

**Research Paper**

## Examination of Unwanted Behaviours and Game Addiction Situations of Secondary School Students

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### ABSTRACT

This study examines the relationship between middle school students' undesirable behaviours and digital game addiction. Undesirable behaviours disrupt teaching, harm peers, compromise safety, and lower teacher motivation. These behaviours, often influenced by family and environmental factors, disrupt classroom order. Digital games, particularly violent ones, can lead to issues such as anxiety, aggression, and addiction, which further contribute to hyperactivity, antisocial behaviours, and confusion between reality and fantasy. Identifying and addressing these behaviours is crucial for enhancing the teaching process. The research was conducted with 372 middle school students in the Turkish Republic of Northern Cyprus (TRNC). It aimed to measure the levels of undesirable behaviours and digital game addiction and to explore differences by gender and grade level. Findings showed that female students exhibited more undesirable behaviours, such as "hurting others," "insulting," and "self-harming," than male students. A moderate positive correlation was found between digital game addiction and undesirable behaviours, indicating that addiction may exacerbate such issues. The study suggests that digital game addiction negatively impacts students' behaviours. Collaboration between school administrations, teachers, and families is essential to address this problem. Recommendations include limiting game time, promoting healthy digital content, enhancing social skills through educational programs, and increasing parental supervision. Families are encouraged to support alternative social activities. Future research should assess the effectiveness of these strategies in reducing game addiction and improving behavioural outcomes.



### INTRODUCTION

In schools and classrooms, intentional or unintentional behaviours by students that disrupt educational activities, harm students, negatively affect safety, or lower teachers' motivation are referred to as undesirable behaviours (Balay, 2003; Bayar & Kerns, 2015; Celep, 2008; Çetin, 2013; Little, 2005; Medikoğlu & Dalaman, 2018; Thompson, 2009; Yalçinkaya & Küçükkaragöz, 2006).

Undesirable behaviours can range from minor, tolerable actions with limited impact to behaviours causing significant disturbances and escalating issues. They are categorized to understand their varying degrees of undesirability (Kesici & Sarpkaya, 2013; Yalçinkaya & Küçükkaragöz, 2006). Due to the subjective nature of such behaviours, providing precise definitions is challenging, thus warranting the use of these classifications (Yiğit, 2004).

Undesirable behaviours can be grouped into four main categories (Beşdok, 2007; İra, 2014):

1. Those arising from the classroom's physical structure and equipment
2. Those stemming from the teacher
3. Those caused by the student
4. Those originating from the curriculum and teaching methods

When analyzing undesirable student behaviours in this context, the first three categories are related to educational opportunities and planning. The fourth category involves behaviours stemming from the student, which are harder to pinpoint. External factors like family dynamics and environmental characteristics, as well as the student's experiences, play significant roles in shaping these behaviours (Açıkgöz, 2009; Demir, 2011; Yiğit, 2004).

Undesirable student behaviours cause disruptions in the classroom and learning environment (Degol & Bachman, 2015; Sarıtaş, 2006). Various methods can be employed to prevent harm to this environment, but selecting the appropriate approach is crucial. Incorrect interventions by teachers may provoke negative reactions from students, exacerbating the problem (Erol, Özaydın & Koç, 2010). Therefore, accurately identifying the problem and its root causes is essential for achieving educational goals (Yaraş & Turan, 2021).

Since the early 2000s, rapid changes have impacted every aspect of life, including children's worlds. Traditional play spaces like streets, once vibrant with children's voices, are now replaced by digital environments as urban children increasingly engage with technology and online games (Horzum, 2011). The swift advancement of information technologies has made digital games easily accessible to children (Güvendi, Tekkurşun Demir & Keskin, 2019).

A significant portion of these games contains violent content, which has been linked to adverse effects such as anxiety disorders, mood disturbances, attention problems, aggression, violent tendencies, social isolation, and addiction (Çankaya & Ergin, 2015; Freeman, 2008; Greitemeyer, 2018; Hartmann, 2007). As technology becomes indispensable, it also brings addiction issues (Karadağ & Kılıç, 2019).

The compulsive and problematic use of games is labeled with various terms like obsessive-compulsive gaming and pathological gaming (Irmak & Erdoğan, 2016). Digital game addiction is associated with hyperactivity, aggression, antisocial behaviour, violent tendencies, and confusion between reality and fantasy (Horzum, 2011). Despite their educational and entertaining aspects, digital games containing violent elements pose significant risks by normalizing violence and aggression for children (Aydoğdu Karaaslan, 2015).

