

The role of physical literacy in improving fitness and active lifestyle

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Received 16 April 2024; Accepted 17 January 2025; Published 16 April 2025
Ed 2025; 10(1): 86-96

ABSTRACT

Background: Physical literacy is one of the main concepts that encompasses a wide range of outcomes and the main focus of the physical education curriculum. In designing physical literacy, it takes very serious concern, whether sports education students are ready to implement experiential learning programmes that contribute to improvement physical literacy, daily lifestyle, and pedagogic abilities. Considering the importance of physical literacy for students, future physical education teacher candidates should have a good level of understanding of physical literacy before passing it on to their students in the future. **Research Objectives:** This study aims to determine the understanding of physical literacy in sports education students. **Methods:** A descriptive quantitative approach was adopted for this study. During the course of this study, closed-ended questionnaire were used to collect data. The population in this study was sports education students of Muhammadiyah University of Jember. The sampling technique was voluntary response sampling, totalling 217 students aged between 18-23 years, divided into 194 male students and 36 female students. An alternative in choosing answers to questionnaires with a Likert scale of 1-5 (1: strongly disagree to 5: strongly agree) then the data was analysed using percentages. **Finding and Results:** Sport education students have a high perception of physical literacy mainly related to the health-related benefits of exercise. But there is still a small proportion of them do not have self-management skills for fitness. A total of (82.1%) of them realized that the benefits of exercise can improve fitness. **Conclusion:** Sports education students' good understanding of physical literacy should be accompanied by good fitness management skills as a form of implementation of this understanding. As future physical education teachers, they will be role models for their students. The relationship between an active lifestyle between physical education teachers and students is an interesting recommendation for further research.

Keywords: Physical literacy; sport education; comprehension



[https://doi.org/10.25299/sportarea.2025.vol10\(1\).10942](https://doi.org/10.25299/sportarea.2025.vol10(1).10942)

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How to Cite: Apriliyanto, R., Hardovi, B. H. & Sulaiman, A. (2024). The role of physical literacy in improving fitness and active lifestyle. *Journal Sport Area*, 10(1), 86-96. [https://doi.org/10.25299/sportarea.2025.vol10\(1\).10942](https://doi.org/10.25299/sportarea.2025.vol10(1).10942)

Authors' Contribution: a – Study Design; b – Data Collection; c – Statistical Analysis; d – Manuscript Preparation; e – Funds Collection

INTRODUCTION

Physical literacy (PL) is a concept that has quickly attracted attention on a global scale and been included into a number of sports and educational strategies (Ma et al., 2020). Physical literacy can be defined as having the encouragement, self-confidence, physical competence, knowledge, and understanding to appreciate and be responsible for continuing physical activity throughout one's life (Ke et al., 2022; Pajkić et al., 2023).

Through physical education has great potential to develop physical literacy (Bulqini et al., 2021). The limited knowledge that has been used to study changes in physical literacy has always intersected with the use of instruments to evaluate students (Yan et al., 2024; Young et al., 2021). Students learn the value of physical fitness in physical education with the ultimate goal of developing movement abilities that may be used in daily life (Dollaway et al., 2024; García-Hermoso et al., 2020). There must be specific actions that may be taken that can be included into the physical education curriculum in order to build the concept of movement (García-Hermoso et al., 2020; Rudd et al., 2019). Since this knowledge narrows the focus of physical education, one strategy that can be established is to employ a physical literacy model. In the context of high-quality physical education, the idea of physical literacy is acknowledged as a key fundamental (Xu et al., 2021). The ability to engage in physical activity outside of the classroom is the ultimate goal of physical education, and students' understanding of physical literacy as the capacity to be physically literate is the most crucial aspect of physical literacy.

In addition to the physical and motor domains, physical literacy addresses the affective and cognitive domains in an effort to promote physical activity with a holistic approach (Grauduszus et al., 2023). Others define and interpret with components of motivation, confidence, physical competence, knowledge, and understanding to sustain physical activity throughout life (Boldovskaia et al., 2023). Teacher as a educators who have a very important role. Therefore, in implementing effective learning, teachers must be able to implement strategies including setting learning objectives, evaluating learning positive feedback and being inclusive so as to produce students as expected (Munna & Kalam, 2021). A teacher's function as an educator is crucial. As a result, in order to carry out effective learning, teachers must be able to apply strategies such as prioritising learning objectives, evaluating learning, and through planning, motivation, and control, teachers can determine attitudes in order to produce students who are positive about their development (Darling-Hammond et al., 2024; Medina et al., 2023). Physical education teachers should also realise this. Physical education, one of the subjects that must be taught in schools, plays an important role in the development of all aspects for students such as social, affective, cognitive, physical, and lifestyle (Bamta et al., 2023; Tambalis, 2022).

