



The Impact of Mobile Legends Online Games on Negative Behavior of Primary School Students

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Abstract

The rapid development of digital technologies in the 4.0 era has had a profound effect on the educational environment, especially with the rise of games like Mobile Legends. This study aims to examine the potential impact of Mobile Legends on negative behavior, particularly bullying, in primary school students. It seeks to explore the link between the frequency of playing Mobile Legends and negative behaviors, such as verbal aggression, in Indonesian primary school students. A quantitative method was used, involving a survey with 20 questions about gaming habits and negative behaviors. The study involved 25 fifth-grade students. Data analysis was conducted using descriptive statistics, regression analysis, and Pearson correlation. The results showed that while students played Mobile Legends moderately, a significant correlation ($r = 0.753$, $p < 0.001$) between the frequency of gaming and negative behaviors, especially bullying, was observed. Regression analysis indicated that about 68% of the variance in negative behavior could be explained by the frequency of gaming. The study concludes that frequent Mobile Legends gameplay is positively linked to negative behaviors like bullying. The study recommends that educators and parents monitor gaming time, promote responsible gaming, and incorporate conflict resolution skills into school programs to help mitigate the negative effects of online games on students' social behavior.

Keywords: Online Games, Negative Behavior, Bullying, Students.

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1. Introduction

The rapid advancement of technology in the 4.0 era has significantly transformed various aspects of human life, with notable effects on the educational sector (Yarahmadi, 2021). One of the most prominent changes is the integration of the internet into the learning process (Gupta & Kumar, 2021; Soundarya et al., 2024). Traditionally, education was conducted through face-to-face interactions between teachers and students; however, today, learning can occur remotely through various digital devices, such as mobile phones and computers. This shift has opened new opportunities for educators to utilize technology-driven methods and media, making learning more engaging and interactive, thereby capturing students' attention more effectively (Getenet & Tualaulelei, 2023; Lesko, 2011).

Ghuman & Griffiths, (2012) and Kim et al., (2005) define online games as games that are accessible via the internet using electronic devices and can be played by one or more participants. These games often involve various genres, including adventure, strategy, and role-playing, with established rules designed to provide players with a sense of enjoyment and satisfaction. One particularly popular online game among children and teenagers today is *Mobile Legends*, a multiplayer online game that involves strategic team-based combat.

Although *Mobile Legends* offers an enjoyable gaming experience, it has raised concerns about its impact on young players' behavior. Due to the team-based nature of the game, players often engage in strategy discussions and collaborate to defeat opponents (Bonny & Castaneda, 2022; Ge et al., 2024). However, conflicts arise when one player's performance does not meet expectations, leading to insults and the use of offensive language (Munn, 2023). Such negative interactions often manifest in direct communication or through in-game chat features. Researchers have observed instances where children, particularly in multiplayer settings, engage in verbal abuse during gameplay, which may contribute to the development of aggressive behaviors (Akel et al., 2023; De Medeiros et al., 2020; Zhang et al., 2021).

According to Del Rey et al., (2022), bullying occurs when an individual experiences harassment or mistreatment from others, often accompanied by a fear of further abuse. The victim feels powerless to stop the negative behavior. Nelson et al. (2019) further describes bullying as deliberate aggressive behavior that exploits an imbalance of power, including actions such as hitting, kicking, mocking, teasing, and verbal insults. Among primary school students, one of the most common forms of bullying is verbal abuse, which involves derogatory language, name-calling, and harsh criticism. This form of bullying can cause significant emotional distress and psychological harm to the victims.

In light of these concerns, an interview conducted on January 15, 2025, with a teacher at Elementary School in Indonesia revealed that negative behaviors, particularly verbal aggression, are prevalent among students, especially in Grade V. One contributing factor to this behavior is the widespread use of mobile phones by children, which facilitates access to online games such as *Mobile Legends*. This study aims to explore the extent to which *Mobile Legends* influences negative behaviors in primary school students, providing valuable data that could help teachers and schools develop strategies to address these issues effectively.

2. Materials and Methods

2.1. Research Design

In determining the impact of repetition of mobile legends repetition towards negative behavior, quantitative research was conducted using a survey. Several steps of survey research carried out are problem identification, literature study, determination of research methods, designing instruments, data collection, data analysis, results and conclusions. the researcher conducted the research at the State Elementary School in indonesia. The research time was in 2025. The subjects of this study included all fifth-grade students (11 years old) totaling 25 students.

