



The Elementary School Students' Physical Literacy Levels in Supporting an Active Lifestyle in Physical Education Learning

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ABSTRACT

Physical literacy is an important component in Physical Education, Sports, and Health learning that plays a significant role in developing students' abilities, motivation, knowledge, and active lifestyle habits. This study aimed to analyse the level of physical literacy among elementary school students in supporting an active lifestyle during physical education learning at SDN Kesatrian. The study employed a quantitative approach using a survey method. The research sample consisted of 40 students from grades III-V selected through a purposive sampling technique. Data were collected using a physical literacy questionnaire covering indicators of motivation and confidence, daily physical activity, knowledge and understanding, and physical competence. The data were analysed using descriptive statistics with percentage techniques. The findings revealed that the students' physical literacy level was categorised as good, with an average percentage of 75.41%. The indicators of motivation and confidence achieved 73.63%, daily physical activity 71.34%, knowledge and understanding 79.38%, and physical competence 77.29%. These findings indicate that students possess a relatively good level of physical literacy in supporting an active lifestyle during physical education learning. However, students' daily physical activity still needs to be improved through more active physical education learning and support from both the school environment and families in encouraging sustainable physical activity habits.

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- Conception and design of the study;
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INTRODUCTION

Education is a fundamental aspect in shaping the quality of human resources, not only oriented towards improving academic competence but also towards developing character, health, and sustainable life skills (Fauziah, 2017). Within the Indonesian education system, Physical Education, Sports, and Health plays an important role in supporting students' holistic development through planned, systematic, and sustainable physical activities



(Wibowo et al., 2026). Physical education in Indonesia is a compulsory subject taught to students from primary, secondary, to higher education levels (Zakiyah, 2025). Physical Education learning not only aims to improve students' movement skills, but also serves as a medium for developing cognitive, affective, and social aspects, as well as fostering healthy lifestyle behaviours in everyday life (Habibi & Astra, 2023; Madri & Asnaldi, 2020).

At the elementary school level, Physical Education learning becomes highly important because childhood is a fundamental developmental phase that determines the formation of habits and behaviours into adulthood (Syahidah & Suherman, 2023). At this stage, students experience rapid development in motor, physical, psychological, and social aspects, thereby requiring learning experiences capable of optimising all dimensions of development (Taufan et al., 2018) Regular physical activity during elementary school age contributes to improvements in physical fitness, motor skills, mental health, and the overall quality of life of children (Paramitha et al., 2024).

Various studies have indicated a global decline in children's physical activity levels in recent years (Yuan et al., 2026) Changes in modern lifestyles, the increasing use of digital devices, prolonged screen time, and reduced opportunities for outdoor play have become factors contributing to children's low participation in physical activity (Grauduszus et al., 2023). Low levels of physical activity during childhood may increase the risk of various health problems, including obesity, poor physical fitness, and future health disorders (Mohammadi & Mohammadnabizadeh, 2026).

Along with the advancement of scientific knowledge, the concept of physical literacy has emerged as a more comprehensive approach to understanding individual engagement in physical activity (Lynch & Soukup, 2016). The concept of physical literacy not only emphasises physical competence, but also encompasses motivation, confidence, physical competence, knowledge, and understanding that enable individuals to maintain physical activity throughout their lives (Y. Y. Sari et al., 2024) This concept has developed into one of the essential foundations of modern physical education because it integrates multiple domains of student development (Duncan et al., 2024).

Physical literacy is regarded as a multidimensional concept because it involves the interaction of physical, cognitive, affective, and behavioural domains (Adi et al., 2025). Students who possess high levels of physical literacy tend to demonstrate greater motivation to engage in physical activity and higher levels of confidence in participating in various movement activities (Rhamadana et al., 2025). Furthermore, a good level of physical literacy is also associated with improved physical fitness and sustained participation in physical activity (Saputri et al., 2025).

Recent systematic reviews have shown that physical literacy has evolved into a holistic approach applied across various educational systems in different countries (Berli et al., 2025) The concept emphasises that children's engagement in physical activity is not solely determined by movement competence, but is also influenced by affective and cognitive aspects (Nyström et al., 2018). Various physical literacy assessment instruments have also been developed to identify students' abilities more comprehensively (Barnett et al., 2023).

