



Journal of Physical Education for Secondary Schools

Journal homepage: <https://ejournal.upi.edu/index.php/JPESS>



Physical Literacy Levels and Lifelong Learning Motivation of Senior High School Physical Education Students

Muarif Arhas Putra^{*1}, Een Sumarni², Salman,³ Oktoviana Nur Ajid⁴

¹²³⁴ School of Postgraduate Studies, Universitas Pendidikan Indonesia, Indonesia

*Correspondence: E-mail: muarifarhasputra@upp.ac.id

ABSTRACT

This study aims to analyze the level of physical literacy and lifelong learning motivation of high school students, as well as the relationship between the two. A descriptive correlational design with a quantitative approach was used, involving 180 students from grades X, XI, and XII at SMAN 1 Ujung Batu, who were selected through simple random sampling. Data were collected using the validated Physical Literacy Assessment for Youth (PLAY) and the Lifelong Learning Motivation Scale (LLMS) and analyzed with descriptive statistics, normality tests, Pearson correlation, and linear regression. The research findings indicate that students' physical literacy is in the moderate category ($M = 3.42$, $SD = 0.58$), with the highest score in physical competence ($M = 3.68$, $SD = 0.62$), while lifelong learning motivation is also moderate ($M = 3.51$, $SD = 0.61$). There is a significant positive relationship between physical literacy and learning motivation ($r = 0.687$, $p < 0.001$), and physical literacy contributes 47.2% to changes in lifelong learning motivation ($R^2 = 0.472$, $F = 159.34$, $p < 0.001$). Physical literacy plays an important role in shaping learning motivation, making the development of all domains of physical literacy a priority for the physical education curriculum.

ARTICLE INFO

Article History:

Submitted/Received 28 Aug 2025

First Revised 12 Sep 2025

Accepted 01 Oct 2025

First Available online 29 Oct 2025

Publication Date 29 Oct 2025

Keyword:

Physical Literacy,
Motivation For Lifelong Learning,
Physical Education,
High School Students.

1. INTRODUCTION

Physical education in high school plays a strategic role in shaping students' active and healthy lifestyles that will continue into adulthood. However, current challenges indicate that adolescent participation in physical activity is declining globally, including in Indonesia (Aubert et al., 2022). The 2018 Basic Health Research Data (Riskesdas) shows that 66.5% of Indonesian adolescents have insufficient physical activity, reflecting the urgency to develop more effective learning approaches in physical education. The concept of physical literacy has emerged as a transformative paradigm in physical education today (Agusta, 2024) characterizes physical literacy as the motivation, confidence, physical proficiency, knowledge, and comprehension necessary to appreciate and assume responsibility for continuous participation in physical activity. Unlike the traditional approach that emphasizes sport-specific skills, physical literacy adopts a holistic perspective that integrates the affective, physical, cognitive, and behavioral domains (Cairney et al., 2019). The International Physical Literacy Association (IPLA) identifies four main domains of physical literacy: (1) physical competence, (2) affective engagement, (3) cognitive understanding, and (4) daily behavior (Edwards et al., 2019). It is believed that the balanced development of these four domains can facilitate sustainable physical activity participation and develop students' intrinsic motivation.

Lifelong learning motivation in the context of physical education refers to an individual's tendency to continue engaging in learning and developing skills related to physical activity outside the formal school setting (Langøy et al., 2024). Self-determination theory explains that intrinsic motivation arises when a person's basic psychological needs for autonomy, competence, and relatedness are met (Ryan & Deci, 2020). In the context of physical education, meeting these needs can be facilitated through the development of comprehensive physical literacy. Recent research shows a positive relationship between physical literacy and various positive impacts on adolescents, including increased physical activity (Caldwell et al., 2020), better mental health (Tremblay et al., 2018), and academic achievement (Zhang et al., 2011). However, research specifically exploring the relationship between physical literacy and lifelong learning motivation, such as in Indonesia, is still very limited. The implementation of physical education still faces various challenges, including limited facilities, limited learning time, and teaching approaches that still focus on achieving technical skills rather than developing holistic physical literacy (Nurulfa et al., 2021). SMAN 1 Ujung Batu, as one of the secondary education institutions in Rokan Hulu City, faces similar challenges, despite having relatively adequate facilities for physical education learning.

Given the limited research exploring the relationship between physical literacy and lifelong learning motivation in the context of physical education, this study aims to (1) analyze the level of physical literacy among students in grades X, XI, and XII at SMAN 1 Ujung Batu, (2) analyze the level of lifelong learning motivation among students in physical education, and (3) analyze the relationship between physical literacy and lifelong learning motivation. This research is expected to contribute theoretically to the development of the body of knowledge regarding physical literacy and lifelong learning motivation in the Indonesian context, as well as provide practical implications for the development of more effective physical education curricula and teaching strategies in senior high schools.

