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## High school e-games players time management and academic motivation in Physical Education

### Gestión del tiempo de los jugadores de juegos electrónicos de secundaria y motivación académica en Educación Física

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## Abstract

This study examined the relationship between time management and academic motivation in Physical Education among high school students playing “Mobile Legends: Bang Bang (MLBB)”. Using a descriptive-correlational research design, the study surveyed 200 high school students to determine how their time management skills were related to their academic motivation in PE. Findings indicated a weak but significant positive relationship between overall time management and academic motivation [ $r(198) = .204$ ,  $p = .004$ ], suggesting that students with better time management skills tended to exhibit higher academic motivation. Among the components of time management, long-range planning had the strongest relationship with academic motivation ( $r(198) = .211$ ,  $p = .003$ ), followed by time attitudes ( $r(198) = .180$ ,  $p = .011$ ). These results suggest that students who set structured long-term goals and maintained a positive perception of time were more likely to stay motivated in their coursework. In contrast, short-range planning showed the weakest and non-significant relationship ( $r(198) = .135$ ,  $p = .057$ ), indicating that organizing short-term tasks alone does not strongly influence academic motivation. The study highlights the importance of developing effective time management strategies to support academic engagement. Encouraging students to engage in goal-setting, task prioritization, and self-regulation can help maintain motivation and productivity. Future research should explore intervention-based approaches and the influence of external factors such as parental support and school policies in shaping students’ time management and motivation in Physical Education.

**Keywords:** academic motivations, Mobile Legends: Bang Bang, time management, online mobile gaming

## Resumen

Este estudio examinó la relación entre la gestión del tiempo y la motivación académica en Educación Física entre estudiantes de secundaria que juegan “Mobile Legends: Bang Bang (MLBB).” Utilizando un diseño de investigación descriptivo-correlacional, el estudio encuestó a 200 estudiantes de secundaria para determinar cómo sus habilidades de gestión del tiempo se relacionaban con su motivación académica en Educación Física. Los hallazgos indicaron una relación positiva débil pero significativa entre la gestión general del tiempo y la motivación académica [ $r(198) = .204$ ,  $p = .004$ ], lo que sugiere que los estudiantes con mejores habilidades de gestión del tiempo tendían a exhibir una mayor motivación académica. Entre los componentes de la gestión del tiempo, la planificación a largo plazo tuvo la relación más fuerte con la motivación académica ( $r(198) = .211$ ,  $p = .003$ ), seguida de las actitudes hacia el tiempo ( $r(198) = .180$ ,  $p = .011$ ). Estos resultados sugieren que los estudiantes que establecieron metas estructuradas a largo plazo y mantuvieron una percepción positiva del tiempo tuvieron más probabilidades de mantenerse motivados en sus cursos. En cambio, la planificación a corto plazo mostró la relación más débil y no significativa ( $r(198) = .135$ ,  $p = .057$ ), lo que indica que la organización de tareas a corto plazo por sí sola no influye significativamente en la motivación académica. El estudio destaca la importancia de desarrollar estrategias eficaces de gestión del tiempo para fomentar la implicación académica. Animar a los estudiantes a participar en el establecimiento de metas, la priorización de tareas y la autorregulación puede contribuir a mantener la motivación y la productividad. Las investigaciones futuras deberían explorar los enfoques basados en

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la intervención y la influencia de factores externos, como el apoyo parental y las políticas escolares, en la gestión del tiempo y la motivación de los estudiantes en Educación Física.

**Palabras claves:** motivaciones académicas, Mobile Legends: Bang Bang, gestión del tiempo, juegos móviles en línea

## Introduction

The rapid growth of digital technology and increased internet accessibility in the Philippines have significantly contributed to the rising popularity of online gaming. Recent data from Kemp (2025) indicate that approximately 83.3% of the Philippine population has access to the internet, with nearly 23% of individuals aged 18 to 24 actively engaging online. This demographic closely overlaps with the online gaming community, reinforcing the notion that gaming is a major digital activity among young individuals (Meriläinen & Ruotsalainen, 2023). Mobile gaming has become the dominant form of gameplay due to the affordability and accessibility of mobile devices and internet connectivity (Lee & Kim, 2025).

