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### Digital Game Addiction: A Study on High School Students in Bulanık

#### *Dijital Oyun Bağımlılığı: Bulanık Lise Öğrencileri Üzerine Bir Araştırma*

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##### **ABSTRACT**

This study aims to investigate digital game addiction among high school students in Muş. The global proliferation of the Internet has led to a significant increase in computer usage rates and the number of digital platform users. Concurrently, shrinking physical playgrounds, growing environmental safety concerns, and rapid advancements in digital media tools have collectively shifted children's preferences from physical to digital spaces. This change means child are now choosing to spend their time on the internet, social media, and digital gaming platforms rather than engaging with friends outdoors. Digital gaming platforms have emerged as a significant alternative to real-life interactions, and the increasing time spent on these platforms has elevated the risk of addiction. Using a quantitative research method, data for this study were collected through a "Personal Information Form" designed by the researchers and a validated and reliable scale developed by Hazar and Hazar (2017). The research involved 405 students across 5 high schools in Bulanık district, Muş province. Analysis of the collected data focused on key aspects of addiction, including difficulties in focusing, procrastination behavior, negative projections, and emotional changes experienced by the students.

##### **ÖZ**

Bu çalışmanın amacı Muş'taki lise öğrencileri arasında dijital oyun bağımlılığını incelemektir. İnternetin küresel ölçekte yaygınlaşması, bilgisayar kullanım oranlarında ve dijital platform kullanıcı sayılarında önemli bir artışı beraberinde getirmektedir. Aynı zamanda, fiziksel oyun alanlarının daralması, çevresel güvenlik kaygılarının artması ve dijital medya araçlarındaki hızlı gelişmeler, çocukların tercihlerini fiziksel alanlardan dijital alanlara kaydırmıştır. Bu değişim, çocukların artık dışarıda arkadaşlarıyla vakit geçirmek yerine zamanlarını internet, sosyal medya ve dijital oyun platformlarında geçirmeyi tercih ettikleri anlamına gelmektedir. Dijital oyun platformları gerçek hayattaki etkileşimlere önemli bir alternatif olarak ortaya çıkmıştır ve bu platformlarda geçirilen sürenin artması bağımlılık riskini artırmıştır. Nicel bir araştırma yöntemi kullanılan bu çalışma için veriler, araştırmacılar tarafından tasarlanan bir "Kişisel Bilgi Formu" ve Hazar ve Hazar (2017) tarafından geliştirilen, geçerliliği ve güvenilirliği kanıtlanmış bir ölçek aracılığıyla toplanmıştır. Araştırmaya Muş ili Bulanık ilçesindeki 5 liseden 405 öğrenci katılmıştır. Toplanan verilerin analizi, odaklanma güçlüğü, erteleme davranışı, olumsuz projeksiyonlar ve öğrencilerin yaşadığı duygusal değişiklikler de dahil olmak üzere bağımlılığın temel yönlerine odaklanmıştır.

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## **1. Introduction**

Technological advances and changes transform and shape social life (Alkan, 2023: 705). Technological developments transform many areas of our lives from education to health, from communication to transportation, and this transformation affects many individuals from different age groups, genders and education levels. Games, one of the basic areas of life, have also had its share of this change, and the understanding of games, which started with simple materials existing in nature, has turned into digital games today. Digital games attract the attention of individuals of all ages, genders and educational levels thanks to the diversity they offer, and the growth in this field affects a wide audience.

The rapid spread of internet access and the penetration of computer products into every aspect of our lives cause children to move away from traditional games and increase their interest in digital games (Aras, 2021, p. 17). Games are activities that bring people together. However, playing games can have both positive and negative effects, especially on children and adolescents. Children or adults who spend a long time in front of the computer may experience problems in their social relationships; their communication with their families and friends may weaken. In addition, there may be negative changes in their school and work life. Game addiction, like other addictions, causes people to spend more time with increasing pleasure. When these individuals play games excessively, they may experience difficulties in communicating with their families and friends, which negatively affects their course and work performances. On the basis of the negative effects of playing games, there are situations such as excessive playing and addiction (Horzum, Ayas, & Çakır Balta, 2008: 77).

Digital games can negatively affect children and adolescents' physical and mental development as well as their social lives. These effects can lead to various problems such as sleep disorders, excretory problems, unhealthy eating habits, difficulties in social life, and deterioration of interpersonal relationships (Nazlıgül, Baş, Akyüz, & Yorulmaz, 2018: 13). This study provides a general assessment of high school students' digital game addiction. The study adopted the quantitative research method and the questionnaire technique was used to collect the data. The questionnaire covers topics such as students' digital game playing habits, the effect of these habits on procrastination behaviors, the negative situations caused by digital game deprivation, and the emotional changes they experience while playing digital games. In this way, it was possible to examine in more depth how widespread the level of digital game addiction is and the effects of this addiction on students' academic achievement, social relationships and psychological state. Furthermore, the findings provide guidance for educators and parents to guide students' digital gaming habits in a healthy way.

## **2. Internet Concept**

The word Internet is an abbreviation of 'Interconnected Networks' and describes a global communication network that connects computers around the world. This term of English origin means 'interconnected' and can be translated into Turkish as 'International Network' or 'Interconnected Networks' (Glowniak, 1998: 135-144). The Internet is formed when at least two computers are connected to each other via a network connection and exchange data. This communication network, in which millions of computers around the world are connected to each other, constitutes the Internet (Geray, 2002: 24).

Internet is one of the most important tools that make communication and communication accessible and shareable. Known as the 'general network', the internet offers users a rich communication environment that hosts many different types of content with its high speed and wide interaction capacity (Narin, 2017: 21). The Internet was developed based on technological standards and communication protocols that enable data communication between computers. With the widespread acceptance of the TCP/IP protocol in the late 1980s, the Internet began to take its modern form. In this period, the basic infrastructure of the Internet was established and websites were started to be designed to provide data communication between users (Fashner & Drye, 2011: 117).

