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From motion to motivation: the relationship of physical activity on Filipino students' self-efficacy for learning

Del movimiento a la motivación: la relación entre la actividad física y la autoeficacia de aprendizaje de los estudiantes filipinos

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Abstract
This study investigates the relationship between physical activity engagement and self-efficacy for learning among college students. The primary purpose is to examine how varying levels of physical activity impact students' confidence in their academic abilities, with a focus on areas such as motivation, emotional management, problem-solving, and self-regulation. A quantitative research design, specifically descriptive correlation, was employed to assess the physical activity engagement and self-efficacy of 674 randomly selected respondents. The International Physical Activity Questionnaire (IPAQ) was used to measure the level of physical activity. At the same time, a Self-efficacy for Learning Scale was utilized to assess students' self-belief in their academic capabilities. Descriptive and inferential statistics, including frequency counts, means, and the Pearson correlation coefficient, were used for data analysis. The findings indicate that most respondents (53%) are highly engaged in physical activity and have high Self-Efficacy for Learning (mean = 2.92). A significant relationship between physical activity engagement and self-efficacy for learning (r=.160**; p=.001) was also revealed, suggesting that higher levels of physical activity are positively linked to increased self-efficacy. These results have important implications for educational institutions, suggesting that promoting physical activity may contribute to students' academic confidence and overall success. The study concludes that a holistic approach, integrating physical and academic development, is essential for fostering well-rounded students. It also recommends that future research explore the long-term effects of physical activity on educational outcomes and investigate specific types of physical activities that are most beneficial for enhancing self-efficacy.
Keywords: academic achievement; college students; learning strategies; physical activity; self-efficacy

Resumen
Este estudio investiga la relación entre la participación en actividad física y la autoeficacia para el aprendizaje entre los estudiantes universitarios. El propósito principal es examinar cómo los diferentes niveles de actividad física influyen en la confianza de los estudiantes en sus habilidades académicas, centrándose en áreas como la motivación, la gestión emocional, la resolución de problemas y la autorregulación. Se empleó un diseño de investigación cuantitativa, específicamente correlación descriptiva, para evaluar el compromiso con la actividad física y la autoeficacia de 674 encuestados seleccionados al azar. El Cuestionario Internacional de Actividad Física (IPAQ) se utilizó para medir el nivel de actividad física, mientras que una Escala de Autoeficacia para el Aprendizaje se empleó para evaluar la autoconfianza de los estudiantes en sus capacidades académicas. Se utilizaron estadísticas descriptivas e inferenciales, incluyendo conteos de frecuencia, medias y el coeficiente de correlación de Pearson, para el análisis de datos. Los hallazgos indican que la mayoría de los encuestados (53%) están muy comprometidos con la actividad física y tienen una alta Autoeficacia para el Aprendizaje (media = 2.92). También se reveló una relación significativa entre el compromiso con la actividad física y la autoeficacia para el aprendizaje (r=.160**; p=.001), lo que sugiere que niveles más altos de actividad física están positivamente vinculados a un aumento de la autoeficacia. Estos resultados tienen importantes implicaciones para las instituciones educativas, sugiriendo que promover la actividad física puede contribuir a la confianza académica y

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al éxito general de los estudiantes. El estudio concluye que un enfoque holístico, que integre el desarrollo físico y académico, es esencial para fomentar estudiantes integrales. También se recomienda que futuras investigaciones exploren los efectos a largo plazo de la actividad física en los resultados académicos e investiguen tipos específicos de actividades físicas que sean más beneficiosas para mejorar la autoeficacia.
Palabras clave: logro académico; estudiantes universitarios; estrategias de aprendizaje; actividad física; autoeficacia

Introduction:

Self-efficacy for learning refers to an individual's belief in their capability to manage and execute tasks that lead to academic success. It involves confidence in one's ability to acquire new skills, apply knowledge effectively, and overcome challenges in the learning process. Schunk & DiBenedetto (2021) highlighted that self-efficacy significantly influences motivation and perseverance, as individuals with high self-efficacy are more likely to engage in learning activities and persist despite difficulties. Furthermore, Woottipong (2022) emphasized that self-efficacy is a core component of self-regulated learning, enabling students to set goals, monitor progress, and adjust strategies.