Among the most prominent mobile games in the Philippines is *Mobile Legends: Bang Bang*, a multiplayer online battle arena (MOBA) game inspired by *Defense of the Ancients (Dota)* (Mawalia, 2020; Oetomo & Fahyuni, 2022). Since its release, *Mobile Legends* has gained immense traction among Filipino gamers, establishing itself as a leading Esports title (Edombingo et al., 2024). Esports has grown exponentially, transforming from a niche hobby into a mainstream entertainment industry (Omole, 2024). The Asia-Pacific region currently holds the highest number of active gamers worldwide (Perez et al., 2024), with the Philippines significantly contributing to this expansion (Derla, 2024).

The accessibility of online gaming has reshaped gaming behavior (Mahmud et al., 2023), such as in the Philippines, transitioning from traditional cybercafes to mobile gaming environments (Alontaga, 2018). According to Pasayat et al. (2025), while online gaming provides entertainment and cognitive engagement, it can also influence students' academic performance, time management, and motivation. Students who spend excessive time gaming often struggle with organizing academic responsibilities, leading to reduced academic performance (Alzahrani & Griffiths, 2024). The systematic study of Zhong et al. (2022) emphasized that while e-games may have many advantages, one of its trade-

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off is poor time management skills due to prolonged gaming exhibited lower motivation in academic tasks. Conversely, moderate gaming has been linked to cognitive benefits, such as improved focus, problem-solving skills, and task-switching abilities (Reynaldo et al., 2021; Ryu et al., 2021). Some scholars argue that structured gaming schedules and self-regulation strategies can help mitigate the negative effects of excessive gaming while promoting positive learning behaviors (Koban et al., 2022; Shi et al., 2019).

Time management plays a critical role in students' academic success, and Trueman and Hartley (1995) identified three essential components of time management: *short-range planning*, *time attitudes*, and *long-range planning*. *Short-range planning* involves organizing tasks and setting short-term goals (Adams & Blair, 2019), such as daily or weekly schedules, which help students stay productive and complete assignments on time. *Time attitudes* refer to an individual's perception of time and confidence in managing it effectively (Çelik et al., 2023), where a positive attitude is linked to better academic outcomes and reduced stress. Lastly, *Long-range planning* involves setting structured routines and long-term academic goals (Razali et al., 2018), allowing students to prepare ahead for future responsibilities. Students who actively develop these time management skills tend to experience better academic performance, lower stress levels, and improved productivity. In the context of online gaming, integrating these strategies can help students strike a balance between recreational gaming and academic responsibilities, ensuring their motivation and performance are not negatively affected.

Similarly, academic motivation is a key factor in determining students' engagement and success in school. Vallerand et al. (1992) proposed the Academic Motivation Scale (AMS), which categorizes motivation into three levels: *intrinsic*, *extrinsic*, and *amotivation*. *Intrinsic motivation* refers to learning for personal satisfaction and curiosity-driven knowledge acquisition (Oudeyer et al., 2016). Students with high intrinsic motivation will likely perform better academically and manage their time effectively. On the other hand, *extrinsic motivation* is driven by external rewards, such as grades, recognition, or avoiding negative consequences (Levesque et al., 2010). While extrinsically motivated students may succeed academically, their engagement often depends on external pressures. Lastly, *amotivation* describes a lack of motivation, where students struggle with academic engagement and may exhibit poor time management and

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low academic performance (Leroy & Bressoux, 2016). Understanding these motivation levels is crucial in examining how online gaming influences students' academic behaviors and learning outcomes.

In this regard, this present study is grounded in Self-Determination Theory by Deci and Ryan (1985), which emphasizes the importance of intrinsic motivation in learning and performance. According to SDT, students engage in activities based on their needs for competence, autonomy, and relatedness. Video games, particularly structured and educational ones, can fulfill these needs by offering challenges that enhance cognitive skills, motivation, and self-regulation (Leite & Dourado, 2024). Furthermore, Time Management Theory by Macan (1994) provides a framework for understanding how students allocate their time for academic and non-academic activities. Research by Macan et al. (1990) suggests that effective time management strategies, such as goal-setting and prioritization, are linked to better academic performance and reduced stress. Controlled gaming, when integrated into structured educational programs, has been found to improve students' ability to balance leisure and academic responsibilities (Adžić et al., 2021). Furthermore, Flow Theory by (Csikszentmihalyi et al., 2005) explains how individuals can achieve deep engagement in an activity when the challenge level aligns with their skillset. Applied to gaming, this theory suggests that well-designed educational video games can facilitate a state of "flow," (Plass et al., 2015) where students experience heightened concentration and motivation, leading to improved time management skills.