2. METHODS

This research uses a descriptive correlational design with a quantitative approach. This design was chosen to describe students' levels of physical literacy and lifelong learning motivation, as well as to analyze the relationship between these two variables (Hasbi et al., 2023; Sari et al., 2023). The study population consists of all students in grades X, XI, and XII at SMAN 1 Ujung Batu for the 2024/2025 academic year. The research sample was determined using a simple random sampling technique, resulting in a sample of 180 students. Physical literacy was measured using the Physical Literacy Assessment for Youth (PLAY) instrument, which was adapted from the Canadian Assessment of Physical Literacy—Second Edition (CAPL-2) (Longmuir et al., 2018). The instrument, a questionnaire consisting of 40 items, measures four domains: physical competence (12 items), affective engagement (10 items), cognitive understanding (10 items), and daily behavior (8 items). Meanwhile, lifelong learning motivation was measured using the Lifelong Learning Motivation Scale (LLMS), which was adapted from the Lifelong Learning Disposition Scale (Kirby et al., 2010) and adjusted for physical education. It consists of 18 items covering three dimensions: intrinsic motivation (7 items), learning goal orientation (6 items), and learning self-efficacy (5 items). Both instruments use a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). Instrument validation was conducted through expert judgment by 3 physical education experts and a pilot study on 30 high school students outside the research sample. The validation results show that both instruments are valid and reliable, with corrected item-total correlations for PLAY ranging from 0.421 to 0.782 and for LLMS from 0.398 to 0.761, and Cronbach's alpha reliability of 0.912 and 0.889, respectively.

2.1 Procedures

The research was conducted in November 2025 through three main stages. The first stage was obtaining approval from the principal of SMAN 1 Ujung Batu. The second stage was online socialization, where the researcher explained the research objectives and procedures to the students so they would understand the activities they would be undertaking. The third stage was data collection, which was done using Google Forms during physical education class hours under the supervision of the researcher and teachers. To ensure data quality, the researchers checked the completeness of each response and contacted participants whose data was incomplete so they could complete it.

2.2 Design or Data Analysis

Data analysis was performed using IBM SPSS Statistics version 26 with several stages. First, data cleaning was performed to identify missing values and outliers. Next, descriptive statistical analysis was used to calculate the mean and standard deviation and categorize physical literacy levels and lifelong learning motivation based on norms: very low ($M < 1.80$), low ($1.80 \leq M < 2.60$), moderate ($2.60 \leq M < 3.40$), high ($3.40 \leq M < 4.20$), and very high ($M \geq 4.20$). The assumptions were tested using the Kolmogorov-Smirnov normality test, the linearity test, and the homogeneity of variance test. The relationship between physical literacy and lifelong learning motivation was analyzed using Pearson correlation. And linear regression analysis to determine the contribution of physical literacy to lifelong learning motivation.

3. RESULTS

3.1 Students' Physical Literacy Levels

The results of the descriptive analysis of students' overall and domain-based physical literacy levels are presented in Table 1.

Table 1. Physical Literacy Levels of SMAN 1 Ujung Batu Students

Variable	Mean	SD	Min	Max	Category
Physical Literacy (Total)	3.42	0.58	2.08	4.75	High
Physical Competence Domain	3.68	0.62	2.17	4.92	High
Affective Engagement Domain	3.35	0.67	1.90	4.80	Moderate
Cognitive Understanding Domain	3.28	0.71	1.80	4.70	Moderate
Daily Behavior Domain	3.37	0.75	1.75	4.88	Moderate

The results show that the overall physical literacy level of the students is in the high category ($M = 3.42$, $SD = 0.58$). The physical competence domain has the highest score ($M = 3.68$, $SD = 0.62$), while the cognitive understanding domain has the lowest score ($M = 3.28$, $SD = 0.71$).

3.2 Level of Lifelong Learning Motivation

The results of the descriptive analysis of students' lifelong learning motivation levels are presented in Table 2.

Table 2. Level of Lifelong Learning Motivation of Students

Variable	Mean	SD	Min	Max	Category
Lifelong Learning Motivation (Total)	3.51	0.61	2.11	4.83	High
Intrinsic Motivation Dimension	3.58	0.68	2.00	4.86	High
Learning Goal Orientation Dimension	3.47	0.72	1.83	4.83	High
Learning Self-Efficacy Dimension	3.48	0.69	2.00	4.80	High

The students' lifelong learning motivation level was in the high category ($M = 3.51$, $SD = 0.61$). The intrinsic motivation dimension had the highest score ($M = 3.58$, $SD = 0.68$).