The Internet has become the most important element of today and is considered as a new turning point in terms of human history. This global communication tool, which enables rapid access to different points around the world, makes significant contributions to social events. At both national and international level, countries, states, institutions, social organisations and all dynamics of the society have taken place and interacted in the Internet environment with uncertain borders (Işık, 2007: 18).

### **3. Game Concept**

Play is defined as activities with and without rules, where people spend time willingly and freely, where there is no pressure and even contributes to the development of children (Eni, 2017: 13).

“Play is a voluntary act or activity, freely consented to, but carried out in accordance with strictly prescriptive rules, within certain limits of time and space, having an end in itself, accompanied by a sense of tension and joy and a consciousness of 'being otherwise than usual'. The concept thus defined tends to encompass everything we call play in relation to animals, children and adult humans: skill, strength, intelligence and good luck. This category of play seems to be recognizable as one of the basic spiritual elements of life” (Huizinga, 2015: 48). According to Boratav (2013: 232-233), play is an activity that children, and sometimes adults, engage in for the purpose of having fun in their free time outside of work. Play can include all kinds of behaviours that children do outside of their compulsory duties such as studying, eating and sleeping. Repeating a word over and over again, pushing each other as if fighting with friends or running aimlessly for minutes are also examples of play.

Playing is an activity in which only the means and methods allowed by the rules (lusoric possibilities) are used to achieve a certain goal (prelusoric goal). In this process, the rules prohibit more effective means and methods and require a preference for less effective ones (constitutive rules). At the same time, rules are adopted and applied only in such a way as to make the activity possible (lusoric attitude) (Suits, 2012: 56). Games are defined as actions that aim to achieve certain goals, and these goals are within the boundaries of the game framework. (Dursun, 2019: 88).

The child can fulfil the play activity that is important for him/her alone. Play is one of the most important needs of the child after basic needs such as nutrition. The child, by nature, finds something to play with in every situation and makes time for it. Play is an integral part of his/her life. If there is a child anywhere in the world, there is definitely play there (Gökşen, 2014: 229-259).

Game is defined as any kind of competition that has its own rules depending on the type played, suitable for spending time, fun, made with body and mind, developing skills and requiring agility (TDK, 2005: 1526). The child's natural learning environment is games. As the child plays games, he/she both develops his/her skills and his/her senses become sharper. Play is like a kind of laboratory for the child to discover himself/herself and his/her environment. After love, play is what the child needs the most to develop his/her personality. Just as a child growing up without love is unthinkable, a childhood without play is also unthinkable. Love and play are extremely important concepts for children's mental health (Yörükoğlu, 2021: 66-72).

### **4. The Concept and Types of Digital Games**

Developing technology has shaped lifestyles in many areas with the practical solutions it offers to human life. Play, one of the basic areas of life, has also been affected by this development. Game behaviours, which started with the instinct of being intertwined with nature and imitating it, have gained a new dimension with the advancement of computer technologies and the emergence of digital games based on imagination (Hazar Z. , 2016: 46-53).

A game is an activity that people utilise their free time, is played for a specific purpose (entertainment, education, health, etc.) in a limited time period with physical and mental limits, has its own rules, and requires voluntary participation. While play helps to develop social cohesion and emotional maturity, it also requires elements such as talent, intelligence, skill and concentration. The game is an activity that has an effect on both players and spectators and is enjoyed (Hazar, 2000). Digital games are a set of systems that provide software interaction with interfaces such as monitor, keyboard, mouse, joystick through devices such as computers, tablets and phones, and reach the result in line with certain rules and goals (Kaya, 2013).

There are various reasons why individuals turn to digital games. These include the desire to distract, the search for different entertainments, the ambition to challenge, the desire to get away from the social environment, and the desire to do things that they cannot do in real life. In addition, the desire of individuals to spend their free time, the desire to reach higher levels in the game, the excitement of passing certain stages, the expectation of winning prizes, and the fact that games are the subject of conversation in their environment are among the factors that determine game playing attitudes (Tekkurşun & Bozkurt, 2019).

The development and updating of digital games and even the follow-up of their tabloid aspects by young people have made these games an important part of popular culture for young people (Namlı & Demir, 2020). The biggest contribution of technological developments has been the transformation of digital games. While most games were played on video game consoles in the past, today, with the advancement of devices and games, users can easily access and play digital games through various devices such as personal computers, smartphones, tablets and smart televisions (Bilgin, 2015: 32).

Digital games can be classified according to various criteria. For example, according to the hardware on which the game is played, they can be categorised as computer games, mobile phone games, tablet games, arcade games and console games. In addition, according to the number of people playing the game, it can also be grouped as single-player, double-player or multiplayer, online or local network supported games (Kaya, 2013: 52).

According to Marc Prensky (2001), there are 8 different types of computer games. These types are categorised as action games, adventure games, fighting games, puzzle games, role-playing games, simulation games, sports games and strategy games. With the increasing use of the Internet, it is seen that online games have recently gained an important place among these genres.

## **5. Digitalization and Digital Game Addiction**

The term “digital” is based on the Latin word “digitus”, an ancient means of counting. Digital technologies refer to devices, systems and resources that operate with microprocessors and have the capacity to process, generate and store data. In this context, tools such as computers, internet, social media platforms and mobile phones are defined as digital technologies (Mengalli, 2009). Digital technologies are important life components that make life easier with the solutions offered by scientific knowledge and that we encounter in all areas of life with these solutions (İncedere & Tunç, 2022).

