

# THE RELATIONSHIP BETWEEN GAMING DISORDER AND THE TENDENCY TOWARD ACADEMIC BURNOUT AMONG TENTH-GRADE STUDENTS OF THE MACHINING ENGINEERING PROGRAM AT SMK MUHAMMADIYAH KRAMAT, TEGAL REGENCY

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## Abstract

The increasing use of online games among adolescents has raised concerns about excessive gaming and its possible effects on academic activities. Gaming disorder may be associated with learning fatigue, decreased motivation and concentration, and reduced confidence in academic abilities, which can contribute to academic burnout. This study examined the relationship between gaming disorder and the tendency toward academic burnout among tenth-grade students of the Machining Engineering Program at SMK Muhammadiyah Kramat, Tegal Regency, in the 2025/2026 academic year. A quantitative approach with a correlational design was employed. The population consisted of 73 students, all of whom were included in the sample. Data were collected through questionnaires, supported by observation, interviews, and documentation. The instruments had met validity and reliability requirements. Data were analyzed using descriptive statistics and the Pearson Product Moment correlation test with SPSS version 22. The findings showed that gaming disorder was mainly categorized as moderate and somewhat high, while academic burnout was predominantly in the somewhat high category. The correlation analysis yielded a coefficient of 0.694 with a significance value of 0.000 ( $p < 0.05$ ), indicating a positive and significant relationship between gaming disorder and academic burnout. Thus, students with higher gaming disorder tendencies tended to experience higher academic burnout tendencies. These findings may support school counselors in developing guidance services that promote healthy gaming behavior, self-regulation, time management, and prevention of academic burnout.

**Keywords :** academic burnout; correlation; gaming disorder; students; vocational school;

## 1 INTRODUCTION

The rapid development of information and communication technology has transformed many aspects of daily life, including how adolescents use the internet. One form of technology use that has developed rapidly is online gaming. Easy access through smartphones and internet networks has made online games a popular form of entertainment among students. In addition to entertainment, online games provide challenges, social interaction, and competition that may encourage individuals to play for long periods. When this activity is carried out excessively without adequate self-control, it may produce negative consequences for students' personal, social, and academic lives.

Excessive involvement in online gaming may develop into a problematic behavioral pattern commonly referred to as gaming disorder. This condition is marked by difficulties in regulating gaming behavior, a tendency to place gaming above other important activities, and persistence in gaming even when it has resulted in unfavorable consequences for the individual. The condition may affect students' physical and psychological well-being and may also interfere with learning activities. Mustikawati et al., (2025) reported that online gaming addiction among adolescents may affect physical health, mental health, psychosocial behavior, and other related conditions. Wibowo and Belladiena, (2024) also reported that excessive online gaming may be associated with sleep disturbance, fatigue, and reduced health conditions that can interfere with learning concentration. Novianti, (2021) noted that excessive digital technology use may contribute to stress, mental fatigue, and decreased learning motivation.

In an educational context, high involvement in online gaming can reduce the attention, time, and energy available for academic demands. Students may postpone assignments, experience difficulty concentrating during lessons, and show lower engagement in academic activities. These conditions may contribute to academic burnout, which refers to physical, emotional, and mental exhaustion arising from prolonged academic demands. Academic burnout may be reflected in learning exhaustion, cynical or

negative attitudes toward academic activities, and reduced confidence in one's academic ability. Oktasari et al., (2022) explained that academic burnout can hinder students' learning processes, while Ardianti et al., (2025) found that academic burnout is associated with academic pressure, psychological conditions, and the learning environment.

Previous studies have indicated that gaming disorder is related to various academic and psychological problems. Hasanah et al., (2022) found that gaming disorder tendencies were associated with weaker self-control and greater emotional involvement in gaming. Makas et al., (2025) reported that excessive gaming behavior was related to psychological pressure and mental health conditions among adolescents. These findings suggest that high gaming involvement may coexist with problems in students' academic and psychological functioning.

The phenomenon was also identified among tenth-grade students of the Machining Engineering Program (TPM) at SMK Muhammadiyah Kramat, Tegal Regency. Based on observations and preliminary study conducted by the researcher, some students spent time playing online games until late at night, reducing their rest time. This condition was associated with sleepiness during lessons, reduced learning concentration, low participation in learning activities, and a tendency to postpone assignments. An initial questionnaire administered to 73 students showed that 39 students (53.5%) had a high tendency toward gaming disorder, 25 students (34.2%) were in the moderate category, and 9 students (12.3%) were in the low category. Interviews with teachers and students also indicated that some students used smartphones to play games during lessons and did not participate optimally in learning activities.

