



Relationship Between Self-Efficacy and Learning Motivation Elementary Physical Education

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Abstract

Learning motivation is essential for supporting students' active participation and engagement in physical education. Self-efficacy is considered a psychological factor that may influence students' motivation; however, evidence regarding this relationship among elementary school students remains limited. This study aimed to examine the relationship between self-efficacy and learning motivation in physical education among elementary school students. A quantitative cross-sectional correlational design was employed. The study involved 30 fifth- and sixth-grade students selected through random sampling. Data were collected using self-efficacy and learning motivation questionnaires and analyzed using descriptive statistics, the Shapiro–Wilk normality test, and Spearman's rank-order correlation. The results showed a weak positive but statistically non-significant relationship between self-efficacy and learning motivation ($\rho = .163$, $p = .390$). The findings indicate that, although students with higher self-efficacy tended to report higher learning motivation, the observed relationship was weak and did not provide sufficient statistical evidence to confirm a significant association within the present sample. These findings suggest that self-efficacy alone may not adequately explain students' learning motivation in physical education. The results should be interpreted cautiously because the study involved a relatively small sample from a single school, which may limit statistical power and generalizability. Future research should involve larger and more diverse samples and examine additional psychological, instructional, and environmental factors associated with students' learning motivation in physical education.

Keywords: self-efficacy; learning motivation; physical education; elementary school; student engagement

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A. Introduction

Physical education is an integral component of the school curriculum that contributes to students' physical, cognitive, social, and emotional development through structured and meaningful movement experiences. At the elementary school level, physical education is not limited to improving physical fitness and fundamental motor skills but also contributes to the development of self-confidence, cooperation, emotional regulation, and lifelong engagement in physical activity. The quality of students' learning experiences in physical education is therefore influenced not only by instructional practices but also by psychological factors that shape their willingness to participate, persist, and engage in learning activities (Bull et al., 2020; Ntoumanis et al., 2021).

One of the most important psychological factors supporting successful learning is motivation. Learning motivation refers to the internal and external processes that initiate, direct, and sustain students' engagement in learning activities. In physical education, motivated students are more likely to participate actively, attempt new movement skills, persist when facing difficulties, and demonstrate greater engagement throughout the learning process. According to Self-Determination Theory, students' motivation is strengthened when their basic psychological needs for autonomy, competence, and relatedness are supported within the learning environment (Ryan & Deci, 2020). Conversely, students with low levels of motivation may show limited participation, reduced effort, and a

tendency to avoid challenging learning activities (Urhahne & Wijnia, 2023; W. Wang et al., 2024).

Among the psychological factors associated with students' motivation, self-efficacy has received considerable attention. Self-efficacy refers to an individual's belief in their capability to organize and perform the actions required to achieve specific goals (Schunk, 2021). In the context of physical education, self-efficacy may be reflected in students' confidence in performing movement skills, their willingness to attempt challenging activities, and their persistence after experiencing difficulties or failure. Students with stronger self-efficacy beliefs are generally more willing to invest effort and remain engaged in learning activities, whereas students with lower self-efficacy may experience greater hesitation and reduced participation (Morano et al., 2022; Zeng et al., 2024).

Previous studies have suggested that self-efficacy is associated with several positive educational and behavioral outcomes, including physical activity participation, student engagement, persistence, and intrinsic motivation (Zhang & Chen, 2024). In addition, supportive teaching practices, constructive feedback, opportunities for successful experiences, and positive learning environments may contribute to the development of both self-efficacy and motivation in physical education (Cheon et al., 2023; White et al., 2021). These findings indicate that students' beliefs about their abilities may play an important role in shaping how they respond to learning experiences.

However, previous evidence regarding the relationship between self-efficacy and learning motivation has largely focused on adolescents, university students, athletes, or participants in specific sport settings. Evidence involving elementary school students, particularly within the context of school-based physical education, remains relatively limited. This limitation is important because elementary school students have different cognitive, emotional, and social developmental characteristics from older learners. At this stage of development, students' motivation may be strongly influenced not only by their confidence in their own abilities but also by teacher support, peer relationships, enjoyable learning experiences, perceived competence, and characteristics of the learning environment (Yuliawan et al., 2024).

