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The Correlation of Online Game Addiction on Students' Study Habits

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ABSTRACT

Frequent use of online games has recently become a critical problem affecting students' study habits. Thus, this study aimed to determine the relationship between students' level of online game addiction and their study habits. It analyzed the level of online game addiction among students that may affect their study habits. A total of 25 high school students were utilized as respondents in the study. The researcher employed a descriptive research design, and a survey questionnaire was distributed to the student-respondents, which involved the systematic collection and analysis of numerical data to identify patterns and relationships between online gaming addiction and study habits. Data were gathered using a survey questionnaire, and the responses were analyzed using frequency, percentages, weighted mean, standard deviation, Kruskal-Wallis test, and Spearman correlation in the analysis of data. The data revealed that a significant number of the students engaged with online games regularly, and respondents agreed that online game addiction affected their thoughts, emotions, behavior, and responsibilities. It also affected their interest in other activities, and they felt bored when not playing online games. However, despite the challenge of online game addiction, students demonstrated highly manifested behaviors in their engagement with study habits, indicating a strong commitment to academic success.

Keywords: *Loss of Interest, Failure to Control, Psychosocial, Motivation*

INTRODUCTION

Online games, along with technological advancement, have entered the daily life of students through the popularity of computers, smartphones, PSPs (PlayStation Portable), and other gaming devices. Frequent use of online games has recently become a critical problem affecting students' study habits. As early as 2018, online game addiction was officially included in the category of "addictive mental disorder" by the World Health Organization (WHO), and the International Classification of Diseases (ICD) was updated specifically to include the category of "Internet Gaming Disorder" (IGD).

The internet has become the biggest medium of technology that connects everyone to every corner of the world. With the accessibility of the internet, online gaming has become extremely popular, especially among teenagers. It is said to be one of the most popular trends among teenagers because it is used as a leisure activity, a stress reliever, and a form of relaxation. There is no area of technology that has become as prominent as online gaming. It was also because online gaming can be played at any point and time of the day. The addiction had made teenagers immersed in the games so much that they isolate themselves from social communication and physical activities, just an attempt to reach a higher level in the game. Some even went to the extreme of spending on purchasing games-related items to keep themselves at the highest level in the game. Addiction started to alarm many societies about the outcomes and detrimental effects that it might have on children and teenagers.

A large body of literature on the relationship between problematic smartphone use and academic performance has illustrated the varying adverse effects of excessive smartphone obsession (Durak, 2018; Mendoza et al., 2018): These effects are manifested in three critical ways; first, the more

frequently cellphones are used during study, the greater the negative impact on academic performance and achievement. Second, students are required to master the basic skills and cognitive abilities to succeed academically, which are negatively affected by excessive cellphone use and addiction. Third, online game addiction negatively affects students' learning motivation (Demir and Kutlu, 2018; Eliyani and Sari, 2021). Hong et al. (2021) and Nong et al. (2023) suggested that the impact of addiction on students' learning should be explored more deeply.

The negative effect of online games is obvious. In terms of education, a decline in academic performance is one of the most apparent negative effects of online games. Besides that, due to addiction, online gaming may also cause a lack of sleep, homework unattended, and loss of interest in school activities such as social clubs and sports, as well as social communication. It was noted that social isolation has caused a child to lose skills in dealing with others, be unable to speak and express themselves, and eventually cause a separation from reality and live in an imagination that is confined to himself (Elsayed, 2021).

Moreover, students' study habits can vary depending on individual factors such as time spent gaming, the type of games played, and the student's discipline. Excessive gaming can lead to distractions, procrastination, and reduced study time, negatively impacting academic performance. However, moderate gaming can provide relaxation and stress relief, which might positively affect study habits if balanced with academic responsibilities. Besides that, the design of online games also provides cognitive, different learning experiences that engage on an affective, behavioral, cognitive, and sociocultural level (Homer et al., 2015).

Therefore, it is worthwhile to investigate the internal influence mechanism of students' online game addiction on their study habits. This study is important because it examined the possible consequences of online game addiction on students' academic success. As online gaming becomes more widespread among young people, it is crucial to examine how excessive gaming might disrupt study routines, resulting in reduced concentration, challenges with time management, and poorer academic outcomes. By illuminating these effects, students can effectively manage both their gaming activities and academic responsibilities. This study will focus on students aged 12-18 years old, as this demographic is particularly susceptible to online game addiction due to factors such as peer influence, academic pressures, and easy access to technology.