In a study by Lemmens et al. (2009) involving 644 middle school students, gaming addiction scores were significantly associated with aggression. Numerous studies have highlighted the correlation between gaming addiction and aggression (Anderson & Bushman, 2001; Solak, 2012). Anderson et al.'s (2010) meta-analysis of 136 studies concluded that exposure to violent games increases aggressive behaviours.

The middle school period is crucial for identity development, and issues like undesirable behaviours and gaming addiction during this stage can negatively impact adolescents' psychosocial health. This study aims to explore the relationship between undesirable behaviours and gaming addiction among middle school students. Specifically, it seeks to identify the undesirable behaviours exhibited by these students, assess their gaming addiction levels, and understand the nature of the relationship between these factors. The findings could provide valuable insights for school administrators, parents, and professionals, aiding in the development of effective interventions to support healthy adolescent development.

To address the aims of the research, the following questions were formulated:

1. Are there notable differences in the undesirable behaviour scores between male and female students?
2. Do undesirable behaviour scores vary significantly across different grade levels?
3. Are there significant gender-based differences in the digital game addiction scores?
4. Do digital game addiction scores differ significantly based on the students' grade levels?
5. Is there a correlation between the scores of digital game addiction and undesirable behaviours?

## METHODOLOGY

This section describes the research model, the study population and sample, data collection techniques, and data analysis methods.

### Research Model

This quantitative study investigates the digital game addiction and undesirable behaviour levels of middle school students in Güzelyurt and Lefke districts of the Turkish Republic of Northern Cyprus (TRNC). A survey model was used to assess students' undesirable behaviours and gaming addiction levels, while a correlational survey model explored the relationship between these variables. Surveys are typically conducted to derive generalizations about a population based on a sample (Karasar, 2018). Correlational studies, also known as relational surveys, identify relationships between variables and determine the extent to which one variable explains another (Can, 2018; Creswell, 2017).

### Population and Sample

The study population consists of 11,026 students (5,695 males and 5,331 females) enrolled in TRNC middle schools during the 2023–2024 academic year (TRNC MoNE, 2024). The sample comprises 411 middle school students selected through simple random sampling. After excluding incomplete or carelessly filled responses, data from 372 students were analyzed. Simple random sampling ensures each unit of the population has an equal chance of being selected (Büyüköztürk et al., 2016). Sample size recommendations vary. Some suggest 10 times the number of scale items (Kline, 1994), while others recommend 5 times the number (Büyüköztürk et al., 2016). The “Undesirable Student Behaviours Scale” (29 items) and “Digital game Addiction Scale for Children” (24 items) were used in this study. The sample size of 372 exceeds the minimum required for reliable analysis. For a confidence level of 0.95, the required sample size is 371.3. The study was conducted accordingly with the necessary permissions.

**Table 1.** Sample Representing the Population

Grade Level	Female Students	Male Students	Total Number of Students	Percentage (%)
6	41	43	84	22.6
7	52	63	115	30.9
8	89	84	173	46.5
<b>Total</b>	<b>182</b>	<b>190</b>	<b>362</b>	<b>100.0</b>

### Data Collection Tools

To measure undesirable behaviours, the "Undesirable Student Behaviours Scale" developed by Alkaş (2010) was used. To assess game addiction in children, the "Digital game Addiction Scale for Children" developed by Hazar & Hazar (2017) was employed. The results from these two scales provide insights into students' general behaviours and gaming habits.

### Undesirable Student Behaviours Scale

This scale was developed by Alkaş (2010). The application time is 25 minutes, and it is a paper-and-pencil test. The scale's validity and reliability were tested using data from 352 participants. It consists of four dimensions. To determine its reliability, the Cronbach's alpha internal consistency coefficient was calculated and found to be .83. In this study, the Cronbach's alpha internal consistency coefficient was calculated as .914, indicating that the scale is highly reliable and demonstrates excellent reliability in this sample (Tavşancıl, 2014; Bonett & Wright, 2015).

### Digital game Addiction Scale for Children

To measure children's game addiction, the "Digital game Addiction Scale for Children" developed by Hazar & Hazar (2017) was utilized. This scale consists of 31 items. The reliability of the scale was evaluated by calculating the Cronbach's alpha internal consistency coefficient and conducting a test-retest correlation. The Cronbach's alpha value was found to be .90, and the test-retest correlation coefficient was .81. In this study, the Cronbach's alpha internal consistency coefficient was calculated as .917, confirming that the scale demonstrates excellent reliability in this sample as well (Bonett & Wright, 2015).