2.2. Instrument

The questionnaire used was in the form of 20 statements for each online game mobile legends questionnaire and negative behavior. This instrument is a questionnaire developed through a validation process with i-CVI and reliability testing using Cronbach alpha. Sequentially, the i-CVI and Alpha values obtained were 0.80 which was categorized as valid and 0.79 which was categorized as reliable. The description of the instrument used is as follows.

Table 1 Instrumen used

Construct	Indicator	Number of Item
Gaming construct	Online games played	5
	Intensity of playing online mobile legends games	5
	Habits in playing online mobile legends games	5
	Negative impact of online games mobile legends	5
Student attitudes/behavior construct	Types of bullying behavior of students	5
	Characteristics of student bullying behavior	5
	Factors causing student bullying behavior	5
	The impact of bullying behavior on students at school	5

2.3. Data Analysis

In determining the impact of repetition of mobile legends repetition towards negative behavior, data analysis was carried out using descriptive analysis, regression and Pearson correlations. Descriptive analysis was carried out to obtain the level of frequency and negative behavior of students based on criteria on table 1. Then the regression shows whether negative behavior can be predicted through the habit of playing mobile legends and negative behavior. While descriptive analysis was carried out to see whether there was a positive correlation between the habit of playing mobile legend games and negative behavior.

Table 2 Criteria Games Online Mobile Legends and Negative Student Behavior

Formula	Score	Category
$X \geq Mi + 1.5 SDi$	79.96 - 100	Very high
$Mi + 0.5 SDi \leq X < Mi + 1.5 SDi$	66.66 – 79.95	high
$Mi - 0.5 SDi \leq X < Mi + 0.5 SDi$	53.36 – 66.65	Moderate
$Mi - 1.5 SDi \leq X < Mi - 0.5 SDi$	40.06 – 53.35	Low
$X \leq Mi - 1.5 SDi$	20 – 40.05	Very Low

3. Results

3.1. The Frequency of Playing Mobile Legends Games and Negative Behavior

Based on Table 1, the descriptive statistics show that the average frequency of playing Mobile Legends among students was 61.68, which falls in the moderate range. The standard deviation for gaming frequency was 16.945, indicating some variation

in how much time students spent playing. The minimum and maximum scores were 20 and 78, respectively. Regarding negative behavior, as measured by the bullying questionnaire, the average score was 53.16, indicating low-level negative behavior. The standard deviation for negative behavior was 22.077, showing considerable variation among students. The scores ranged from 20 to 94, suggesting that while some students showed very little negative behavior, others experienced more frequent bullying episodes. Overall, while students play Mobile Legends to a moderate extent, the associated negative behavior, including bullying, remains relatively low on average.

Table 3 Descriptive statistics

	Negative_Behaviour	ML_gaming_repetition
Valid	25	25
Missing	0	0
Mean	61.680	53.160
Std. Deviation	22.077	16.945
Minimum	20.000	20.000
Maximum	94.000	78.000

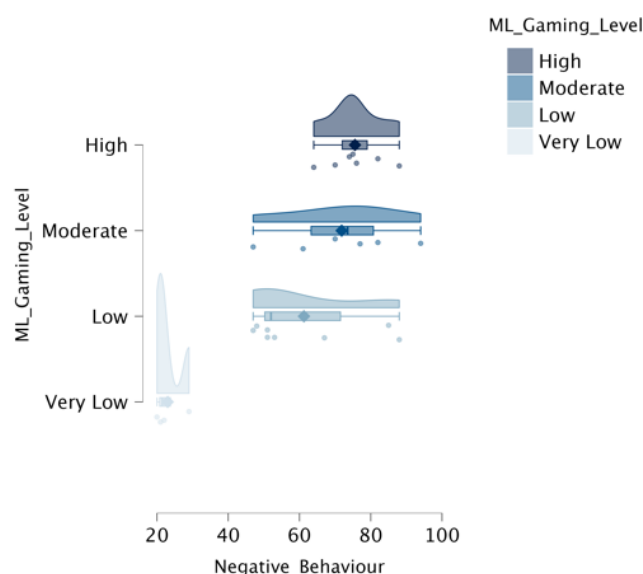


Figure 1. Raincloud analysis of frequency of playing Mobile Legends games and negative behavior

3.2. Frequency of Playing Mobile Legends Games Effect Towards Negative Behavior

The regression analysis aimed to determine the effect of Mobile Legends gaming frequency on negative behavior. Table 3 showed that the regression model (M_1), which included the variable of Mobile Legends gaming repetition, accounted for a significant portion of the variance in negative behavior. Specifically, the R^2 value was 0.680, and the adjusted R^2 was 0.634, meaning that around 68% of the variance in negative behavior could be explained by the frequency of playing Mobile Legends.