Hence, this study aimed to investigate the correlation between online game addiction and students' study habits. It sought to understand how excessive use of online games might affect students' approach to their studies by exploring several questions. Specifically, this study examined the demographic profile of the respondents (age, sex, educational level, and frequency of playing online game), the level of online game addiction (in terms of tolerance, loss of interest in other activities, failure to control, and psychosocial problems), students' study habits (focusing on managing school activities, utilizing resources and feedback, organizing and planning activities, and motivation), whether there are significant differences in the level of study habits when students are grouped according to their profile, and if there is a significant relationship between students' online game addiction and their study habits.

MATERIALS AND METHODS

The study employed a descriptive research design since it described the perception of the respondents on online game addiction, and how this online game addiction affected their study habits. The educational institutions of both private and public schools of Cagayan de Oro City served as the primary research locale, where students aged 12-18 years old were considered, with a total sample size of 25 respondents for the study. The researcher used a convenience sampling design without

replacement, incorporating the total enumeration sampling technique in determining the population for the sample size estimation process. This sampling technique has an equal chance of being included in the sample when using this sampling without replacement strategy (Singh, Ali, Choudhury, & Gujar, 2020).

The researcher utilized a survey questionnaire as the main instrument of the study. This instrument has two sets: (1) the level of online game addiction and (2) study habits. The questionnaire was reviewed and evaluated by the experts in the field to ensure its validity and reliability. The questionnaire for the level of online game addiction is an adapted questionnaire from the study of Sun et al. (2023), which consists of four (4) domains: (i) Tolerance, (ii) Loss of interest in activities, (iii) Failure control, (iv) Psychosocial Problem, and each contains five components.

For students study habits, there are four (4) domains: (i) Managing school activities which has seven (7) components, (ii) Utilizing resources and feedback with five (5) components, (iii) Organizing and planning activities which also has five (5) components, and (iv) Motivation which includes eight (8) components. To distribute the survey questionnaire, the researcher personally handed the questionnaire to the random students of Cagayan de Oro. Sufficient time was allotted to the respondents to respond to the survey at their convenience. The researcher recognizes the importance of accommodating the respondents' schedules to encourage meaningful and thoughtful responses.

Upon completion of the data collection period, the researcher tallied and computed the responses for interpretation. The researchers examined the items checked by the respondents, analyzing the data to identify patterns, trends, and relationships relevant to the effects of online games on academic performance. The survey or questionnaire was held at the convenience of the respondents. It was done through the English language form. The survey or questionnaire takes 5-15 minutes. Whereby all their personal details and responses will be kept confidential and anonymous. Frequency, percentages, mean, standard deviation, the Spearman Correlation test, and the Kruskal-Wallis Test were used for statistical analysis.

RESULTS AND DISCUSSION

Respondents' Demographic Profile

Most respondents, 11 in total or 44%, were aged 15-16. The significant concentration in the mid-teen years suggests that middle and high schools should implement programs addressing online game addiction, promoting healthy gaming habits, and balancing screen time with academic responsibilities.

There were 12 female respondents, accounting for 48% of the sample, and 13 male respondents, representing 52% of the sample. This indicated a relatively balanced gender representation in the study, with a slight majority of male respondents. The balanced gender representation in the sample exposed that online game addiction affects both male and female students relatively equally. The slight male majority aligns with existing research showing higher gaming engagement among males, but the near parity with females emphasizes that intervention should be inclusive of all students, regardless of gender.

The respondents from Grade 10 constituted 16% (4 respondents) of the sample. Both Grade 11 and Grade 12 each accounted for 8% (2 respondents each grade level) of the sample. Grade 7 and Grade 9 had the highest representation, each with 24% (6 respondents each grade level). Grade 8 followed closely, making up 20% (5 respondents) of the sample. This distribution showed a diverse representation across different grade levels, with a higher concentration in the middle grades (7 and 9). The higher concentration of respondents in grades 7 and 9 suggested that students in these middle grades might be more susceptible to online game addiction. This could be due to factors such as

increased social interactions, peer pressure, and more discretionary time compared to higher grades, where academic demands are greater. The lower representation in grades 11 and 12, each at 8% indicated that older students are more focused on their academic responsibilities and have less time for gaming, or it could reflect a shift in interests as they prepare for graduation and post-secondary plans.

A substantial majority, 60% (15 respondents), played online games daily. Weekly players made up 20% (5 respondents), indicating regular engagement with online games. Occasionally and monthly players constituted 8% (2 respondents each) of the sample, suggesting less frequent interaction. Only one respondent, representing 4% of the sample, reported never playing online games. This data revealed that a significant portion of the respondents engaged with online games regularly, with daily gaming being the most prevalent.