### Data Analysis

To examine undesirable behaviours and game addiction based on the gender variable, an Independent Samples t-Test was conducted. For analysis based on the grade level variable, a One-Way Analysis of Variance (ANOVA) was performed. The Scheffe test was applied to identify differences between groups. To assess the relationship between the two scale scores, a Correlation Test was used.

## FINDINGS AND DISCUSSION

In this section, the data obtained in the study were analysed to examine the relationships between undesirable student behaviours and digital game addiction among middle school students. First, the analysis focused on whether undesirable student behaviours differed by gender and grade level. Statistical analyses revealed significant gender-based differences, with female students exhibited higher scores in harmful and insulting behaviour categories than male students.. However, no significant differences were found in undesirable behaviours based on grade level. In the analysis of digital game addiction, no significant differences were found by gender or grade level. Finally, a moderate positive correlation was found between undesirable student behaviours and digital game addiction. The detailed analysis results for each variable are presented below.

**Table 2.** Examination of Undesirable Student Behaviour Scores by Gender

Variable	Gender	N	$\bar{X}$	df	t	p
Undesirable Student Behaviours	Female	182	42.53	12.42	2.373	.018*
	Male	190	39.72	10.33		

\* $p < .05$

An Independent Samples t-Test was conducted to determine whether undesirable behaviour scores differed significantly by gender among middle school students. As shown in the table, there was a significant difference in undesirable student behaviour scores based on gender ( $t(370) = 2.656, p < .05$ ).

**Table 3.** Examination of Undesirable Student Behaviours Subscale Scores by Gender

Subscale	Gender	N	$\bar{X}$	df	t	p
Non-compliance with Rules	Female	182	14.24	4.28	0.541	0.446
	Male	190	14.01	3.96		
Harm to Others	Female	182	14.84	5.28	2.897	0.004*
	Male	190	13.36	4.54		
Insulting Behaviour	Female	182	7.16	3.09	2.166	0.031*
	Male	190	6.56	2.21		
Self-harm	Female	182	6.29	2.68	2.166	0.031*
	Male	190	5.79	1.64		

\*p &lt; .05

For the subscales of undesirable behaviours, an Independent Samples t-Test was conducted to determine if significant gender differences existed. No significant difference was found in the Non-compliance with Rules subscale, while significant differences in favour of female students were observed in the Harm to Others ( $t(370) = 2.897$ ,  $p < .05$ ), Insulting Behaviour ( $t(370) = 2.166$ ,  $p < .05$ ), and Self-harm ( $t(370) = 2.166$ ,  $p < .05$ ) subscales. Female students exhibited more harmful and insulting behaviours compared to males.

**Table 4.** Examination of Undesirable Student Behaviour Scores by Grade Level

Variable	Grade Level	N	$\bar{X}$	df	F	p	Difference
Undesirable Student Behaviours	6th Grade	73	40.66	10.62	1.236	.292	—
	7th Grade	115	40.13	9.99			
	8th Grade	173	42.09	12.58			

As shown in Table 4, there was no significant difference in undesirable student behaviour scores based on grade level ( $F(2,369) = 1.114$ ,  $p > .05$ ).

**Table 5.** Examination of Undesirable Student Behaviour Subscale Scores by Grade Level

Subscale	Grade Level	N	$\bar{X}$	df	F	p	Difference
Non-compliance with Rules	6th Grade	84	13.00	3.11	4.235	.015*	6 < 8
	7th Grade	115	14.28	4.05			
	8th Grade	173	14.55	4.92			
Harm to Others	6th Grade	84	14.52	5.25	1.351	.260	—
	7th Grade	115	13.47	4.54			
	8th Grade	173	14.28	5.09			
Insulting Behaviour	6th Grade	84	6.90	2.63	0.917	.400	—
	7th Grade	115	6.58	2.11			
	8th Grade	173	7.02	3.41			
Self-harm	6th Grade	84	5.93	2.22	1.461	.233	—
	7th Grade	115	5.80	3.39			
	8th Grade	173	6.24	2.43			

\*p &lt; .05

To determine whether the subscale scores for undesirable student behaviours differ significantly across grade levels in middle school students, an ANOVA test was conducted for each subscale. Upon examining the table, a significant difference was observed in the "Non-compliance with rules" dimension of the digital game addiction subscales between 6th and 8th-grade students. According to the Scheffe test, the difference favored 6th-grade students ( $F(2,369) = 3.067$ ,  $p < .05$ ). This suggests that while students tend to adhere more to rules when they first enter middle school, non-compliance increases as they progress to the final grade. No significant differences were found in the other subscales, including "Harming others," "Insulting," and "Self-harm."

