

The Effect of Internet Gaming Disorder on Learning Motivation of Students at SMAN 21 Medan

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Abstract

Online gaming behavior can increase excitement and reduce stress in students. However, uncontrolled online gaming behavior will lead to addiction which is then called Internet Gaming Disorder. Students with Internet Gaming Disorder tend to spend their time playing online games rather than their daily activities, and this will have an impact on students' tasks as students by neglecting the levers so that they will lose their motivation to learn. This study aims to analyze the influence of Internet Gaming Disorder on the learning motivation of high school students. The design of this research is case control. The sample used in this study was a 1:2 ratio, namely 27 students as case subjects and 54 students as control subjects. Data collection was carried out using IDGS-SF9 and AMS questionnaires. The results of this research data were analyzed using the Chi Square test. The results of the study found that the learning motivation of the case subjects was in the average category, namely 26 students (96.3%). Meanwhile, the control subjects of student learning motivation were relatively high, namely 34 students (63%). Based on the results of the Chi Square test, the influence of Internet Gaming Disorder on learning motivation ($p < 0.05$) with an odd ratio of 44.2. Suggestions for further researchers could examine the influence of Internet Gaming Disorder on learning motivation in high school students with a larger population.

Keywords: *Internet Gaming Disorder, Learning Motivation, Online Game Addiction*

INTRODUCTION

Play Game has become a popular self-entertaining activity around the world with a number of Gamers in 2020 it was around 2.6 billion people and by the end of 2021 there was an increase to 2.9 billion people. This happens because of the large number of Mobile Games new releases that can be downloaded for free and Gamers It is expected to continue to grow in the future along with the industry Game that will continue to grow about 12% per annum in 2020-2025 (Georgiev, 2023).

Mobile Marketing Association (MMA) states that the number of Mobile Gamer in Indonesia reaches 60 million, which is among the highest prevalence in Southeast Asia (Dananjaya et al., 2022). Meanwhile, in 2021, the ministry of communication and information technology recorded the number of Gamer in Indonesia reached around 175.1 million people with players Game computers around 53.4 million and players Mobile Games about 121.7 million people (Sihombing & Manurung, 2022). With the prevalence of addiction events Online Games highest in the age range of 13-18 years, namely in adolescents and young adults. This is in line with research in Lebanon on the main predictors of addiction Online Games in young adulthood, among others, sleep disorders and academic performance (Hawi et al., 2018).

Play Game helps the brain in stabilizing mood and relaxation. Award system given in Game helps increase dopamine which brings happiness to players Game. This is of course good if the time of play Game controllable. However, playing activities Game excessive can cause a behavior in individuals who cannot control themselves and develop into addiction Game called Internet Gaming Disorder (IGD) (Kurnianingsih et al., 2018). This addiction usually includes behavioral criteria such as something that stands out (play Game), mood disorders, withdrawal symptoms from social, relapse after some time of quitting, and difficulty controlling play habits Game apart from everyday problems. Until the end, play Online Games prolonged and uncontrollable ones are known to cause disturbances in social functioning and allow psychological problems to arise from them (Sugaya et al., 2019).

Internet Gaming Disorder (IGD) It is often associated with psychological problems, such as anxiety and depressive symptoms. In Malaysia, individuals with higher levels of stress are at risk Internet Gaming Disorder larger (Ruzyanei et al., 2021). In adolescents with Internet Gaming Disorder It was found that comorbidity psychological problems such as depression, anxiety, impulsivity, behavioral disorders, and hyperactivity were found. In addition, adolescents also feel that they get social acceptance from the virtual world through assessments Game and identity Game which forms self-esteem regulation through Game (Sugaya et al., 2019). Therefore, research in Padang in 2019 stated the causes of students who play Online Games to eliminate the psychological problems he suffers from. Perception that play Online Games can increase joy and reduce stress will have a bad impact on students' interest in learning (Yanti et al., 2019).

Therefore, American Psychiatric Association (APA) insert Internet Gaming Disorder in Part III of the fifth revision Diagnostic and Statistical Manual of Mental Disorders (DSM-V) as a tentative disorder that requires further research. DSM-V criteria for Internet Gaming Disorder, among which is preoccupation with Online Games, loss of self-control in play Game, development of withdrawal symptoms, tolerance, loss of interest, excessive use, cheating to hide the habit of playing Game, escape from a bad mood and lose social relationships due to playing Game excessively. World Health Organization (WHO) itself has determined Gaming Disorder (GD) as a mental disorder in the eleventh revision International Classification of Disease (ICD-11).