Physical activity refers to any bodily movement produced by skeletal muscles that requires energy expenditure and enhances physical fitness and overall health. It encompasses various forms, including exercise, recreational activities, and daily tasks such as walking or gardening. Hung et al. Hung et al. (2023) emphasize its role in improving cardiovascular health, muscle strength, and mental well-being while reducing the risk of chronic diseases. Herbert (2022) categorizes physical activity into types such as aerobic, anaerobic, and flexibility exercises, highlighting its multidimensional nature.

Students today face significant challenges related to physical activity and self-efficacy in learning, often stemming from lifestyle changes and educational pressures. The increasing prevalence of sedentary behaviors, driven by technology use and academic demands, has led to a decline in regular physical activity among students (Stockwell et al., 2021; Omura et al., 2021). This inactivity negatively impacts not only their physical health but also their cognitive functions and emotional well-being. Concurrently, many students struggle with low self-efficacy for learning, which can result from academic

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stress, lack of support systems, and the fear of failure (Chuang et al., 2022). Compounding these issues, socioeconomic disparities and limited access to resources further hinder opportunities for engaging in physical activities and building academic confidence (Alliott et al., 2022).

In the Philippines, many students face declining levels of physical activity due to increased academic demands, screen time, and limited access to safe recreational spaces, which contribute to sedentary lifestyles and reduced overall well-being (Riño et al., 2025). This lack of physical engagement can negatively affect not only physical health but also students' cognitive and emotional functioning (Esto et al., 2025). At the same time, challenges such as academic pressure, lack of learning support, and low motivation have contributed to reduced self-efficacy for learning among Filipino students, affecting their confidence and persistence in academic tasks (Mancera et al., 2025). These dual concerns necessitate a greater focus on the interconnected nature of physical and academic development within the local educational context (Esponja et al., 2025).

Recent studies highlight the significant interplay between physical activity and self-efficacy for learning, demonstrating how movement positively influences academic confidence. Research shows that students who engage in regular physical activity exhibit higher levels of self-efficacy, as physical activity fosters a sense of achievement and resilience (Kim et al., 2023). Participation in structured physical education programs has also been found to enhance self-regulated learning behaviors, a key indicator of self-efficacy (Zheng & Xiao, 2024). Furthermore, integrating physical activities into academic settings not only improves students' physical health but also bolsters their motivation and belief in their academic capabilities (Rosenkranz et al., 2023).

Despite numerous studies exploring the benefits of physical activity and self-efficacy for learning independently, there remains a notable gap in research correlating these two variables, particularly among college students in the Philippines. While existing literature highlights the individual importance of physical activity and self-efficacy, little attention has been given to understanding their interplay within the unique context of Filipino students. This study seeks to address this gap by answering the general research question: How does physical activity influence self-efficacy for learning among college students? The primary objective of this research is to investigate the relationship between

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physical activity and self-efficacy for learning, offering valuable insights that can inform educators, policymakers, and institutions in developing comprehensive interventions to promote students' physical and academic well-being.

This research holds significant importance for its respondents, as it aims to provide insights into how physical activity can enhance their confidence in learning, promoting both academic and personal growth. This study contributes to filling the gap in understanding the correlation between physical activity and self-efficacy for learning, particularly within the Philippine context, to the body of knowledge. In the wider academic community, the findings can inform evidence-based strategies and policies that support holistic education, fostering healthier and more resilient learners.

