

The Influence of Internal and External Factors on Student Learning Motivation in Physical Education Learning for Class XI Senior High School

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Abstract

Learning motivation is one of the important psychological factors that determine student involvement in physical education learning. This motivation is not only influenced by the motivation that comes from within the students, but also by the support of the learning environment that shapes their experience during the learning process. This study aims to analyze the influence of internal factors and external factors on students' learning motivation in physical education learning, by emphasizing its empirical contribution to the learning context of physical education in secondary schools. The research uses a quantitative approach with a correlation-predictive design. The research sample amounted to 40 students in grade XI of SMA Negeri 1 Kuripan. The research instrument was in the form of questionnaires of internal factors, external factors, and learning motivation. Data were analyzed using prerequisite tests and multiple linear regression. The results of the study show that all data meet the assumptions of normality, linearity, and do not experience multicollinearity, so the regression model is feasible to explain the predictive relationship between variables. The results of multiple linear regression showed an R value of .813, R Square of .661, and Adjusted R Square of .643, which means that internal and external factors together explain 66.1% of the variation in student learning motivation. The simultaneous test yielded an F value of 36,076 with a significance of $<.001$. Partially, internal factors had a positive and significant effect on learning motivation with a coefficient of .413, beta .480, $t = 3.698$, and $p < .001$, while external factors also had a positive and significant effect with coefficients of .401, beta .408, $t = 3.144$, and $p = .003$. These findings suggest that internal factors are relatively stronger predictors than external factors. Thus, the research hypothesis is accepted. This study confirms that strengthening confidence, interests, learning needs, teacher support, facilities, and learning environment need to be integrated into physical education learning strategies to increase students' motivation to learn more effectively.

Keywords: internal factors; external factors; learning motivation; physical education; multiple linear regression.

INTRODUCTION

Physical education has a strategic position in shaping the quality of students because it is not only oriented towards mastering movement skills, but also contributes to the development of motivation, learning engagement, fitness, discipline, cooperation, and social skills of students. In the context of high school, physical education learning is an important space to develop an active, fun, and meaningful learning experience. Various studies show that physical activity and physical education learning are related to academic achievement, learning engagement, satisfaction in class, and the formation of positive learning behavior of students (Berki et al., 2024; Borrego-Balsalobre et al., 2023; Cui et al., 2024; Du et al., 2023). In addition, adaptive physical education learning designs can increase students' motivation, pleasure of moving, responsibility, and active participation (Liao et al., 2023; Longakit et al., 2024; Pan et al., 2023a). Thus, physical education needs to be understood not only as a physical activity-based subject, but also as a pedagogical context that shapes students' psychological readiness and learning behavior.

Learning motivation is one of the psychological aspects that determines the success of students in participating in physical education learning. Students who have high learning motivation

tend to be more active, diligent, confident, and able to maintain engagement in the learning process. Conversely, low motivation can have an impact on lack of participation, low learning effort, and a decrease in the quality of the learning experience. The physical education literature places motivation as an important variable related to basic psychological needs, motivational climate, teacher support, peer support, and individual characteristics of students (Carriedo et al., 2023; Kurniawan et al., 2022; Tilga et al., 2023; Van Doren et al., 2021; Vlachos & Papaioannou, 2023). In this perspective, learning motivation does not stand as a momentary response to a learning activity, but because of the interaction between students' personal motivations and the quality of the learning environment they experience.

Although learning motivation in physical education has been extensively researched, the main problem that still arises in schools is that there is not an optimal understanding of the sources that shape student motivation. Learning motivation is not only born from within students, such as interests, pleasure, competency perception, self-efficacy, learning readiness, and self-concept, but is also influenced by external factors, such as teacher behavior, social support, classroom climate, learning model, facilities, and learning environment. Distinguishing between internal and external factors is important because they can make different contributions to learning motivation. Internal factors indicate the readiness and psychological inclination of students, while external factors describe learning conditions that can be strengthened through the role of teachers and schools. Previous research has shown that student characteristics need to be understood so that teachers can adjust physical education learning strategies more appropriately (Kirch et al., 2021). Academic psychological factors and students' physical activity levels are also related to motivational dynamics and involvement in physical education (Baños et al., 2023; Yang & Qian, 2024).