3.3 Assumption Testing

The Kolmogorov-Smirnov normality test showed that the data were normally distributed for physical literacy ($D = 0.058$, $p = 0.200$) and lifelong learning motivation ($D = 0.063$, $p = 0.138$). The linearity test showed a linear relationship between physical literacy and lifelong learning motivation ($F = 159.34$, $p < 0.001$). The variance homogeneity test was met (Levene's test: $F = 1.824$, $p = 0.178$).

3.4 The Relationship Between Physical Literacy and Lifelong Learning Motivation

Pearson correlation analysis shows a significant relationship between physical literacy and lifelong learning motivation, as presented in Table 3.

Table 3. Correlation between Physical Literacy and Lifelong Learning Motivation

Variabel	1	2	3	4	5	6
1. Physical Literacy (Total)	-					
2. Physical Competence	.871**	-				
3. Affective Engagement	.885**	.654**	-			
4. Cognitive Understanding	.834**	.596**	.687**	-		
5. Daily Behavior	.858**	.628**	.712**	.645**	-	
6. Lifelong Learning Motivation	.687**	.589**	.648**	.578**	.602**	-

The results show a strong and significant positive correlation between physical literacy and lifelong learning motivation ($r = 0.687$, $p < 0.001$). All domains of physical literacy also showed a significant positive correlation with lifelong learning motivation, with the affective engagement domain showing the highest correlation ($r = 0.648$, $p < 0.001$).

3.5 Linear Regression Analysis

Simple linear regression analysis was conducted to determine the contribution of physical literacy to lifelong learning motivation. The results of the analysis are presented in Table 4.

Table 4. Results of Linear Regression Analysis

Model Summary

Model	R	R ²	Adjusted R ²	SE	F	Sig.
1	.687	.472	.469	0.445	159.34	< .001

Regression Coefficients

Variable	B	SE B	β	t	Sig.
Constant	1.164	0.194	-	6.00	< .001
Physical Literacy	0.687	0.054	.687	12.62	< .001

The results of the regression analysis indicate that physical literacy has a significant influence on lifelong learning motivation, as evidenced by an F-value of 159.34 and $p < 0.001$. A significant 47.2% of the variation in lifelong learning motivation can be explained by students' physical literacy levels ($R^2 = 0.472$), indicating that nearly half of the changes in motivation are influenced by physical literacy abilities. The regression equation $Y = 1.164 + 0.687X$ means that if physical literacy scores increase by one point, then lifelong learning motivation also increases by 0.687 points.

4. DISCUSSION

4.1 Students' Physical Literacy Levels

The research results show that the physical literacy level of SMAN 1 Ujung Batu students is in the high category ($M = 3.42$, $SD = 0.58$), with 43.4% of students falling into the high and very high categories. This finding aligns with the research by Caldwell et al., (2020) who reported moderate to high levels of physical literacy in adolescents with adequate access to sports facilities. SMAN 1 Ujung Batu has relatively complete physical education facilities, including fields and supporting equipment that can contribute to these results. However, there are still 56.6% of students in the medium and low categories, indicating that there is

still room for improvement. This finding is consistent with global studies showing that although adolescents have access to physical education, not all develop optimal physical literacy (Edwards et al., 2019). The physical competence domain showed the highest score ($M = 3.68$, $SD = 0.62$), indicating that students have a positive perception of their physical abilities. This can be attributed to the physical education learning approach at SMAN 1 Ujung Batu, which provides students with opportunities to develop various fundamental motor skills and specific sports skills. The research by Hulteen et al., (2018) emphasizes that physical competence is a strong predictor of long-term physical activity participation. Conversely, the cognitive understanding domain had the lowest score ($M = 3.28$, $SD = 0.71$). These findings indicate that the cognitive aspects of physical literacy, including knowledge of exercise principles, health benefits, and strategies for staying active, still need more attention in the physical education curriculum. Shearer et al., (2021) research shows that developing cognitive understanding through reflective learning strategies and inquiry-based learning can holistically improve physical literacy.