Physical literacy has gained recognition as a cornerstone in promoting lifelong engagement in physical activity, addressing both individual and societal well-being. Commonly defined as “the motivation, confidence, physical competence, knowledge, and understanding to maintain physical activity throughout life,” physical literacy provides a multidimensional approach to understanding movement (Choi et al., 2022). Unlike traditional frameworks focusing solely on fitness or sports performance, physical literacy integrates physical, cognitive, emotional, and social domains. This holistic perspective is particularly significant in addressing the global physical inactivity crisis, which the World Health Organization (WHO) identifies as a leading risk factor for non-communicable diseases such as cardiovascular disease, diabetes, and cancer (World Health Organization, 2020). By emphasising intrinsic motivation and personal responsibility, physical literacy advocates for a sustainable and lifelong relationship with physical activity, aligned with broader health promotion goals.

Research on physical literacy is relevant across different age groups and contexts. In educational settings, fostering physical literacy has been associated with improved motor skills, cognitive development, and social competence in children (Lafave & Van Wyk, 2024). In practice, PL programmes promote the development of fundamental motor skills, such as coordination, balance, and agility, which lay the groundwork for a range of physical activities. Even more amazingly, physical activity benefits some children with congenital diseases (Ernandini & Wiryaputra, 2024). In adolescents includes the psychological, social, and partly cognitive domains of physical literacy (Mota et al., 2021), while adults include motivation, confidence, physical competence, knowledge and understanding to support physical activity throughout life (Boldovskaia et al., 2023).

PL is a critical determinant of establishing healthy habits. Research has demonstrated that individuals with higher levels of physical literacy tend to exhibit better cardiovascular fitness and are more likely to maintain regular physical activity in their daily lives. This is attributed to their ability to recognise the benefits of physical activity and integrate it into their routines, ultimately enhancing overall quality of life (Cairney et al.,

2019). Moreover, physical literacy is linked to a reduced risk of non-communicable diseases through increased participation in moderate-to-vigorous physical activity (Bull et al., 2020). Therefore, interventions aimed at improving physical literacy perception can serve as an effective strategy to promote fitness and active lifestyles at both individual and population levels.

Many researchers study physical literacy perceptions of population characteristics such as teachers. Some of the findings of previous researchers include: physical literacy perceptions of physical education teachers can improve with continuing professional development programmes (Sum et al., 2021). Physical education teacher candidates who have good sports experience have high self-confidence (Barber et al., 2022). Teacher background influences perceptions of physical literacy, the results of studies show that physical education teachers have a better understanding of physical literacy compared to classroom teachers (Yildizer & Munusturlar, 2022), teachers with a bachelor's degree and younger with 11-20 years of teaching experience and teaching in urban areas have high perceptions of Physical Literacy (Friskawati & Dwijantie, 2022). Referring to these previous studies, there are several differences including the characteristics of the subjects studied previously, namely kindergarten teachers, classroom teachers and physical education teachers. Therefore, it is also necessary to know the perception of physical literacy of sports education study programme students as future physical education teachers. This is important to study because they assist students at school through physical education subjects.

METHOD

Research Design

A descriptive quantitative approach was adopted for this study. During the course of this study, questionnaires were used to collect data. An alternative in choosing answers to questionnaires with a Likert scale of 1-5. The collection of physical literacy knowledge data used a questionnaire from PPLI (Perceived Physical Literacy Instrument) for sport education students, the reason for using this questionnaire was because construct validation had been carried out which initially had 18 items to 9 items with Cronbach's alpha validation level (0.82) is very good (Sum et al., 2016). The use of PPLI in Indonesia has also been carried out in previous studies, for example, research from Friskawati and Dwijantie (2022) related to the perception of physical literacy of kindergarten teachers based on demographic information. And other research on understanding physical literacy of physical education teachers (Apriliyanto & Sulaiman, 2023). The Likert scale is used to measure attitudes, opinions and perceptions of a person or group of people regarding social phenomena (Sugiyono, 2019).

Research Participants/Subjects

The population in this study is sports education students of Muhammadiyah University of Jember. The sampling technique is voluntary response sampling by sending a google form questionnaire link to all sports education students. There were 217 respondents with an age range between 18-23 years and consisted of 194 male students and 36 female students.