Method

Research Design

This study employed a quantitative research design, specifically a descriptive correlation approach, to examine the relationship between physical activity and self-efficacy for learning among college students. Quantitative research involves the systematic collection and analysis of numerical data to understand patterns, relationships, or trends within a population (Thomas & Zubkov, 2020). Descriptive correlation, on the other hand, focuses on identifying and describing the relationship between two variables without establishing causation (Seeram, 2019). This design is most suitable for the study, as it enables the measurement and analysis of the degree to which physical activity is associated with self-efficacy for learning, providing valuable insights into their potential interplay within the context of college students.

Respondents and Sampling

The respondents of this study comprised 674 college students selected through simple random sampling. Simple random sampling is a technique where every individual in the population has an equal chance of being chosen, ensuring fairness and reducing selection bias (Noor et al., 2022). This method was deemed the most appropriate for this study as it provides a representative sample of the target population, allowing for generalizable findings about the relationship between physical activity and self-efficacy for learning among college students.

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Research Instrument

This research employed the International Physical Activity Questionnaire (IPAQ), developed by Thomas et al., which has a high reliability index of 0.87, to measure the physical activity levels of the respondents. Additionally, the study utilized the Self-Efficacy for Learning scale, developed by Zimmerman, to assess the respondents' confidence in their ability to succeed in learning tasks. The reliability of this scale was confirmed through a Cronbach's alpha of 0.91, demonstrating its consistency and dependability in measuring self-efficacy for learning. These instruments were selected for their validity and proven reliability in capturing the variables of interest.

Statistical Analysis

This research utilized both descriptive and inferential statistics to analyze the data, including frequency counts, mean, and composite mean to describe the levels of physical activity and self-efficacy for learning among the respondents. The Pearson Correlation Coefficient was employed to test the relationship between physical activity and self-efficacy for learning. Pearson's correlation is the most appropriate because it measures the strength and direction of a linear relationship between two continuous variables, making it ideal for assessing the association between these two factors. This method provides a clear understanding of the degree to which physical activity is related to self-efficacy for learning in a college student population.

Ethical Consideration

This study strictly observed ethical considerations, ensuring voluntary participation, informed consent, and the confidentiality of all responses. To address potential biases, particularly self-selection bias, the researchers employed random sampling to ensure a fair and representative distribution of respondents. Additionally, recall bias was minimized by framing survey questions clearly and focusing on recent behaviors and experiences. Ethical approval was secured before data collection, and all procedures adhered to standard ethical guidelines for research involving human participants.

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Results

Figure 1 presents the level of students' physical activity engagement, categorized into three levels: Low Activity, Moderate Activity, and High Activity. These categories reflect the extent of students' participation in physical activities, ranging from minimal to substantial engagement. This classification provides a comprehensive understanding of students' activity patterns, serving as a basis for analyzing their relationship with self-efficacy for learning.

