



The Role of Emotional Intelligence, Learning Motivation, and Exercise Awareness in Supporting Physical Education Learning Outcomes of High School Students

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Abstract:

This research is grounded in the significance of psychological and behavioral factors in achieving the objectives of Physical Education, Sports, and Health (PJOK). The study aims to examine the relationship between emotional intelligence, learning motivation, and exercise awareness with PJOK learning outcomes among high school students, both partially and simultaneously. A quantitative approach with correlational research design and multivariate correlational analysis was employed. The research sample consisted of 555 students from UM Malang Laboratory High School, selected through purposive sampling technique. Partial correlation analysis showed significant but very low relationships between PJOK learning outcomes and emotional intelligence ($r = .131$, $p = .002$), learning motivation ($r = .103$, $p = .015$), and exercise awareness ($r = .196$, $p < .001$). Simultaneously, the three variables were also significantly correlated with PJOK learning outcomes ($R = .205$, $R^2 = .042$, $p < .001$), accounting for only 4.2% of the variance, while the remaining 95.8% was explained by factors outside this study. Although the statistical contribution of these psychological and behavioral factors was small, their consistent and significant relationship with PJOK learning outcomes indicates that they remain practically relevant. Strengthening students' emotional intelligence, learning motivation, and exercise awareness through literacy development and regular physical activity habits can therefore still meaningfully support improved fitness and learning outcomes, even though other factors outside this study exert greater influence.

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Introduction (مقدمة)

Physical Education, Sports, and Health (PJOK) represents a fundamental component of education aimed at developing students' physical, cognitive, affective, and social dimensions in a balanced manner. PJOK learning focuses not only on enhancing movement skills and physical fitness but also plays a crucial role in character formation, social skills development, and establishing healthy lifestyle habits that can be sustained long-term (Muntianik & Sasmita, 2023). Consequently, learning outcomes serve as a critical indicator in achieving established educational objectives.

Learning outcomes represent the measure of student success after receiving instruction during the learning process. Within the PJOK context, learning outcomes reflect not merely physical capabilities but also analytical mastery, attitudes, and skill potential acquired throughout the learning process. Gunawan and Kustiani (2018) demonstrated that learning outcomes are influenced by various internal and external factors. Internal factors include physical condition, psychological state, interests, motivation, and student potential, while external aspects relate to family environment, school settings, and community contexts.

Currently, various challenges in adolescent development, such as increased digital technology usage, reduced physical activity, and shifts in social interaction patterns, potentially affect PJOK learning quality. Evidence suggests that several students tend to be less physically active and underutilize sports activities as part of healthy lifestyle practices. This condition can significantly impact student engagement in PJOK learning implementation and the achievement of superior learning outcomes.

One psychological factor suspected to correlate with PJOK learning outcomes is emotional intelligence. According to Goleman (2017), emotional intelligence possessed by individual students originates from their ability to examine, understand, process, and effectively utilize emotions. Students with high emotional stability are better equipped to regulate emotions, maintain motivational stability, and quickly understand how to adapt to their environment and establish positive social relationships. These advantages can help students face various challenges in PJOK learning, potentially enhancing learning outcomes according to applicable standards.

Beyond emotional intelligence, learning commitment and earnestness also constitute important factors affecting student achievement in the learning process. Learning motivation serves as one form of internal and external student support that can guide individuals toward achieving specific learning objectives (Hamzah & Uno, 2006). Students with high learning enthusiasm naturally remain active, spirited, and make greater contributions during the learning process. In PJOK learning, learning motivation plays a role in supporting students to actively participate in activities, receive consistent training, and strive to achieve optimal performance.

Another equally important factor is exercise awareness. Exercise awareness represents individual understanding and attitudes regarding the importance of engaging in light exercise for health and living a healthy life (Abakay et al., 2023). Data indicates that individuals with high exercise awareness possess strong motivation to engage in physical or sports activities because these activities feel enjoyable and become obligations. Within the educational context, exercise awareness can support students to more actively participate in sports learning, thereby supporting better learning outcome achievement.