In the context of physical education learning, the development of physical literacy has become increasingly important because the objectives of physical education are no longer solely oriented towards mastering sports techniques, but also towards fostering active lifestyle habits. Learning activities involving diverse movement experiences can improve students' motor skills, self-confidence, and motivation to remain physically active (Rokhayati et al., 2016)

The concept of an active lifestyle refers to a way of life characterised by consistent engagement in daily physical activities (Darmawan et al., 2025). An active lifestyle has become one of the key indicators in maintaining both physical and psychological health (Cabrayilova, 2022). Children who adopt an active lifestyle tend to demonstrate better physical fitness, higher social competence, and lower risks of disease compared with children who exhibit sedentary behaviours (Bon, 2020).

International studies have demonstrated a positive relationship between physical literacy and an active lifestyle. Children who possess good movement competence, high motivation, and a strong understanding of physical activity tend to be more active in engaging in daily physical activities (Pellegrino, 2016). School-based physical activity programmes have also shown positive impacts on improving students' physical literacy (Anico et al., 2022).

In the Indonesian context, research on physical literacy remains relatively limited compared with that conducted in other countries. Most studies in physical education have focused more on physical fitness, motor skills, or students' learning outcomes, whereas studies specifically analysing the levels of physical literacy among elementary school students are still scarce. This condition indicates the existence of a research gap that requires further attention so that the concept of physical literacy can be implemented optimally within the physical education learning system.

School environmental characteristics, learning facilities, students' activity patterns, and school culture may also influence students' levels of physical literacy. Therefore, analysing students' physical literacy levels is important as a basis for developing more effective learning strategies that are aligned with students' needs.

This study was conducted among students at SDN Kesatrian. The selection of the elementary school as the research site was based on the importance of elementary school age as a critical period for establishing active lifestyle habits that may influence physical activity behaviours in later life. In addition, there has been no empirical data describing the physical literacy levels of students at SDN Kesatrian, thus making this study necessary to provide an overview of the existing condition.

Based on these various issues, research on the physical literacy levels of elementary school students is important to conduct because physical literacy is not only related to students' movement abilities, but also associated with the development of motivation, self-confidence, knowledge, and sustainable active lifestyle habits. Low levels of physical activity and the increasing prevalence of sedentary behaviour among elementary school-aged children may negatively affect physical health, social development, and students' quality of life in the future. On the other hand, studies related

to physical literacy among elementary school students in Indonesia, particularly within the context of physical education learning, remain relatively limited, resulting in a lack of empirical data that can be used as a basis for developing learning programmes that support an active lifestyle. Therefore, this study is considered essential in providing a comprehensive overview of elementary school students' physical literacy levels as a foundation for designing more effective, innovative, and sustainable physical education learning strategies aimed at fostering active lifestyle behaviours among students.

METHODS

This study employed a quantitative approach using a descriptive survey method to analyse the physical literacy levels of elementary school students in supporting an active lifestyle within Physical Education, Sports, and Health learning. The survey approach was selected because it was considered appropriate for obtaining an empirical overview of students' physical literacy conditions based on data collected directly from respondents through the research instrument. The descriptive method was used to describe students' physical literacy levels without providing any specific treatment to the research subjects (Creswell, 2015). This approach was considered relevant to address the research objectives, which focused on mapping and analysing the physical literacy levels of elementary school students.

The study was conducted at SDN Kesatrian with a total of 40 students from grades III to V serving as the research subjects. The sample was selected using a purposive sampling technique, which refers to a sampling method based on its suitability with the aims and objectives of the research (Sari et al., 2023). The selection of research subjects was based on the characteristics of elementary school students who are in the fundamental motor development phase and actively participate in physical education learning on a regular basis. In addition, students in grades III–V were considered capable of understanding the questionnaire instrument used in this study.

The research instrument employed a physical literacy questionnaire developed based on the main indicators of physical literacy. The research instrument used a four-point Likert scale. The physical competence indicator in this study was measured using students' self-perception through questionnaire items related to fundamental movement skills and participation in movement activities. Although direct motor performance tests may provide more objective results, the use of questionnaires was considered appropriate for the preliminary descriptive purpose of this study and adjusted to the characteristics of elementary school students. Including motivation and confidence, physical competence, knowledge and understanding, as well as participation in physical activity. The development of the instrument referred to the concept of physical literacy proposed by Myers & Whitehead, (2018) and several previous studies related to the measurement of physical literacy among elementary school-aged children (Myers et al., 2022). The research instrument used a four-point Likert scale consisting of strongly appropriate, appropriate, less appropriate, and not appropriate. Prior to its implementation, the validity of the instrument was evaluated through expert

judgment conducted by physical education experts. In addition, reliability testing was conducted using Cronbach's Alpha to ensure the consistency of the instrument. The results indicated that the instrument met the criteria of validity and reliability for use in this study. The instrument underwent a content validity process conducted by physical education experts and a readability test involving elementary school students to ensure language clarity and the suitability of the indicators.