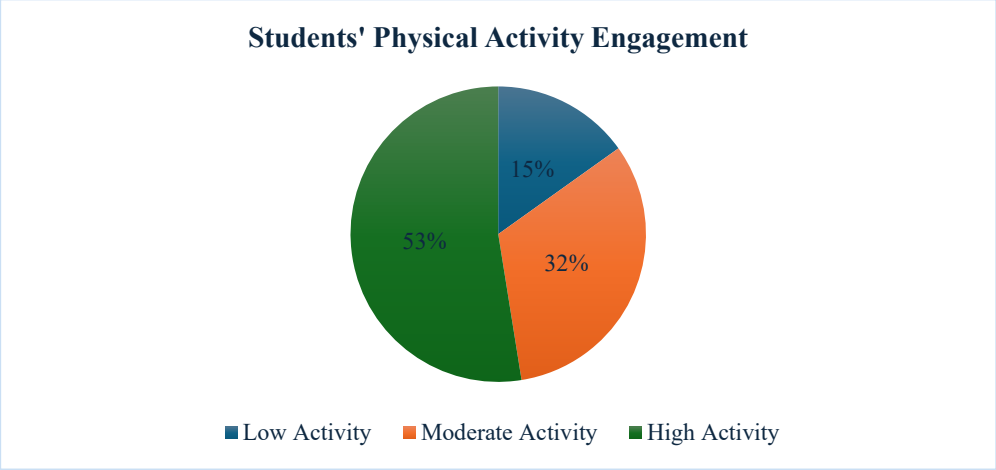

Figure 1. Level of Students' Physical Activity Engagement

Figure 2 illustrates the self-efficacy for learning among the respondents, categorized into key components: Overall Self-Efficacy for Learning, Motivation and Emotional Management, Problem-Solving and Adaptive Thinking, and Self-Regulation and Study Strategies. This breakdown highlights the specific areas contributing to students' confidence in their learning abilities. The data provides a detailed perspective on how respondents perceive their capabilities across various aspects of the learning process.

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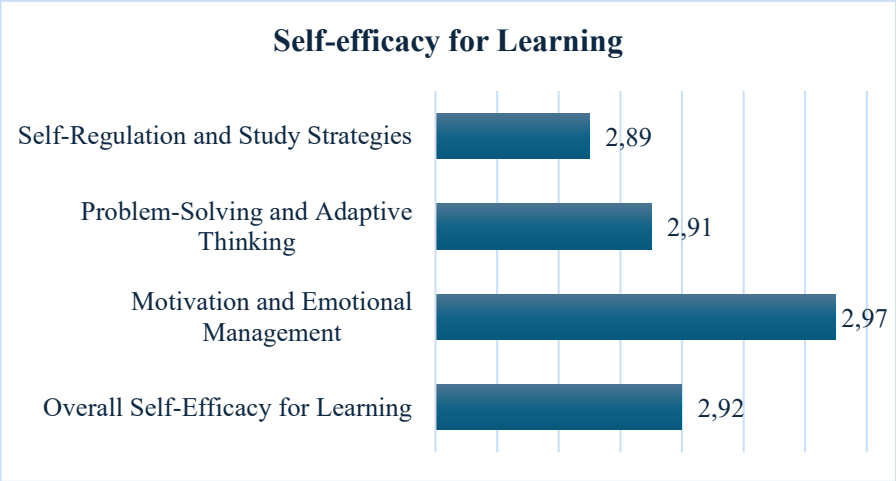

Legend: 4.00-3.50 - Very High Self-Efficacy; 3.49-2.50 - High Self-Efficacy; 2.59-1.50 Moderate Self-Efficacy; 1.49-1.00 Low Self-Efficacy

Figure 2. Self-efficacy for Learning Among the Respondents

Table 1 presents the test of the relationship between the respondents' physical activity engagement and self-efficacy for learning. This analysis examines the correlation between the two variables, highlighting the strength and direction of their association. The results provide valuable insights into how physical activity influences students' confidence in their learning abilities.

Table 1. Test of Relationship between the Respondents' Physical Activity Engagement and Self-efficacy for Learning

Paired Variables	Pearson Correlation Coefficient	p-value	Interpretation α=0.05
Physical Activity Engagement and Self-Efficacy for Learning	.160**	.001	Significant

Discussion

Level of Students' Physical Activity Engagement

Figure 1 shows the students' physical activity engagement. Out of 674 respondents, 102 (15.13%) reported low physical activity engagement, 218 (32.34%) demonstrated moderate engagement, and 354 (52.52%) exhibited high engagement in physical activities. This means that more than half of the respondents actively participate in physical activities, reflecting a commendable level of engagement. This implies that

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the majority of students prioritize physical activity, which may positively contribute to their overall well-being and academic performance.

The findings align with prior studies that emphasize the positive trends in physical activity among students, particularly those with access to supportive environments and resources. For instance, research by Shi et al. (2021) highlighted that students with higher engagement in physical activities tend to exhibit better physical and mental health outcomes. Similarly, Vilchez et al. (2021) noted a significant correlation between structured physical activity programs and increased student participation rates. Moreover, Wang et al. (2022) found that environments that encourage physical activity significantly influence students' overall engagement and health behaviors. These corroborative findings underscore the importance of fostering physical activity in educational settings to sustain these levels of engagement.