The predominance of daily gamers (60%) suggested a potential for online gaming to have a substantial impact on students' study habits. This high level of engagement indicated that gaming is a significant part of these students' daily lives, potentially competing with or even displacing time that could be spent on academic activities. The 20% of respondents who played weekly also demonstrated a notable level of engagement, albeit less intense, which could still influence their study routines. The lower percentage of occasional and monthly players suggested that for minorities, gaming is a less significant activity, likely having a minimal impact on their study habits. The 4% who never played online games served as a baseline to compare the study habits of gamers versus non-gamers.

Level of Online Game Addiction

Online gaming has become a leisure activity among students, offering entertainment and a means of social interaction. However, concerns have arisen about the potential addictive nature of online gaming and its effect on students' study habits.

This section presents the level of online game addiction of student-respondents according to the four key aspects: tolerance, loss of interest in activities, failure to control gaming habits, and psychosocial problems. Table 1 illustrates the level of online game addiction of the respondents.

Table 1
Mean Distribution of the Respondents' Level of Online Game Addiction

Indicators	Mean	SD	Description	Interpretation
Tolerance	2.896	0.0643	Agree	Highly Manifested
Loss of interest in activities	2.568	0.0378	Agree	Highly Manifested
Failure to Control	3.144	0.1375	Agree	Highly Manifested
Psychosocial	2.760	0.1576	Agree	Highly Manifested
Total	**2.842**	**0.0574**	**Agree**	Highly Manifested

The mean score for tolerance was 2.896, indicating that the respondents agreed to this aspect. This suggested that tolerance was highly manifested by the respondents, which signified that they experienced tolerance. This means that they may require increasing amounts of time or intensity of online gaming to achieve the desired level of satisfaction.

In loss of interest in activities, the mean score was 2.568, indicating agreement. This implied that respondents agreed that they had lost interest in other activities due to their online gaming habits. This further entailed that this aspect was highly manifested by the respondents.

The mean score for failure control was 3.144, indicating agreement. This suggested that respondents agreed that they have struggled to control their online gaming habits, as evidenced by unsuccessful attempts to limit gaming time or quit gaming altogether, since it was highly manifested. In the

psychosocial problem, the mean score was 2.760, indicating agreement. This implied that respondents agreed that online gaming impacted their psychosocial well-being, such as experiencing feelings of guilt, shame, loneliness, or using gaming as a means of escapism.

The overall result of the level of online game addiction was 2.842, indicating agreement or highly manifested. This means that respondents generally agreed that the indicators related to online game addiction across all aspects measured in the study were highly manifested. Therefore, the result indicated that respondents have a significant level of online game addiction or they highly manifested the indicators, as disclosed by their agreement with statements related to tolerance, loss of interest in activities, lack of control, and psychosocial problems.

The study highlighted the need for a balanced approach to online gaming, emphasizing the importance of awareness, education, and support in managing gaming habits to ensure it does not detrimentally affect students' study habits. Although online gaming meets the various needs of individuals, when the behavior turns into an addiction, it leads to adverse effects on individuals, especially adolescents, where it can impair their mental health (Batmaz et al., 2020; Purwaningsih & Nurmala, 2021). Moreover, the strong indication of online game addiction among students calls for proactive measures to address this issue. Educational institutions should consider incorporating programs that educate students about the risk of excessive gaming and promote healthy digital habits. Parents need to be aware of their children's gaming behaviors and set appropriate boundaries to ensure a balanced lifestyle.

Mental health professionals should also be prepared to provide support and interventions for students struggling with gaming addiction. Cognitive-behavioral strategies could be employed to help students develop better self-control and time management skills. Additionally, fostering recreational activities that can provide similar levels of excitement and satisfaction without the negative consequences of gaming could be beneficial. Previous studies have indicated various variables that predict and/or are associated with gaming addiction, including attention-deficit/hyperactivity disorder (ADHD), obsessive-compulsive disorder (OCD), anxiety and depression (Andreassen et al.,2016), social anxiety (Karaca et al., 2020), low self-esteem (Kim et al., 2022), interpersonal competence (Lee et al., 2019), relationship problems, and hostile environment (Sela et al.,2020).

Level of Study Habits

Understanding respondents' perceptions of their study habits is crucial for identifying areas of strength and opportunities for improvement. This survey aimed to assess various aspects of students' study habits, including managing school activities, utilizing resources and feedback, organizing and planning activities, and maintaining motivation. Table 2 presents the level of study habits of the respondents.