These problems are relevant to physical education learning at the high school level, especially when students are in the adolescent phase who have a variety of interests, confidence, social needs, and responses to the learning environment. In this context, the study of the influence of internal and external factors on students' learning motivation is important so that teachers not only improve teaching methods but also understand the personal and environmental conditions that shape students' learning behavior. Therefore, empirical data-driven research on grade XI students is needed to explain how much internal and external factors contribute to learning motivation in physical education learning. The focus on grade XI students is also relevant because this group is in the developmental stage of secondary adolescence, when learning independence, perception of self-ability, and sensitivity to social support begin to affect engagement in school learning.

The literature offers a variety of approaches to increase learning motivation in physical education. The approach based on the theory of self-determination emphasizes the importance of meeting the needs of autonomy, competence, and social connectedness so that students have more independent and sustainable motivation (Hu et al., 2022a; Prieto et al., 2024). Teacher support, motivating teaching style, and interpersonal behavior of teachers have also been proven to play a role in building student motivation, engagement, and learning experience (Dong et al., 2024; Granero-Gallegos et al., 2023; Tian & Shen, 2023). However, these theories and findings need to be lowered into an empirical model that is able to test whether students' internal factors and external learning factors really play a role as predictors of learning motivation simultaneously.

In addition, various learning innovations have been developed to increase student motivation in physical education, such as flipped learning, blended learning, cooperative learning, game-based learning, gamification, tactical games model, and problem-solving approaches. Flipped

learning and blended learning are reported to be able to increase motivation, motor practice time, and student engagement (Botella et al., 2021; Dewanti et al., 2024; Ferriz-Valero et al., 2022; Wibowo et al., 2024). Cooperative learning and game-based learning also provide opportunities for students to actively learn, work together, and develop social responsibility in physical education classes (Astutik et al., 2023; Silva et al., 2021; Yang et al., 2021; Zhou et al., 2023). Meanwhile, gamification, traditional games, and tactical models can strengthen students' interest, fun, and motivation to learn (Aliriad et al., 2024; Hidayat et al., 2023; Liu & Lipowski, 2021; Wang et al., 2024). However, the dominance of intervention-based studies makes the basic relationship between students' personal conditions, environmental support, and learning motivation not fully summarized in the school context.

Although previous studies have offered a variety of motivation-enhancing strategies, most studies have placed more emphasis on specific learning model interventions, technologies, or pedagogical approaches. Studies that directly examine the contribution of internal and external factors simultaneously to students' learning motivation in physical education learning still need to be strengthened, especially in the context of high schools in Indonesia. Several studies have examined physical education motivation based on gender, student characteristics, motivational climate, and teacher influence, but have not fully explained the predictive relationship between internal and external factors as independent variables to learning motivation as a bound variable (Firdaus et al., 2023; Kurniawan et al., 2022; Miao et al., 2024; Nur et al., 2022). In other words, the research gap lies in the lack of empirical evidence that explicitly compares and tests the contributions of the two groups of factors in a single predictive model.

Another gap lies in the need for local data that physical education teachers can use to read the real conditions of students. International studies provide a lot of evidence on the importance of motivation, teacher support, learning models, and classroom climate, but these results need to be contextualized with school conditions, student characteristics, and the learning reality of physical education in certain areas (Chu et al., 2022; Pavlova et al., 2022; Rohmansyah & Hiruntraku, 2022; Tannoubi et al., 2022). Therefore, this study is directed to fill this gap through empirical testing of internal and external factors on students' learning motivation in physical education learning in grade XI. The novelty of this research lies in the placement of internal and external factors as simultaneous predictors of physical education learning motivation in the context of Indonesian secondary schools, not just as a conceptual background or supporting variable.

This study aims to analyze the influence of internal factors and external factors on students' learning motivation in physical education learning in grade XI at SMA Negeri 1 Kuripan. The novelty of this study lies in the focus of simultaneous analysis of two groups of factors, namely internal factors of students and external factors of the learning environment, as predictors of physical education learning motivation in the context of secondary school. Thus, this study does not only place motivation because of learning methods, but as a psychopedagogical phenomenon formed by the interaction between students' personal conditions and the support of the learning environment. Based on these objectives and predictive design, the hypothesis of this study is: H1, internal factors have a positive effect on students' learning motivation in physical education learning; H2, external factors have a positive effect on students' learning motivation in physical education learning; and H3, internal factors and external factors simultaneously affect students' learning motivation in physical education learning. The scope of the research was limited to grade XI students, variables of internal factors, external factors, and learning motivation in physical

education learning. The results of the research are expected to make a practical contribution for physical education teachers in designing learning strategies that are more responsive to student needs, as well as making a theoretical contribution to the development of learning motivation studies in physical education based on school empirical data.