Previous research findings show that emotional intelligence correlates positively with learning outcomes (Satya Hasmara & STKIP PGRI Jombang, 2022). Other research also demonstrates that learning motivation contributes to learning achievement (Putra et al., 2021). Meanwhile, research on exercise awareness has been more extensively linked to physical activity

participation and healthy lifestyle habits (Abakay et al., 2023). Unfortunately, research examining the relationship among these three variables in one research model for PJOK learning outcomes remains very limited, particularly among high school students.

The specific research gap addressed in this study is the absence of prior research examining emotional intelligence, learning motivation, and exercise awareness together, within a single model, as predictors of PJOK learning outcomes among high school students; most previous studies have investigated these variables separately or paired with other constructs. The novelty of this research therefore lies in its comprehensive, simultaneous examination of the three variables, and in positioning exercise awareness—still a rarely used predictor in Indonesia's secondary education context—alongside more established psychological predictors of PJOK learning outcomes.

Various previous studies have examined correlations between emotional management and learning outcomes (Satya Hasmara & STKIP PGRI Jombang, 2022) or relationships between learning motivation and learning achievement (Putra et al., 2021). Exercise awareness research has also been extensively linked to physical activity participation and lifestyle patterns (Abakay et al., 2023). However, research examining these three variables comprehensively for PJOK learning outcomes among high school students remains relatively limited. Furthermore, exercise awareness is still rarely used as a predictor variable in PJOK learning outcome studies. Therefore, further research is needed that can provide more comprehensive data regarding psychological and behavioral factor contributions to learning outcomes.

Based on this background, the present study addresses the following research questions: (1) Is there a significant partial correlation between emotional intelligence, learning motivation, and exercise awareness, respectively, and PJOK learning outcomes among high school students? (2) Is there a significant simultaneous correlation between the three variables and PJOK learning outcomes? Accordingly, the study proposes the following hypotheses: (H1) emotional intelligence is significantly correlated with PJOK learning outcomes; (H2) learning motivation is significantly correlated with PJOK learning outcomes; (H3) exercise awareness is significantly correlated with PJOK learning outcomes; and (H4) emotional intelligence, learning motivation, and exercise awareness are simultaneously and significantly correlated with PJOK learning outcomes. The findings are expected to contribute theoretically to PJOK learning development and serve as a benchmark for teachers in building more effective learning strategies.



Method (منهج)

Research Design

The research employed a multivariate correlational design, examining correlations between each independent variable partially and simultaneously toward the dependent variable.

Research Setting and Participants

The research was conducted at UM Malang Laboratory High School from May 10–17, 2025. The research population comprised all UM Malang Laboratory High School students consisting of grades 10, 11, and 12. The research sample totaled 555 students, selected using a purposive sampling technique based on the following criteria: (a) actively enrolled and present during the data collection period, (b) willing to complete the questionnaire in full, and (c) having a documented PJOK grade for the current semester. Prior to data collection, students and their parents/guardians were informed of the study's purpose and procedures, and informed consent was obtained; participation was voluntary, and the confidentiality of student data was maintained throughout the research process.

Research Variables

Independent variables in this research consisted of emotional intelligence (X_1), learning motivation (X_2), and exercise awareness (X_3), while the dependent variable was PJOK learning outcomes (Y). Emotional intelligence, learning motivation, and exercise awareness data were obtained using closed-ended questionnaires developed on a [state Likert-scale range, e.g., four-point] scale ranging from "strongly disagree" to "strongly agree," adapted from established constructs in the literature (Goleman, 2017; Hamzah & Uno, 2006; Abakay et al., 2023) and contextualized to PJOK learning. Each instrument consisted of [state number] items covering [state indicators/dimensions, e.g., self-awareness, self-regulation, motivation, and exercise habits]. Instrument validity was tested using Pearson product-moment item-total correlation, with items retained if r -count exceeded r -table at the 5% significance level, and reliability was tested using Cronbach's alpha, with all instruments reaching an acceptable coefficient ($\alpha \geq$ [state value, e.g., 0.70]) prior to use. PJOK learning outcome data were obtained through grade documentation from students' most recent semester report.

Data Analysis

The analysis employed descriptive statistics to describe research data characteristics. Subsequently, Pearson Product Moment correlation tests were conducted to determine correlations between each independent variable and PJOK learning outcomes. Multiple linear regression analysis was used to determine simultaneous relationships among the three independent variables toward PJOK learning outcomes with a 5% significance level.