Research Procedures

PPLI was translated first into Indonesian. Compiled through google form then distributed via whatsapp to be filled in by sports education students at Muhammadiyah University Jember. The following stage after collecting the data is to evaluate it in order to draw conclusions about the research findings. Using the % (percentage) formula technique, analyse the data used in this study (Sudijono, 2018).

Data Analysis

After the data obtained through the PPLI was distributed to research participants, the data was analysed descriptively using percentages for each statement on the PPLI.

RESULTS AND DISCUSSION

The data collected is based on the results of a questionnaire that has been distributed to 217 sports education students of Muhammadiyah University of Jember. The description of the research data presents information regarding age, gender, and understanding of physical literacy.

Table 1. Age Distribution of Research Participants

Age	Total	Percent (%)
18	62	28.6%
19	29	13.3%
20	35	16.1%
21	25	11.5%
22	27	12.4%
23	39	17.9%

According to the information in the table above, the age of the research subjects with the highest prevalence was 18 years, the age with the lowest prevalence was 21 years, the percentage was (13.3%) at the age of 19, the percentage was (16.1%) at the age of 20, the percentage was (12.4%) at the age of 22, and the subjects with the percentage (17.9%) were 39 people.

Table 2. Category Gender

Gender	Total	Percent (%)
Male	194	89.4%
Female	23	10.6%

The percentage levels for male and female sex in the table may be observed as being (10.6%) for female with 23 respectively, and with a percentage of (89.4%) for male suggesting that the majority of the subjects in this study were male.

Table 3. Research Result Data

PL	Undecided	Agree	Strongly agree
PL1		123/217*100% = 56.7%	94/217*100% = 43.3%
PL2		66/217*100% = 30.4%	151/217*100% = 69.6%
PL3		39/217*100% = 17.9%	178/217*100% = 82.1%
PL4		102/217*100% = 47%	115/217*100% = 53%
PL5	12/217*100% = 5.6%	98/217*100% = 45.1%	107/217*100% = 49.3%
PL6		109/217*100% = 50.2%	108/217*100% = 49.8%
PL7		76/217*100% = 35%	141/217*100% = 65%
PL8	29/217*100% = 13.3%	112/217*100% = 51.7%	76/217*100% = 35%
PL9	13/217*100% = 6%	126/217*100% = 58%	78/217*100% = 36%
N	54/1953*100% = 2.7%	851/1953*100% = 43.6%	1048/1953*100% = 53.7%
PL : Understanding of physical literacy			

According to the table above, no responders selected “strongly disagree” or “disagree” as their response. In total, 2.7% of respondents to the 1953 questionnaire replies indicated they were unsure. Of those that responded in agreement, 43.6% did so, and 53.7% of respondents to the 1048 questionnaire responses indicated they strongly agreed. so that the physical education instructor is aware of physical literacy. For more

information, refer to the graph of each percentage item, which is as follows. It shows the percentage level of the responses that were distributed in the questionnaire:

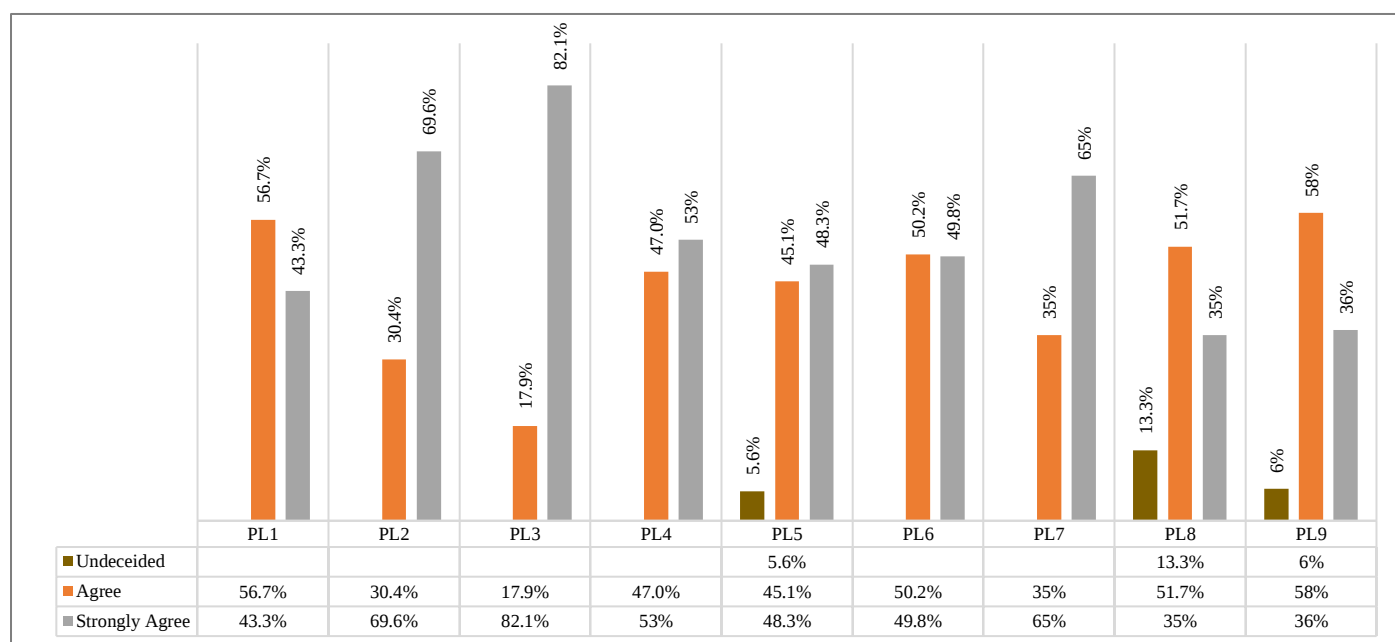


Figure 1. Physical Literacy Graphic Representation Comprehension

From the above figure, it can be seen that, out of the 9 items of the questionnaire, 3 responses on PL5 (have self-management skills for fitness), PL8 (I am confident in natural survival), and PL9 (I am able to handle problems in difficulty) were not specified. This shows that some sports education students do not determine the answer to PL5 with a percentage level (5.6%), in the PL8 category (13.3%) and PL 9 (6%); with these results, it seems that some sports education students are not sure about the perception of physical literacy, especially on fitness management, perceptions of physical literacy, especially on self-fitness management, natural survival, and the ability to handle problems in adversity. Answers for agree and strongly agree were all given with different percentages, varying percentages. In the PL3 category (I know the health-related benefits of exercise) with the highest percentage (PL3) and the highest percentage (PL3) health-related benefits of exercise, the highest percentage (82.1%) was found for the strongly agree for the answer that strongly agreed, while the lowest percentage (17.9%) was found in category PL3 for answers that agreed. This shows that sports education students have a high perception of physical literacy with regard to the health-related benefits of exercise perceptions regarding the benefits of exercise related to health. Physical competence, daily behaviour, motivation, and self-confidence are among the four dimensions of physical literacy that can be known. For long-term individual health, it has been acknowledged that the development of physical literacy is crucial. All students should take part in high-quality physical education since it is an essential component of the school curriculum. Physical education teachers, in particular, should take this role seriously because it affects the students' physical literacy (McLennan & Thompson, 2015). The role of the teacher as a motivator is very necessary as an effort to increase participation in physical education classes and form students' physical activity habits in daily life (Jankauskiene et al., 2022). In order to effectively teach physical literacy to pupils, physical education teachers must first have a firm grasp of the concept themselves.

The interest of students in physical education subjects will be influenced by the attitude of physical education teachers, who must be supportive of physical activity. According to a recently published study, having a good attitude toward sports will improve your health and help you avoid getting sick (Bendíková & Dobay, 2017). As a result, it stands to reason that physical education teachers likewise need to adopt a positive outlook on exercise. According to research findings, sport education students are enthusiastic about sports and have a good attitude. Health status will be impacted by understanding how important physical literacy is, and it will help prevent aging-related chronic diseases (Jones et al., 2018). Regular physical activity helps maintain

a healthy weight, prevents chronic diseases, and promotes psychological wellbeing. It is also a crucial part of leading a healthy life (Bopp et al., 2019).

Body mass index (BMI), as well as physical fitness as a marker for measuring physical literacy characteristics at various levels, are both significant components of self-evaluation in relation to physical literacy (Giblin et al., 2014). BMI as a tool for assessing overweight (Hyppönen et al., 2022). With at least one hour each week of regular exercise, physical fitness can be increased (Power & Clifford, 2013). Physical literacy was connected to the following health indicators: BMI and body weight, waist circumference, cardiorespiratory fitness, physical activity, and sedentary behaviour (Cornish et al., 2020). It is important for physical education teachers to develop the concept of physical literacy because it is closely related to physical, psychosocial, cognitive, and integrated development (Bailey et al., 2023).