Furthermore, although previous research generally suggests a positive association between self-efficacy and motivation, the strength and significance of this relationship may vary across educational levels and learning contexts. In physical education, students' motivation is a multidimensional construct that can be shaped by both internal psychological factors and external instructional conditions. Consequently, self-efficacy may not always function as the strongest predictor of learning motivation, particularly among younger students who are still developing their perceptions of competence and learning experiences. Therefore, examining this relationship specifically among elementary school students is necessary to provide a more context-sensitive understanding of the psychological factors associated with motivation in physical education.

The present study addresses this gap by examining the direct relationship between self-efficacy and learning motivation among fifth- and sixth-grade elementary

school students in physical education. The novelty of this study lies in its focus on elementary school students within a school-based physical education context, a population that has received comparatively less attention in previous studies examining the relationship between these two psychological constructs. Understanding this relationship may provide empirical evidence for teachers and schools in designing learning strategies that support students' confidence, participation, and motivation from an early age.

Therefore, this study aimed to analyze the relationship between self-efficacy and students' learning motivation in physical education among elementary school students. Based on theoretical perspectives and previous empirical findings, the study proposed the following hypothesis:

H1: There is a positive and significant relationship between students' self-efficacy and learning motivation in physical education.

B. Methods

Research Design

This study employed a quantitative cross-sectional correlational design to examine the relationship between students' self-efficacy and learning motivation in physical education. The cross-sectional design was used because data on both variables were collected from participants at a single point in time without providing any experimental treatment or intervention. In this study, self-efficacy was examined as the predictor variable, while learning motivation was examined as the outcome variable. The study aimed to determine the direction, strength, and statistical significance of the relationship between the two variables rather than to establish a causal relationship (Creswell & Creswell, 2021).

Participants and Sampling

The study was conducted at MI Ikhlashul Jamaah, Indonesia. The target population consisted of 217 students enrolled in Grades 5 and 6, aged between 10 and 12 years. These grade levels were selected because students at this developmental stage were considered capable of understanding and responding to the questionnaire items used in the study.

A total of 30 students participated in the study. Participants were selected from the target population using a random sampling procedure to provide each eligible student with an equal opportunity to be included in the study. The sample size was determined using the Slovin formula with a margin of error of 10%. However, the relatively small sample size should be considered when interpreting the results because it may limit the statistical power to detect weak relationships between the variables. Therefore, the findings of this study should be interpreted within the context of the sample and research setting.

The inclusion criteria were: (1) students enrolled in Grades 5 or 6 at MI Ikhlashul Jamaah, (2) aged 10–12 years, (3) willing to participate in the study, and (4) obtaining permission from their parents or guardians. Students who were absent during data collection or did not complete the questionnaire were excluded from the analysis.

Research Instruments

Data were collected using two self-report questionnaires measuring self-efficacy and learning motivation.

Self-efficacy was measured using a questionnaire developed by Harpizon et al. (2024). The instrument consisted of 30 statements representing three dimensions of self-efficacy: magnitude, strength, and generality. Responses were measured using

a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicated higher levels of perceived self-efficacy.

Learning motivation was measured using an instrument developed by Tuga (2020). The questionnaire consisted of 30 statements and used a four-point Likert scale ranging from 1 (disagree) to 4 (strongly agree). Higher scores indicated higher levels of students' learning motivation.

Before the main data collection, the instruments were reviewed to ensure that the language and content were appropriate for elementary school students. The internal consistency of both instruments should be evaluated using Cronbach's alpha coefficient, with a value of .70 or above generally considered acceptable for research purposes. Information regarding the validity and reliability of the original instruments and the reliability results obtained from the present study should be reported clearly.

Data Collection Procedure

The research procedure began with the identification of the research problem and the formulation of the research objectives. Subsequently, the researchers determined the study population, sample, and research instruments. Permission to conduct the study was obtained from the school administration before data collection.

After obtaining institutional permission and parental or guardian consent, participants were informed about the purpose and procedures of the study. Students were also informed that their participation was voluntary and that their responses would be kept confidential. The questionnaires were administered directly at the school under the supervision of the researchers. Participants were given sufficient time to read and respond to each

item. The researchers provided clarification when students experienced difficulty understanding the instructions without influencing their responses.

After data collection, all questionnaires were checked for completeness. Complete responses were coded and entered into IBM SPSS Statistics for analysis. Data were then screened before statistical testing.

Ethical Considerations

This study involved elementary school students; therefore, particular attention was given to ethical considerations related to research involving children. Permission to conduct the research was obtained from the school administration. Participation was voluntary, and parental or guardian consent was obtained before students participated in the study. Students were informed that they could decline participation or withdraw from the study without academic consequences. Participants' identities were kept confidential, and the collected data were used solely for research purposes.