Result (نتائج)

Descriptive Statistics

Table 1. Descriptive Statistics of Research Variables

Variable	Mean	SD	Min	Max
Emotional Intelligence	95.46	14.487	53	120
Learning Motivation	58.47	8.162	28	72
Exercise Awareness	89.68	9.103	49	100
PJOK Learning Outcomes	89.25	2.300	82	97

Descriptive analysis results indicate that the average student emotional intelligence was 95.46, learning motivation was 58.47, exercise awareness was 89.68, and learning outcomes were 89.25.

Variable Categories

Table 2. Distribution of Research Variable Categories

Variable	Dominant Category	Frequency	Percentage
Emotional Intelligence	High	337	60.72%
Learning Motivation	High	324	58.38%
Exercise Awareness	High	541	97.48%

The majority of students possessed high levels of emotional intelligence, learning motivation, and exercise awareness.

Correlation Test Results

Table 3. Relationship Between Independent Variables and PJOK Learning Outcomes

Variable	r	Sig.
Emotional Intelligence	0.131	0.002

Learning Motivation	0.103	0.015
Exercise Awareness	0.196	0.000

Based on Table 3, all independent variables demonstrated positive and significant correlations with learning outcomes. It is important to note, however, that although these correlations were statistically significant – partly a function of the large sample size ($N = 555$) – their effect sizes fall in the very low to low range ($r < .20$) according to Guilford's classification. Statistical significance in this case should therefore not be interpreted as indicating a strong or practically large relationship; each variable individually explains only a small proportion of the variance in PJOK learning outcomes.

Simultaneous Correlation Results

Table 4. Simultaneous Relationship Among Research Variables

Statistic	Value
R	0.205
R Square	0.042
Adjusted R Square	0.037
Sig.	0.000

Analysis results revealed that emotional intelligence, learning motivation, and exercise awareness simultaneously had significant relationships with PJOK learning outcomes. These three variables contributed 4.2% toward PJOK learning outcome variation.



Discussion (مناقشة)

Correlation Between Emotional Intelligence and PJOK Learning Outcomes

The findings demonstrated significant continuity and enhancement between emotional capabilities and outcomes. These findings indicate that students with earnestness in managing emotions well find it easier to participate optimally in learning. The ability to control emotions, maintain motivation, build social relationships, and face challenges during learning enables students to focus more on understanding material and mastering taught skills.

Data found in this research aligns with Goleman's (2017) theory stating that emotional intelligence plays a role in supporting individual success across various life aspects, including education. Students who can manage emotions well possess better self-restraint abilities, enabling them to maintain engagement throughout the learning process.

These findings are consistent with results from Ningtyas and Synthiawati (2021), Satya Hasmarra and STKIP PGRI Jombang (2022), and Monica and Prasetyo (2019), which demonstrated that emotional intelligence positively correlates with PJOK learning outcomes. Although the obtained correlation value was categorized as low ($r=0.131$), this data still demonstrates that emotional intelligence is a contributing factor to PJOK learning outcome achievement.

Correlation Between Learning Motivation and PJOK Learning Outcomes

Learning motivation in education constitutes an important factor supporting students to engage actively in learning. This research proved that continuity exists between learning motivation and PJOK learning outcomes. When students possess high learning motivation, they will demonstrate activeness, discipline, and greater effort in participating in learning activities.

According to Hamzah and Uno (2006), learning motivation functions as a driving force determining the direction and intensity of one's learning behavior. Sports and fitness lessons serve as binding elements where learning motivation can encourage students to actively

participate in practical and theoretical activities, thereby increasing opportunities to achieve appropriate learning outcomes.

The data found in this research are similar to Putra et al. (2021), Dewi Calista Fatimatuz Zahroh et al. (2024), and Daffa and Firdaus (2025), who concluded that learning motivation correlates closely with PJOK learning outcomes for students. Although the discovered correlation was relatively low ($r=0.103$), these results can demonstrate that learning motivation still plays a role in supporting successful PJOK learning.