A review article published in 2019 stated that Internet Gaming Disorder in minors or adolescents affects daily life such as schoolwork, truancy and academic achievement. Students with Internet Gaming Disorder demonstrate severe sleep disturbances and poor school performance (Sugaya et al., 2019). Addiction Game in adolescents, especially students, will cause behavior that prefers to play Game rather than learning, because they think that play activities Game more fun than studying. So students prefer to take time to play Game which causes reduced study time and other needs. This of course affects academics related to study concentration, lazy studying, and truancy (Wijayanto, 2018).

The results of Suparni (2018) research said that there was a significant correlation between addiction Online Games with learning motivation. He stated that this happens because it is influenced by extrinsic learning motivation factors, which are when individuals are more likely to focus on playing Online Games compared to learning. So indirectly the individual will spend more time and energy in playing Online Games which will affect his motivation to learn (Suparni & Handayani, 2018). Children feel by playing Online Games can eliminate boredom from learning acceptance. If gaming activities are not controlled, it can cause addiction Online Games who would normally spend time playing Online Games compared to doing assignments or repeating lessons. Therefore, children's motivation to learn will decrease along with declining learning outcomes (Fitri & Lestari, 2021).

Research by Fadda (2022) analyzes if the influence of Online Games has an impact on declining student learning motivation. Individuals with addiction Online Games tends to be egocentric and individualistic who influences his life by assuming his life is in place Game that he plays. Therefore, they are constantly stuck with playing activities Game which leads to a decrease in motivation to learn so that they neglect schoolwork and even prefer to skip school to play Game (Johan, 2019).

However, another study on junior high school students in North Jakarta stated that there was no link between addiction Online Games with student learning motivation. This is due to the number of addiction respondents Online Games with low motivation to learn, only 0.07% of respondents while showing a proportion of addiction Online Games quite high, namely 1,243 out of 1,474 (84.3%) (Octavia et al., 2020). This research is in line with research in Malaysia that academic achievement is not a predictor of Internet Gaming Disorder (Ruzyanei et al., 2021).

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Based on an initial survey conducted by researchers at SMAN 21 Medan, there is excessive gaming behavior such as playing games during learning time. In addition, researchers also found 27 students who were at risk of experiencing Internet Gaming Disorder. The results of the initial survey conducted by the researcher also found that the average student playing online games aims to eliminate boredom that leads to addiction to continue the game. Therefore, the researcher is interested in finding out the influence of Internet Gaming Disorder on learning motivation in SMAN 21 Medan students.

This study aims to analyze the influence of Internet Gaming Disorder on the learning motivation of students at SMAN 21 Medan. The research has several specific objectives: to describe the characteristics of the respondents (including gender, game types, and playing duration), to identify the level of student learning motivation, and to analyze the risk that Internet Gaming Disorder poses to this motivation. Theoretically, this research is expected to enrich knowledge and serve as a reference for further studies on this disorder in high school students. Practically, the findings are intended to provide insights for parents and teachers in supervising students and preventing Internet Gaming Disorder.

RESEARCH METHOD

This research was conducted using an observational analytical design with a case-control approach, applying inclusion and exclusion criteria. The study took place at SMAN 21 Medan, Southeast Medan, Medan City, North Sumatra Province.

The population consisted of 595 students, with an initial survey identifying 27 students at risk of Internet Gaming Disorder. The sample included active grade XI and XII students who played online games and agreed to participate, excluding those involved in online gambling, gaming for livelihood, or with psychopathological disorders. Using a 1:2 ratio, the sample comprised 27 case subjects (at risk) and 54 control subjects (not at risk).

Case subjects were selected using total sampling, including all students identified at risk. Control subjects were chosen through simple random sampling from the eligible students. The independent variable was Internet Gaming Disorder, and the dependent variable was learning motivation.