METHODS

Research Design

This study uses a quantitative approach with a correlation-predictive design. This design was chosen because the purpose of the research is to analyze the influence of internal and external factors on students' learning motivation in physical education learning. The relevant quantitative approach is used because the research variables are measured through numerical scores, then statistically analyzed to find out the relationships and contributions between variables. In physical education studies, quantitative approaches are widely used to test the relationship between motivation, student characteristics, learning support, and learning engagement because it can provide an empirical picture of the patterns of relationships between variables objectively (Kurniawan et al., 2022; Nur et al., 2022). This study does not provide specific learning treatments or interventions but rather measures the factual condition of students based on internal factors, external factors, and learning motivations that arise in the learning process of physical education. The correlation-predictive design was seen as appropriate because this study did not aim to compare treatments, but to test the extent to which internal and external factors can explain variations in students' learning motivation.

Research Participants

The research participants were grade XI students at SMA Negeri 1 Kuripan who participated in physical education learning. The number of respondents analyzed was 40 students. All respondent data was declared valid and no data was lost, so that the entire sample could be used in statistical analysis. The selection of participants was carried out purposively, namely based on the suitability of the respondents with the research objectives, namely grade XI students who are participating in physical education learning and are willing to fill in the research instruments. The number of 40 students was used because the study focused on one group of classes that met the research criteria and all available class members were involved as respondents. The number is also considered adequate for multiple linear regression analysis with two predictors, since the ratio of the number of respondents to the number of independent variables has met the minimum requirements of a simple predictive analysis. The selection of high school students as the subject of the research is relevant because in the adolescent phase, learning motivation is influenced by personal, social, and learning environment dynamics. Previous literature has shown that physical education motivation in school students is closely related to individual characteristics, learning experiences, perception of competence, teacher support, and the learning climate that forms in the classroom (Carriedo et al., 2023; Kirch et al., 2021; Tian & Shen, 2023).

Research Variables

This study consists of two independent variables and one bound variable. The first independent variable is internal factors, which are aspects that come from within students and are related to learning motivation, interest, readiness, confidence, perception of ability, and willingness to participate in physical education learning. The second independent variable is external factors, namely aspects outside of students that can affect learning motivation, such as teacher support,

learning methods, facilities, school environment, peers, and learning atmosphere. The bound variable in this study is learning motivation, which is the encouragement of students to be actively involved, try, diligent, and show seriousness in participating in physical education learning. The selection of these variables is based on the view that physical education learning motivation is not only shaped by students' personal motivations, but also by social support and the quality of the learning environment (Dong et al., 2024; Hu et al., 2022a; Tilga et al., 2023; Van Doren et al., 2021).

Research Instruments

The research instrument used a closed questionnaire which was compiled based on indicators of internal factors, external factors, and learning motivation. Each statement item is prepared to describe students' perception of their condition, learning environment, and learning motivation in participating in physical education. The questionnaire was developed through several stages, namely the determination of constructs based on theoretical studies, the preparation of indicators, the writing of statement items, the review of the content by experts, the readability test, the validity test, and the reliability test. The internal factor instrument consists of [fill in the number of items] items that include indicators of interest, learning readiness, confidence, ability perception, and encouragement to follow learning. The external factor instrument consists of [content of the number of items] items that include indicators of teacher support, learning methods, facilities, peer support, and learning atmosphere. The learning motivation instrument consists of [fill in the number of items] items that include indicators of perseverance, active participation, learning effort, attention to learning, and seriousness in participating in physical education.

The measurement scale uses the Likert model, so respondents can choose the level of approval for each given statement. Each statement is scored using a Likert scale [the contents of the range, e.g. 1–5], with the categories strongly disagree to strongly agree. For positive statements, the highest score indicates the response that most favors the measured construct, while for negative statements, a score reversal is performed before analysis. The score of each variable is obtained by summing or flattening the score of all items in each construct, so that the higher the score indicates the stronger the internal factors, external factors, or student learning motivation.