Correlation Between Exercise Awareness and PJOK Learning Outcomes

Exercise awareness was the variable with the highest correlation value compared to other variables. Data suggested that significant correlation exists between exercise awareness and sports learning outcomes. Students with high awareness regarding physical activity importance will be more active in participating in learning, more disciplined in training, and possess positive attitudes toward sports activities.

Similar to Abakay et al. (2023), data showed that individuals with high exercise awareness levels possess stronger motivation to participate in physical activities. Research findings by Satria and Rosidi (2024) also demonstrated that health awareness and sports enjoyment are important factors in forming sustainable sports habits.

High exercise awareness helps students develop active living habits, thereby supporting movement skill enhancement, physical fitness, and understanding of PJOK material. Therefore, the higher the exercise awareness possessed by students, the greater their opportunity to obtain better PJOK learning outcomes.

Simultaneous Correlation of Emotional Intelligence, Learning Motivation, and Exercise Awareness with PJOK Learning Outcomes

Research data discovered that emotional intelligence, learning motivation, and exercise awareness simultaneously had complete correlation with PJOK learning outcomes. These three variables contributed 4.2% toward PJOK learning outcome variation.

The obtained analysis demonstrates that successful PJOK learning is determined not only by physical and cognitive abilities but is also influenced by students' psychological and behavioral factors. Students who can manage emotions, possess high learning motivation, and realize the importance of physical activity tend to more actively participate in learning and more easily achieve learning objectives.

The combination of statistically significant yet weak correlations and a small simultaneous contribution (4.2%) can be explained by several factors. First, with a large sample ($N = 555$), even small associations tend to reach statistical significance, so significance alone does not indicate a practically important relationship. Second, PJOK learning outcomes in this study were derived from grade documentation, which is also shaped by teacher assessment practices, task completion, and attendance—factors only loosely connected to psychological dispositions such as emotional intelligence or motivation. Third, learning outcomes are inherently multidimensional and are plausibly more strongly influenced by physical fitness, motor ability, teaching quality, facility availability, and family or school support than by any single psychological variable. Subsequent research therefore needs to examine these other factors more comprehensively, ideally alongside the three variables studied here.

According to Gunawan and Kustiani (2018), learning achievement is shaped by both internal and external aspects such as learning interest, physical ability, physical fitness, family support, school environment, teaching methods, and facility and infrastructure availability, which together likely account for much of the 95.8% of variance left unexplained here. In practical

terms, teachers should not expect large gains in PJOK learning outcomes from interventions targeting emotional intelligence, learning motivation, or exercise awareness alone; rather, the 4.2% contribution indicates that these psychological and behavioral factors function as modest, low-cost supporting levers that are most useful when combined with improvements to teaching methods, facilities, and family or school support, rather than treated as primary determinants of PJOK learning success.

Research Implications

These findings can provide practical benchmarks for PJOK teachers to not only influence movement skill development but also attend to students' psychological aspects. Teachers can implement learning strategies that encourage emotional intelligence development, enhance learning motivation, and build exercise awareness through active, collaborative, and enjoyable learning. Thus, PJOK learning can provide more optimal benefits for student development.

Research Limitations

Several limitations exist that constitute weaknesses. First, emotional intelligence, learning motivation, and exercise awareness data were obtained through self-report instruments, thus still allowing response bias. Second, research was conducted at one school, so certainly research results cannot be demonstrated and generalized widely. Third, the three variables' contribution toward PJOK learning outcomes remained relatively small, indicating other matters not yet researched potentially affecting PJOK learning outcomes.



Conclusion (خاتمة)

This study found that emotional intelligence, learning motivation, and exercise awareness were each significantly, though weakly, correlated with PJOK learning outcomes among high school students, both partially and simultaneously ($R^2 = .042$), with exercise awareness showing the strongest association. These results directly address the study's objective by confirming that psychological and behavioral factors, alongside physical ability, play a role in PJOK learning success—although their combined contribution remains modest, as 95.8% of the variance is explained by factors outside this study. Because the design was correlational, these findings indicate association rather than causation; the three predictors should therefore be regarded as supporting, not primary, factors in PJOK learning outcomes. PJOK teachers are encouraged to incorporate strategies that nurture students' emotional intelligence, motivation, and exercise awareness as one component of broader efforts to improve learning outcomes.

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