In summary, this study examined the relationship between time management and academic motivation among high school students, particularly in Physical Education. It seeks to determine how students' ability to manage their time relates to their academic motivation and whether effective time management strategies contribute to sustained academic engagement. Additionally, the study explores how selected demographic characteristics may be related to time management and academic motivation, providing a deeper understanding of potential influencing factors.

Despite the recognized importance of time management in academic success, empirical studies on its relationship with academic motivation remain limited, particularly within the high school setting in the Philippines. While previous research has explored time management and academic motivation in college students and general

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academic populations, few studies have investigated this relationship among high school students, particularly in Physical Education. Furthermore, existing literature has largely overlooked how certain demographic characteristics, such as age, gender, and school type, may influence students' time management skills and academic motivation.

Given the critical role of time management in academic performance and student motivation, this study aims to fill this gap by examining how time management and academic motivation are related among high school students. By also exploring the potential influence of selected demographic factors, this research provides valuable insights for educators, parents, and policymakers in fostering effective time management strategies and enhancing students' academic motivation.

### ***Statement of the Problem and Hypotheses Formulation***

This study analyzed the relationship between time management and academic motivations among high school students playing MLBB. Specifically, it will provide answers to the following:

1. What is the demographic and playing profile of the respondents?
2. Is there a significant relationship between academic motivations and time management in terms of:
  - 2.1. short-range planning;
  - 2.2. time attitudes; and
  - 2.3. long-range planning
3. What is the implication of the study on the Academic Motivations and Time Management of high school students?

To guide the researchers to analyze the data to be collected, the following hypotheses will be tested:

**H<sub>1</sub>:** There is a significant relationship between time management and academic motivations of high school MLBB players.

**H<sub>1a</sub>:** There is a significant relationship between short-range planning and academic motivations

**H<sub>1b</sub>:** There is a significant relationship between time attitudes and academic motivations

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**H1c:** There is a significant relationship between long-range planning and academic motivations

## Methods

### *Research Design, Participants, and Sampling Technique*

This study utilized a descriptive-correlational design, employing a survey technique to collect and analyze numerical data. This approach enables the identification of patterns and relationships between variables without manipulating them. Specifically, it examines the degree and direction of the relationship between time management and academic motivation among high school e-games players. While it does not establish causation, the study provides valuable insights into how these factors interact, allowing for generalizations to be made within the target population. Furthermore, the respondents for the study were selected by using *Quota sampling technique*. These individuals are chosen by researchers based on certain characteristics or features. In this regard, the study has used a selection criterion to obtain the most reliable data from the respondents: (1) must be 12 years old and above; (2) currently enrolled as junior and/or senior high school students; and, (3) must be a player of '*Mobile Legends: Bang Bang*' for at least six months and above.

### *Instrument*

This study has used a three (3) part questionnaire. Part I deals with the demographic profile and gaming history. The researchers obtained information about when and how they began playing MLBB and who inspired them to do so. For Part II, the researchers adopted the 18-item Measuring time-management skills by Trueman and Hartley (1995). The questionnaires' content represented the respondents' Time Management in terms short-range planning, time attitudes and long-range planning. Responses are recorded on 5-point Likert Scale ranging from 1- never to 5- always. Upon checking the reliability of the instrument, the Cronbach's Alpha value ( $\alpha = 0.77$ ), suggests that reliability of the instrument has an acceptable reliability. For Part III, the researchers adopted the 28-item Academic Motivation Scale (AMS) by Vallerand et al. (1992). This instrument measured respondents' motivation level in terms of intrinsic motivation,

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extrinsic motivation and amotivation. Responses are recorded on a 7-point Likert scale ranging from 1- not at all to 7- exactly. Furthermore, the internal consistency of the instrument is ( $\alpha = 0.77$ ), implying that the reliability of the instrument is also acceptable. In this particular instrument, a composite score was used to assess the level of academic motivation of high school students in physical education.

