The Relationship Between Students' Digital Game Addiction and Their Attitudes and Habits Towards Reading

Öğrencilerin Dijital Oyun Bağımlılığı ile Okumaya Karşı Tutum ve Alışkanlıkları Arasındaki İlişki[1]

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Abstract

Purpose: The aim is to determine the relationship between middle school students' levels of digital game addiction and their attitudes and habits towards reading.

Design/Methodology/Approach: The study used a correlational survey model. This model introduces a survey approach aimed at determining the co-variation between two or more variables. The sample group of the study consisted of 324 secondary school students enrolled in the educational year 2023-2024 in the Kaman district of Kırşehir province. Data were collected using the "Digital Game Addiction Scale" and the "Attitude and Habit Scale Towards Reading."

Findings: The collected data were analyzed using the SPSS 21 software package. Upon examining the findings of the study, it was determined that as students' digital game addiction increased, their attitudes and habits towards reading decreased. Conversely, as digital game addiction decreased, attitudes and habits towards reading increased. Additionally, it was observed that the levels of digital game addiction were higher in male students compared to female students.

Highlights: The findings of this study, along with the literature review, indicate that whether they are children or adolescents, if digital games are not played in a controlled manner, it can lead to addiction. A child who has acquired digital game addiction may reduce the time allocated to their studies, start avoiding social environments, and may not be able to develop certain skills that would make them academically successful. It is crucial, especially for parents, to control the duration and type of digital games their children play.

Öz

Çalışmanın amacı: Ortaokul öğrencilerinin dijital oyun bağımlılık düzeyleri ile okumaya karşı tutum ve alışkanlıkları arasındaki ilişkiyi belirlemektir.

Materyal ve Yöntem: Araştırmada ilişkisel tarama modeli kullanılmıştır. Bu model, iki veya daha fazla değişken arasındaki birlikte değişimi belirlemeyi amaçlayan bir tarama yaklaşımını ortaya koyar. Araştırmanın örneklem grubunu 2023-2024 eğitim öğretim yılında Kırşehir ili Kaman ilçesinde öğrenim görmekte olan 324 ortaokul öğrencisi oluşturmuştur. Veriler "Dijital Oyun Bağımlılığı Ölçeği" ve "Okumaya Karşı Tutum ve Alışkanlık Ölçeği" ile toplanmıştır.

Bulgular: Elde edilen veriler SPSS 21 paket program ile analiz edilmiştir. Araştırmanın bulguları incelendiğinde, orta düzeyde negatif korelasyon olduğu tespit edilmiştir. Ayrıca erkek öğrencilerin kız öğrencilere göre dijital oyun bağımlılık düzeylerinin yüksek olduğu görülmüştür.

Önemli Vurgular: Bu çalışmanın bulguları ile literatür taramasında karşımıza çıkan durum bizlere gösteriyor ki gerek çocuklar olsun gerekse gençler olsun dijital oyunlar kontrollü bir şekilde oynanmaz ise bağımlılık düzeyine çıkabilmektedir. Dijital oyun bağımlılığı edinmiş bir çocuğun derslerine ayıracağı zaman azalabilir, sosyalleşme yaşayacağı ortamlardan kaçınma başlayabilir ve akademik olarak kendisini başarılı kılacak birtakım becerilerini geliştiremeyebilir. Özellikle ebeveynler başta olmak üzere çocukların dijital oyun oynama sürelerini ve oynadıkları oyunların türünü kontrol altına almaları gerekmektedir.

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INTRODUCTION

In today's rapidly advancing world of technology, we are constantly encountering new developments every day. While these advancements make their impact in areas such as education, health, transportation, and more, they also appear in devices that we can use in our daily lives. Playing games, which is one of the fundamental rights of children, also benefits from these developments. Devices suitable for gaming, capturing the interest of children and young people, are frequently used by them.

When examining the age range of individuals engaged in digital gaming, it is observed that it has a large spectrum, encompassing childhood, adolescence, young adulthood, and elderly stages ranging from three years old (Hazar &Hazar, 2019). The most significant factor influencing the preference for digital games across all age groups is the ease of accessibility. These games, compatible with appropriate technological devices, are readily playable in almost any environment and captivate players with their rich content. When the term addiction is mentioned, substance dependencies like alcohol, drugs, or cigarettes often come to mind. However, the advancement of technology and the evolution of human behavior have given rise to new types of addictions (Aksel, 2018). Digital game addiction in children can lead to negative physical consequences as well as various adverse impacts from a psychosocial perspective. This condition may not only bring about positive changes in a child's social skills but also result in behavioral disorders such as irritability, attention deficit, depression, anxiety disorders, anger, and more (Aslan, Başcıllar & Karataş, 2022). Physically, constant exposure to the digital environment can cause vision and hearing problems in children.