Table 1 Operational definition

No	Variable	Definition	Measuring Instruments	Scores/Measurement Results	Scale
1.	<i>Internet Gaming Disorder</i> (IGD)	The behavior of playing <i>online games</i> continuously and uncontrollably, interfering with daily activities.	Checksheet	1. Normal: 9-35 2. Emergency Risk : 36-45	Category
2.	Learning Motivation	Motivation in students, both internal and external, that influences students to learn in order to achieve the expected goal, namely learning achievement.	Academic Motivation Scale (<i>AMS</i>) Questionnaire	1. Average learning motivation: score <114-148 2. High learning motivation: score >148	Ordinal

Research Instruments

1. Internet Gaming Disorder

Internet Gaming Disorder measured using questionnaires The Nine-Item Short Form Internet Gaming Disorder Scale (IGDS-SF9) was discovered by Mark Griffiths, a psychologist from England who focuses on the field of behavioral addiction. The questionnaire has been

tested for validity and reliability by Cronbach's Alpha 0,87. The questionnaire was translated into Indonesian by Latifah (2020) with Cronbach Alpha by 0.857 (Latifah et al., 2020). The questionnaire consists of a Likert scale, with nine questions each of which is given a score of one to five. The total of the overall score will determine the risk of emergency room with the following interpretation (Latifah et al., 2020):

- a. 9-35 : normal
- b. 36-45 : Risk of Internet Gaming Disorder.

2. Learning Motivation

Learning Motivation is measured using questionnaires Academic Motivation Scale (AMS) developed by Vallerand with Cronbach's Alpha 0.83 to 0.86. The questionnaire was translated into Indonesian by Anindita with Cronbach's Alpha by 0.941. The AMS consists of 28 question items with three dimensions that are in accordance with the theory of self-determination, namely intrinsic motivation, extrinsic motivation, and amotivation. AMS uses a likert scale with a range of seven points given a score of one to seven. The interpretation of AMS is as follows:

- a. <114-148 average learning motivation
- b. >148 high motivation to learn

Table 2 Distribution of Learning Motivation Scale Items

Variable	Sub Variable	Indicators	Number Items	Sum
Motivation Academic	Motivation Intrinsic	To find out	1,2,3,4	4
		Achieving achievements	5,6,7,8	4
		Experiencing Stimulation	9,10,11,12	4
		External regulations	13,14,15,16	4
	Extrinsic Motivation	Regulation of introspection	17,18,19,20	4
		Regulated identified	21,22,13,24	4
	Amotivation	Feelings of <i>powerlessness</i>	25,26,27,28	4
TOTAL				28

Data Collection Techniques

The data collection technique began by conducting an initial survey at SMAN 21 Medan City which will then be conducted research at SMAN 21 Medan City after obtaining approval and permission from the school. Students who fall within the inclusion criteria will be collected in one class and distributed the questionnaire that has been created. The data collection technique carried out in this study is a questionnaire as primary data. The questionnaire was used to analyze students with suspected Internet Gaming Disorder and measure students' motivation to learn.

Data Processing

Data processing is carried out in several stages, namely:

1. Editing
Editing is generally defined as an activity to check and improve the filling of forms or questionnaires.
2. Coding
Coding, which is converting data in the form of sentences or letters into numerical or number data.
3. Data Entry
Enter data in the form of answers from each respondent in the form of code (numbers or letters) entered into a computer program or software .
4. Cleaning

Cleaning is an activity of rechecking data to see the possibility of code errors, incompleteness, and so on. Then repairs or corrections are made.

Data Analysis

The data analysis used in this study is univariate and bivariate analysis using SPSS software. Univariate analysis tests are used to describe the frequency and distribution of independent and dependent variables. Bivariate analysis to see the correlation or relationship of two variables that are suspected to be influential. The analysis test that will be used is the Chi-square test, if the data obtained is not eligible to be carried out the Chi-square test, then an alternative Fish test will be carried out.

RESULTS AND DISCUSSION

Research Results

The results of the analysis were carried out to analyze the variables of existing individual characteristics in a descriptive manner using frequency distribution. After conducting research, processing and data analysis regarding the influence of Internet Gaming Disorder on the learning motivation of students of SMAN 21 Medan. The sample in this study was based on a comparison of case and control subjects, which is 1:2. A total of 27 students as case subjects and 54 as control subjects

Univariate Analysis

Univariate analysis was carried out on each research variable in this study to find out and identify the characteristics of these variables. The univariate analysis in this study is descriptive statistics which include the characteristics of respondents and the level of learning motivation of SMAN 21 Medan students. The general characteristics of the respondents in this study were based on gender, duration of *game play*, age, and type of *game* played.