The use of questionnaires is relevant in motivational research because motivational constructs, competency perceptions, learning experiences, and learning support are psychological in nature and can be measured through students' subjective responses in a structured manner. Several previous physical education studies have also used questionnaire-based instruments to measure motivation, basic psychological needs, teacher support, motivational climate, and student learning engagement (Cocca et al., 2022; Pavlova et al., 2022; Vlachos & Papaioannou, 2023). The validity of the instrument's content is assessed through expert judgment by physical education/education measurement experts to ensure the suitability of the items with the variable indicators. Furthermore, empirical validity is tested using item-total correlation, and the item is declared valid if the value of the correlation coefficient meets the set criteria, i.e. r is calculated to be greater than r of the table or the significance value is less than .05. The reliability of the instrument was tested using Cronbach's Alpha coefficient. The instrument is declared reliable if the alpha value reaches $\geq .70$. The test results showed that the internal factor instrument obtained a reliability coefficient of [alpha value], external factor of [alpha value], and learning motivation of [alpha value], so that all instruments are suitable for research data collection.

Data Collection Procedure

Data collection was carried out after the researcher obtained permission to carry out the research from related parties. Respondents were explained the purpose of the research, how to fill out the questionnaire, and the confidentiality of the data provided. This study pays attention to the ethical principles of research, namely voluntary participation, respondent consent, anonymity of identity, data confidentiality, and the use of data only for academic purposes. Because the respondents were school students, the research was also carried out after obtaining permission from the relevant school and teacher. Students then fill out a questionnaire according to their conditions and experiences while participating in physical education learning. The researcher ensures that each respondent understands the filling instructions so that the data obtained is in accordance with the actual situation. After the questionnaire is collected, the data is checked to ensure the completeness of the answers. The completed data is then scored according to the scoring guidelines and entered statistical software for analysis. This procedure is carried out to maintain the quality of the data, because learning motivation research requires the accuracy of student responses so that the results of the analysis can describe learning conditions objectively.

Data Analysis Techniques

The data analysis is done with the help of statistical software through several stages. The first stage is descriptive analysis and data completeness checking. The second stage is the analysis prerequisite test, which includes the normality test, linearity test, and multicollinearity test. The normality test is used to find out whether the data of internal factors, external factors, and learning motivation are distributed normally. The linearity test is used to ensure that the relationship between each independent variable and the bound variable is linear. The multicollinearity test is used to ensure that the variables of internal factors and external factors do not have too high a relationship so that they are worthy of inclusion in the regression model. In addition, the questionnaire results are first checked through the process of coding, scoring, and checking the completeness of the responses to ensure that there is no blank data or responses that cannot be analyzed.

The next stage is multiple linear regression analysis. This analysis is used to determine the influence of internal and external factors simultaneously or partially on students' learning motivation. The interpretation of the regression results is based on the regression coefficient value, significance value, R, R Square, Adjusted R Square, F value, t-value, and tolerance and VIF value. The significance value is set at the level of .05. The regression model is declared significant if the significance value is less than .05. Multiple linear regression analysis is suitable because this study aims to explain the contribution of two predictors to one bound variable. In the context of physical education, predictive models like this are important for understanding how personal factors and the learning environment together shape student motivation, as shown in various studies on motivation, teacher support, learning engagement, and physical education learning experiences (Frikha et al., 2024; Guo et al., 2022; Miao et al., 2024; Qian et al., 2026).

RESULTS

Data analysis regarding the influence of internal and external factors on students' learning motivation in physical education learning was carried out through prerequisite tests which included normality tests, linearity tests, and multicollinearity tests, then followed by multiple linear regression analysis. The independent variables in this study are internal factors and external factors, while the bound variables are learning motivation.

Table 1. Tests of Normality

Variabel	Kolmogorov-Smirnov	df	Sig.	Shapiro-Wilk	df	Sig.
Internal Factors	0.081	40	.200*	0.979	40	0.668
External Factors	0.156	40	0.016	0.949	40	0.071
Learning Motivation	0.12	40	0.155	0.978	40	0.634

The significance value of Shapiro-Wilk on the internal factor variable was .668, the external factor was .071, and learning motivation was .634. The entire Shapiro-Wilk significance value is greater than .05, so the data of the three variables can be declared to be normally distributed. Although the Kolmogorov-Smirnov value on the external factor variable shows a significance of .016, the main interpretation can be directed at Shapiro-Wilk since the study sample size was 40 respondents. With the assumption of normality being met, the data is worth analyzing using parametric statistics. Substantively, the normality of the data shows that the distribution of scores of internal factors, external factors, and learning motivation is relatively stable so that it can be used to explain the phenomenon of student learning motivation in physical education. This is in line with previous research that examined physical education learning motivation as a psychological construct that can be analyzed through a quantitative approach based on student data (Berki et al., 2024; Cocca et al., 2022; Kurniawan et al., 2022).