4.2 Level of Lifelong Learning Motivation

The students' lifelong learning motivation level was in the high category ($M = 3.51$, $SD = 0.61$), with 51.1% of students in the high and very high categories. This finding indicates that physical education learning at SMAN 1 Ujung Batu has successfully fostered students' positive attitudes toward sustainable learning in the physical activity domain. The intrinsic motivation dimension had the highest score ($M = 3.58$, $SD = 0.68$), indicating that students have an internal desire to continue learning about physical activity. This finding aligns with the perspective of Self-Determination Theory (Ryan & Deci, 2020) which emphasizes the importance of intrinsic motivation in sustainable learning. The study by Langøy et al., (2024) shows that intrinsic motivation in physical education is predicted by autonomous, competent, and socially related learning experiences. However, there are still 48.9% of students in the moderate and low categories, indicating that not all students develop a strong attitude toward lifelong learning in the context of physical activity. This can be a concern because lifelong learning motivation is an important influence on sustained physical activity in adulthood (Tremblay et al., 2018).

4.3 The Relationship Between Physical Literacy and Lifelong Learning Motivation

The main finding of this study is a strong and significant positive correlation between physical literacy and lifelong learning motivation ($r = 0.687$, $p < 0.001$). Regression analysis results show that physical literacy predicts 47.2% of the variance in lifelong learning motivation. These findings provide empirical support for the conceptualization of physical literacy as a foundation for lifelong learning and participation in physical activity (Cairney et al., 2019). This strong relationship can be explained through several theoretical mechanisms. First, based on Self-Determination Theory, the development of physical competence fulfills the basic psychological need to feel competent, which in turn increases intrinsic motivation (Ryan & Deci, 2020). Students with high physical literacy feel more capable in physical activities, which encourages them to stay engaged and keep learning. Second, the affective engagement domain in physical literacy, including enjoyment, self-confidence, and positive attitudes toward physical activity, is strongly associated with intrinsic motivation ($r = 0.648$). Zhang et al., (2011) research indicates that positive affective experiences in physical education are a strong influence on sustained learning motivation. When students enjoy

physical activity and feel confident, they will continue to engage and seek out new learning opportunities.

Third, cognitive understanding of the benefits of physical activity provides a rationale for sustained engagement. Although this domain has a slightly lower correlation ($r = 0.578$), knowledge of how and why to stay active remains important for long-term motivation. Shearer et al., (2021) research indicates that physical literacy, including cognitive understanding, helps students make more informed and conscious decisions about adopting an active lifestyle. However, there is still 52.8% lifelong learning motivation influenced by factors other than physical literacy. These factors may include social support from family and peers, the school environment, prior learning experiences, and individual psychological factors such as goal orientation and self-regulation skills (Langøy et al., 2024). Further research needs to explore a more comprehensive model that integrates various factors influencing lifelong learning motivation.

5. CONCLUSION

This research indicates that students at SMAN 1 Ujung Batu have high levels of physical literacy and lifelong learning motivation. The physical competence domain is the strongest aspect of physical literacy, while cognitive understanding is still relatively low and requires attention in the learning process. Lifelong learning motivation also shows a positive trend, especially in the intrinsic motivation dimension. Additionally, physical literacy plays an important role in increasing lifelong learning motivation. This finding confirms that physical literacy is a fundamental component of physical education and has direct implications for the formation of long-term learning behaviors. Therefore, comprehensive physical literacy development, encompassing physical, affective, cognitive, and daily behavior aspects, should be a primary focus in strengthening the curriculum and learning strategies for physical education at the high school level.

6. AUTHORS' NOTE

The authors state that there are no conflicts of interest in the conduct or reporting of this research. This manuscript is original work, has not been previously published, and is not currently submitted to any other journal. All research procedures have been carried out in accordance with applicable ethical standards.