Self-efficacy for Learning (Figure 2)

Self-regulation and Study Strategies. The Self-Regulation and Study Strategies component yielded a composite mean of 2.89, indicating High Self-Efficacy for Learning. This suggests that respondents generally possess strong confidence in their ability to manage learning tasks effectively and independently. This implies that students are likely to utilize organized strategies and maintain focus, enabling them to achieve their academic goals despite challenges or distractions.

The findings are supported by studies highlighting the role of self-regulation in enhancing learning outcomes. Students with high self-regulation skills are more likely to exhibit persistence and academic resilience (Wang, 2021). Effective study strategies, such as time management and goal-setting, significantly contribute to students' confidence in their learning abilities (Chung et al., 2021). Additionally, self-regulated learners are better equipped to adapt to diverse academic demands, reinforcing the importance of this component in fostering effective learning (Theobald, 2021).

Problem-solving and Adaptive Thinking. The Problem-Solving and Adaptive Thinking component received a composite mean of 2.91, which is interpreted as High Self-Efficacy for Learning. This means that the respondents feel confident in their ability to tackle problems and adapt to unexpected challenges in their learning process. This

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implies that students are likely to approach academic obstacles with a positive mindset and can think critically to find solutions.

This finding aligns with previous research emphasizing the importance of problem-solving skills in academic success. Students who exhibit high levels of adaptive thinking are better at overcoming learning challenges and adapting to new situations (Chughtai et al., 2024). Moreover, the ability to apply problem-solving strategies enhances self-efficacy, as students feel more capable of handling diverse academic tasks (Cruz & Bryan, 2023). Additionally, research by Fullerton et al. (2021) suggests that adaptive thinking contributes to greater academic resilience, enabling students to persist even when facing difficulties.

Motivation and Emotional Management. The Motivation and Emotional Management component recorded a composite mean of 2.97, interpreted as High Self-Efficacy for Learning. This means that respondents generally possess strong motivation and can manage their emotions effectively during learning. This implies that students are likely to stay focused and persist through challenges, maintaining a positive emotional state that supports their academic efforts.

The findings are consistent with previous research that underscores the importance of motivation and emotional regulation in academic performance. Motivated students who effectively manage their emotions tend to achieve higher levels of success in their studies (Acosta-Gonzaga & Ramirez-Arellano, 2021). Furthermore, emotional management is closely linked to self-efficacy, as students who can regulate their emotions are more likely to feel capable of handling academic pressures (Zuffianò et al., 2023). Additionally, emotional stability contributes to sustained motivation, further reinforcing students' confidence in their learning abilities (Adlaon et al., 2024; Yang et al., 2024).

Overall Self-Efficacy for Learning. The Overall Self-Efficacy for Learning received a grand mean of 2.92, interpreted as High Self-Efficacy for Learning. This means that across the three areas—motivation and emotional management, problem-solving and adaptive thinking, and self-regulation and study strategies—students exhibit a generally high level of confidence in their learning abilities. This implies that students are likely to approach their academic tasks with a strong sense of capability, allowing them to handle various challenges effectively.

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These findings align with existing research that highlights the crucial role of self-efficacy in academic success. Students with high overall self-efficacy tend to show greater persistence, resilience, and better problem-solving skills in their studies (Pillay et al., 2022). Research also indicates that high self-efficacy positively influences motivation, which in turn leads to better academic performance (Affuso et al., 2023). Additionally, self-regulated learning strategies, as part of self-efficacy, have been shown to significantly enhance students' academic achievements (Fokkens-Bruinsma et al., 2021).