The research procedure began with obtaining permission from the school authorities to conduct the study. After permission had been granted, the researcher coordinated with the physical education teacher regarding the schedule for data collection. Subsequently, the researcher explained the objectives of the study and the procedures for completing the questionnaire to the students. Data collection was conducted directly within the school environment under the supervision of the researcher to ensure that all respondents understood each statement in the research instrument. The collected data were then reviewed and re-examined to ensure the completeness of the respondents' answers.

The data analysis technique employed descriptive statistical analysis using percentages to describe the physical literacy levels of elementary school students. The obtained data were calculated based on the scores of each indicator and subsequently categorised into specific levels according to predetermined interpretation criteria. Descriptive analysis was utilised to provide an overview of students' physical literacy levels in supporting an active lifestyle within physical education learning. The results of the analysis were then presented in the form of percentages and narrative descriptions to facilitate the interpretation of the research data (Fraenkel et al., 2022).

This study also considered research ethics by maintaining the confidentiality of respondents' identities and using the research data solely for academic purposes. All research procedures were conducted in accordance with educational research standards and received approval from the school authorities prior to data collection.

RESULTS AND DISCUSSION

Result

This study aimed to analyse the physical literacy levels of elementary school students in supporting an active lifestyle within physical education learning at SDN Kesatrian. The research data were obtained through the distribution of questionnaire instruments to 40 students from grades III-V, covering four main indicators of physical literacy, namely motivation and confidence, daily physical activity, knowledge and understanding, and physical competence. Data analysis was conducted using descriptive percentage statistics to determine the level of achievement for each indicator.

Based on the results of the data analysis, the percentage levels of students' physical literacy for each indicator were obtained as presented in the following description.

Motivation and Confidence

The results of the analysis indicated that the motivation and confidence indicator achieved a percentage of 73.63% and was categorised as good. These findings demonstrate that most students possessed relatively high levels of interest and self-confidence in participating in physical education learning. Students enjoyed engaging in sports activities, were willing to try new movements, and showed enthusiasm in actively playing with their peers. The high level of students' motivation and confidence indicates that physical education learning at school has been able to create an enjoyable learning environment and encourage students' active participation. Motivation is considered one of the important components of physical literacy because it can influence students' continuous engagement in physical activity. The findings of this study are consistent with Myers & Whitehead, (2018), who stated that motivation and confidence serve as the primary foundations for shaping individuals' lifelong engagement in physical activity. Furthermore, physical education learning involving game-based activities and social interaction may also enhance students' confidence in performing movements. A supportive learning environment enables students to be more willing to explore their movement abilities, thereby contributing positively to the development of physical literacy.

Daily Physical Activity

The daily physical activity indicator obtained a percentage of 71.34% and was categorised as good. These findings indicate that most students were sufficiently active in engaging in daily physical activities, both within and outside the school environment. Such activities included playing outdoors, participating in sports activities, helping with household chores, and routinely performing movement-based activities. Although categorised as good, the percentage of daily physical activity was still lower compared with the other indicators. This condition suggests that some students were not yet consistently active in engaging in physical activity. Technological developments, the increased use of electronic devices, and the rise of sedentary behaviour among elementary school-aged children may be among the factors contributing to the decline in students' daily physical activity levels. The findings of this study support those of (Burhan et al., 2023), who explained that children in the modern era tend to experience a decline in physical activity due to the increasing use of digital devices and reduced opportunities for active play. Therefore, support from both schools and families is required to create an environment that encourages students to be more physically active in their daily lives.

Knowledge and Understanding

The knowledge and understanding indicator achieved a percentage of 79.38% and was categorised as good. This percentage indicates that students possessed a relatively good understanding of the importance of physical activity, the benefits of exercise for physical health, the importance of warming up before exercise, and the significance of maintaining physical fitness. The high achievement in this indicator demonstrates that physical education learning not only provides movement experiences, but also delivers theoretical understanding to students regarding the benefits of physical activity for health. Knowledge and understanding are important components of *physical literacy*

because they help students comprehend the reasons for maintaining an active lifestyle. The findings of this study are consistent with Barnett et al., (2023) who stated that the knowledge dimension within *physical literacy* plays a role in developing individuals' awareness to engage in physical activity independently and sustainably. With a good level of understanding, students tend to have greater awareness of the importance of maintaining health through physical activity.