Table 2
Mean Distribution of Respondents' Level of Study Habits

Indicators	Mean	SD	Description	Interpretation
Managing School Activities	3.1714	0.0651	Agree	Highly Manifested
Utilizing Resources and Feedback	3.152	0.1174	Agree	Highly Manifested
Organizing and Planning Activities	3.08	0.1145	Agree	Highly Manifested
Motivation	3.135	0.1189	Agree	Highly Manifested
Total	**3.1346**	**0.0259**	**Agree**	Highly Manifested

The overall results of respondents' study habits were measured using a 4-point Likert scale. For managing school activities, the respondents had a mean score of 3.1714, which indicated that they generally agreed with their ability to manage their school activities effectively. This included creating

study schedules, setting goals, and prioritizing tasks. In terms of utilizing resources and feedback, the mean score was 3.152, showing that the students agreed that they effectively used textbooks, online resources, and feedback from teachers to enhance their learning. They also took advantage of educational apps and participated in class discussions. For organizing and planning activities, the mean score was 3.08, indicating that the students agreed they could organize their study materials, prioritizing tasks, managing their time, and maintaining a consistent study routine.

Regarding motivation, the respondents had a mean score of 3.135, which suggested that they were motivated in their academic pursuits. This included setting clear goals, managing distractions, seeking challenges, engaging in self-reflection, and seeking support from others. The overall mean score of 3.1346, falling into the "agree" category, indicates that students generally perceived their study habits positively. They believed that they were effective in managing school activities, utilizing resources and feedback, organizing and planning activities, and maintaining motivation. These findings suggested that students are aware of and implement strategies that contribute to their academic success.

The survey results underscored the importance of effective study habits in academic success. By recognizing and supporting the various aspects of study habits, educators and academic support services can help students enhance their academic performance and overall learning experience. Study habits are the most important predictors of academic performance. Students must learn and apply study skills to organize and learn a large amount of information. Evidence suggests that those who lack study strategy knowledge do not achieve effective and stable learning, and, thus, do not perform well academically (Jafari et al., 2019).

Difference in the Level of Study Habits when Grouped according to Demographic Profile

Kruskal-Wallis test was used to determine if there was a significant difference between the students' study habits when grouped according to demographic profile in terms of age, sex, grade level, and frequency of doing online games at a 0.05 level of significance.

Table 3
Results of the Test of Significant Difference in the Level of Study Habits when grouped according to profile

Indicators of Study Habits	Age	Sex	Grade Level	Frequency of Doing Online Games
	p-value	p-value	p-value	p-value
Managing School Activities	0.5865	0.4181	**0.0211***	0.1281
Utilizing Resources and Feedback	0.2295	0.1245	0.1657	0.5014
Organizing and Planning Activities	0.2841	0.3969	0.3706	0.4002
Motivation	0.1918	0.2475	**0.03441***	0.1847

Note: Significant if p-value < 0.05 and p-value < 0.01***

Table 3 shows the results of the Kruskal-Wallis test, which evaluated potential significant differences in respondents' study habits when grouped according to demographic profile at a 0.05 significance level. The null hypothesis was rejected for managing school activities and motivation in relation to grade level, as the p-values were less than 0.05. This indicated strong evidence of a significant difference in the level of study habits, particularly managing school activities and motivation, when grouped according to grade level with 95% confidence. The remaining demographic profiles (age, sex, and frequency of playing online games) did not show statistically significant differences in respondents' level of study habits, as their p-values were greater than 0.05, leading to a failure to reject the null hypothesis.

Therefore, the Kruskal-Wallis test results indicated that age, sex, and the frequency of doing online games did not significantly influence respondents' study habits. However, grade level had a significant impact on managing school activities and motivation. The significant impact of grade level on managing school activities and motivation underscores the importance of tailoring educational interventions to different grade levels. Educators should consider developing grade-specific strategies to enhance students' study habits and motivation.

The results emphasized the importance of maintaining high levels of self-motivation and goal setting. Encouraging students to continue setting clear goals, managing distractions, and seeking challenges can help sustain their academic success. For educators, understanding students' motivational factors can inform teaching strategies and support systems. Learning styles can enhance students' development and initiative in their study habits (Tsai, Shen, & Lin, 2015). Hence, study skills need to be developed since students are the center of learning, which will motivate them properly in their learning enhancement. Most of the students have difficulty in their learning process, especially when they are not motivated properly in their studies. They should be motivated to think about maturity. This can accelerate to improve their learning process (Mallillin et al., 2020).