### ***Data gathering and ethical considerations***

The present study targeted a sample of 200 high school MLBB players. To ensure ethical research practices, the study first sought verbal consent from authorized individuals before proceeding. A formal letter of request was presented, outlining the objectives of the study, the participants' expected contributions, potential risks, and benefits. Additionally, a sample questionnaire was provided for review. The study ensured the confidentiality of participants' names and contact information. Potential respondents were contacted, and the study's objectives, contributions, risks, and benefits were clearly explained. Verbal and written consent were obtained before participation. Participants were also given the option to choose their preferred method of data collection, either online or face-to-face, with strict adherence to minimum health protocols when in-person interactions were required. The data gathering was then scheduled according to agreed-upon conditions, ensuring that the process was conducted ethically and with respect for the participants' well-being.

### ***Data analysis***

To describe respondents' demographic profiles and gaming history, descriptive analysis such as frequency (f), percentage (%), and mean (M) were used. Furthermore, correlational analysis such as *Spearman-rho* was also employed to ascertain relationships between two or more variables. Lastly, the *chi-square statistic* ( $\chi^2$ ) compared the size of any discrepancies between the expected results and the actual results, given the size of the sample and the number of variables in the relationship.

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## Results

Table 1 illustrates the profile of MLBB players, which includes the demographic and educational profiles. Based on the table, it shows that in a total of 200 respondents, the results show the highest age with 50.5% or 101 respondents age is ranging from 18 years old and above while 13.5% or 27 respondents age is ranging from 12 to 14 years old. According to the table, the highest is from public school, with 147 respondents or 73.5%, and the lowest is from a private school, with 53 respondents or 26.5%. The highest year level, with 89 respondents or 44.5%, is grade 12, while the lowest year level, with ten respondents or 5%, is grade 7. With 78 respondents, Junior High School has a 39% response rate. Strand, Science, Technology, Engineering, and Mathematics (STEM) have the highest percentage of 33.5% with 67 respondents, while Humanities and Social Sciences (HUMSS) has the lowest rate of 3.5% with 7 respondents.

**Table 1.** Respondents' Profile

Variables	Item	N(%)
Gender	Male	106(53.00%)
	Female	86(43.00%)
	LGBTQ+	8(4.00%)
School	Public	147(73.5%)
	Private	53(26.5%)
Age	12-14 years old	27(13.5%)
	15-17 years old	72(36.00%)
	18 and above	101(50.5%)
Year Level	Grade 7	10(5.00%)
	Grade 8	13(6.5%)
	Grade 9	22(11.00%)
	Grade 10	33(16.5%)
	Grade 11	33(16.5%)
	Grade 12	89(44.5%)
	ABM	24(12.00%)
Strand	GAS	8(4.00%)
	HUMSS	7(3.5%)
	STEM	67(33.5%)
	TECHVOC	16(8.00%)
	JHS	78(39.00%)

Table 2 exemplifies the playing history of Mobile Legends players. According to the table, the maximum length of playing is 55.5% ranging from 6 to 23 months with 111

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respondents, while the lowest percentage is 11.5% ranging from 48 to 60 months with 23 respondents. In terms of playing frequency, 68 respondents play everyone (1) to two (2) weeks, with the most significant proportion of 34%, while 16 respondents play every 5 to 6 weeks, with the lowest rate of 8%. Students with one (1) to three (3) hours of playing time per day have the highest percentage of 65.5% with 131 respondents, while students with 10 to 12 hours of playing time per day have the lowest rate of 1.5% with three (3) respondents.

**Table 2.** Playing history of high school MLBB players

Variables	Item	N(%)
Length of playing	6-23 months	111(55.5%)
	24-27 months	66(33.00%)
	48-60 months	23(11.5%)
Frequency of playing	1-2/week	68(34.00%)
	3-4/week	60(30.00%)
	5-6/week	16(8.00%)
	Daily	56(28.00%)
Playing time/day	1-3 hours	131(65.5%)
	4-6 hours	51(25.5%)
	7-9 hours	15(7.5%)
	10-12 hours	3(1.5%)
Influencer	Friends	111(55.5%)
	Classmates	21(10.5%)
	Family/relatives	22(11.00%)
	Personal choice	46(23.00%)