Relationship between the Respondents' Physical Activity Engagement and Self-efficacy for Learning

On the Test of Relationship between the Respondents' Physical Activity Engagement and Self-Efficacy for Learning (Table 1), the Pearson correlation coefficient was .160** with a p-value of .001, which is statistically significant. This suggests a weak yet significant positive relationship between physical activity engagement and self-efficacy for learning among students. As students engage more in physical activity, their confidence in their ability to succeed in academic tasks also tends to increase.

The weak correlation found between physical activity engagement and self-efficacy for learning may be attributed to several alternative explanations. One possibility is that other unmeasured factors, such as academic stress, mental health, or socio-economic status, may have had a more substantial influence on students' self-efficacy than physical activity alone. Additionally, the cross-sectional nature of the study limits the ability to establish causality, as it captures data at a single point in time without accounting for changes that may occur over time. The use of self-report measures may also introduce bias, as students might have overestimated or underestimated their activity levels or learning confidence.

These findings are supported by previous research highlighting the positive impact of physical activity on self-efficacy. Studies have shown that physical activity not only improves physical health but also enhances psychological aspects, including self-efficacy (Wang et al., 2022). Furthermore, regular physical activity is linked to improved cognitive function and a greater sense of control, which may foster increased academic confidence (Belcher et al., 2021). Similarly, research by Pachu et al. (2022) emphasized

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that students who engage in regular exercise report higher levels of self-efficacy, especially in academic settings.

The findings suggest a positive, though weak, relationship between physical activity engagement and self-efficacy for learning, indicating that promoting physical activity among students may enhance their academic confidence. This implies that educational institutions might consider incorporating physical activity programs or initiatives aimed at increasing students' engagement in exercise, as it could foster higher levels of self-efficacy. The relationship between physical activity and academic performance highlights the importance of policies that prioritize students' holistic development, integrating physical and cognitive health initiatives (Pascua et al., 2024).

Such policies could focus on providing opportunities for physical activities alongside academic activities, ensuring that students are not only academically prepared but also physically active, which may boost their overall performance (Tariq & Sergio, 2025). Additionally, incorporating physical education or recreational programs into the curriculum might lead to improved motivation and emotional management, which are critical components of self-efficacy for learning. Consequently, both educators and policymakers should recognize the value of physical activity in supporting students' academic success.

Conclusion

The findings of this study make a theoretical contribution by asserting that physical activity, traditionally linked to physical health, also plays a meaningful role in shaping students' self-efficacy for learning. This relationship highlights the increasing recognition of the mind-body connection in educational research, supporting existing theories that emphasize the impact of physical behaviors on psychological outcomes. Practically, the study provides evidence that integrating physical activity into academic life can help foster positive learning beliefs, especially in environments where motivation and resilience are essential to student success.

From an institutional perspective, the results call for the intentional inclusion of physical activity programs within higher education systems—not merely as extracurricular options but as integral components of student development. Universities

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and colleges could enhance learning outcomes by creating supportive environments that promote regular movement through facilities, schedules, and campus culture. Such practices would contribute not only to healthier student bodies but also to more confident, capable learners. As institutions aim to produce well-rounded graduates, this study emphasizes the practical value of aligning academic goals with health-promoting behaviors within the educational setting.

Limitations:

This study is subject to several limitations that should be acknowledged when interpreting the findings. First, the reliance on self-reported measures may introduce potential biases, such as recall inaccuracies and social desirability effects, which could compromise the validity of the reported levels of physical activity and self-efficacy. The cross-sectional research design further limits the ability to draw causal inferences between the variables, as it captures data at only one point in time without accounting for temporal changes that may occur over time. Moreover, the study's scope was limited to a specific cohort of college students within a particular institutional context, which may restrict the generalizability of the results to broader or more diverse populations. Lastly, the study did not control for confounding variables—such as academic performance, psychological well-being, or socio-economic status—that may influence self-efficacy, thus warranting more nuanced investigation in future research.

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