Table 3. Characteristics of Study Respondents.

Characteristic	Case		Control	
	Frequency =27 (f)	Percentage (%)	Frequency =54 (f)	Percentage (%)
Gender				
Man	24	88,9	31	57,4
Woman	3	11,1	23	42,6
Total	27	100	54	100
Duration of Gaming				
<30 minutes	0	0	1	1,9
30 minutes - 1 hour	0	0	7	13,0
>1 hour - 3 hours	0	0	15	27,8
>3 hours - 5 hours	3	11,1	22	40,7
>5 hours - 7 hours	6	22,1	7	13,0
>7 hours - 9 hours	14	51,9	0	0
>9 hours	4	14,8	2	3,7
Total	27	100	54	100
Age				
15 Years	0	0	1	1,9
16 Years	1	3,7	6	11,1
17 Years	23	85,2	41	75,9
18 Years	3	11,1	6	11,1
Total	27	100	54	100

Based on table 3, it shows that the gender of the case subject and the majority of control subjects are male, namely 24 (88.9%) students from the case subject and 31 (57.4%) students from the control subject. Meanwhile, the duration of playing games in the majority of case subjects was >7 hours – 9 hours (22.1%) and in the majority control subjects >3 hours – 5 hours (40.7%). The age of the majority of the case subjects and controls was 17 years (85.2%) of the case subjects and (11.1%) of the control subjects.

Table 4. Types of Games Played

Game Type	Case				Control			
	Frequency=27 (f)				Frequency=54 (f)			
	Yes	%	No	%	Yes	%	No	%
MLBB	17	63	10	18,5	23	42,6	31	57,4
Magic Chess	1	3,7	26	96,3	1	1,9	53	98,1
Free Fire	2	7,4	25	92,6	3	5,6	51	94,4
PUBG	4	14,8	23	42,6	14	25,9	40	74,1
Valorant	6	22,2	21	77,8	2	3,7	52	96,3
DOTA	7	25,9	20	74,1	1	1,9	53	98,1
Genshin	0	0	27	100	2	3,7	52	96,3
Roblox	0	0	27	100	1	1,9	53	98,1
CODM	0	0	27	100	2	3,7	52	96,3
Fornite	0	0	27	100	1	1,9	53	98,1
Point Blank	2	7,4	25	92,6	1	1,9	53	98,1
Lost Saga	0	0	27	100	1	1,9	53	98,1
Cooking Madness	0	0	27	100	1	1,9	53	98,1
Candy Crush	0	0	27	100	8	14,8	46	85,2
Domino	0	0	27	100	1	1,9	53	98,1
8 Ball Pool	0	0	27	100	1	1,9	53	98,1
PLAGUE	1	3,7	26	96,3	0	0	54	100
Homescapes	0	0	27	100	2	3,7	52	96,3
Shopee Games	0	0	27	100	3	5,6	51	94,4

Based on table 4, it shows that the majority of the case subjects and control subjects in this study played MLBB (Mobile Legends Bang Bang) games, namely 17 students (63%) from the case subjects and 23 students from the control subjects. In the case subject , the most played games were followed by DOTA and Valorant games, namely 7 students (25.9%) and 6 (22.25), while in the control subject, followed by PUBG and Candy Crush games, which were 14 students (25.9%) and Candy Crush as many as 8 students (14.8%).

Table 5. The Level of Learning Motivation of Students of SMAN 21 Medan.

Learning Motivation	Case		Control	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Average	26	96,3	20	37
Tall	1	3,7	34	63
Total	27	100	54	100

Based on table 5, it shows that the learning motivation in the majority of case subjects was on average, namely 26 students (93.3%) of the case subjects, while in the control subjects, the majority of learning motivation was high, namely 34 students (63%) of the control subjects. This shows that students at risk of emergency room tend to have average learning motivation and students who are not at risk of emergency room have high learning motivation.

Bivariate Analysis

Bivariate analysis was carried out to determine the relationship between the Internet Gaming Disorder variable and learning motivation in SMAN 21 Medan students with the statistical test used was Chi Square and with the level of significance ($\alpha = 0.05$).