The findings in Table 3a indicate that demographic factors such as age ( $\chi^2 = 9.234$ ,  $p = .215$ ), gender ( $\chi^2 = 9.143$ ,  $p = .214$ ), and school type ( $\chi^2 = .683$ ,  $p = .711$ ) do not show a significant relationship with students' ability to manage their time. This suggests that time management skills are not inherently associated with these background characteristics but rather influenced by individual habits, self-regulation, and personal discipline. Regardless of their age or school environment, students develop time management strategies based on their own experiences and external responsibilities. On the other hand, gaming behavior, particularly length of play ( $\chi^2 = 10.238$ ,  $p = .037$ ) and frequency of play ( $\chi^2 = 21.980$ ,  $p = .001$ ), shows a significant association with time management levels. Students who engage in gaming for extended periods or frequently tend to have distinct time management patterns, which may reflect how they allocate time

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between academic tasks and leisure activities. However, total playing time per day ( $\chi^2 = 5.449, p = .488$ ) does not show a significant relationship with time management. This suggests that the number of hours played alone does not determine a student's ability to organize their time effectively. Instead, factors such as scheduling, prioritization, and self-discipline may play a more critical role. Similarly, the influence of peers, family, or personal choice in gaming initiation ( $\chi^2 = 1.742, p = .942$ ) does not appear to have a notable association with time management. Therefore, it can be postulated that external encouragement or social influences in gaming do not directly shape how students manage their time but may contribute to their overall gaming engagement.

**Table 3a.** Chi-square test between Time Management Level, demographic profile and playing history

Profile	$\chi^2$	df	Phi	Cramer's V	p
Age	9.234	4	.215	.152	.056
Gender	9.143	4	.214	.151	.058
School	.683	2	.058	.058	.711
Strand	6.462	10	.180	.127	.775
Length of Playing	10.238	4	.226	.160	.037
Frequency of Playing	21.980	6	.332	.234	.001
Playing time per day	5.449	6	.165	.117	.488
Influencer	1.742	6	.093	.066	.942

The findings in Table 3b shows that age ( $\chi^2 = 10.275, p = .036$ ) and school type ( $\chi^2 = 6.275, p = .043$ ) have a significant relationship with students' academic motivation. This suggests that as students grow older, their academic motivation may shift, potentially due to increasing responsibilities, changing priorities, or evolving interests in academics and extracurricular activities. Additionally, the type of school a student attends may shape their academic motivation through differences in curriculum, teaching strategies, or learning environments. On the other hand, gender ( $\chi^2 = 1.685, p = .793$ ), academic strand ( $\chi^2 = 9.750, p = .463$ ), and gaming behaviors, including length of play ( $\chi^2 = .934, p = .920$ ), frequency of play ( $\chi^2 = 7.579, p = .271$ ), and daily gaming hours ( $\chi^2 = 10.290, p = .113$ ), do not show a significant connection to academic motivation. This implies that the amount of time spent gaming or gaming frequency does not directly determine a student's

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academic motivation. Instead, motivation appears to be influenced by broader individual and contextual factors rather than gaming habits alone.

**Table 3b.** Level of Academic Motivation, demographic profile and playing history

Profile	$\chi^2$	df	Phi	Cramer's V	p
Age	10.275	4	.227	.160	.036
Gender	1.685	4	.092	.065	.793
School	6.275	2	.177	.177	.043
Strand	9.750	10	.221	.156	.463
Length of Playing	.934	4	.068	.048	.920
Frequency of Playing	7.579	6	.195	.138	.271
Playing time per day	10.290	6	.227	.160	.113
Influencer	4.498	6	.150	.106	.610

Based on the findings illustrated in Table 4, there is a significant but weak positive relationship between time management and academic motivation [ $r(198) = .204, p = .004$ ]. This suggests that students who manage their time effectively tend to be more motivated in their academic pursuits, although time management alone is not the sole determinant of academic motivation. Therefore,  $H_1$  has been *accepted*. Moreover, among the different components of time management, long-range planning shows the strongest correlation with academic motivation [ $r(198) = .211, p = .003$ ], implying that students who set long-term academic goals and organize their schedules in advance tend to exhibit higher academic motivation. Establishing clear objectives and structured plans helps students stay focused and engaged in their learning. Based on this result,  $H_{1c}$  has been *accepted*.