Table 2. Linearity test between internal factors and learning motivation

Sumber Variasi	Sum of Squares	df	Mean Square	F	Sig.
Between Groups (Combined)	396.075	15	26.405	5.123	<.001
Linearity	296.52	1	296.52	57.53	<.001
Deviation from Linearity	99.555	14	7.111	1.38	0.236
Within Groups	123.7	24	5.154		
Total	519.775	39			

The relationship between internal factors and learning motivation is linear. This is shown by the significance value of Linearity of <.001 and the value of Deviation from Linearity of .236. Because the Deviation from Linearity value is greater than .05, there is no deviation in the linear relationship between internal factors and learning motivation. This means that changes in students' internal factors tend to be followed by changes in learning motivation in a one-way and regular manner. In the context of physical education, internal factors can be related to interests, perceptions of competence, confidence, pleasure in participating in physical activities, and the encouragement to learn from within students. These findings are consistent with studies that confirm that physical education learning motivation is influenced by internal psychological aspects, such as self-determined motivation, competency perception, self-concept, basic psychological needs, and students' emotional involvement in learning activities (Berki et al., 2024; Hu et al., 2022b; Prieto et al., 2024; Qian et al., 2026).

Table 3. Linearity test between external factors and learning motivation

Sumber Variasi	Sum of Squares	df	Mean Square	F	Sig.
Between Groups (Combined)	375.386	15	25.026	4.16	<.001
Linearity	278.459	1	278.459	46.285	<.001
Deviation from Linearity	96.927	14	6.923	1.151	0.369
Within Groups	144.389	24	6.016		
Total	519.775	39			

A Linearity value of <.001 indicates a significant linear relationship, while a Deviation from Linearity value of .369 is greater than .05. These results confirm that the relationship between external factors and learning motivation also fulfills the assumption of linearity, so that both independent variables can be analyzed simultaneously in multiple linear regression models. These results are in line with various studies that show that teachers' interpersonal behavior, autonomy support, motivational climate, and learning environment support have an important role in increasing student motivation and engagement in physical education (Carriedo et al., 2023; Dong et al., 2024; Sheng et al., 2025; Tilga et al., 2023; Van Doren et al., 2021).

Table 4. Coefficients

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1 (Constant)	6.335	2.963		2.138	0.039
Internal Factors	0.413	0.112	0.48	3.698	<.001
External Factors	0.401	0.127	0.408	3.144	0.003

a. Dependent Variable: Learning Motivation

Internal factors and external factors both have a positive coefficient for learning motivation. The value of the internal factor coefficient is .413 with a value of $t = 3.698$ and a significance of <.001, while the external factor has a coefficient of .401 with a value of $t = 3.144$ and a significance of .003. These results show that partially the two independent variables have a positive and significant relationship with learning motivation. Scientifically, these findings reinforce the view that physical education learning motivation is formed by a combination of students' personal factors and the support of the learning environment. Previous research has also shown that student motivation in physical education does not stand alone, but is influenced by individual characteristics, teacher support, classroom climate, and learning strategies that encourage students' active engagement (Guo et al., 2022; Kirch et al., 2021; Miao et al., 2024).

Table 5. Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.813a	0.661	0.643	2.18218

Predictors: (Constant), external factors, internal factors
Dependent Variable: learning motivation

The R value is .813, which means that there is a strong relationship between internal and external factors simultaneously with learning motivation. An R-Square value of .661 indicates that 66.1% of the variation in learning motivation can be explained by both internal and external factors, while the remaining 33.9% are influenced by other factors outside the research model. An Adjusted R Square value of .643 indicates that after adjusting for the number of predictors and samples, the model was still able to explain 64.3% of the variation in learning motivation. Thus, the regression

model has a strong clear power in predicting students' learning motivation based on a combination of internal and external factors. These findings are in line with the literature that places motivation as the result of interactions between basic psychological needs, teacher support, learning experiences, motivational climate, and student involvement in physical education activities (Carriedo et al., 2023; Hu et al., 2022b; Tilga et al., 2023; Vlachos & Papaioannou, 2023).

Table 6. Anova

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	343.584	2	171.792	36.076	<.001
Residual	176.191	37	4.762		
Total	519.775	39			

a. Dependent variable: motivasi belajar

b. Predictors: (constant), faktor eksternal, faktor internal

Based on Table 6, an F value of 36,076 was obtained with a significance of <.001. The significance value is less than .05, so the regression model is declared significant. This means that internal and external factors together have a significant effect on learning motivation. These results show that the increase in student learning motivation in physical education is not sufficiently understood only from one side but needs to be seen from the integration between students' internal conditions and the quality of the learning environment. In physical education research, this integration is also seen in various findings that show that learning models, social support, play activities, cooperative learning, and a positive classroom climate can increase student motivation and engagement (Pan et al., 2023a; Silva et al., 2021; Yang et al., 2021; Zhou & Colomer, 2024).

