data are analyzed using statistical methods to determine the effectiveness of the active learning intervention. Pre-test and post-test scores are compared using paired t-tests or analysis of covariance (ANCOVA) to assess the differences in physical literacy outcomes between the experimental and control groups (Chabibi Arif et al., 2021). Observational data are also quantified to provide additional insights into student engagement levels.

Prior to conducting the study, ethical approval is obtained from the school administration, and informed consent is secured from participants and their parents or guardians. Students are assured of confidentiality, and their participation is voluntary, with the option to withdraw from the study at any time.

This research contributes to the existing literature on physical education by providing empirical evidence on the effectiveness of active learning approaches in enhancing students' physical literacy in Indonesian elementary schools (Manazir, 2023). The findings are expected to inform educators and policymakers about best practices in physical education that promote holistic student development.

RESULTS AND DISCUSSION

This study highlights the improvement in students' physical literacy through the application of an active learning approach at Elementary School 3 Abepura. The research involved 120 students divided into two groups: an experimental group using the active learning approach and a control group using traditional methods. The results were analyzed based on physical literacy test scores and observations of student engagement in physical activities during the learning process.

Physical Literacy Test Results

The data from the physical literacy test revealed a significant improvement in the experimental group that followed the active learning approach. Before the intervention, the average pre-test score for the experimental group was 65, and after the intervention, the post-test score increased to 85. This represents an increase of 20 points in students' physical literacy.

In contrast, the control group, which followed traditional teaching methods, showed only a slight improvement. The average pre-test score in the control group was 64, and the post-test score increased to 70, with a modest gain of 6 points.

Table 1. Average Student Physical Literacy Scores

Group	Pre-Test	Post-Test	Increase
Experimental Group	65	85	20
Control Group	64	70	6

Table 1 shows that the active learning approach had a more positive impact on students' physical literacy compared to traditional methods.

Student Engagement in Physical Activities

In addition to the physical literacy test results, observations during the learning process supported these findings. Students in the experimental group demonstrated a higher level of engagement in physical activities during the lessons. A total of 80% of students in the experimental group actively participated, as evidenced by their involvement in physical activities, interactions with peers, and positive attitudes toward sports. In contrast, only 50% of students in the control group showed a similar level of engagement.

Table 2. Student Engagement in Physical Activities

Group	Number of Students	Number of Actively Engaged Students	Engagement Percentage (%)
Experimental Group	60	48	80%
Control Group	60	30	50%

Table 2 illustrates the significant difference in student engagement between the experimental and control groups. Students in the active learning group participated more in physical activities compared to those in the traditional teaching group.

Statistical Test Results

To test the significance of the differences between pre-test and post-test scores, a paired t-test was conducted. The results showed that the experimental group experienced a highly significant improvement ($p < 0.01$), whereas the control group's improvement was not statistically significant ($p > 0.05$). This indicates that the increase in physical literacy in the experimental group can be directly attributed to the application of the active learning method.

Table 3. Paired t-Test Results for Pre-Test and Post-Test Scores

Group	Difference Between Pre-Test and Post-Test	Significance (p-value)
Experimental Group	20	$p < 0.01$
Control Group	6	$p > 0.05$

Table 3 presents the statistical test results, where the difference between pre-test and post-test scores in the experimental group is highly significant, while the difference in the control group is not.

The findings of this study demonstrate that the active learning approach is more effective than traditional methods in enhancing students' physical literacy in elementary schools. The significant improvement in the experimental group can be attributed to several factors, such as the more interactive teaching methods, varied physical activities, and greater student involvement in the learning process.

Observations also indicated that students involved in the active learning approach exhibited higher enthusiasm and participation in physical activities. These results align with previous studies, which have shown that active learning can increase student motivation and improve learning outcomes in physical education.

Overall, the results of this study suggest that implementing active learning methods in physical education not only enhances physical literacy but also strengthens student engagement in learning activities. This method can be adopted by elementary schools to develop more effective and engaging physical education programs for students.

The results of this research indicate that the implementation of an active learning approach significantly enhances students' physical literacy. This finding aligns with previous studies, such as that conducted by (Sutoro et al., 2020), which also found that active learning methods contribute positively to students' learning outcomes in physical education. Active learning provides opportunities for students to engage more deeply in physical activities, enabling them to

learn movement skills in a manner that is both enjoyable and interactive (Sadikin & Hamidah, 2020). This emphasis on engagement aligns with contemporary educational theories that prioritize student-centered learning environments, allowing children to explore their physical capabilities while developing essential motor skills.