Physical literacy's cognitive domain also allows for more in-depth investigation of interpersonal relationships and other people (Edwards et al., 2018). As shown by the study's findings, respondents said that they strongly agreed and agreed that they had great social skills in the PL7 category, with percentages of (65%) and (35%) respectively. A way to improve social skills is to comprehend physical literacy. Building physical literacy abilities is one method to increase social trust (Everley, 2022). Additionally, it supports research showing that engaging in athletics improves social skills. As there will be contacts with one another during sports activities, it appears that there is a relationship between physical literacy and social abilities that will indirectly affect both.

The increased risk of obesity and metabolic illnesses will be impacted by inactivity (Laird et al., 2018). Not only that, physical exercise can be beneficial for physical and mental health, research suggests that physical exercise enables students to manage stress and solve social problems (Guo & Zhang, 2022). The results of the study showed that the PL8 category had an undetermined response rate of (13,3%) and the PL9 category had a percentage of (6%), which of course will have an impact on problem solving and survival. Physical exercise has a part in promoting positive mentality and wellbeing (Mazyarkin et al., 2019). Physical activity is useful for supporting the development of sustainable physical literacy because physical literacy is an integral part of this relationship (Li et al., 2021). It has been empirically proven that physical literacy can effectively promote physical activity and health (Carl et al., 2022). In order to promote physical literacy with learning in physical education, it must be implanted as early as feasible and in the simplest method possible (Young et al., 2023). Teachers of physical education must therefore be familiar with the idea of physical literacy.

Children's physical development, as well as their cerebral, intellectual, emotional, and social development, are all positively impacted by physical education and participation in sports. In addition, having a solid grasp of physical literacy can help athletes, foster community health, and serve as a venue for recreation, all of which work to improve public view of physical literacy (Corbin, 2016). Therefore, in designing a physical literacy model, very serious attention is needed, are sport education students ready to implement experiential learning programs that contribute to increasing physical literacy? Before moving on to the stage of physical literacy, fundamental aspects like teacher experience, daily living, and pedagogical skills are important (Foulkes et al., 2020).

So far, Physical Education learning has only focused on the content of the sports taught in school, such an understanding is certainly reducing the scope of physical education, therefore one of the efforts what can be developed is to apply physical literacy. Physical literacy is one of the main concepts that encompasses a wide range of outcomes and is main focus of physical education curriculum (Yıldizer & Munusturlar, 2022). As part of fostering proficiency in physical literacy, physical education teachers need to have a working knowledge of the concept. In order to promote increased physical activity, attempts to improve physical activity must therefore have significant implications for the function of schools and their physical education teachers (Demetriou et al., 2018). Students' physical activity involvement needs to be encouraged through extracurricular sports activities at school. Their aerobic fitness is better than students who do not actively participate in extracurricular sports (Sulaiman et al., 2024). As one of component of education that is compulsory to be taught in schools, physical education has a very strategic role in the formation of the whole person. So, for a sports education student who is prepared as a physical education teacher, having a basic understanding of physical literacy is essential.

CONCLUSION

Sport education students may benefit from this research's increased understanding of physical literacy. We consider that sport education students who are well versed in physical literacy will be able to provide that information to their students and emphasise the value of physical literacy. Most students are aware of the importance of physical activity that is beneficial for them but in self-management to get these benefits is still weak. Therefore, as students who will become prospective physical education teachers to get used to physical activity as a lifestyle from now on because teachers become role models for their students. A total of (82.1%) of them realised that the benefits of exercise can improve fitness. It is important to make the students aware of the importance of exercising regularly. But there is still a small proportion of them do not have self-management skills for fitness. With the results of the ability of self-management in programming fitness is low, this limited understanding of self-management explains that awareness of self-management of fitness for sports education students needs to be grown. Further research and with a wider sample by targeting subjects at the elementary, junior high, and high school levels is very potential to be carried out. The relationship between an active lifestyle between physical education teachers and students is an interesting recommendation for further research.

ACKNOWLEDGEMENTS

Thank you to the parties involved as well as LPPM (Lembaga Penelitian dan Pengabdian Masyarakat) Universitas Muhammadiyah Jember, who have contributed research grants in order for this study to be completed and conducted successfully.

CONFLICT OF INTEREST

All authors declare no conflict of interest.

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