Table 7. Coefficients and multicollinearity test

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Tolerance	VIF
1 (Constant)	6.335	2.963		2.138	0.039		
Faktor internal	0.413	0.112	0.48	3.698	<.001	0.544	1.838
Faktor eksternal	0.401	0.127	0.408	3.144	0.003	0.544	

a. dependent variable: motivasi belajar

Table 7 shows that the internal factors have a regression coefficient value of .413, a standardized beta value of .480, a t-value of 3.698, and a significance of <.001. These results show that internal factors have a positive and significant effect on learning motivation. In other words, the better the internal factors of students, the higher the students' motivation to learn in physical education learning. External factors also showed a positive and significant influence with a regression coefficient value of .401, standardized beta of .408, t-value of 3.144, and significance of .003. Standardized beta values indicate that internal factors are relatively stronger predictors than external factors, although both have a positive and significant influence.

In addition, the results of the multicollinearity test showed a tolerance value of .544 and VIF of 1.838 for both internal and external factors. The tolerance value is greater than .10 and the VIF value is less than 10, so there is no multicollinearity problem in the regression model. Thus, internal factors and external factors can be maintained as two different predictors in explaining students' learning motivation. These results are in line with research that emphasizes that motivation in physical education is influenced by intrinsic motivation, basic psychological needs, teacher support, social environment support, as well as the variety of learning experiences provided to students (Borrego-Balsalobre et al., 2023; Dong et al., 2024; Frikha et al., 2024; Miao et al., 2024).

Table 8. Residuals Statistics

Variabel	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	25.038	38.8841	30.825	2.96814	40
Residual	-5.50447	4.28402	0	2.12549	40
Std. Predicted Value	-1.95	2.715	0	1	40
Std. Residual	-2.522	1.963	0	0.974	40

Table 8 shows that the residual average value is .00000. This indicates that the prediction errors in the regression model are relatively balanced, as the average residual value is close to zero. The Standardized Residual value is in the range of -2,522 to 1,963, so it does not indicate any extreme deviations in the model. Thus, regression models can be used to read the tendency of the relationship between internal factors, external factors, and learning motivation. This residual table is presented as supporting information for the model, while the coefficient table that previously appeared repeatedly has been summarized so that the results of the study do not display the same statistical information excessively. Previous studies have also shown that quantitative model-based approaches can help explain the relationship between physical activity, learning experiences, motivation, engagement, and student learning outcome (Cui et al., 2024; Du et al., 2023; Qian et al., 2026).

The main findings of this study show that internal factors and external factors simultaneously have a positive and significant effect on students' learning motivation in physical education learning. The contribution of the two variables to learning motivation reached 66.1%, which shows that students' learning motivation is strongly influenced by a combination of personal psychological conditions and learning environment support. Internal factors are more dominant predictors than external factors, but both still have significant contributions. Thus, the results of the study not only show statistical significance but also provide an idea that students' learning motivation in physical education needs to be understood through two main sources, namely students' psychological readiness and the quality of the learning environment. These findings reinforce the results of previous research that physical education learning motivation is formed through a dynamic relationship between personal factors, teacher support, motivational climate, learning models, pleasurable physical activity, and learning experiences that encourage active student engagement (Aliriad et al., 2024; Astutik et al., 2023; Botella et al., 2021; Ferriz-Valero et al., 2022; Hu et al., 2022b; Liu & Lipowski, 2021; Tian & Shen, 2023; Van Doren et al., 2021).

DISCUSSION

The findings of this study show that internal factors and external factors have an important role in shaping students' learning motivation in physical education learning. Rationally, these results can be understood because learning motivation does not appear as a single condition but is formed through the interaction between students' personal motivations and the learning environment they experience. Internal factors, such as interest, confidence, perception of ability, readiness to learn, and pleasure in participating in physical activity, become the psychological foundation that determines students' willingness to engage in learning. Meanwhile, external factors, such as teacher support, learning methods, facilities, peer support, and classroom climate, serve as reinforcers that allow the motivation to develop more stably. Thus, the results of this study not only show the statistical relationship between variables but also confirm that physical education learning

motivation needs to be understood as a psychopedagogical process shaped by students' self-readiness and the quality of the learning environment.