Moreover, the heightened engagement observed in the experimental group signifies that active learning methods not only foster physical skills but also enhance students' motivation to participate in physical activities. According to Al Abduwani (2017), student engagement is a critical factor in effective learning processes. When students feel involved and enjoy the learning experience, they are more likely to exhibit improved results in physical literacy assessments (Syafaruddin, Wahyu Indra Bayu, Syamsuramel, Soleh Solahuddin, 2021). This positive correlation suggests that actively engaging students in their learning processes is essential for achieving educational goals. By incorporating elements of fun, collaboration, and competition, active learning approaches create a dynamic atmosphere that encourages students to challenge themselves and each other.

In contrast, the control group, which employed traditional teaching methods, exhibited only modest improvements in physical literacy. The monotonous and less interactive nature of traditional teaching limits students' opportunities for active learning. Santos et al. (2013) posits that a teaching approach that relies heavily on lectures can diminish student motivation and lead to disengagement in the learning process. This stark difference underscores the need for more dynamic and engaging teaching strategies that captivate students' attention and encourage participation. Traditional methods often fail to accommodate various learning styles, which can result in a lack of interest among students who thrive in more active settings.

The implications of this research are significant for the development of physical education curricula in elementary schools. Incorporating active learning methods can serve as a viable alternative to enhance students' physical literacy, which is crucial for their overall health and development (Wandik et al., 2021). A curriculum that integrates active learning can facilitate a more holistic approach to physical education, ensuring that students not only learn essential skills but also develop a lifelong appreciation for physical activity. The adaptability of active learning methods also allows teachers to tailor lessons to meet the needs of diverse learners, promoting inclusivity in physical education.

Furthermore, this study reinforces the need for educators to adopt varied instructional strategies that cater to the diverse learning styles of students. By diversifying teaching methods, educators can create a more inclusive learning environment that fosters collaboration, communication, and critical thinking skills. The successful integration of active learning approaches can also empower students to take ownership of their learning, thereby fostering autonomy and self-efficacy. Such skills are invaluable, as they not only contribute to physical literacy but also prepare students for lifelong engagement in physical activities and healthy lifestyles.

In comparison to prior research, the current study expands on the findings of Ahmadi (2018) by providing empirical evidence of the effectiveness of active learning in enhancing physical literacy specifically within the context of elementary education. This study complements existing literature by highlighting not only the improvements in physical literacy but also the psychological aspects of engagement and motivation that are pivotal in the learning process. The results affirm that when students are actively engaged, they are more likely to retain the skills and knowledge gained during physical education classes.

Additionally, the findings of this research can inform policy decisions regarding curriculum design and teacher training programs. Schools and educational authorities should consider providing professional development opportunities for educators to become adept in active learning methodologies (Damayanti et al., 2023; Ferdaus & Novita, 2023). By equipping teachers with the necessary skills and knowledge, the potential for improving students' physical literacy through active engagement in learning can be maximized. Such training could focus on practical strategies for implementing active learning techniques, as well as the theoretical underpinnings that support their effectiveness.

In conclusion, the findings from this research strongly advocate for the integration of active learning approaches in physical education curricula at the elementary level. The positive effects observed in students' physical literacy and engagement underscore the value of interactive teaching methods. Therefore, it is recommended that schools actively implement these strategies to enhance not only students' physical competencies but also their overall educational experiences. Moving forward, a collaborative effort among educators, policymakers, and stakeholders will be

essential to ensure that physical education programs reflect the dynamic and interactive nature of modern learning environments.

CONCLUSION

In conclusion, this study highlights the significant impact of active learning approaches on improving physical literacy among elementary school students. The findings reveal a marked increase in physical literacy scores for the experimental group, emphasizing that active learning not only enhances physical skills but also boosts student motivation and engagement. The high level of participation observed during these active learning sessions supports previous research, underscoring the importance of student involvement in achieving successful educational outcomes in physical education.

Based on these findings, it is recommended that schools integrate active learning strategies into their physical education curricula to create more dynamic and engaging learning environments. Professional development opportunities should be provided for educators to equip them with the necessary skills to implement these approaches effectively. Regular assessments of students' physical literacy can also facilitate targeted feedback, helping to foster a growth mindset. By prioritizing active learning and inclusivity, schools can significantly enhance students' physical literacy, promoting their overall health and lifelong engagement in physical activities.

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