Digital games not only cause to the deterioration of children's social skills over time and but may also negatively impact academic performance. Additionally, the prolongation of gaming time can give rise to a significant problem, transforming into game addiction (Hazar & Hazar, 2019). While digital games are defined as games played online or offline through technological devices such as computers, tablets, and smartphones (Martinez-Garza, Clark, Killingsworth & Adams, 2016), digital game addiction is defined as a factor that affects the daily life of the individual and a process which is continued by an individual persisting in excessive gaming desires by pushing their body and mind. (Weinstein, 2010). Both social and physical skills of a child who has digital game addiction are affected negatively. This situation can also lead to a decline in academic success by impacting school life.

Individuals feel need to engage in reading at various levels for the continuity of social life (Alvermann, 2002). Engaging in reading at different levels can have positive effects on personal development, social awareness, academic achievements, and professional success. The role of attitude is crucial in developing reading skills (Özdil & Demir, 2020). It is well known that success in reading skills is closely related to the attitude towards reading (Balcı, 2013). Attitude is a persistent system that enables an individual to make a positive or negative evaluation, including feelings and thoughts toward an object, idea, or person, and as well as behavioral tendencies (Deniz & Tuna, 2006). To encourage individuals to develop a positive attitude toward reading books and turn this attitude into action, various stimuli and interactions are needed to motivate individuals and create a positive perception of reading books in their minds. It is essential to reinforce the positive attitude and make it a habit for individuals who have formed a positive perception mentally, thereby ensuring the continuity of the behavior of reading books (Özdil & Demir, 2020). It is expected that children and young people will develop a positive attitude towards reading and acquire the habit for their academic achievements and personal development.

Digital game addiction is increasingly gaining importance over time and since it has become a serious issue, increase in studies conducted are observed (Bhagat, Jeong & Kim, 2020). In a study conducted by Evcin (2010), it was found that playing violent computer games by secondary school students led to an increase in anger, physical, verbal, and indirect aggression. Köse (2013), in his study, investigated the habits of middle school students in playing computer games and their socialization status. According to the research results, it was found that computer games positively or negatively affect the family, school, and friendship relationships, as well as the socialization of middle school students. When different studies are examined, it seems to be researched that interests of middle school students in violent computer games (Kıran, 2011), the relationship between internet addiction and digital game addiction (Ayas, 2012), determination of aggression tendencies and self-esteem levels in children who prefer violent games in computer games (Ergür, 2015), relationships between digital game addiction, bullying cognitions, and empathy levels in adolescents (Kılıç, 2019), and examination of the relationship between digital game addiction and sleep quality in adolescents (Tuncay & Göger, 2021). Additionally, in a study conducted by Kars (2010), it was concluded that the increase in the duration of playing computer games is associated with an increase in aggressive behaviors. In the study by Koçak and Köse (2014), it was observed that teenagers playing computer games negatively affected their family, school, and friendship relationships, disrupting the social development process.

It has been observed that there is no research in the literature examining the relationship between the reading attitudes and reading habits of children playing digital games. In this context, this study aims to explore the relationship between middle school students' digital game addiction and their attitudes and habits towards reading, to contribute to addressing the identified gap in the relevant literature.

The primary aim of this research is to determine the relationship between digital game addiction levels of middle school students and their attitudes and habits towards reading. In line with this objective, the following questions have been addressed:

1. Is there a significant relationship between middle school students' scores on the Digital Game Addiction Scale and their scores on the Attitudes and Habits towards Reading Scale?

2. Is there a significant difference in middle school students' scores on the Digital Game Addiction Scale based on gender?

3. Is there a significant difference in middle school students' scores on theDigital Game Addiction Scale based on grade level?

4. Do middle school students' scores on the Attitudes and Habits towards Reading Scale show significant differences based on gender?

5. Do middle school students' scores on the Attitudes and Habits towards Reading Scale show significant differences based on grade level?