Data Analysis

Data analysis was conducted using IBM SPSS Statistics. Descriptive statistics were first calculated to summarize the characteristics of the data, including the minimum, maximum, mean, and standard deviation for each research variable.

The distribution of the data was examined using the Shapiro–Wilk normality test. The results indicated that the self-efficacy variable was normally distributed ($p = .125$), whereas the learning motivation variable was not normally distributed ($p < .001$). Therefore, a non-parametric correlation analysis was considered appropriate.

The relationship between self-efficacy and learning motivation was analyzed using

Spearman's rank-order correlation coefficient (Spearman's rho). This analysis was used to determine the direction and strength of the association between the two variables. Statistical significance was evaluated at an alpha level of .05 with a two-tailed test. The correlation coefficient was interpreted according to the magnitude and direction of the relationship. A positive coefficient indicated that higher self-efficacy tended to be associated with higher learning motivation, whereas a negative coefficient indicated an inverse relationship.

The results were interpreted by considering both the correlation coefficient and the statistical significance value. A p -value of less than .05 was considered statistically significant. In addition, because of the relatively small sample size, the magnitude of the correlation coefficient was considered alongside the significance test to provide a more comprehensive interpretation of the findings.

C. Results and Discussion

Results

Descriptive Statistics

Table 1 presents the descriptive statistics for students' self-efficacy and learning motivation. The analysis includes the number of participants, minimum score, maximum score, mean, and standard deviation.

Table 1. Descriptive Statistics of Students' Self-Efficacy and Learning Motivation

Variable	Minimum	Maximum	Mean	Standard Deviation
Self-Efficacy	90	175	140.03	23.758

Variable	N	Minimum	Maximum	Mean	Standard Deviation
Learning Motivation	30	49	150	123.77	22.486
Valid N (listwise)	30				

Based on Table 1, the self-efficacy scores of the 30 students ranged from 90 to 175, with a mean score of 140.03 and a standard deviation of 23.758. These results indicate that students demonstrated varying levels of self-efficacy, with a relatively moderate degree of score dispersion.

Meanwhile, learning motivation scores ranged from 49 to 150, with a mean of 123.77 and a standard deviation of 22.486. The standard deviation indicates that students' learning motivation also varied across participants. Overall, the descriptive results show that both self-efficacy and learning motivation demonstrated individual differences among the students, which provides an appropriate basis for examining the relationship between the two variables.

Table Formatting Note

The table headings should be written consistently as:

1. Self-Efficacy
2. N
3. Minimum
4. Maximum
5. Mean
6. Standard Deviation

Avoid splitting words across lines, such as "Minimum," "Maximum," "Standard Deviation," or "Self-Efficacy." The table

should also use a consistent font size and column width to ensure readability.

Table 1. Descriptive Statistics of Students' Self-efficacy and Learning Motivation

	N	Minimum	Maximum	Mean	Standard Deviation
Self-Efficacy	30	90	175	140.03	23.758
Motivation to learn	30	49	150	123.77	22.486
Valid N (listwise)	30				

Based on the results of descriptive statistical analysis, the self-efficacy variable has an average value of 140.03 with a minimum score of 90 and a maximum score of 175 and a standard deviation of 23.758. Meanwhile, the learning motivation variable has an average value of 123.77 with a minimum score of 49 and a maximum score of 150 and a standard deviation of 22.486.

Table 2. Normality Test of Students' Self-efficacy and Learning Motivation

Kolmogorov-Smirnov				Shapiro-Wilk		
	Statistics	df	Sig.	Statistics	df	Sig.
Self-Efficacy	.147	30	.097	.945	30	.125
Motivation to learn	.220	30	<.001	.829	30	<.001

The results of the Shapiro-Wilk normality test showed that the self-efficacy variable obtained a significance value of 0.125, indicating a normal distribution of the data. Meanwhile, the learning motivation variable obtained a significance value <0.001, indicating a non-normal distribution of the data. Therefore, because one of the variables was not normally distributed, the Spearman Rank correlation test was used to test the hypothesis of the relationship between self-efficacy and learning motivation.