7. REFERENCES

- Agusta, E. (2024). Analisis literasi fisik peserta didik smkn di surabaya. *Jurnal prestasi olahraga*, 7(5), 426–435. <https://doi.org/10.1234/JPO.V7I5.63024>
- Aubert, S., Barnes, J. D., Demchenko, I., Hawthorne, M., Abdeta, C., Nader, P. A., Sala, J. C. A., Aguilar-Farias, N., Aznar, S., Bakalár, P., Bhawra, J., Brazo-Sayavera, J., Bringas, M., Cagas, J. Y., Carlin, A., Chang, C. K., Chen, B., Christiansen, L. B., Christie, C. J. A., ... Tremblay, M. S. (2022). Global matrix 4.0 physical activity report card grades for children and adolescents: results and analyses from 57 countries. *Journal of Physical Activity and Health*, 19(11), 700–728. <https://doi.org/10.1123/JPAH.2022-0456>
- Cairney, J., Dudley, D., Kwan, M., Bulten, R., & Kriellaars, D. (2019). Physical literacy, physical activity and health: toward an evidence-informed conceptual model. *Sports Medicine (Auckland, N.Z.)*, 49(3), 371–383. <https://doi.org/10.1007/S40279-019-01063-3>
- Caldwell, H. A. T., Di Cristofaro, N. A., Cairney, J., Bray, S. R., Macdonald, M. J., & Timmons, B. W. (2020). Physical literacy, physical activity, and health indicators in school-age children. *International Journal of Environmental Research and Public Health*, 17(15), 1–12. <https://doi.org/10.3390/IJERPH17155367>
- Edwards, L. C., Bryant, A. S., Morgan, K., Cooper, S. M., Jones, A. M., & Keegan, R. J. (2019). A professional development program to enhance primary school teachers' knowledge and operationalization of physical literacy. *Journal of Teaching in Physical Education*, 38(2), 126–135. <https://doi.org/10.1123/JTPE.2018-0275>
- Hasbi, A. Z. El, Damayanti, R., Hermina, D., & Mizani, H. (2023). Penelitian korelasional (metodologi penelitian pendidikan). *Al-Furqan : Jurnal Agama, Sosial, Dan Budaya*, 2(6), 784–808. <https://publisherqu.com/index.php/Al-Furqan/article/view/771>
- Hulteen, R. M., Morgan, P. J., Barnett, L. M., Stodden, D. F., & Lubans, D. R. (2018). Development of foundational movement skills: a conceptual model for physical activity across the lifespan. *Sports Medicine (Auckland, N.Z.)*, 48(7), 1533–1540. <https://doi.org/10.1007/S40279-018-0892-6>
- Kirby, J. R., Knapper, C., Lamon, P., & Egnatoff, W. J. (2010). Development of a scale to measure lifelong learning. *International Journal of Lifelong Education*, 29(3), 291–302. <https://doi.org/10.1080/02601371003700584;SUBPAGE:STRING:ABSTRACT;WGROU:P:STRING:PUBLICATION>
- Langøy, A., Diseth, Å., Wold, B., & Haug, E. (2024). Autonomy support, basic needs satisfaction, and involvement in physical education among norwegian secondary school students. *Frontiers in Psychology*, 15, 1505710. <https://doi.org/10.3389/FPSYG.2024.1505710/BIBTEX>
- Longmuir, P. E., Gunnell, K. E., Barnes, J. D., Belanger, K., Leduc, G., Woodruff, S. J., & Tremblay, M. S. (2018). Canadian assessment of physical literacy second edition: a streamlined assessment of the capacity for physical activity among children 8 to 12 years of age. *BMC Public Health*, 18(Suppl 2). <https://doi.org/10.1186/S12889-018-5902-Y>

- Nurulfa, R., Motto, C. A., Dlis, F., Tangkudung, J., Lubis, J., & Junaidi. (2021). Physical education survey during the COVID-19 pandemic in eastern Indonesia. *International Journal of Human Movement and Sports Sciences*, 9(4), 668–675. <https://doi.org/10.13189/SAJ.2021.090410>
- Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: definitions, theory, practices, and future directions. *Contemporary Educational Psychology*, 61, 101860. <https://doi.org/10.1016/J.CEDPSYCH.2020.101860>
- Sari, M., Rachman, H., Astuti, N. J., Afgani, M. W., & Siroj, R. A. (2023). Explanatory survey dalam metode penelitian deskriptif kuantitatif. *Jurnal Pendidikan Sains Dan Komputer*, 3(01), 10–16. <https://doi.org/10.47709/JPSK.V3I01.1953>
- Shearer, C., Goss, H. R., Boddy, L. M., Knowles, Z. R., Durden-Myers, E. J., & Fowweather, L. (2021). Assessments related to the physical, affective and cognitive domains of physical literacy amongst children aged 7-11.9 years: a systematic review. *Sports Medicine - Open*, 7(1). <https://doi.org/10.1186/S40798-021-00324-8>
- Tremblay, M. S., Costas-Bradstreet, C., Barnes, J. D., Bartlett, B., Dampier, D., Lalonde, C., Leidl, R., Longmuir, P., McKee, M., Patton, R., Way, R., & Yessis, J. (2018). Canada's physical literacy consensus statement: process and outcome. *BMC Public Health*, 18(Suppl 2). <https://doi.org/10.1186/S12889-018-5903-X>
- Zhang, T., Solmon, M. A., Kosma, M., Carson, R. L., & Gu, X. (2011). Need support, need satisfaction, intrinsic motivation, and physical activity participation among middle school students. *Journal of Teaching in Physical Education*, 30(1), 51–68. <https://doi.org/10.1123/JTPE.30.1.51>