With the inclusion of digital technologies in human life, especially the introduction of the internet into our lives has enabled individuals to easily access all kinds of information. The concept of digitalization, simply put, means the more efficient and effective use of digitized data. In the business world, it is defined as making changes in business processes and practices by using digital technologies (Accenture, 2021; Goswami & Schuurmans, 2022). Digitalization refers to the widespread interaction of digital innovations in the economy and society rather than a new revolution (Perez, 2015; Goswami and Schuurmans, 2022).

Addiction is related to the objects that individuals use or the actions they perform. It renders the person uncontrollable and makes it impossible to live a life without it. In other words, use and behaviours override the will of the individual. The person continues to use addictive actions and behaviours even if he/she does not want to (Eker, 2016: 36).

In the recent period when digitalisation has shaken our lives in every aspect, games played in streets, avenues, parks and coffeehouses are now played in offices, homes, game halls and internet cafes. As digitalisation has affected every aspect of life, games have also taken their share. Instead of playing on football fields, open spaces, parks or playgrounds, children prefer to play games with their peers in PlayStation halls, at home or in internet cafes. This is true for most games, regardless of the type of game. These entertainment tools offered in electronic environment are rapidly integrating into our lives and at the same time becoming one of the most important tools of socialisation (Kaya, 2013: 90).

Pathological gaming addiction is defined in two different ways. The first definition includes the pathological symptoms specified in the Diagnostic and Statistical Manual of Mental Disorders. These symptoms include preoccupation, withdrawal, development of tolerance, inability to reduce or stop gaming, neglecting other activities, continuing to play despite problems, deception, escape from gaming, and deterioration of relationships due to excessive gaming. The second classification is based on the international disease classification and three main factors stand out here. These factors are; deterioration of the ability to control, always prioritising gaming, and continuing to play despite being problematic (Han, Cho, Sung, & Park, 2022, p. 2). According to the Green Crescent's Turkey's Anti-addiction Training Report, some of the symptoms of gaming addiction are as follows (Doğruluk, 2017: 54):

- The person prefers to play games instead of spending time with his/her family, friends and environment,
- Bragging about his achievements in the game rather than in real life,
- Increased family unrest due to too much time spent playing,

- Becoming restless and irritable when away from the digital platform they are addicted to,
- Decreased quality of social life and weakened relationships,
- Physical health problems, body imbalance, increased pain and insomnia.

According to Bilgin (2015: 41-42), digital game addiction is especially common in adolescents. There are two main reasons for this. Firstly, the ability of Generation Z, born after 2000, to grow up in the age of communication and information comes to the fore. Generation Z can adapt to the speed of information and time faster because they are more interested in technology. For this generation, 'Technology has become their basic need. It is not possible for them to understand the world without devices such as phones and computers, and they accept technology as a natural way of life.' In addition, the predisposition of these individuals to technology can lead to personal addictions as a result of uncontrolled and excessive use. The second reason why digital game addiction is more common among adolescents is that their decision-making skills are not yet fully developed. In addition, during this period, individuals tend to value their friends more, and adolescents' interactions with their friends through digital games lead to addiction.

According to international studies, the prevalence of gaming addiction varies between 2% and 15%. Problematic online gaming has been reported to be an important public health problem, especially in South Korea, China and Taiwan. According to a study conducted among American youth, 90% of young people play digital games and 15% of them are addicted to digital games (Yalçın Irmak, 2014: 16).

From the past to the present, the human bond with games has always been strong. Traditional games such as hide and seek, körebe and hopscotch were enjoyable and indispensable activities for people in the past. However, with the development of technology, interest in digital games has increased and people have turned to computers and game halls. This intense interest in digital games causes a decrease in social life and interaction between individuals. Today, there is a computer in almost every home and everyone, including young children, uses smart mobile phones, which leads to an increase in research on digital game addiction (Köksal B., 2015: 27).

When the literature is analysed, recent studies on digital game addiction are examined,

In a survey study conducted with 2,853 high school students, Yılmaz et al. (2014) found that 16.3% of the students were highly addicted to the internet. The study also revealed that students who like to play games and chat online are more addicted and that boys' internet addiction is more common than girls.

In a study conducted by Çavuş et al. (2016) on university students, it was found that individuals who like strategy, action-adventure, sports and online games are in the high risk group in terms of digital game addiction and are associated with the degree of digital game addiction. In addition, it was reported that people who prefer quiz, simulation and puzzle games have lower rates of digital game addiction.

In a study conducted by Eni (2017), digital game addiction among high school students was addressed. In the study, it was stated that one of the reasons why high school students tend to play games is that boys turn to digital games to escape from the problems in their lives. In addition, it was determined that the time spent by male students in games was more than female students and the time allocated to digital games increased as the education level of the family increased. However, it was observed that the tendency towards digital games decreased as the household income level increased. In the study conducted by Aktaş (2018), psychological resilience and aggression tendencies of 889 secondary school students with internet addiction and digital game addiction were examined. The study revealed that digital game addiction and internet addiction are interrelated and one triggers the other.

## **6. Method**

### **6.1. Purpose and Importance of the Study**

"Digital Game Addiction: A Research on Fuzzy High School Students", it was aimed to determine high school students' focus on digital gaming, the relationship between digital gaming and procrastination, the reflection of digital gaming deprivation, and digital gaming and emotional change. In the study, the descriptive survey model, one of the quantitative research methods, was preferred and the survey technique was used as the data collection tool. Determining the level of Digital Game Addiction of high school students is very important for a healthy education to solve the problems, if any.

The questions tried to be obtained within the scope of the research are as follows:

1. How are high school students' focus on digital gaming?
2. Determining the relationship between digital game and procrastination?
3. What are the reflections of digital game deprivation?
4. Determination of digital game playing and emotional change?