An Independent Samples T-test was conducted to determine whether digital game addiction scale scores differed significantly by gender among middle school students

**Table 6.** Analysis of Digital game Addiction Scale Scores by Gender

Variable	Gender	N	$\bar{X}$	df	t	p
Digital game Addiction Scale	Female	182	60.39	18.46	1.804	.072
	Male	190	56.75	20.33		

As shown in Table 6, there is No statistically significant difference was observed between genders in overall game addiction scores ( $t(370) = 1.647$ ,  $p > .05$ ).

**Table 7.** Analysis of Digital game Addiction Subscale Scores by Gender

Subscale	Gender	N	$\bar{X}$	df	t	p
Excessive Focus on and Conflict about Gaming	Female	182	16.52	5.82	1.668	.096
	Male	190	15.41	7.00		
Tolerance Development and Value Assigned to Gaming	Female	182	20.67	6.90	1.399	.163
	Male	190	19.67	6.91		
Postponement of Individual and Social Tasks	Female	182	14.23	5.37	2.053	.041*
	Male	190	13.04	5.78		
Psychological-Physiological Withdrawal Symptoms and Immersion	Female	182	9.51	3.63	1.751	.081
	Male	190	8.87	3.40		

\* $p < .05$

As shown in Table 7, Independent Samples T-tests were conducted for each subscale to determine whether there were significant gender differences in the digital game addiction subscales among middle school students. The results indicated a significant difference in the 'Postponement of Individual and Social Tasks' subscale in favor of female students ( $t(370) = 2.053$ ,  $p < .05$ ), suggesting that female students tend to postpone individual and social tasks more than their male peers. However, no significant differences were found in the subscales of 'Excessive Focus on and Conflict about Gaming,' 'Tolerance Development and Value Assigned to Gaming,' and 'Psychological-Physiological Withdrawal Symptoms and Immersion.' In Table 8 below, an ANOVA test was conducted to determine whether the digital game addiction scale scores of middle school students differed significantly by grade level.

**Table 8.** Analysis of Digital game Addiction Scale Scores by Grade Level

Variable	Grade Level	N	$\bar{X}$	s.d.	F	p	Difference
Digital game Addiction Scale	6th Grade	84	60.96	16.39	.355	.701	—
	7th Grade	115	58.92	21.95			
	8th Grade	173	57.68	19.14			

As shown in Table 8, there is no significant difference in digital game addiction scale scores by grade level ( $F(2,369) = .729$ ,  $p > .05$ ).

**Table 9.** Analysis of Digital game Addiction Subscale Scores by Grade Level (ANOVA)

Subscale	Grade Level	N	$\bar{X}$	s.d.	F	p	Difference
Excessive Focus on and Conflict about Gaming	6th Grade	84	16.55	5.75	.052	.950	—
	7th Grade	115	15.85	7.13			
	8th Grade	173	15.92	6.39			
Tolerance Development and Value Assigned to Gaming	6th Grade	84	20.71	5.83	.028	.972	—
	7th Grade	115	20.17	7.69			
	8th Grade	173	20.08	6.87			
Postponement of Individual and Social Tasks	6th Grade	84	14.34	4.75	.581	.506	—
	7th Grade	115	13.77	6.36			
	8th Grade	173	13.30	5.44			
Psychological-Physiological Withdrawal Symptoms and Immersion	6th Grade	84	9.53	3.35	.940	.391	—
	7th Grade	115	9.45	3.75			
	8th Grade	173	8.92	3.47			

Separate ANOVA tests were conducted for each subscale to determine whether digital game addiction subscale scores differ significantly by grade level. As seen in Table 9, no significant differences were found across grade levels in any of the subscales. To examine the relationship between undesirable student behaviours and digital game addiction, a correlation analysis was conducted.

**Table 10.**Correlation Analysis between Undesirable Student Behaviours and Digital game Addiction

	Undesirable Student Behaviours	Digital game Addiction
<b>Undesirable Student Behaviours</b>	$r = 1$	$r = .348^{**}$
	$p = —$	$p = .000$
<b>Digital game Addiction</b>	$n = 372$	$n = 372$
	$r = .348^{**}$	$r = 1$
	$p = .000$	$p = —$
	$n = 372$	$n = 372$

$^{**}p < .01$

The table shows a significant positive correlation between undesirable student behaviours and digital game addiction scores ( $r = .348$ ,  $p < .01$ ). This indicates a moderate positive relationship, as the correlation coefficient falls within the range of .30 to .70.