METHOD

Research Model

The research employed a correlational survey model. This model establishes a scanning approach aiming to determine the co-variation between two or more variables. The correlational survey model is utilized to identify the existence of co-variation among variables and to determine the nature of these variations. In this model, analyses are conducted by focusing on whether variables co-vary and, if so, the nature of this co-variation (Büyüköztürk, 2013; Karasar, 2020).

Sample Group of the Study

The sample group of the study consists of secondary school students studying in Kaman district of Kırşehir province in the 2023-2024 academic year. Simple random sampling method was used in this study. The sample was selected from a total of 324 students attending three secondary schools affiliated to the Ministry of National Education in Kaman district. The details of the sample group for the research are provided in Table 1.

Table 1. Descriptive Data for the Sample Group

Class Grade	Female		Male		Total	
	N	%	N	%	N	%
5. Grade	30	40	45	60	75	23,1
6. Grade	36	55,3	29	44,7	65	20,1
7. Grade	43	51,8	40	48,2	83	25,6
8. Grade	44	43,6	57	56,4	101	31,2
Total	153	47,2	171	53,8	324	100

When examining the data in Table 1, it is observed that 47.2% of the sample group consists of female students, while 53.8% consists of male students. Looking at the distribution by class, 23.1% of the sample group are 5th graders, 20.1% are 6th graders, 25.6% are 7th graders, and 31.2% are 8th graders.

Data collection tools

The research data were collected using two scales: the "Digital Game Addiction Scale for Children" developed by Hazar and Hazar (2017) and the "Attitudes and Habits towards Reading Scale" developed by Özdil and Demir (2020).

The Digital Game Addiction Scale for Children was developed by Hazar and Hazar in 2017 with the participation of middle school students to determine the levels of digital game addiction in children. The scale, consisting of a total of 24 items, has a four-factor structure. It is a 5-point Likert scale with response options formulated as "Strongly Disagree (1)," "Disagree (2)," "Undecided (3)," "Agree (4)," "Strongly Agree (5)." Students responding to the scale items will make an assessment by assigning a value between 1 and 5 and marking the appropriate option. The minimum score that can be obtained from the scale is 24, while the maximum score is 120. In the scale's rating system, groups are evaluated as follows: normal (1-24), low risk (25-48), risky (49-72), addicted (73-96), highly addicted (97-120)

The Attitudes and Habits towards Reading Scale was developed by Özdil and Demir in 2020 with the participation of middle school students to assess children's attitudes and habits towards reading. The scale consists of 19 items and has two sub-factors. It is a 5-point Likert scale with response options formulated as "Strongly Disagree (1)," "Disagree (2)," "Undecided (3)," "Agree (4)," "Strongly Agree (5)." Students responding to the scale items will assess and mark the appropriate value between 1 and 5. The interpretation of the averages for the scale is as follows: always (4.21-5.00), often (3.41-4.20), sometimes (2.61-3.40), rarely (1.81-2.60), and never (1.00-1.80), considering average values ranging from 1.00 to 5.00.

Data Collection Process

Data were collected from 324 students using the Digital Game Addiction Scale and the Attitudes and Habits Towards Reading Scale. In this study, in which the relationship between digital game addiction and attitudes and habits towards reading of secondary school students was examined, the data were collected face-to-face by the researchers from three different schools in Kaman district of Kırşehir province in the fall semester of the 2023-2024 academic year.. Necessary explanations were made to the students by the researchers and the scales given to them were filled in voluntarily. The Ethics Committee Report related to

the research was obtained from Kastamonu University. During the data collection process, the researchers conducted face-to-face interviews with the students and the application was carried out on a voluntary basis.

Data analysis

The collected data were then transferred to the SPSS 21 software package for analysis. SPSS 21 software was used for data analysis. The minimum and maximum scores that could be obtained from both scales were determined as 1 and 5, respectively. Initially, skewness and kurtosis values of the obtained data were examined to determine whether the data showed normal distribution. Skewness and kurtosis coefficient values between -1 and +1 indicate that the scores have a normal distribution.