Physical Competence

The physical competence indicator obtained a percentage of 77.29% and was categorised as good. These findings indicate that most students possessed relatively good fundamental movement skills, such as running, jumping, throwing, catching balls, and performing sports movements instructed by the physical education teacher. Physical competence is one of the primary components of *physical literacy* associated with an individual's ability to perform various fundamental movement skills. These abilities are important in supporting students' participation in a range of sports and physical play activities. The findings revealed that students demonstrated relatively good physical abilities because physical education learning provided opportunities for students to actively engage in various movement activities. Martinović et al., (2011) explained that diverse movement experiences in physical education learning can enhance students' physical competence and self-confidence in performing physical activities.

Table 1.
 Percentage Results of Elementary School Students' Physical Literacy Levels in Supporting an Active Lifestyle in Physical Education Learning

No	Indicators	Percentage	Category
1	Motivation and Confidence	73.63%	Good
2	Daily Physical Activity	71.34%	Good
3	Knowledge and understanding	79.38%	Good
4	Physical Competence	77.29%	Good
Average		75.41%	Good

Discussion

The findings of this study revealed that the physical literacy levels of elementary school students at SDN Kesatrian were generally categorized as good across all assessed indicators, including physical competence, motivation and confidence, knowledge and understanding, and daily physical activity. These results indicate that students possess sufficient capacities to engage in physical activities and develop active lifestyle behaviors through physical education learning. The findings are consistent with the conceptual framework of physical literacy proposed by Margaret Whitehead, which emphasizes that physical literacy encompasses not only movement competence but also motivation, confidence, knowledge, and lifelong engagement in physical activity.

The good level of physical literacy found in this study reflects the increasingly important role of physical education in promoting holistic child development. Contemporary physical education programs are designed not merely to improve motor skills but also to foster positive attitudes toward movement and healthy living. Recent studies have demonstrated that physical literacy serves as a strong predictor of long-

term participation in physical activity among children and adolescents (Cairney et al., 2019; Longmuir et al., 2022). Students with higher levels of physical literacy tend to exhibit greater enjoyment of movement, stronger self-efficacy, and more consistent participation in physical activity both inside and outside school environments.

One of the most prominent findings was the high score obtained in the knowledge and understanding indicator. This result suggests that physical education learning at SDN Kesatrian has successfully provided students with adequate knowledge regarding the benefits of physical activity, health maintenance, and active living. Knowledge is considered a fundamental component of physical literacy because it enables children to make informed decisions regarding participation in physical activities throughout their lives. According to Edwards et al. (2018), students who understand the health benefits of movement are more likely to engage in regular physical activity than those with limited knowledge. Similarly, research conducted in Indonesia has shown that physical education curricula integrating health education significantly improve students' awareness of healthy lifestyles (Pratiwi et al., 2021).

The positive outcomes observed in the motivation and confidence domain further indicate that students generally experience positive emotional responses toward physical education learning. Motivation and confidence are critical psychological determinants of physical literacy because they influence children's willingness to participate in movement experiences. According to Self-Determination Theory, intrinsic motivation develops when individuals experience competence, autonomy, and social relatedness during learning activities (Ryan & Deci, 2020). The current findings suggest that the learning environment created by physical education teachers may have successfully supported these psychological needs. Similar findings were reported by Lubans et al. (2019), who found that enjoyable and student-centered physical education lessons significantly increased motivation, confidence, and long-term participation in physical activity among school-aged children.

From a developmental perspective, elementary school represents a critical period for establishing positive movement experiences and active lifestyle habits. During this stage, children experience rapid growth in motor skills, cognitive development, and social competence. Therefore, providing positive physical activity experiences can strengthen children's confidence and promote continued engagement in movement activities. Research by Barnett et al. (2022) demonstrated that children who develop strong movement confidence during primary school are more likely to remain physically active during adolescence and adulthood. This evidence supports the argument that physical literacy development should become a central objective of physical education programs.

The findings also demonstrated satisfactory levels of physical competence among students. Physical competence refers to the ability to perform a wide range of fundamental movement skills efficiently and confidently. Previous studies have consistently shown that children with better motor competence tend to exhibit higher physical activity participation rates and better health outcomes (Robinson et al., 2018; Hulteen et al., 2020). Fundamental movement skills such as running, jumping, throwing,

catching, and balancing serve as building blocks for participation in more complex sports and recreational activities. Consequently, the good physical competence levels identified in this study indicate that students possess an adequate foundation for lifelong physical activity engagement.