Additionally, time attitudes also demonstrate a meaningful relationship with academic motivation [ $r(198) = .180, p = .011$ ]. This suggests that students who feel in control of their time are more likely to be motivated in their studies. A positive attitude toward time management may help reduce stress and improve academic engagement. Thus,  $H_{1b}$  has been *accepted*. On the other hand, short-range planning has the weakest correlation with academic motivation and is not statistically significant [ $r(198) = .135, p = .057$ ]. This suggests that organizing short-term activities alone does not strongly influence students' academic drive compared to long-term goal-setting and time

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perception. Based on this result,  $H_{1a}$  has been *rejected*. These findings highlight that while effective time management contributes to academic motivation, it works in combination with other factors such as personal drive, external support, and learning environments. Encouraging students to develop strong long-term planning habits and a positive outlook on time management may help enhance their motivation and academic performance.

**Table 4.** Relationship between time management and academic motivation of high school MLBB players

	Academic motivations	
	<i>r</i>	<i>p</i> -value
<b>Short Range Planning</b>	.135	.057
<b>Time Attitudes</b>	.180	.011
<b>Long Range Planning</b>	.211	.003
<b>Overall Time Management</b>	.204	.004

## Discussion

The findings suggest that gaming frequency and duration are related to time management skills, yet gaming itself does not automatically lead to poor time management. The lack of a significant relationship between demographic factors and time management indicates that effective time management is a learned skill rather than one influenced by age, gender, or school type. This aligns with the study conducted by Werdini et al. (2021), which found that while students may have a strong reliance on online gaming, this does not necessarily equate to poor time management. Also, Werdini et al. (2021) emphasized that time management ability is more dependent on individual self-regulation rather than gaming duration alone. Additionally, the relationship between gaming frequency and time management suggests that students who engage in gaming more frequently may develop certain time management habits. However, Chen et al. (2018) noted that the impact of gaming on time management is mediated by personal characteristics such as self-efficacy and self-control. Additionally, Chen et al. (2018) found that students with stronger interpersonal relationships but lower self-efficacy and self-regulation devoted more time to gaming, which potentially hindered their ability to manage time effectively. This reinforces the idea that while gaming can influence time allocation, individual planning skills and discipline play a more crucial role in

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determining whether gaming habits lead to poor time management. Interestingly, the total number of hours played daily did not show a significant relationship with time management. This implies that it is not necessarily the amount of time spent playing that affects time management but how students integrate gaming into their daily routines. This reinforces the idea that time management is not solely determined by gaming habits but also by personal discipline, self-control, and prioritization strategies (Chen et al., 2018).

The significant relationship between age, school type, and academic motivation suggests that motivation shifts as the students progress through school. Older students, particularly those in public schools, exhibited different motivation levels, which could be attributed to increased responsibilities, external pressures, or variations in school environments. Broussard and Garrison (2004) found similar results in their study, noting that younger students displayed higher academic motivation than older students. Gillet et al. (2012) also highlighted that intrinsic motivation may decline as students age, potentially due to increasing academic pressure and external expectations. Additionally, the findings indicate that school type also plays a role in shaping academic motivation. Islam et al. (2020) examined how students' academic motivation varied depending on their educational environment, particularly concerning internet and gaming activities. Islam et al. (2020) found that students from different school types exhibited different academic performance and engagement levels, suggesting that the educational setting contributes to differences in motivation levels. The current study's results align with these findings from different scholars, reinforcing that external factors such as school policies, curriculum demands, and institutional support may influence students' academic motivation (Kickert et al., 2022; Raboca & Carbunarean, 2024; Siddiky & Haque, 2024). However, no significant relationship was found between gaming history and academic motivation, suggesting that students' motivation to perform academically is not necessarily shaped by their gaming behaviors. This supports the conclusions of Islam et al. (2020), who emphasized that while gaming may affect academic performance, it does not directly determine academic motivation. Instead, motivation is shaped by a broader range of factors, including personal goals, external encouragement, and learning environment (Wang et al., 2024). This challenges the common belief that frequent gaming leads to academic disengagement.