## **6.2. Research Model And Data Collection**

The aim of this study is to determine the level of digital game addiction among high school students. The descriptive survey model was applied in the study. According to the survey model, the event is examined without any change and the result is tried to be reached (Büyüköztürk, Akgün, Demirel, Karadeniz, & Çakmak, 2015). In this study, data were collected through a "Personal Information Form" and a scale developed by Hazar and Hazar (2017), whose validity and reliability studies have been conducted and whose scientific reliability has been approved. The scale consists of 21 questions and five sections. These data collection tools provided comprehensive information on the demographic characteristics and digital game addiction levels of the participants. The study was conducted with a total of 405 students from five different high schools in Bulanık district of Muş province. The participants were selected to include individuals from various socioeconomic backgrounds so that the data obtained could be more generalizable. In line with the collected data, the relationships between students' digital game playing habits and their focus levels, procrastination behaviors, negative repercussions and emotional changes caused by digital game deprivation were analyzed in detail. In this context, the effects of digital game addiction on students' cognitive, behavioral, and emotional states were addressed from a multidimensional perspective; in addition to descriptive data, the interactions between variables were statistically evaluated through t-test and ANOVA analyses.

## **6.3. Population and Sample**

The population of this study, which was conducted to determine the digital game addiction levels of high school students, consists of high school students, while the sample consists of Bulanık Murat Anatolian High School, Bulanık Anatolian High School, Bulanık Anatolian Imam Hatip High School, Bulanık Said Nursi Anatolian High School and Bulanık Vocational and Technical Anatolian High School students. Within the scope of this study, quota sampling technique, one of the quantitative research methods, was used. The purpose of quota sampling is to create a small model within the universe and to ensure that some groups within the universe are represented in the sample. In such a case, the proportions of the groups in the population should be known. Since the current situation is not known, the proportions determined by previous studies are used (Gürtan, 1982). This study, which was conducted as a field research between May 2024 and October 2024, was conducted face-to-face. 60 people were tested the reliability of the study with the pre-test application. In the pre-test, the degree of reliability (Cronbach's Alpha) is 0,780. Thus, it was determined that the study was within the sufficient confidence interval in terms of its application (Çevik & Akgül, 2005). In order to obtain a consistent statistical data, it is important to calculate the sample size correctly. In this direction, according to Yazıcıoğlu and Erdoğan (2014), at least 384 people constitute the sample in a universe of 100 million people with a 5% margin of error. Considering the high school students in Turkey, 420 questionnaire forms were delivered to the participants with a 5% margin of error. 15 questionnaire forms were found to be incorrect or incomplete and were not included in the analysis. The study was carried out on 405 questionnaire forms. After the questionnaires were applied, the degree of reliability was measured again and it was found to be 0.765. Therefore, the study was found to be reliable (Çevik & Akgül, 2005). The data were tested through IBM SPSS Statistics 22 programme.

## **7. Findings**

The distributions of the participants' gender, school, class level and number of cardels in the field research conducted are given in Table 1, the distributions of the data related to the electronic device used to play games, the type of game and the time spent in the game are given in Table 2, and the distributions of the analysis of digital game addiction according to gender (t test) are given in Table 3, The distributions of the (anova) analysis of digital game addiction according to grade level are presented in Table 4, the distributions of the (anova) analysis of digital game addiction according to school are presented in Table 5, the

distributions of the (anova) analysis of digital game addiction according to device type are presented in Table 6, and the distributions of the (anova) analysis of digital game addiction according to game type are presented in Table 7. In the study, descriptive data, t test and anova analysis were used.

**Table 1.** Distribution of Demographic Data

| Demographic Characteristics | Categories                                                | Number (n) | Percentage (%) |
|-----------------------------|-----------------------------------------------------------|------------|----------------|
| <b>Gender</b>               | Woman                                                     | 195        | 48,1           |
|                             | Male                                                      | 210        | 51,9           |
|                             | <b>Total</b>                                              | <b>405</b> | <b>100</b>     |
| <b>Your Class</b>           | 1. 9th grade                                              | 94         | 23,3           |
|                             | 2. 10th grade                                             | 108        | 26,7           |
|                             | 3. 11th grade                                             | 97         | 23,9           |
|                             | 4. 12th grade                                             | 106        | 26,1           |
|                             | <b>Total</b>                                              | <b>405</b> | <b>100</b>     |
| <b>Your school</b>          | 1. Bulanık Murat Anatolian High School                    | 81         | 20,1           |
|                             | 2. Bulanık Anatolian High School                          | 76         | 18,7           |
|                             | 3. Bulanık Anatolian Imam Hatip High School               | 86         | 21,2           |
|                             | 4. Bulanık Said Nursi Anatolian High School               | 83         | 20,4           |
|                             | 5. Bulanık Vocational and Technical Anatolian High School | 79         | 19,6           |
|                             | <b>Total</b>                                              | <b>405</b> | <b>100</b>     |

The demographic data of the study is given in Table 1. Among the demographic characteristics, gender, grade and school duration were evaluated. While 48.1% of the individuals participating in the study were female, 51.9% were male. 23.3% of the participants were 9th grade, 26.7% were 10th grade, 23.9% were 11th grade and 26.1% were 12th grade students. 20.1% of the participants were Bulanık Murat Anatolian High School, 18.7% were Bulanık Anatolian High School, 21.2% were Bulanık Anatolian Imam Hatip High School, 20.4% were Bulanık Said Nursi Anatolian High School and 19.6% were Bulanık Vocational and Technical Anatolian High School students.