Despite the generally positive findings, the daily physical activity indicator obtained the lowest percentage among all physical literacy components. This result is noteworthy because it suggests that although students possess adequate knowledge, motivation, and competence, these attributes may not always translate into sufficient physical activity behaviors outside school settings. Similar discrepancies have been reported in numerous international studies examining physical literacy and physical activity behavior among children (Keegan et al., 2019; Caldwell et al., 2020). This phenomenon highlights the complexity of physical activity participation, which is influenced by multiple environmental, social, and contextual factors.

Family support plays a particularly significant role in determining children's daily physical activity levels. Parents influence children's activity behaviors through modeling, encouragement, transportation, and participation in shared physical activities. Research conducted by Rhodes et al. (2020) found that parental support was one of the strongest predictors of moderate-to-vigorous physical activity among elementary school children. In the Indonesian context, family involvement has also been identified as an important factor influencing children's engagement in recreational and sports activities (Nugroho et al., 2022). Therefore, efforts to improve physical literacy should extend beyond school environments and actively involve families.

Another important factor influencing daily physical activity is the availability of safe and accessible play facilities. Urbanization, limited recreational spaces, and safety concerns may reduce opportunities for children to engage in active play. Recent studies have emphasized that access to parks, playgrounds, and community sports facilities significantly contributes to children's physical activity participation (Moore et al., 2021). Schools and local governments therefore play a crucial role in creating supportive environments that encourage active lifestyles among children.

The increasing use of digital technology and electronic devices also represents a major challenge to children's physical activity participation. Excessive screen time has been associated with reduced physical activity, increased sedentary behavior, and poorer health outcomes among school-aged children (Carson et al., 2020). The COVID-19 pandemic further accelerated children's reliance on digital technologies, leading to concerns regarding declining movement behaviors worldwide. Consequently, interventions aimed at promoting physical literacy should include strategies for balancing technology use with opportunities for active play and physical engagement.

Importantly, the present findings reinforce the growing body of evidence indicating a strong relationship between physical literacy and active lifestyle development. Students possessing high levels of motivation, confidence, competence, and knowledge are generally more likely to engage in regular physical activity. This relationship has been consistently documented across different cultural and educational contexts (Cairney et al., 2019;

Longmuir et al., 2022; Shearer et al., 2021). Physical literacy therefore serves as a valuable framework for understanding and promoting lifelong participation in physical activity.

Based on these findings, physical education teachers should continue implementing innovative, student-centered, and enjoyable learning approaches that promote all dimensions of physical literacy. Models such as Teaching Games for Understanding (TGfU), Sport Education, Cooperative Learning, and movement-based learning have been shown to effectively enhance students' motivation, competence, and engagement (Casey & MacPhail, 2018; Harvey & Jarrett, 2019). Furthermore, integrating physical literacy principles into curriculum design can help ensure that physical education contributes not only to skill development but also to the formation of sustainable active lifestyle behaviors.

Overall, the results of this study confirm that physical literacy is a multidimensional construct that plays a fundamental role in supporting active lifestyles among elementary school students. Strengthening physical literacy through comprehensive physical education programs, family involvement, supportive environments, and healthy lifestyle promotion strategies can contribute significantly to improving children's physical activity participation and long-term health outcomes.

CONCLUSION

Based on the findings of this study, the physical literacy levels of elementary school students at SDN Kesatrian were categorised as good across all investigated indicators. The motivation and confidence indicator obtained a percentage of 73.63%, daily physical activity 71.34%, knowledge and understanding 79.38%, and physical competence 77.29%. These findings indicate that students possessed relatively good abilities, motivation, understanding, and physical skills in supporting the implementation of an active lifestyle within physical education learning.

The high achievement in the knowledge and understanding indicator demonstrates that students have understood the importance of physical activity and healthy lifestyles in their daily lives. In addition, the good category achieved in students' motivation and confidence indicates that physical education learning has been able to create enjoyable learning experiences and encourage students' active participation. The good level of students' physical competence also suggests that physical education learning contributes positively to the development of elementary school students' fundamental movement skills.

Although all indicators were categorised as good, daily physical activity obtained the lowest percentage compared with the other indicators. Therefore, more optimal efforts are required to improve students' physical activity habits outside school learning through support from teachers, schools, and families. Innovative physical education learning and environments that support physical activity are expected to enhance students' physical literacy sustainably, thereby fostering active lifestyle behaviours from an early age.

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