## DISCUSSION, CONCLUSION AND RECOMMENDATIONS

According to the results of the study, the unwanted student behaviour score was found to be higher in female students than in male students. This difference is statistically significant. The findings indicate that female students reported higher levels of certain undesirable behaviours compared to their male counterparts. When examining the subdimensions, a difference in favor of girls has been observed in the categories of "Harming Others," "Degrading," and "Self-harm." However, when looking at digital game addiction scores, no significant difference was found between genders in both the overall and subscale scores.

In terms of grade level, no significant difference was observed in the overall unwanted student behaviour scores. However, in the "Non-compliance with Rules" sub-dimension, the 8th-grade students scored higher, and a significant difference in favour of the 8th graders was found when compared to the 6th-grade students. These findings suggest that students who initially tend to follow the rules when they enter middle school tend to demonstrate a decline in rule-compliant behaviours as they advance through grade levels. Regarding digital game addiction, no difference was observed in the overall scale scores by grade level. However, in the subscales, a significant difference in favour of male students was found in the "Procrastination of Individual and Social Tasks/Homework" dimension. This finding shows that male students were found to exhibit higher levels of procrastination-related behaviours.

The study revealed a moderate positive relationship between the unwanted behaviour scale scores and digital game addiction scale scores of middle school students. This suggests that digital game addiction may contribute to the emergence or escalation of undesirable behaviours.

Goodwin (2018: 73) indicates that the repeated watching and playing of games by children directs their by activating mirror neurons, which are believed to be responsible for imitation and social learning. This leads to children actively engaging in violent behaviour. According to Goodwin's findings, the rewarding nature of many digital games may normalize violence as a means to win. A study by Gökyer and Doğan (2016) found that teachers linked children's unwanted behaviours to their social circles and the internet. The results of this study support the findings of our research. Talan and Kalinkara (2021), in a study with middle school students, found that as the frequency of participation in social activities increased, computer game addiction decreased. This result suggests that digital game addiction may be inversely related to students' level of social participation.

In conclusion, this study has revealed a strong relationship between digital game addiction and unwanted student behaviours. Specifically, as game addiction increases, students' behavioural problems also rise. Girls show more unwanted behaviours compared to boys, suggesting that game addiction may be a may contribute to the emergence or escalation of undesirable behaviours. Additionally, it was found that students' tendency to comply with rules decreased over time, and procrastination behaviours were more prominent among girls. These findings allow us to better understand the behavioural and psychological consequences of digital game addiction in educational environments.

Based on the research findings, the following recommendations can be made:

**Prevention and Management of Digital game Addiction:** The findings of the study suggest that digital game addiction can increase unwanted student behaviours. Therefore, school administrations and teachers, in collaboration with families, should develop more effective strategies to prevent and control game addiction. Implementing structured screen-time regulations and

parental controls may help mitigate addiction tendencies. Additionally, educational games and healthy digital content can be suggested to mitigate the negative effects of game addiction.

**Development of Behavioural Education Programs:** Considering the rise in unwanted behaviours among students, emotional and social development-supportive educational programs in schools become essential. Programs that focus on developing social skills such as empathy, anger management, and problem-solving should be implemented. These types of programs can reduce negative behaviours triggered by digital games and other environmental factors.

**Differentiated Interventions Based on Gender and Grade Level:** The research found that female students exhibited more unwanted behaviours than male students, and their tendency to comply with rules decreased as their grade level increased. In this context, special counselling and support programs should be developed to address the unique challenges faced by female students. Additionally, age-appropriate educational interventions and behavioural management strategies should be implemented, considering the behavioural differences across grade levels.

**Strengthening Family and School Collaboration:** Families have an important impact on children's digital game addiction and unwanted behaviours. Parents should closely monitor their children's digital game usage and social interactions and encourage regular activities and alternative social engagements at home. School-family partnerships can raise awareness and work together to help students develop healthier digital habits.

**Increasing Social Activities and Sports Participation:** To reduce digital game addiction, students should be encouraged to participate more in social activities and sports. Participation in social events can reduce students' addiction to digital games while also helping them develop social skills. Schools should offer alternative social activities such as sports, arts, and cultural events. Collaborative programs with local authorities can also be implemented.

Longitudinal studies are recommended to evaluate the sustained impact of targeted interventions on both game addiction and behavioural outcomes in diverse school contexts.

**Ethical Approval and Participant Consent:** The necessary ethical approval for the study was obtained from University of Lefke Research Ethics Committee, (Date: 01.03.2024, Ethical Clearance No: BAYEK041.05).

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