Table 3. Spearman Rank Correlation Test

			Self-Efficacy	Motivation to
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			cy	learn
Spearman's Rho	Self-Efficacy	Correlation Coefficient	1,000	.163
		Sig. (2-tailed)		.390
		N	30	30
	Motivation to learn	Correlation Coefficient	.163	1,000
		Sig. (2-tailed)	.390	
		N	30	30

The results of the Spearman rank correlation test show that the correlation coefficient value between self-efficacy and learning motivation is 0.163 with a significance value of 0.390. This correlation value indicates a positive relationship with a very low level of relationship strength. Because the significance value is greater than 0.05 ($0.390 > 0.05$), the relationship between self-efficacy and learning motivation is not significant. Thus, it can be concluded that there is no significant relationship between self-efficacy and student learning motivation in physical education learning in elementary schools.

This study shows that self-efficacy has a positive, but insignificant, relationship with students' learning motivation in physical education lessons in elementary schools. This finding indicates that students' beliefs in their abilities are not the sole determinant of learning motivation. Theoretically, self-efficacy plays a role in encouraging individuals to face challenges, maintain effort, and actively engage in the learning process. Students with high self-efficacy tend to demonstrate better participation and persistence during physical education lessons (Basileo et al., 2024; Schunk, 2021).

However, the results of this study differ from several previous studies that reported a significant relationship between self-efficacy and learning motivation (Agustina et al., 2024; Purwasih et al., 2025). This

difference is thought to be influenced by respondent characteristics, educational level, and different learning contexts. In elementary school students, learning motivation in physical education is influenced not only by confidence in one's abilities but also by enjoyable learning experiences, a variety of activities, and support from teachers and peers. This condition aligns with Self-Determination Theory, which explains that motivation develops when the needs for competence, autonomy, and social connectedness are met (Ryan & Deci, 2020).

The findings of this study are also supported by several studies showing that self-efficacy is not always the primary predictor of motivation or learning outcomes. In physical education learning, student engagement is influenced by various factors, such as learning quality, successful experiences, motor skills, physical condition, and a supportive learning environment (Syahrudin et al., 2025; H. Wang et al., 2024). This suggests that learning motivation is a multidimensional construct formed through the interaction of internal and external factors, so the influence of self-efficacy can be less dominant in certain contexts.

The implications of this study indicate that increasing student learning motivation in physical education learning is not sufficient through strengthening self-efficacy alone, but also needs to be supported by learning strategies that can create positive learning experiences, provide constructive feedback, and a learning environment that encourages active student participation. Further research is recommended to examine other variables that have the potential to influence learning motivation, such as teacher support, learning climate, perceived competence, and physical activity enjoyment, so that a more comprehensive understanding of the factors that influence

student learning motivation in physical education learning is obtained.

Discussion

The present study examined the relationship between self-efficacy and learning motivation among elementary school students in physical education. The results revealed a weak positive correlation between self-efficacy and learning motivation ($\rho = .163$); however, this relationship was not statistically significant ($p = .390$). Therefore, the proposed hypothesis stating that there is a positive and significant relationship between students' self-efficacy and learning motivation was not supported by the data.

The positive direction of the correlation indicates that students with higher levels of self-efficacy tended to report higher learning motivation. However, the magnitude of the association was weak, and the statistical test did not provide sufficient evidence to conclude that the observed relationship was statistically significant in the study population. Importantly, a non-significant result should not be interpreted as evidence that no relationship exists between self-efficacy and learning motivation. Rather, the findings indicate that this study did not detect a statistically significant relationship between the two variables within the present sample.

This finding suggests that self-efficacy alone may not sufficiently explain variations in students' learning motivation in physical education. Learning motivation is a complex and multidimensional construct that may be associated with various psychological, instructional, and environmental factors. However, because these factors were not directly measured in the present study, they cannot be identified as direct explanations for the non-significant result. Factors such as perceived teacher support, peer interaction, enjoyment of physical activity, learning

experiences, and the characteristics of the instructional environment should therefore be considered as potential variables for examination in future research rather than as confirmed determinants of the present findings.

The results may also reflect the developmental characteristics of elementary school students. Students at this educational level are still developing their perceptions of competence and confidence. Their motivation to participate in physical education may not depend exclusively on their individual beliefs about their abilities. Nevertheless, this interpretation should be considered cautiously because developmental factors were not directly measured in the present study. Future research could examine whether age, perceived competence, enjoyment, teacher support, or peer relationships contribute to the relationship between self-efficacy and learning motivation among younger students.

Another important consideration is the relatively small sample size. The study involved only 30 students from a population of 217 students at one school. A small sample may reduce statistical power, particularly when the relationship between variables is weak. Consequently, the non-significant result may reflect not only the weak observed association but also the limited ability of the study to detect small effects. In addition, the use of participants from a single school limits the generalizability of the findings to other elementary school populations, educational contexts, and geographical locations.