Table 6. Chi Square Test Results The Effect of Internet Gaming Disorder on Learning Motivation

	Emergency Room Risks		No Risk of Emergency Room		Sum		p	OR
	f	%	f	%	f	%		
Average	26	32,1	20	24,7	46	56,8	0.001	44,2
Tall	1	1,2	34	42	35	43,2		
Sum	27	33,3	54	66,7	81	100		

Table 6, shows that as many as 26 (32.15%) students at risk of emergency room have average learning motivation and as many as 1 (1.2%) students have high learning motivation. Meanwhile, as many as 20 (24.7%) students who are not at risk of emergency room have average learning motivation and as many as 34 (42%) students who are not at risk of emergency room have high learning motivation. This shows that students who are not at risk of emergency room have high learning motivation compared to students at risk of emergency room who have average learning motivation.

The result based on table 4.4, obtained $p = 0.001$, then H_1 is accepted (hypothesis accepted). This states that there is a significant influence between the variables of the emergency room and learning motivation in students of SMAN 21 Medan. The Odd Ratio was obtained at 44.2, meaning that students with emergency room risk are 44.2 times more likely to have average learning motivation than high learning motivation.

Discussion

Research in India found that students are more at risk of emergency room than female students, namely 13 students (15%) and 2 students (3.5%). This is because women have better executive control than men when it comes to completing instructions in the game Game, where this may cause women to avoid the development of the emergency room. This research is in line with the results of research that has been conducted by researchers, where the number of students is more than women at SMAN 21 Medan.

Inside instructions Game activates the part of the brain associated with the desire to keep playing Game. Men with emergency room have greater meso-cortico-limbic system activity than women when playing Game. Gender can significantly positively predict the onset and risk level of emergency room in early adolescence, meaning that in early adolescence, boys are more at risk of developing emergency room and faster than girls. This is consistent with a higher incidence of emergency departments in men than women in studies in adults (Wang et al., 2021). Before playing Game, males will trigger greater activation in the part of the right striatum brain that is involved in the processing of 'gratification' for rewards. Activity in the ventral striatum can trigger motivated or goal-oriented behaviors and satisfying reactions that result in addiction. Striatum can also be active when individuals are exposed to addiction-related stimuli (Dong et al., 2018). According to Dong (2018) research, greater activation of the striatum occurs in men as a result of their own desire for exposure to cues/clues inside Game. This suggests that men are more sensitive to in-game cues (Dong et al., 2018).

Research by Liu (2021) states that playing Game >6 hours per week has a higher risk in the development of emergency room (Liu et al., 2021). This is because there is a positive relationship with increased game duration Game Online and increased risk of exposure to emergency rooms. In a study conducted by Severo (2020), individuals who played Game with a duration of >20

hours per week was 13.5 times greater risk of exposure to emergency room compared to individuals who played with a duration of <1 hour per week (Severo et al., 2020). Research on junior high school students (2021), found students who are addicted to playing Game Online has a duration of bermian gem >6 hours/day (Anggraeni et al., 2021). This is supported by another study in India which stated that students with emergency rooms spend 7 hours/day playing Game. The research conducted by the researcher found that the emergency room risk group played the most with a duration of >7-9 hours, which was 14 people (51.9%), the duration of >5 hours-7 hours, which was 6 people (22.1%), the duration of >9 hours, 4 people (14.8%), and >3-5 hours, which was 3 people (11.1%).

Students at risk of emergency room mostly play Game with the MOBA genre, namely 17 students (63%) playing MLBB and 7 students (25.9%) playing DOTA. Research by T'ng (2023), states that frustrated individuals will easily get caught up in the social sphere created in Game MOBA genre. This can happen due to active interactions within Game which requires players to work together to achieve their goals. Therefore, socialization within Game makes players want to spend longer (T'ng et al., 2023).

The results of the study found an influence between emergency room and learning motivation. This is in line with previous research on addiction Game Online conducted by Rahyuni (2021) which shows that there is a significant negative influence between Online Games and learning motivation. It can be interpreted that the more individuals are addicted to playing Online Games Then the student's motivation to learn will also decrease (Rahyuni et al., 2021). Test Chi Square Demonstrate significant results with the p-value by 0.001. This means that there is a significant relationship between the variable of the emergency room and the learning motivation of students at SMAN 21 Medan, if there are students who are at risk of emergency room, they have average learning motivation. Odd Ratio obtained from the calculation, which is 44.2. This states that students with a 44.2 times greater risk of emergency room have average learning motivation compared to students who do not experience emergency room.