**Table 2.** Distribution of Digital Game Type and Game Playing Time Data

|                                  | Categories           | Number (n)   | Total Percentage (%) | 405 percent (%) |
|----------------------------------|----------------------|--------------|----------------------|-----------------|
| <b>Game type</b>                 | 1. Action            | 126          | 11,5                 | 31,1            |
|                                  | 2. Adventure         | 98           | 9,0                  | 24,2            |
|                                  | 3. War               | 350          | 31,8                 | 86,4            |
|                                  | 4. Violence          | 340          | 30,9                 | 84,0            |
|                                  | 5. Sports            | 150          | 13,6                 | 37,0            |
|                                  | 6. Competition       | 20           | 1,8                  | 5,0             |
|                                  | 7. Strategy          | 5            | 0,4                  | 1,2             |
|                                  | 8. Tactics           | 12           | 1,1                  | 3,0             |
|                                  | <b>Total</b>         | <b>1.101</b> | <b>100</b>           |                 |
| <b>Digital game playing time</b> | 1. Less than 1 hour  | 185          | 45,7                 |                 |
|                                  | 2. 1 hour            | 57           | 14,2                 |                 |
|                                  | 3. 2 hours           | 54           | 13,3                 |                 |
|                                  | 4. 3 hours           | 52           | 12,8                 |                 |
|                                  | 5. 4 hours           | 40           | 9,8                  |                 |
|                                  | 6. 5 hours and above | 17           | 4,2                  |                 |
|                                  | <b>Total</b>         | <b>405</b>   | <b>100</b>           |                 |

The data on digital game types and game playing time in the study are given in Table 2. It is seen that 31.8% of the participants play war games, 30.9% play violence games, 13.6% play sports games, 11.5% play action games, 9% play adventure games, and 3.3% play competition, tactics and strategy games. The

average daily game playing time of the participants is 45.7% less than 1 hour, 14.2% play 1 hour, 13.3% play 2 hours, 12.8% play 3 hours, 9.8% play 4 hours and 4.2% play 5 hours and above.

**Table 3.** Descriptive Distribution of Data on Digital Game Addiction

| Factors related to digital game addiction                  | Participation levels |          |           |          |                  | $\bar{x}$<br>(mean) | ss   |
|------------------------------------------------------------|----------------------|----------|-----------|----------|------------------|---------------------|------|
|                                                            | Strongly disagree    | Disagree | Undecided | I agree. | Absolutely agree |                     |      |
| 1. Focus on Digital Gaming                                 | %6,9                 | %8,6     | %10,5     | %44,0    | %30,0            | 3,70                | 0,91 |
| 2. Relationship Between Digital Gaming and Procrastination | %6,8                 | %11,7    | %11,5     | %45,0    | %25,0            | 3,50                | 1,21 |
| 3. Reflection of Digital Gaming Deprivation                | %8,7                 | %9,5     | %8,0      | %41,5    | %32,3            | 3,69                | 0,92 |
| 4. Digital Gaming and Emotional Change                     | %9,9                 | %9,7     | %10,4     | %39,8    | %30,0            | 3,49                | 1,20 |

Descriptive data on digital game addiction are given in Table 3. Thus, the results show that the participants mostly focus on digital games ( $\bar{x}=3.70$ ,  $s=0.91$ ), digital games and procrastination are related ( $\bar{x}=3.50$ ,  $ss=1.21$ ), there are reflections in digital game deprivation ( $\bar{x}=3.69$ ,  $ss=0.92$ ) and there are emotional changes while playing digital games ( $\bar{x}=3.49$ ,  $ss=1.20$ ).

**Table 4.** Analysis of Data on Digital Game Addiction By Gender (t test)

| Factors related to digital game addiction                  | Gender | Number<br>(n) | $\bar{x}$ (mean) | SS   | t      | p           |
|------------------------------------------------------------|--------|---------------|------------------|------|--------|-------------|
| 1. Focus on Digital Gaming                                 | Woman  | 195           | 3,31             | 1,28 | -2,550 | <b>0,00</b> |
|                                                            | Male   | 210           | 4,09             | 0,79 |        |             |
| 2. Relationship Between Digital Gaming and Procrastination | Woman  | 195           | 3,21             | 1,26 | -2,850 | <b>0,00</b> |
|                                                            | Male   | 210           | 3,79             | 0,89 |        |             |
| 3. Reflection of Digital Gaming Deprivation                | Woman  | 195           | 3,25             | 1,15 | -5,465 | <b>0,00</b> |
|                                                            | Male   | 210           | 4,13             | 0,82 |        |             |
| 4. Digital Gaming and Emotional Change                     | Woman  | 195           | 3,12             | 1,28 | -3,650 | <b>0,00</b> |
|                                                            | Male   | 210           | 3,86             | 0,95 |        |             |

The gender (t test) analysis for digital game addiction is given in Table 4. The responses given by male participants to the factors of “Focus on Digital Games” ( $t=-2.550$ ;  $p<0.05$ ), “Relationship between Digital Games and Procrastination” ( $t=-2.850$ ;  $p<0.05$ ), “Reflection of Digital Game Deprivation” ( $t=-5.465$ ;  $p<0.05$ ), “Playing Digital Games and Emotional Change” ( $t=-3.650$ ;  $p<0.05$ ) differ significantly from the responses given by female participants. Therefore, it is seen that male individuals focus on digital games more than female individuals, tend to procrastinate while playing digital games, reflections are seen more in game deprivation and emotional change is reflected more while playing games.