Original article. High school e-games players time management and academic motivation in Physical Education. Vol. 12, n.º 1; p. 1-22, January 2026. <https://doi.org/10.17979/sportis.2026.12.1.11619>

The positive but weak correlation between time management and academic motivation suggests that while effective time management contributes to student motivation towards physical education, it is not the sole determining factor. As mentioned by Valente et al. (2024) students who engage in long-term planning and maintain a positive attitude toward managing their time are likelier to remain motivated in their studies. Moreover, Nasrullah and Saqib Khan (2015) emphasized that time management behaviors influence students' academic performance, particularly short-range planning, long-range planning, and time attitudes. Previous studies have also found that while short-range planning is crucial, long-range planning and time perception have stronger associations with academic success (Cooper & Fobian, 1987; Nigussie, 2019). Similarly, Razali et al. (2018) found that students who maintain a structured approach to time management exhibit higher levels of academic motivation. Moreover, Razali et al. (2018) highlighted a significant, albeit modest, correlation between time attitudes, time planning, and academic motivation, reinforcing the importance of time management in shaping learning behaviors. These findings align with the present study, which found that long-range planning and time attitudes had the strongest correlation with academic motivation in physical education. This indicates that students who plan ahead and establish structured academic goals tend to maintain higher levels of motivation in their studies (Fuentes et al., 2023). Interestingly, short-range planning showed the weakest correlation with academic motivation. This suggests that while organizing daily or weekly tasks is beneficial, it may not be as impactful in sustaining long-term academic motivation as setting structured goals and maintaining a positive outlook on time management. This reinforces the need for students to develop long-term study habits and structured academic plans to maintain engagement and success.

## Conclusion

This study highlights the complex relationship between time management and academic motivation among high school MLBB players in physical education. While gaming frequency and duration are related to time management skills, gaming does not inherently lead to poor time management. Instead, self-regulation, self-efficacy, and planning skills play a more significant role in students' ability to balance their academic

Original article. High school e-games players time management and academic motivation in Physical Education. Vol. 12, n.º 1; p. 1-22, January 2026. <https://doi.org/10.17979/sportis.2026.12.1.11619>

and recreational activities. Furthermore, while academic motivation is significantly associated with age and school type, gaming history does not directly influence it. The study also found that time management and academic motivation have a weak but significant positive correlation, suggesting that while time management supports motivation, it is not the sole determining factor in academic success.

Students should develop effective time management strategies to foster a balanced approach to gaming and academics, such as allocating specific time slots for studying and gaming ensuring that academic obligations and leisure activities are fulfilled. Just as MLBB players set strategic objectives in a game, students should establish clear academic goals to enhance their motivation and maintain focus on their studies. Moreover, reflective gaming practices can help students assess whether gaming habits support or hinder their academic performance, allowing them to make necessary adjustments. Gaming can also be used as a reward system, where students treat it as an incentive for completing school tasks, promoting a disciplined and structured study routine. Additionally, improving time management skills through task prioritization, planning, and organization can enhance academic performance and the gaming experience.

Physical educators can also incorporate gaming elements into education, utilizing gamification strategies such as leaderboards, point systems, and rewards to increase student engagement and academic motivation. On the other hand, parents play a crucial role in monitoring and guiding students' gaming habits by setting boundaries and maintaining open discussions about responsible gaming and study schedules. By fostering a supportive learning environment, physical educators and parents can help students develop strong time management habits while allowing them to enjoy recreational activities.

Although this study provides valuable insights, it has several limitations. The focus on high school MLBB players may not fully represent other student groups or different types of gamers, and the self-reported nature of the data could introduce biases. Additionally, the correlational design limits the ability to determine causation between variables. Future research should explore broader gaming populations, objective performance metrics, and experimental interventions to assess the long-term impact of gaming on students' academic engagement and time management skills. Studies could

Original article. High school e-games players time management and academic motivation in Physical Education. Vol. 12, n.º 1; p. 1-22, January 2026. <https://doi.org/10.17979/sportis.2026.12.1.11619>

also investigate how integrating gaming-based learning techniques in Physical Education and other subjects influences motivation and performance.

In summary, this study emphasizes that gaming and academics can coexist harmoniously when students practice structured time management and goal setting. Rather than discouraging gaming, physical educators and parents should focus on helping students develop self-regulation skills, strategic planning habits, and motivation-driven study techniques. Future research should further examine how structured interventions can help students balance gaming and academic responsibilities, ensuring both productivity and enjoyment in their learning journey.

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