Correlation Between Online Game Addiction and Study Habits

The researcher used the Spearman Correlation to determine the significant relationship between the respondents' online game addiction and their study habits with 0.05 level of significance. Spearman Correlation was conducted to compare the perceived level of online game addiction with respondents' study habits. The addiction levels were measured in terms of tolerance, loss of interest in activities, failure control, and psychosocial problems, while study habits were assessed according to managing school activities, utilizing resources and feedback, organizing and planning activities, and motivation.

For tolerance, a significant negative correlation was found with managing school activities (rho: -0.52, p-value 0.0079), organizing and planning activities (rho: -0.61, p-value 0.0011), and motivation (rho: -0.598, p-value 0.0016). This indicated that higher tolerance levels were associated with poorer performance in these areas. However, no significant correlation was found with utilizing resources and feedback (rho: -0.31, p-value 0.131).

Table 4 shows the results of tests of a significant relationship between respondents' level of online game addiction and study habits.

Table 4
Result of the Test of the Significant Relationship between Respondents' Level of Online Game Addiction and Study Habits

Indicators	Tolerance		Loss of Interest in Activities		Failure Control		Psychosocial Problem		Overall measure of online game addiction	
	rho	*p-value*	*rho*	*p-value*	*rho*	*p-value*	*rho*	*p-value*	*rho*	*p-value*
Managing School Activities	-0.52	0.0079**	-0.34	0.0976	-0.013	0.95	-0.31	0.1257	-03355	0.1011
Utilizing Resources and Feedback	-0.31	0.131	-0.13	0.528	0.007	0.97	-0.19	0.3622	-0.1766	0.3982
Organizing and Planning Activities	-0.61	0.0011**	-0.47	0.018*	-0.31	0.13	-0.592	0.0018**	-0.5355	0.0058**
Motivation	-0.598	0.0016**	-0.45	0.026*	-0.16	0.443	-0.448	0.025*	-0.4564	0.0218*
Overall measure of students' study habits	-0.5657	0.0032**	-0.38	0.057	-0.11	0.6	-0.41	0.0426*	-0.4068	0.0436*

Note: Significant if p-value < 0.05 and p-value < 0.01***

In terms of loss of interest in activities, significant negative correlations were observed with organizing and planning activities (rho: -0.47, p-value 0.018) and motivation (rho: -0.45, p-value 0.026), suggesting that higher loss of interest was linked to decreased efficacy in these areas. No significant correlation was found with managing school activities (rho: -0.34, p-value 0.0976) and utilizing resources and feedback (rho: -0.13, p-value 0.528). For failure to control, there were no significant correlations with any of the indicators of study habits. Managing school activities (rho: -0.013, p-value 0.95), utilizing resources and feedback (rho: 0.007, p-value 0.97), organizing and planning activities (rho: -0.31, p-value 0.13), and motivation (rho: -0.16, p-value 0.443) all showed non-significant results.

Lastly, for psychosocial problems, significant negative correlations were found with organizing and planning activities (rho: -0.592, p-value 0.0018) and motivation (rho: -0.448, p-value 0.025), indicating that higher levels of psychosocial problems were linked to poorer outcomes in these areas. No significant correlation was found with managing school activities (rho: -0.31, p-value 0.1257) and utilizing resources and feedback (rho: -0.19, p-value 0.3622). Therefore, the study found that higher levels of online game addiction, particularly in terms of tolerance and psychosocial problems, were significantly associated with poorer study habits in areas such as managing school activities, organizing and planning activities, and motivation.

Failure to control did not show significant correlations with any indicators of study habits. In short, online gaming addiction negatively affects adolescents' lives in different areas (Griffiths, 2022; Haberlin & Atkin, 2022). The study highlighted the need for comprehensive intervention strategies to mitigate the negative effects of online game addiction on students' study habits. Educational institutions should consider implementing programs that promote healthy gaming habits, enhance students' organizational and planning skills, and provide psychological support to address psychosocial problems.

CONCLUSION

The study's findings support the notion that students' addiction to online games is highly prevalent, as seen by their agreement with comments about psychological issues, lack of interest in activities, tolerance, and inability to control. They are constantly thinking about playing online games, and it can take them longer to get the satisfaction they want. Students did not, however, inevitably disregard their academic obligations. Students revealed a strong commitment to academic performance despite the problem of online game addiction. Furthermore, the results also suggest that playing online games excessively is strongly linked to worse study habits in areas like motivation, organizing and planning activities, and managing schoolwork. Depending on how students handle it, online gaming may have both beneficial and detrimental consequences on their study habits. Furthermore, students' study habits and online gaming experiences are unrelated to their age, sex, or frequency of online gaming.

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