**Table 5.** Analysis of Data on Digital Game Addiction According to Grade Level (anova)

| Factors related to digital game addiction | Class         | Number<br>(n) | $\bar{x}$ (mean) | SS   | F     | p    |
|-------------------------------------------|---------------|---------------|------------------|------|-------|------|
| 1. Focus on Digital Gaming                | 1. 9th grade  | 94            | 3,75             | 1,05 | 2,465 | 0,09 |
|                                           | 2. 10th grade | 108           | 3,72             | 1,09 |       |      |
|                                           | 3. 11th grade | 97            | 3,65             | 1,08 |       |      |
|                                           | 4. 12th grade | 106           | 3,68             | 1,05 |       |      |
|                                           | 1. 9th grade  | 94            | 3,45             | 1,02 |       |      |

|                                                                   |               |     |      |      |       |      |   |
|-------------------------------------------------------------------|---------------|-----|------|------|-------|------|---|
| <b>2. Relationship Between Digital Gaming and Procrastination</b> | 2. 10th grade | 108 | 3,48 | 1,05 | 2,596 | 0,08 | - |
|                                                                   | 3. 11th grade | 97  | 3,55 | 1,02 |       |      |   |
|                                                                   | 4. 12th grade | 106 | 3,52 | 1,08 |       |      |   |
|                                                                   |               |     |      |      |       |      |   |
| <b>3. Reflection of Digital Gaming Deprivation</b>                | 1. 9th grade  | 94  | 3,73 | 1,06 |       |      |   |
|                                                                   | 2. 10th grade | 108 | 3,65 | 1,01 | 2,375 | 0,10 | - |
|                                                                   | 3. 11th grade | 97  | 3,71 | 1,03 |       |      |   |
|                                                                   | 4. 12th grade | 106 | 3,67 | 1,08 |       |      |   |
| <b>4. Digital Gaming and Emotional Change</b>                     | 1. 9th grade  | 94  | 3,48 | 1,05 |       |      |   |
|                                                                   | 2. 10th grade | 108 | 3,51 | 1,10 | 2,562 | 0,12 | - |
|                                                                   | 3. 11th grade | 97  | 3,47 | 1,02 |       |      |   |
|                                                                   | 4. 12th grade | 106 | 3,50 | 1,03 |       |      |   |

The class level (anova) analysis for digital game addiction is given in Table 5. No significant relationship was found between the class levels in the questions asked about digital game addiction.

**Table 6.** Analysis of Data on Digital Game Addiction By School (anova)

| Factors related to digital game addiction                         | School                                                    | Number (n) | $\bar{x}$ (mean) | SS   | F     | p    |   |
|-------------------------------------------------------------------|-----------------------------------------------------------|------------|------------------|------|-------|------|---|
| <b>1. Focus on Digital Gaming</b>                                 | 1. Bulanik Murat Anatolian High School                    | 81         | 3,66             | 1,07 | 0,805 | 0,48 | - |
|                                                                   | 2. Bulanik Anatolian High School                          | 76         | 3,76             | 1,08 |       |      |   |
|                                                                   | 3. Bulanik Anatolian Imam Hatip High School               | 86         | 3,75             | 1,03 |       |      |   |
|                                                                   | 4. Bulanik Said Nursi Anatolian High School               | 83         | 3,65             | 1,01 |       |      |   |
|                                                                   | 5. Bulanik Vocational and Technical Anatolian High School | 79         | 3,70             | 1,02 |       |      |   |
| <b>2. Relationship Between Digital Gaming and Procrastination</b> | 1. Bulanik Murat Anatolian High School                    | 81         | 3,46             | 1,01 | 0,537 | 0,65 | - |
|                                                                   | 2. Bulanik Anatolian High School                          | 76         | 3,51             | 1,02 |       |      |   |
|                                                                   | 3. Bulanik Anatolian Imam Hatip High School               | 86         | 3,49             | 1,08 |       |      |   |
|                                                                   | 4. Bulanik Said Nursi Anatolian High School               | 83         | 3,53             | 1,03 |       |      |   |
|                                                                   | 5. Bulanik Vocational and Technical Anatolian High School | 79         | 3,51             | 1,01 |       |      |   |
| <b>3. Reflection of Digital Gaming Deprivation</b>                | 1. Bulanik Murat Anatolian High School                    | 81         | 3,68             | 1,89 | 2,088 | 0,60 | - |
|                                                                   | 2. Bulanik Anatolian High School                          | 76         | 3,70             | 1,05 |       |      |   |
|                                                                   | 3. Bulanik Anatolian Imam Hatip High School               | 86         | 3,72             | 1,02 |       |      |   |
|                                                                   | 4. Bulanik Said Nursi Anatolian High School               | 83         | 3,67             | 1,03 |       |      |   |
|                                                                   | 5. Bulanik Vocational and Technical Anatolian High School | 79         | 3,68             | 1,08 |       |      |   |
| <b>4. Digital Gaming and Emotional Change</b>                     | 1. Bulanik Murat Anatolian High School                    | 81         | 3,49             | 1,04 | 3,670 | 0,56 | - |
|                                                                   | 2. Bulanik Anatolian High School                          | 76         | 3,51             | 1,01 |       |      |   |
|                                                                   | 3. Bulanik Anatolian Imam Hatip High School               | 86         | 3,50             | 1,06 |       |      |   |

|                                                                 |    |      |      |
|-----------------------------------------------------------------|----|------|------|
| 4. Bulanık Said Nursi<br>Anatolian High School                  | 83 | 3,53 | 1,01 |
| 5. Bulanık Vocational and<br>Technical Anatolian High<br>School | 79 | 3,44 | 1,03 |

The analysis of digital game addiction according to school (anova) is presented in Table 6. No significant relationship was found in the questions regarding digital game addiction according to school.