Based on the previous research and the phenomenon found at SMK Muhammadiyah Kramat, research on the relationship between gaming disorder and academic burnout among vocational high school students requires more specific investigation. Previous studies have more frequently examined gaming disorder in relation to self-control, learning motivation, academic achievement, or psychological conditions, while research concerning its relationship with academic burnout among vocational students remains relatively limited. Therefore, this study was conducted to provide empirical evidence regarding the relationship between gaming disorder and the tendency toward academic burnout among tenth-grade students of the Machining Engineering Program at SMK Muhammadiyah Kramat, Tegal Regency. The findings are expected to provide a basis for school counselors and schools in developing preventive services and interventions that support more optimal learning conditions.

## 2 METHODOLOGY

This study employed a quantitative approach with a correlational research design. The study aimed to analyze the relationship between gaming disorder and the tendency toward academic burnout among tenth-grade students of the Machining Engineering Program (TPM) at SMK Muhammadiyah Kramat, Tegal Regency, in the 2025/2026 academic year. The population consisted of 73 tenth-grade TPM students. Because the population was relatively limited, all 73 students were included as the research sample.

Data were collected primarily through questionnaires constructed according to indicators of gaming disorder and academic burnout. Observation, interviews, and documentation were also used to support the questionnaire data. Before being used in the main study, the instruments were tested for validity using Pearson Product Moment correlation and for reliability using Cronbach's Alpha. The results indicated that the instruments met the validity and reliability criteria and were therefore considered appropriate for data collection.

Data analysis was conducted using IBM SPSS Statistics version 22. Descriptive statistics were used to describe the distribution and general condition of the two variables. Normality testing was conducted as a prerequisite for inferential analysis. The research hypothesis was then tested using Pearson Product Moment correlation to determine the direction and strength of the relationship between gaming disorder and academic burnout. A significance level of 0.05 was used as the basis for decision making.

## 3 RESULTS

The research was conducted at SMK Muhammadiyah Kramat, Tegal Regency, involving 73 tenth-grade students of the Machining Engineering Program. The Gaming Disorder and Academic Burnout questionnaires had previously passed validity and reliability testing. The data were then analyzed using descriptive statistics and Pearson Product Moment correlation.

**Table 1. Descriptive Statistics of the Research Variables**

| Variable         | N  | Minimum | Maximum | Mean  | Standard Deviation |
|------------------|----|---------|---------|-------|--------------------|
| Gaming Disorder  | 73 | 25      | 125     | 76.30 | 17.311             |
| Academic Burnout | 73 | 25      | 125     | 79.85 | 15.020             |

Table 1 shows that the mean score for Gaming Disorder was 76.30 with a standard deviation of 17.311, while the mean score for Academic Burnout was 79.85 with a standard deviation of 15.020. The standard deviations indicate variation among respondents while the means provide an overall description of the two variables

**Table 2. Frequency Distribution of Gaming Disorder**

| Category      | Frequency | Percentage (%) |
|---------------|-----------|----------------|
| Very Low      | 0         | 0.00           |
| Low           | 8         | 10.96          |
| Somewhat Low  | 13        | 17.81          |
| Moderate      | 20        | 27.40          |
| Somewhat High | 20        | 27.40          |
| High          | 10        | 13.70          |
| Very High     | 2         | 2.74           |
| Total         | 73        | 100.00         |

As shown in Table 2, the Gaming Disorder distribution was dominated by the moderate and somewhat high categories, each consisting of 20 students (27.40%). Thirteen students (17.81%) were in the somewhat low category, 10 students (13.70%) in the high category, 8 students (10.96%) in the low category, and 2 students (2.74%) in the very high category. No students were classified as very low. Overall, the findings indicate that most respondents showed gaming disorder tendencies ranging from moderate to somewhat high.

**Table 3. Frequency Distribution of Academic Burnout**

| Category      | Frequency | Percentage (%) |
|---------------|-----------|----------------|
| Very Low      | 0         | 0.00           |
| Low           | 1         | 1.37           |
| Somewhat Low  | 16        | 21.92          |
| Moderate      | 20        | 27.40          |
| Somewhat High | 23        | 31.51          |
| High          | 11        | 15.07          |
| Very High     | 2         | 2.74           |

|       |    |        |
|-------|----|--------|
| Total | 73 | 100.00 |
|-------|----|--------|

Table 3 shows that Academic Burnout was dominated by the somewhat high category, with 23 students (31.51%), followed by the moderate category with 20 students (27.40%). Sixteen students (21.92%) were in the somewhat low category, 11 students (15.07%) in the high category, 2 students (2.74%) in the very high category, and 1 student (1.37%) in the low category. No student was in the very low category. These findings indicate that the academic burnout tendency of most respondents was in the somewhat high category.