Table 4 Linear regressions

Model	R	R^2	Adjusted R^2	RMSE
M_0	0.000	0.000	0.000	22.077
M_1	0.825	0.680	0.634	13.349

Note. M_1 includes ML_Gaming_Level

Table 5 Analysis of variance

Model		Sum of Squares	df	Mean Square	F	p
M_1	Regression	7955.392	3	2651.797	14.882	< .001
	Residual	3742.048	21	178.193		
	Total	11697.440	24			

Note. M_1 includes ML_Gaming_Level

Note. The intercept model is omitted, as no meaningful information can be shown.

Additionally, the model's Root Mean Square Error (RMSE) was 13.349, indicating a good fit. The analysis of variance (ANOVA) in table 4 for Model M_1 showed an F-value of 14.882 with a p-value less than 0.001, confirming a statistically

significant relationship between Mobile Legends gaming and negative behavior. These findings suggest that the frequency of Mobile Legends gaming has a significant impact on students' negative behaviors, supporting the idea that more frequent gaming is linked to higher levels of bullying behavior among students.

3.3 Correlations between Playing Mobile Legends Games and Negative Behavior

To assess the connection between playing Mobile Legends games and negative behavior, a Pearson's correlation analysis was used. This analysis evaluated the strength and direction of the relationship between the frequency of Mobile Legends gameplay and negative behavior. The correlation coefficient (r) was 0.753, indicating a strong positive relationship. The p -value, which was less than 0.001, confirmed that this correlation is statistically significant.

Table 6 Correlations between Playing Mobile Legends Games and Negative Behavior

	Pearson's r	p	Effect size (Fisher's z)	SE Effect size
Negative_Behaviour - ML_gaming_repetition	0.753***	< .001	0.980	0.213

Note. All tests one-tailed, for positive correlation.

* $p < .05$, ** $p < .01$, *** $p < .001$, one-tailed

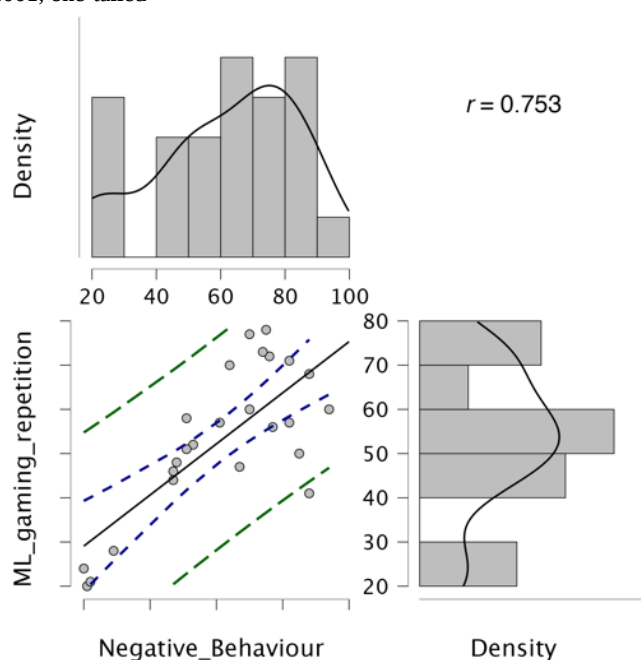


Figure 2 Correlations between Playing Mobile Legends Games and Negative Behavior

The effect size, calculated using Fisher's z , was 0.980, with a standard error of 0.213, further confirming the strength of the relationship. This result indicates that as students play Mobile Legends more frequently, their likelihood of engaging in negative behaviors such as bullying increases. The correlation analysis confirms that Mobile Legends gaming is positively linked to negative behavior in primary school students. These findings underscore the significant influence that frequent gaming can have on students' social interactions, particularly in terms of bullying.