**Table 7.** Analysis of the relationship between digital game addiction and time spent playing the game (anova)

| Factors related to digital game addiction                         | Play time            | Number (n) | $\bar{x}$ (mean) | SS   | F     | p           |                         |
|-------------------------------------------------------------------|----------------------|------------|------------------|------|-------|-------------|-------------------------|
| <b>1. Focus on Digital Gaming</b>                                 | 1. Less than 1 hour  | 185        | 3,42             | 1,41 | 2,760 | <b>0,00</b> | 1, 2, 3 - 4<br>(p=0,00) |
|                                                                   | 2. 1 hour            | 57         | 3,47             | 1,40 |       |             |                         |
|                                                                   | 3. 2 hours           | 54         | 3,45             | 1,20 |       |             |                         |
|                                                                   | 4. 3 hours           | 52         | 3,87             | 1,02 |       |             |                         |
|                                                                   | 5. 4 hours           | 40         | 3,96             | 1,03 |       |             |                         |
|                                                                   | 6. 5 hours and above | 17         | 4,05             | 1,01 |       |             |                         |
| <b>2. Relationship Between Digital Gaming and Procrastination</b> | 1. Less than 1 hour  | 185        | 3,15             | 1,39 | 2,350 | <b>0,00</b> | 1, 2, 3 - 4<br>(p=0,00) |
|                                                                   | 2. 1 hour            | 57         | 3,18             | 1,41 |       |             |                         |
|                                                                   | 3. 2 hours           | 54         | 3,15             | 1,21 |       |             |                         |
|                                                                   | 4. 3 hours           | 52         | 3,84             | 1,03 |       |             |                         |
|                                                                   | 5. 4 hours           | 40         | 3,86             | 1,01 |       |             |                         |
|                                                                   | 6. 5 hours and above | 17         | 3,87             | 1,00 |       |             |                         |
| <b>3. Reflection of Digital Gaming Deprivation</b>                | 1. Less than 1 hour  | 185        | 3,30             | 1,35 | 2,880 | <b>0,00</b> | 1, 2, 3 - 4<br>(p=0,00) |
|                                                                   | 2. 1 hour            | 57         | 3,28             | 1,40 |       |             |                         |
|                                                                   | 3. 2 hours           | 54         | 3,25             | 1,12 |       |             |                         |
|                                                                   | 4. 3 hours           | 52         | 4,08             | 1,01 |       |             |                         |
|                                                                   | 5. 4 hours           | 40         | 4,12             | 1,03 |       |             |                         |
|                                                                   | 6. 5 hours and above | 17         | 4,15             | 0,98 |       |             |                         |
| <b>4. Digital Gaming and Emotional Change</b>                     | 1. Less than 1 hour  | 185        | 3,10             | 1,37 | 2,653 | <b>0,00</b> | 1, 2, 3 - 4<br>(p=0,00) |
|                                                                   | 2. 1 hour            | 57         | 3,12             | 1,42 |       |             |                         |
|                                                                   | 3. 2 hours           | 54         | 3,15             | 1,23 |       |             |                         |
|                                                                   | 4. 3 hours           | 52         | 3,77             | 1,05 |       |             |                         |
|                                                                   | 5. 4 hours           | 40         | 3,85             | 1,02 |       |             |                         |
|                                                                   | 6. 5 hours and above | 17         | 3,95             | 1,00 |       |             |                         |

The time interval (anova) analysis for digital game addiction is given in Table 7. The factors of “Focus on Digital Games” ( $f=2.760$ ;  $p<0.05$ ), “Relationship between Digital Games and Procrastination” ( $f=2.350$ ;  $p<0.05$ ), “Reflection of Digital Game Deprivation” ( $f=2.880$ ;  $p<0.05$ ), “Playing Digital Games and Emotional Change” ( $f=2.653$ ;  $p<0.05$ ) differ significantly according to the responses of the participants who play games for 2 hours or less per day and the participants who play games for 3 hours or more per day. Therefore, it was concluded that the participants who play games for 2 hours or less per day focus on digital games more than the participants who play games for 3 hours or more per day, they tend to procrastinate while playing digital games, the reflections are seen more in game deprivation and the emotional change is reflected more while playing games.

**Table 8.** Analysis Of The Relationship Between Digital Game Addiction And Game Type (anova)

| Factors related to digital game addiction                         | Game type      | Number (n) | $\bar{x}$ (mean) | SS   | F     | p                                            |
|-------------------------------------------------------------------|----------------|------------|------------------|------|-------|----------------------------------------------|
| <b>1. Focus on Digital Gaming</b>                                 | 1. Action      | 126        | 3,96             | 1,01 | 2,560 | <b>0,00</b><br>1, 2, 3, 4, 5 – 6<br>(p=0,00) |
|                                                                   | 2. Adventure   | 98         | 3,97             | 1,02 |       |                                              |
|                                                                   | 3. War         | 350        | 4,08             | 1,00 |       |                                              |
|                                                                   | 4. Violence    | 340        | 4,01             | 1,01 |       |                                              |
|                                                                   | 5. Sports      | 150        | 4,10             | 0,78 |       |                                              |
|                                                                   | 6. Competition | 20         | 3,16             | 1,38 |       |                                              |
|                                                                   | 7. Strategy    | 5          | 3,21             | 1,32 |       |                                              |
|                                                                   | 8. Tactics     | 12         | 3,14             | 1,32 |       |                                              |
| <b>2. Relationship Between Digital Gaming and Procrastination</b> | 1. Action      | 126        | 3,75             | 1,02 | 2,430 | <b>0,00</b><br>1, 2, 3, 4, 5 – 6<br>(p=0,00) |
|                                                                   | 2. Adventure   | 98         | 3,71             | 1,01 |       |                                              |
|                                                                   | 3. War         | 350        | 3,81             | 1,03 |       |                                              |
|                                                                   | 4. Violence    | 340        | 3,79             | 1,01 |       |                                              |
|                                                                   | 5. Sports      | 150        | 3,82             | 0,80 |       |                                              |
|                                                                   | 6. Competition | 20         | 3,02             | 1,36 |       |                                              |
|                                                                   | 7. Strategy    | 5          | 3,09             | 1,35 |       |                                              |
|                                                                   | 8. Tactics     | 12         | 3,03             | 1,31 |       |                                              |
| <b>3. Reflection of Digital Gaming Deprivation</b>                | 1. Action      | 126        | 3,95             | 1,00 | 2,892 | <b>0,00</b><br>1, 2, 3, 4, 5 – 6<br>(p=0,00) |
|                                                                   | 2. Adventure   | 98         | 3,99             | 1,03 |       |                                              |
|                                                                   | 3. War         | 350        | 4,06             | 0,95 |       |                                              |
|                                                                   | 4. Violence    | 340        | 4,03             | 1,02 |       |                                              |
|                                                                   | 5. Sports      | 150        | 4,09             | 0,82 |       |                                              |
|                                                                   | 6. Competition | 20         | 3,13             | 1,42 |       |                                              |
|                                                                   | 7. Strategy    | 5          | 3,14             | 1,37 |       |                                              |
|                                                                   | 8. Tactics     | 12         | 3,17             | 1,35 |       |                                              |
| <b>4. Digital Gaming and Emotional Change</b>                     | 1. Action      | 126        | 3,77             | 1,02 | 2,750 | <b>0,00</b><br>1, 2, 3, 4, 5 – 6<br>(p=0,00) |
|                                                                   | 2. Adventure   | 98         | 3,72             | 1,05 |       |                                              |
|                                                                   | 3. War         | 350        | 3,83             | 1,06 |       |                                              |
|                                                                   | 4. Violence    | 340        | 3,81             | 1,02 |       |                                              |
|                                                                   | 5. Sports      | 150        | 3,72             | 0,95 |       |                                              |
|                                                                   | 6. Competition | 20         | 3,03             | 1,28 |       |                                              |
|                                                                   | 7. Strategy    | 5          | 3,07             | 1,30 |       |                                              |
|                                                                   | 8. Tactics     | 12         | 3,05             | 1,37 |       |                                              |