Table 2. Normality Test Data Regarding Students' Digital Game Addiction Scale Scores and Attitude Towards Reading Scale Scores

Norms	N	Minimum	Maximum	Average	SS	Skewness	Kurtosis
Digital game addiction scale scores	324	1	5	2,11	,82	-,91	,13
Attitudes and habits scale scores	324	1	5	3,51	,64	-,11	,30

When Table 2 is examined, it is observed that the skewness and kurtosis coefficient values for the digital game addiction scale scores are between -1 and +1. Similarly, the skewness and kurtosis values for the attitudes and habits towards reading scale scores are found to be between -1 and +1. The analysis results indicate that the scores of students on the digital game addiction scale and the attitudes and habits towards reading scale show a normal distribution. Therefore, independent samples t-test was applied to determine the relationship between gender variables in the analysis of the data. One Way ANOVA was used to reveal the relationship between the scores and the class variable. In addition, Pearson Product-Moment Correlation was used to determine the relationship between students' digital game addiction and attitudes and habits towards reading scores. Furthermore, descriptive statistics such as frequency, percentage, and mean scores were utilized for data description.

FINDINGS AND INTERPRETATIONS

In the research, initially, the correlation between middle school students' scores on the Digital Game Addiction Scale and scores on the Attitudes and Habits towards Reading Scale was examined, and the findings obtained are presented in the table below.

Table 3. Correlation between Digital Game Addiction and Attitudes and Habits towards Reading

Variable	N	r	p
DOB (digital game addiction)	324	-,532	,00
OYTA (attitudes and habits towards reading)			

p<.01

According to the data in the table, a statistically significant negative correlation at a moderate level has been found between middle school students' scores on the Digital Game Addiction Scale and scores on the Attitudes and Habits towards Reading Scale (r=.-532; p<.01). This finding indicates an inverse relationship between middle school students' digital game addiction and their attitudes and habits towards reading. In other words, as students' game addiction increases, their attitudes and habits towards reading decrease; as digital game addiction decreases, attitudes and habits towards reading increase.

Table 4. T-test Results of Digital Game Addiction Scale Scores by Gender

Cinsiyet	N	X	S	sd	t	p
Erkek	171	55,58	20,25	322	4,759	,00
Kız	153	45,47	17,68			

p<.01

According to the data in the table, there is a significant difference in middle school students' scores on the Digital Game Addiction Scale based on gender, t(322) = 4.759, p < .01. This finding indicates that the digital game addictions of male and female students significantly differ. It has been observed that male students have higher levels of digital game addiction (M = 55.58) compared to female students (M = 45.47).

Table 5. Descriptive Statistics of Digital Game Addiction Scale Scores

Sınıf Düzeyi	N	X	SS
5. Sınıf	75	47,33	19,00
6.Sınıf	65	49,75	18,85
7.Sınıf	83	54,31	20,80
8.Sınıf	101	51,19	19,63

The analysis results indicate that there is no significant difference in middle school students' digital game addiction scores based on grade level, $F(3,320) = 1.738$, $p > .05$. In other words, it is observed that middle school students' digital game addictions are similar across different grade levels.

Table 6. ANOVA Results of Digital Game Addiction Scale Scores According to Class Level

Source of the varience	Total sum of squares	sd	Average of squares	F	p
Between group	2012,892	3	670,964	1,738	,159
Within group	123510,6	320	385,971		
Total	125523,5	323			

Even though there is no significant differentiation, considering the averages at the grade level, it has been determined that the game addiction scores of fifth-grade students (X=47.33) are the least, and the game addiction scores of seventh-grade students are the highest (X=54.31). Again, looking at the average scores, it is noteworthy that there is an increase in game addiction scores for middle school students from the fifth grade to the eighth grade, and in the eighth grade, this trend decreases.

Table 7. T-test Results of Attitudes Towards Reading and Habit Scale Scores According to Gender

Gender	N	X	S	sd	t	p
Male	171	64,75	11,67	322	3,242	,00
Female	153	69,12	12,58			

p<.01

According to the data in the table, there is a significant difference in the reading attitude and habit scale scores of middle school students by gender, $t(322) = 3.242$, $p < .01$. This finding indicates that the reading attitudes and habits of male and female students differ significantly. It has been found that female students' reading attitudes and habits (X=69.12) are higher than those of male students (X=64.75).

Table 8. Descriptive Statistics of Attitude Towards Reading and Habit Scale Scores

Class Grade	N	X	SS
5. Grade	75	72,57	11,63
6. Grade	65	68,87	10,66
7. Grade	83	64,53	10,39
8. Grade	101	63,09	13,43

The analysis results indicate that the reading attitude and habit levels of middle school students show a significant difference according to the grade level, $F(3,320) = 11.082$, $p < .05$. In other words, it is observed that the reading attitude and habit levels of middle school students do not have similar characteristics across grade levels. A significant difference has been identified between fifth-grade students and seventh and eighth-grade students.