**Table 4. Pearson Product Moment Correlation Test**

| Variables                          | Correlation (r) | Sig. (2-tailed) | Interpretation                        |
|------------------------------------|-----------------|-----------------|---------------------------------------|
| Gaming Disorder – Academic Burnout | 0.694           | 0.000           | Positive and significant relationship |

Table 4 shows a Pearson correlation coefficient of 0.694 with a significance value of 0.000 ( $p < 0.05$ ). The result indicates a positive and significant relationship between Gaming Disorder and Academic Burnout. The coefficient represents a strong relationship. Therefore, the research hypothesis is accepted: students with higher gaming disorder tendencies tend to have higher academic burnout tendencies.

## 4 DISCUSSION

The findings demonstrate a positive and significant relationship between Gaming Disorder and Academic Burnout among tenth-grade students of the Machining Engineering Program at SMK Muhammadiyah Kramat. The Pearson Product Moment analysis produced  $r = 0.694$  and  $p = 0.000$  ( $p < 0.05$ ). The strength of the correlation indicates that the two variables are strongly associated in the research sample. Importantly, the correlational design does not establish a cause-and-effect relationship; rather, it shows that higher levels of gaming disorder tendency are accompanied by higher levels of academic burnout tendency.

The descriptive results provide additional context for this relationship. Gaming Disorder was most frequently found in the moderate and somewhat high categories, while Academic Burnout was most frequently found in the somewhat high category. This pattern suggests that a substantial proportion of students were experiencing relatively high involvement in gaming while also showing signs of academic fatigue. Such a condition is relevant to the educational context because time and energy devoted to gaming may compete with time needed for studying, completing assignments, resting, and participating in classroom activities.

The findings are consistent with the conceptual characteristics of gaming disorder described in the source study, this condition is characterized by limited control over gaming activities, giving greater priority to gaming than to other activities, and maintaining gaming behavior despite the negative effects that may arise. In addition, problematic gaming behavior can be identified through six aspects, including salience, mood modification, tolerance, withdrawal symptoms, conflict, and relapse. When gaming becomes highly prioritized, students may reduce the time available for academic responsibilities and may experience disrupted rest and reduced concentration.

The results are also consistent with the concept of academic burnout. Academic burnout involves exhaustion resulting from sustained academic demands, negative or cynical attitudes toward learning activities, and reduced confidence in academic competence. In the present study, the somewhat high tendency toward academic burnout indicates that some students may already be experiencing fatigue, reduced learning enthusiasm, and difficulty dealing with academic demands. These conditions may become more difficult to manage when students also devote substantial time and attention to online gaming.

Previous studies cited in the source material support the present finding. Ningrum and Cahyono, (2022) found a relationship between self-control and online gaming intensity among adolescents, suggesting that weaker self-control may be associated with longer gaming involvement. Hasanah et al., (2022) similarly linked gaming disorder tendencies with weaker self-control and greater emotional involvement in gaming. Wibowo and Belladiena, (2024) described the association of excessive online gaming with sleep disturbance and fatigue, while Novianti, (2021) discussed the potential relationship between excessive digital technology use, stress, mental fatigue, and decreased learning motivation.

Together, these findings provide a reasonable context for understanding why problematic gaming may coexist with academic burnout.

The present study has practical implications for guidance and counseling services. School counselors may use the findings as a basis for preventive and developmental programs addressing self-regulation, time management, healthy technology use, and academic stress management. Guidance may be delivered through classroom guidance, individual counseling, group counseling, or psychoeducation. The focus should not only be on reducing gaming time, but also on helping students recognize priorities, regulate their behavior, maintain adequate rest, and balance recreational activities with academic responsibilities.

Although the correlation is strong and statistically significant, the findings should be interpreted within the scope of the study. The study involved students from one vocational program at one school and used a quantitative correlational design. Consequently, the results cannot be generalized automatically to wider populations, and the analysis cannot determine whether gaming disorder directly causes academic burnout. Future research may involve larger and more diverse samples, students from different schools or educational levels, and additional variables that may help explain the relationship between gaming behavior and academic burnout.

## 5 CONCLUSIONS

This study concludes that Gaming Disorder among tenth-grade students of the Machining Engineering Program at SMK Muhammadiyah Kramat was dominated by the moderate and somewhat high categories, while Academic Burnout was dominated by the somewhat high category. Pearson Product Moment analysis showed a positive and significant relationship between Gaming Disorder and Academic Burnout, with  $r = 0.694$  and  $p = 0.000$  ( $p < 0.05$ ). Thus, the higher the tendency toward Gaming Disorder, the higher the tendency toward Academic Burnout among the students in the research sample. The findings are limited to the participants and context examined and should not be interpreted as evidence of causality or broad population generalization.

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