The game type (anova) analysis for digital game addiction is given in Table 8. The factors of “Focus on Digital Games” ( $f=2.560$ ;  $p<0.05$ ), “Relationship between Digital Games and Procrastination” ( $f=2.430$ ;  $p<0.05$ ), “Reflection of Digital Game Deprivation” ( $f=2.892$ ;  $p<0.05$ ), “Playing Digital Games and Emotional Change” ( $f=2.750$ ;  $p<0.05$ ) differ significantly according to the responses given by the participants who play games in the genres of “Action”, “Adventure”, “War”, “Violence”, “Sports” and the participants who play games in the genres of “Competition”, “Strategy” and “Tactics”. Therefore, it is seen that participants who play games in the genres of “Action”, “Adventure”, “War”, “Violence”, “Sports” focus on digital games more than participants who play games in the genres of “Competition”, “Strategy” and “Tactics”, they tend to procrastinate while playing digital games, reflections are seen more in game deprivation and emotional changes are reflected more while playing games.

## 8. Conclusion

In today's world where digitalization is integrated into almost every aspect of our lives and computer and internet technologies have become an integral part of our daily lives, digital games have also gained an important place. While digital platforms are rapidly becoming popular, especially for entertainment and

leisure purposes, this development also paves the way for an increase in asocial behaviors and an increase in addiction levels in individuals. This phenomenon can lead to various negative effects especially on children, adolescents and adults. Digital game addiction not only causes psychological problems, but can also create problems that negatively affect the physical health of individuals. Spending long periods of time in front of a computer can cause eye health, postural disorders and other physiological disorders. This study takes an in-depth look at the factors affecting high school students' digital game addiction and analyzes the levels of this addiction. A number of social, psychological and environmental factors that shape interest in digital games are discussed, and students' relationship with digital games is evaluated in various dimensions. The effects of variables such as students' playing time, preferences for game genres, family structures, school achievement and environmental factors on addiction levels were investigated. The descriptive data on the participants' digital game addiction in the field research are as follows: Focus on digital games is high, procrastination behavior is observed while playing digital games, negative reflections are seen in digital game deprivation, and emotional changes are experienced while playing digital games. In terms of gender, it is seen that male individuals focus on digital games more than female individuals, tend to procrastinate while playing digital games, have more negative repercussions in game deprivation, and have more emotional changes while playing games. Hazar and Hazar. (2017), Karaaslan (2015), Horzum (2011) and Şen (2023) also obtained similar results. In the questions asked about digital game addiction, no significant relationship was found according to grade level and school of study. In terms of playing time, it was concluded that participants who played games for 2 hours or less per day focused more on digital games, tended to procrastinate while playing digital games, had more reflections in game deprivation, and had more emotional changes while playing games than participants who played games for 3 hours or more per day. In the study, it was concluded that participants who played games in the genres of "Action", "Adventure", "War", "Violence", "Sports" and participants who played games in the genres of "Competition", "Strategy" and "Tactics" focused more on digital games, tended to procrastinate while playing digital games, and reflected more emotional changes while playing games.

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#### **Etik, Beyan ve Açıklamalar**

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1. Etik Kurul izni ile ilgili;  
☒ Bu çalışmanın yazarı, Muş Alparslan Üniversitesi Bilimsel Araştırma ve Yayın Etiği Etik Kurulu'nun tarih 21.05.2024 sayı 142362 ve karar 72 ile etik kurul izin belgesi almış olduklarını beyan etmektedir.
  2. Bu çalışmanın yazarı, araştırma ve yayın etiği ilkelerine uyduklarını kabul etmektedir.
  3. Bu çalışmanın yazarı kullanmış oldukları resim, şekil, fotoğraf ve benzeri belgelerin kullanımında tüm sorumlulukları kabul etmektedir.
  4. Bu çalışmanın benzerlik raporu bulunmaktadır.
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