The sampling and measurement approach also represent limitations that should be acknowledged. Although random sampling was used, the relatively small number of participants may not adequately

represent the diversity of the overall population. Furthermore, the study relied on self-report questionnaires, which may be influenced by students' understanding of questionnaire items, response tendencies, or social desirability. These limitations should be considered when interpreting the findings.

Despite these limitations, the study provides preliminary evidence regarding the relationship between self-efficacy and learning motivation among elementary school students in physical education. The findings indicate that the relationship observed in this sample was positive but weak and statistically non-significant. Therefore, educational interventions should not assume that increasing self-efficacy alone will necessarily produce substantial improvements in students' learning motivation.

Future studies should involve larger and more diverse samples from multiple schools to improve statistical power and generalizability. Researchers should also consider examining additional variables that may be associated with learning motivation, such as perceived competence, enjoyment, teacher support, peer relationships, autonomy support, and the learning environment. Longitudinal or mixed-methods approaches may also provide a more comprehensive understanding of how self-efficacy and learning motivation develop and interact over time in physical education settings.

D. Conclusion

This study investigated the relationship between self-efficacy and learning motivation among elementary school students in physical education. The findings showed a positive correlation coefficient between the two variables ($\rho = .163$), indicating that higher levels of self-efficacy tended to be accompanied by higher levels

of learning motivation. However, the relationship was weak and did not reach statistical significance ($p = .390$). Accordingly, the hypothesis proposing a positive and significant relationship between self-efficacy and learning motivation was not supported by the results of the present study.

The findings suggest that the contribution of self-efficacy to students' learning motivation may be limited within the context examined in this research. Although students' confidence in their ability to perform learning tasks remains an important psychological construct, the present results indicate that differences in self-efficacy were not strongly associated with differences in learning motivation among the participating students. Thus, self-efficacy should not be considered the sole indicator for understanding or predicting students' motivation to participate in physical education activities.

An important implication of this finding is that efforts to improve students' learning motivation should adopt a broader perspective. Physical education teachers may need to consider multiple dimensions of the learning process rather than focusing exclusively on strengthening students' beliefs in their individual abilities. The development of learning motivation may require instructional practices that create meaningful learning experiences, encourage active participation, provide appropriate challenges, and support students' continued engagement throughout the learning process. Therefore, strategies aimed at improving motivation should be designed by considering both students' psychological characteristics and the broader educational context in which learning takes place.

The results also contribute to the understanding of motivation in elementary school physical education by showing that

relationships between psychological variables may not always produce strong or statistically significant patterns. Findings from older students, athletes, or other educational contexts cannot automatically be generalized to younger learners. Elementary school students are situated within a different developmental and learning environment, and the factors associated with their motivation may operate differently. Consequently, research examining psychological constructs in physical education should consider the characteristics of the population and context in which the study is conducted.

The interpretation of these findings should nevertheless take into account several limitations. The study involved 30 students from a single school, which restricts the statistical power and limits the extent to which the findings can be generalized to a wider population. In addition, the use of a cross-sectional design means that the relationship between self-efficacy and learning motivation was examined only at one point in time. Therefore, the study cannot describe how these variables may change or influence each other throughout students' educational experiences. The use of self-report questionnaires may also have affected the results because students' responses can be influenced by their understanding of the items and their perceptions at the time of data collection.

These limitations provide important directions for future research. Subsequent studies should involve larger samples from different schools and educational settings to obtain findings that are more representative of elementary school students. Researchers may also employ longitudinal designs to examine changes in self-efficacy and learning motivation over time. Furthermore, future studies could include additional variables that are theoretically relevant to motivation in physical education, allowing researchers to develop

a more comprehensive explanation of the factors associated with students' engagement and participation.

Overall, this study provides preliminary empirical evidence regarding the relationship between self-efficacy and learning motivation in elementary school physical education. The observed association was positive but weak and statistically non-significant, indicating that the present data did not provide sufficient evidence to establish a significant relationship between the two variables. Rather than concluding that self-efficacy and learning motivation are entirely unrelated, the findings highlight the need for further investigation using stronger research designs and broader samples. This study therefore contributes to the growing body of research on psychological factors in physical education and provides a basis for future investigations aimed at developing a more comprehensive understanding of students' learning motivation.

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