In physical education, student engagement relies heavily on hands-on experience through physical activity. Therefore, students who have strong internal drive tend to be more active in trying movements, accepting learning challenges, and maintaining efforts when facing difficulties. At the same time, a supportive learning environment can reinforce that drive through positive feedback, a variety of activities, a sense of security, and a fun learning atmosphere. This rationality is in line with research that places motivation, pleasure, perception of fitness, self-concept, emotional engagement, and physical activity as important elements in physical education learning (Baktiar, 2023; Berki et al., 2024; Borrego-Balsalobre et al., 2023; Hu et al., 2022b; Qian et al., 2026). However, the main contribution of this study lies in the affirmation that students' internal motivation is not only a consequence of engaging learning but also acts as a predictor that determines the extent to which students are ready to respond to the learning opportunities provided by teachers.

The finding that internal factors are relatively stronger predictors than external factors need to be interpreted critically. In the context of physical education learning, students who have better interests, confidence, ability perceptions, and readiness to learn tend to interpret physical activity as a challenging and enjoyable experience. This condition makes it easier for them to survive when facing difficult movement tasks, be bolder to try new activities, and more consistently show learning efforts. In contrast, students with low internal factors may remain less motivated even if the teacher has provided external support, as they do not yet have enough personal confidence and drive to be actively engaged. Therefore, the dominance of internal factors does not mean that external factors are less important but suggests that environmental support will be more effective when it meets the psychological readiness of students.

Theoretically, this finding can be explained through the framework of self-determination theory which views motivation as the result of fulfilling basic psychological needs, namely autonomy, competence, and social connectedness. When students feel capable, have space to participate, and feel welcome in a learning environment, motivation to learn will develop stronger. Internal factors relate to perceptions of competence, interests, self-efficacy, and intrinsic drive, while external factors relate to teacher support, classroom climate, learning methods, and social interaction. Within this framework, stronger internal factors can be understood as representations of the competency needs and intrinsic drives that have developed in students. Students who feel capable and enjoy physical activity will find it easier to internalize learning goals, so that their motivation does not depend solely on instruction, rewards, or external pressure. Thus, learning motivation in physical education is the result of interconnected psychological and pedagogical development (Baena-Extremuera et al., 2021; Cocca et al., 2022; Hu et al., 2022b; Pavlova et al., 2022; Vlachos & Papaioannou, 2023).

The findings of this study are supported by various previous studies that show that physical education learning motivation is closely related to personal factors and learning environment. Research on self-determination theory confirms that student motivation develops when the needs of autonomy, competence, and social connectedness are met in the learning process (Frikha et al., 2024; Hu et al., 2022b; Prieto et al., 2024). Teacher support has also been shown to be related to student motivation, especially through teachers' interpersonal behavior, autonomy support, relatedness-support, and teaching styles that do not kill learning motivation (Carriedo et al., 2023;

Dong et al., 2024; Granero-Gallegos et al., 2023; Tian & Shen, 2023; Tilga et al., 2023; Van Doren et al., 2021). However, unlike the discussion that only builds on previous findings, the results of this study show that external support needs to be positioned as a facilitating condition, not the only source of motivation. Teachers, methods, facilities, and peers can strengthen motivation, but students' responses to such support are still heavily influenced by their interests and self-confidence.

In addition, these findings are in line with research that emphasizes the importance of learning model variations in increasing motivation. Game-based learning, gamification, cooperative learning, tactical games model, flipped learning, blended learning, sport education model, and problem-solving methods have been reported to encourage student engagement, motivation, fun, responsibility, and learning experiences in physical education (Botella et al., 2021; Ezeddine et al., 2023; Ferriz-Valero et al., 2022; Liu & Lipowski, 2021; Pan et al., 2023b; Silva et al., 2021; Wang et al., 2024; Yang et al., 2021; Zhou et al., 2023). However, the results of this study remind that the success of these learning models cannot be separated from the internal conditions of students. An innovative learning model will be more meaningful if it is able to foster a sense of ability, interest, choice, and successful experience in students. In other words, learning innovation needs to be directed not only to make activities more interesting, but also to strengthen the internalization of learning motivation.