Table 9. ANOVA Results of Attitude Towards Reading and Habit Scale Scores According to Grade Level

Souce of varience	Total sum of squares	sd	Average of squares	F	Significant difference
Between groups	4591,210	3	1530,403	11,082	5.grade - 7.grade
Within group	44193,047	320	138,103		5.grade - 8.grade
Total	48784,256	323			

Considering the average scores based on the grade level, it is observed that fifth-grade students have the highest reading attitudes and habits (X=72.57), while eighth-grade students have the lowest reading attitudes and habits (X=63.09). Again, looking

at the average scores, it is noteworthy that there is a decrease in middle school students' reading attitudes and habits from the fifth grade to the eighth grade.

CONCLUSION, DISCUSSION AND SUGGESTIONS

The relationship between middle school students' digital game addiction and reading attitudes and habits was examined in the research. When the findings of the study were examined, it was determined that as students' digital game addictions increased, their attitudes and habits towards reading decreased; conversely, as digital game addiction decreased, attitudes and habits towards reading increased. There are studies in the relevant literature supporting the research results. In a study conducted by Şahin, Demir, Kümüş, and Kepenek (2022), who examined computer game addiction and reading attitudes of fourth-grade primary school students, it was revealed that the levels of game addiction in male students were higher than those of female students, and their reading attitude levels were lower. Additionally, different research findings have indicated that male students show more interest in and spend more time playing digital games compared to female students (Erboy and Akar Vural, 2010; Çavuş, Ayhan, and Tuncer, 2016; Horzum, 2011; Gökçearslan and Durakoğlu, 2014; Öndeş and Kılıç, 2022). These results also qualitatively support our research findings. Digital game preferences can often be based on individual interests, gender norms, and marketing strategies. Boys generally show more interest in technological and competitive games. This situation can be effective in directing boys towards digital games along with gender norms and expectations. Additionally, marketing strategies that often focus on boys in the gaming industry can reinforce this preference.

In another finding of the study, although there was no significant difference in middle school students' digital game addiction levels according to their grade level, considering the averages at each grade level, it was determined that the fifth-grade students had the lowest game addiction levels (X=47.33), while the seventh-grade students had the highest (X=54.31). Looking at the average scores, there is an increase in game addiction scores from the fifth grade to the eighth grade among middle school students, and a decrease is observed in the eighth grade. This situation can be interpreted as a result of the eighth-grade students' decreased interest in games due to their awareness of preparing for high school entrance exams and the strict supervision of teachers and parents. It is known that students tend to distance themselves from certain activities to succeed in high school entrance exams. There is a reduction in playing games and leisure time, and they spend a significant portion of their time preparing for the exams.

Another finding of the study is that there is a significant difference in middle school students' attitudes and habits toward reading based on gender. It was found that female students have higher attitudes and habits toward reading compared to male students. This can be interpreted as female students having a greater liking for reading and a higher desire for reading. Additionally, there are studies in the literature supporting this research finding (Başaran and Ateş, 2009; Gürer, 2013; Hood, 2015; Ürün Karahan, 2015; Yıldız and Kaman, 2016). When looking at the analysis results at the grade level, it is observed that attitudes and habits toward reading are quite high at the 5th-grade level, and as the grade level increases, these attitudes and habits decrease. This finding may suggest that as children get older, there is a decline in the attitudes they develop toward reading and habits.

The findings of this study, along with the literature review, indicate that whether it be children or adolescents, if digital games are not played in a controlled manner, it can lead to addiction. A child with digital game addiction may reduce the time devoted to their studies, start avoiding social environments, and may not develop certain skills that would make them academically successful. It is crucial, especially for parents, to control the duration and types of digital games their children play. This regulation, initiated at home, should also be supported by the school. It would be beneficial for school administrators and teachers to be conscious of this issue. Organizing seminars within the school to make students aware of digital games can contribute positively. Parents should be involved in this process, and the entire process should be managed collaboratively.

Ethics Committee Approval Information

Ethics committee approval was obtained from Kastamonu University Scientific Research and Publication Board with the approval number 14/44 on 7 December 2023.

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