4. Discussion

The current study investigated the link between how often children play Mobile Legends and the occurrence of negative behaviors, particularly bullying, in primary school students. The results revealed a strong positive connection, where more frequent gameplay was tied to higher levels of negative behaviors like verbal bullying. Regression analysis indicated that the model (M1), which accounted for repeated Mobile Legends gaming, explained a significant portion of the variance in negative behaviors. Specifically, the model showed an R^2 value of 0.680, meaning around 68% of the variation in negative behavior could be explained by how frequently children play the game. The adjusted R^2 value of 0.634 further supported this, confirming a solid link between the two variables. Additionally, the analysis of variance (ANOVA) confirmed the statistical significance of the model, with an F -value of 14.882 ($p < 0.001$), meaning the relationship between frequent Mobile Legends gaming and negative behavior is a substantial predictor, not a random occurrence.

With the increasing influence of digital media in children's lives and games like Mobile Legends playing a central role in daily routines (Ong et al., 2023), it's crucial to draw on theoretical frameworks that examine the effects of violent or aggressive media on children (Stojanovic, 2019). The General Aggression Model (GAM) suggests that exposure to violent video games can increase aggressive behavior, making it relevant in understanding these results (Allen et al., 2018). Anderson and Dill (2000) found that repeated exposure to aggressive video game content can make players more likely to act aggressively in real life, especially when they experience frustration or failure in the game (Weber et al., 2020). In Mobile Legends, the multiplayer

feature, where players are often pitted against each other, may lead to heightened frustration when strategies fail or other players perform poorly. This frustration could then manifest as negative behaviors, like insults, mockery, and bullying, both in-game and in real-life interactions.

Additionally, Bandura et al. (1977) Social Learning Theory provides another lens through which to interpret the findings. According to this theory, children learn behaviors by observing and imitating others, especially peers or authority figures. In online gaming, players observe the actions of both teammates and opponents. In games like Mobile Legends, where verbal abuse and insults are common, children might imitate these behaviors in their social interactions outside of the game, which is concerning in school settings, where verbal bullying is a significant issue (De Medeiros et al., 2020).

Previous research has explored the relationship between online gaming and negative behaviors in children and adolescents. For example, Zhang et al. (2021) found that excessive gaming could lead to behavioral changes, including increased aggression and social isolation. Similarly, Cho et al. (2017) showed that playing violent video games is linked to more aggressive thoughts and actions. This study supports these findings, suggesting that frequent gaming habits, like those formed in Mobile Legends, can have broader social effects, shaping how children interact with others.

This research also aligns with Türkay et al. (2020), who highlighted how online gaming can create a competitive atmosphere that fosters negative behaviors like bullying. They emphasize the role of communication within games, where players exchange hostile language, which can translate to real-life consequences. The verbal bullying seen in this study—such as name-calling and insults—matches their description of cyberbullying in online gaming communities.

From a practical perspective, this study suggests that parents and educators should closely monitor children's engagement with games like Mobile Legends to minimize potential negative effects. Schools could implement programs to promote responsible gaming and raise awareness about the emotional impacts of online interactions. It may also be beneficial to incorporate emotional regulation and conflict-resolution skills into school curricula, helping students manage frustration and aggression in both virtual and real-life settings.

Given the strong relationship between gaming frequency and bullying behaviors, future interventions should not only limit screen time but also consider the content of games and the social dynamics they foster. As Harjanto et al. (2019) noted, online games can provide positive entertainment and educational value, but without proper guidance, they may encourage behaviors that hinder children's social development.

5. Conclusions

This study provides strong evidence of a significant relationship between the frequency of Mobile Legends gameplay and the occurrence of negative behaviors, particularly bullying, among primary school students. Both descriptive and regression analyses show that higher levels of gameplay are closely associated with increased verbal aggression and bullying behavior. The regression model revealed that the frequency of gameplay accounts for nearly 68% of the variance in negative behavior, highlighting the substantial influence of Mobile Legends on student conduct. These findings align with existing literature, which suggests that online gaming, especially multiplayer games, affects children's social behaviors. Based on these results, it is crucial for educators and parents to proactively monitor gaming habits while promoting responsible gaming practices. Additionally, integrating conflict resolution, emotional regulation, and anti-bullying programs into school curricula is recommended to reduce the negative effects of online gaming on student behavior. Further research is needed to explore the long-term impact of online gaming on children's social development and evaluate the effectiveness of intervention strategies in reducing negative behavior.

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Ethical considerations

This research has obtained consent from participants and obtained participant approval to publish their data related to the research.

Conflict of Interest

The authors declare no conflicts of interest.

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