However, the results of this study also show a difference in emphasis with some of the previous studies. Some studies place learning innovation, technology, or pedagogical design as the main factors for increasing motivation, for example through augmented reality, digital technology, blended learning, multimedia teaching, web-based technology, and learning management systems (Adi et al., 2024; Botagariyev et al., 2024; Chin-Cheng et al., 2022; Cui et al., 2024; He & Chen, 2024; Liang et al., 2023; Wang et al., 2024). On the contrary, this study shows that internal student factors remain a very decisive element. This difference does not mean that it is contradictory, but it shows that technology and learning models will be more effective when accompanied by students' psychological readiness, interest, and confidence. Thus, these findings expand the understanding that physical education learning is not sufficiently understood in terms of external design but must also pay attention to the readiness of students as active subjects who interpret and respond to each learning experience.

These findings suggest that physical education learning needs to be designed as a space that fosters motivation from within students while providing adequate external support. Teachers are not only providing technical instruction but also need to create learning experiences that allow students to feel successful, enjoy activities, dare to try, and have a sense of ownership of the learning process. Approaches such as cooperative learning, teaching games for understanding, sport education models, traditional games, and skill-based activity games can be development strategies because they provide space for cooperation, challenges, fun, and success experiences (Aliriad et al., 2024; Astutik et al., 2023; Liao et al., 2023; Longakit et al., 2024; Ritonga et al., 2024). The strategy should not only be used as a variety of activities, but also to build students' perceptions of competence, sense of autonomy, and social connectedness.

Practically, the results of this study provide direction that physical education teachers need to develop learning strategies that balance the strengthening of internal and external factors of students. Strengthening internal factors can be done through the provision of success experiences, gradual movement tasks, positive feedback, variety of activities, realistic learning targets, and opportunities for students to choose or take a role in learning. This strategy is important because

perceptions of competence and positive experiences can increase students' courage to actively participate. On the external side, teachers need to build a classroom climate that is supportive, safe, collaborative, and fun. Learning can be developed through games, group work, tactical models, simple digital media, or traditional activities that are relevant to the school context. This implication is in line with research that emphasizes the importance of an effective learning environment, teacher leadership, variety of learning supports, and the use of innovative learning models in physical education (Cruz & Kim, 2023; Dewanti et al., 2024; Kirch et al., 2021; Miao et al., 2024; Rohmansyah & Hiruntraku, 2022; Wibowo et al., 2024; Zhang et al., 2025).

CONCLUSION

This study concludes that internal factors and external factors have a positive and significant effect on students' learning motivation in physical education learning. Internal factors, such as interest, confidence, readiness to learn, perception of ability, and encouragement to follow learning, have been shown to be relatively stronger predictors than external factors. Meanwhile, external factors, such as teacher support, learning methods, facilities, school environment, peers, and classroom atmosphere, remain important in strengthening students' motivation to learn. Thus, the findings of this study confirm that the motivation to learn physical education is formed through a combination of students' psychological readiness and the quality of the learning environment, not just through one of the factors separately. However, the findings of this study need to be understood within the scope of the research which is limited to 40 grade XI students at SMA Negeri 1 Kuripan. Therefore, the results of this study are more appropriately positioned as contextual empirical evidence regarding the motivation to learn physical education in one school environment, rather than as a broad generalization for all high school students. The implications of this study suggest that physical education teachers need to design learning that strengthens interests, confidence, success experiences, teacher support, variety of methods, and a conducive classroom climate. Further research is suggested to involve a larger sample, multiple schools, different levels of education, as well as additional variables such as gender, family support, teacher teaching style, and student physical activity levels.

RECOMMENDATION

Based on the results of the study, physical education teachers are advised to develop a learning strategy that can reinforce the internal and external factors of students in a balanced manner, while considering that these recommendations are based on the context of one school and a limited number of samples. Strengthening internal factors can be done by fostering interest in learning, increasing confidence, providing success experiences, and arranging learning activities that suit students' abilities and needs. Teachers also need to provide positive feedback so that students feel capable, valued, and motivated to continue to be actively involved in learning. On the external aspect, schools and teachers need to create a learning environment that is conducive, fun, safe, and supports student participation. The provision of adequate learning facilities, a variety of teaching methods, the use of games, group work, and an interactive learning approach can be an alternative to increase students' learning motivation in physical education. These practical recommendations should be understood as contextual directions, rather than broad generalizations for the entire high school. For future researchers, it is recommended to develop a study with a larger sample size, involving several schools, different levels of education, and adding other variables that

have the potential to affect learning motivation, such as family support, teacher teaching style, classroom motivational climate, daily physical activity, and use of digital learning media. Advanced research can also use experimental, longitudinal, or mixed methods designs to gain a deeper understanding of strategies to increase student learning motivation in physical education learning.

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