Research on the central nervous system in the brain shows that the pleasure of playing Game decreased function of dopamine transporters and reduced ligands of dopamine D2 receptors in the right striatum, an area that mediates dopamine in the emergency room. While playing Game, the signals that are inside Game will affect the pleasure system in the brain, sensory information processing, and self-reflection. In addition to being associated with the processing of pleasure in the brain associated with dopamine, IGD is also associated with sensory, cognitive, and also motor functions. Structural changes in gray matter volume (GMV) and density of White-matter in the brain can lead to an addiction process.

The brain region that includes the posterior cingulate cortex, precuneus, and medial prefrontal cortex is a region called Default Mode Network (DMN). DMNs play an important role in processing information and activating high-level cognitive processes, such as decision-making or cognitive control. Structural and functional changes of the DMN can trigger the pathological process of the emergency room. An increase in GMV in the caudate nucleus was found in individuals with emergency departments and had a positive correlation with the severity of the emergency department. Changes in resting status from the DMN can affect the emergency room. If connectivity in the DMN is reduced, it will lead to poor emotional ability, weakened cognitive control, and increased impulsivity, which will lead to emergency room. This can be caused because activation in the posterior cingulate cortex (DMN center) will decrease in emergency room patients, hence a decrease in sensitivity to executive control.

The results of this study are in line with research by Rahayu (2021), namely that there is an influence of addiction Online Games with learning motivation in high school students during the COVID-19 pandemic by ODD Ratio 0,13 (Rahayu et al., 2021). This research is also supported by research in China, which states addiction Online Games affect individual behavior, emotional, and cognitive so that it affects the decline in learning motivation in students (Sun et al., 2023). In

addition, research by Ahmad (2021), states that there is a significant negative relationship between addiction Online Games with student learning motivation at SMA Yuppentek 1 Tangerang (Ahmad et al., 2021).

Play Online Games uncontrollably will create an excessive sense of pleasure in the game Online Games So that the brain stimulates to secrete excessive dopamine (Pratama et al., 2020). Dopamineergic in the brain will strengthen and settle so that it strengthens the reactive system and makes the reflective system weaker and has an impact on decreased cognition and self-control (Lutfiwati, 2021). When a student is addicted Online Games then the student will spend most of his time playing Game So he forgets about other activities, such as skipping school and losing focus at school (Ahmad et al., 2021). This is a problem for students because Online Games which is a distraction so that students divert attention from learning and will affect the student's motivation to learn. Motivation itself is the driving force of students to achieve their goals and if students are addicted Online Games, he will prioritize activities to play Online Games rather than learning, thus eliminating the student's purpose to learn and reducing the student's motivation to learn (Ahmad et al., 2021).

This study has limitations in the limited number of samples in a single population. In addition, there are other factors that cannot be controlled when respondents fill out questionnaires, such as doing things in a hurry because they are lazy to read the questions in the questionnaire or following the answers of the friend next to them so that the respondent's honesty in filling out the questionnaire becomes a weakness that can affect the results of the research questionnaire. In this study, learning motivation questionnaires were used in general, so that they did not specifically lead to learning motivation as a result of the emergency room.

CONCLUSION

Based on the findings of this study, Internet Gaming Disorder (IGD) significantly and substantially reduces learning motivation among students at SMAN 21 Medan, with case subjects being 44.2 times more likely to have average rather than high motivation, and 96.3% of cases showing average motivation compared with 63% of controls exhibiting high motivation; the IGD risk profile favored male students, gaming sessions exceeding seven hours, and a preference for MOBA genres such as Mobile Legends, indicating that excessive and unregulated online gaming diverts time, focus, and cognitive resources from academics. For future research, expand sampling to a larger, more diverse set of schools and regions to improve generalizability; conduct longitudinal studies to establish causal links and long-term academic outcomes; examine mediating and moderating factors such as parental supervision, game genres, personality traits, and school environment; and evaluate the effectiveness of interventions (e.g., cognitive-behavioral therapy, school-based awareness programs, and digital wellness education) to mitigate IGD's impact on learning motivation.

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