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Digital Game Addiction from The Perspective of Children Aged 10-14 Years: A Phenomenological Research

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Abstract

The study aims to explore digital game addiction from the perspective of children aged 10 to 14, focusing on the impact of digital games from their perspective. To do this, the phenomenological research design, using qualitative research methods, was employed. Criterion sampling, one of the purposeful sampling methods, was administered to select participants. Data was collected via individual interviews with 24 children, and interview transcripts were analyzed using content analysis techniques. Findings showed that the majority of children equated digital game addiction to substance addiction. Children explained that digital games cause addiction because of several factors, such as completing missions, winning the game, passing to the next level, and being entertained. The study concludes that digital games affect children academically, socially, physically, and psychologically. Children with high addiction scores to digital games highlighted the effect of digital games on the increasing tendency to violence, while children with low addiction scores to digital games indicated the entertainment aspect of the games in terms of psychological aspects. It was determined that social isolation and the disruption of family relationships become prominent in the effects of digital games on children's social lives. Furthermore, children stated that digital games cause skeletal and muscular system disorders and weight gain, and they mostly stated eye diseases among the physical effects of digital games.

Keywords: Children, Digital addiction, Digital game addiction, Phenomenology

10-14 Yaş Arası Çocukların Gözünden Dijital Oyun Bağımlılığı: Fenomenolojik Bir Araştırma

Öz

Bu çalışma, 10-14 yaş aralığındaki çocukların gözünden dijital oyun bağımlılığını keşfetmeyi ve dijital oyunların etkisine odaklanmayı amaçlamaktadır. Çalışmada nitel araştırma yöntemlerinden fenomenolojik araştırma deseni kullanılmıştır. Katılımcıların seçiminde amaçlı örnekleme yöntemlerinden ölçüt örnekleme yöntemi kullanılmıştır. Veriler 24 çocukla yapılan bireysel görüşmeler yoluyla toplanmış ve görüşme kayıtları içerik analizi teknikleri kullanılarak analiz edilmiştir. Bulgular, çocukların büyük bir kısmının dijital oyun bağımlılığını madde bağımlılığına benzettiklerini ortaya koymuştur. Çocuklar dijital oyunların eğlenceli olma, oyunu kazanma, görev tamamlama ve bir sonraki seviyeye geçme özellikleri nedeniyle bağımlılık yaptığını belirtmişlerdir. Çalışma dijital oyunların çocukları akademik, sosyal, fiziksel ve psikolojik yönden etkilediği sonucuna varmıştır. Öte yandan, bağımlılık puanı yüksek olan çocuklar dijital oyunların psikolojik açıdan en çok şiddet eğilimlerini artırma etkisinden bahsederken bağımlılık puanı düşük olan çocuklar ise eğlendirme etkisini dile getirmişlerdir. Dijital oyunların çocukların sosyal yaşamlarına etkisinde sosyal ortamdan uzaklaşma ve aile ilişkilerinin bozulmasının öne çıktığı tespit edilmiştir. Çocuklar dijital oyunların fiziksel etkilerine yönelik en çok göz rahatsızlıkları dile getirmekle birlikte kilo alma ve iskelet-kas ağrılarına sebep olduğunu da belirtmişlerdir.

Anahtar kelimeler: Çocuklar, Dijital bağımlılık, Dijital oyun bağımlılığı, Fenomenoloji

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INTRODUCTION

Information and Communication Technology (ICT) tools have rapidly become increasingly prevalent with their developing features and increasing usage areas. Turkey also has a significant level of Internet access. According to the survey on ICT usage in households, the proportion of households accessing the Internet in 2021 is 92%. (Turkish Statistical Institute [TURKSTAT], 2021). It is seen that children mostly use the Internet and ICT tools for entertainment and playing games (Kaşıkçı et al., 2014; Turgut & Kurşun, 2020; RTÜK, 2016). Ergüney (2017) points out that children use the Internet for various purposes, especially for watching cartoon films and playing games beginning at the age of three. Toran et al. (2016) have reported that the age of playing games and watching videos in digital media has decreased to 1-1.5.

In the literature, studies show that digital games have many cognitive, social, and emotional contributions to individuals. They benefit from ensuring hand-eye coordination and improving multitasking skills (Lin & Hou, 2015). Besides, children also might improve their social aspects in multi-user digital games by chatting with their friends (Aslan et al., 2019). Digital games can also improve gamers' abilities, such as analyzing, solving problems, reasoning, and making decisions (Kim & Smith, 2015). Digital games are also used in foreign language education to facilitate vocabulary learning (Ceylaner & Yanpar Yelken, 2017). They also improve their visual literacy and provide skills needed in some professions, such as pilots (McKinley et al., 2011).

Besides the positive effects of digital games that children mostly prefer for entertainment, digital games can cause several academic problems, such as refusing to go to school, their reluctance to attend classes, lower academic success, forgetfulness, and sleeping in class (Gentile, 2009; Karacaoğlu, 2019; Odabaşıoğlu et al., 2007). It is seen that some children prefer to socialize in digital game environments, and they have a problem initiating and managing communication in real life (Kowert & Oldmeadow, 2013). Therefore, children become less involved in the group of friends and have conflicts with their family members (Gülçek, 2018). Strategy games confuse children's inner worlds and desensitize them by triggering only the sense of winning (Budak, 2017). Exposure to violent scenes in digital games may normalize violence for children, leading to desensitization towards violent behaviors (Balıkçı, 2018). Consequently, this desensitization may prompt children to adopt violence as a solution to everyday challenges (Budak, 2017; Tutkun et al., 2017). Additionally, digital games are linked to various physical health issues, including headaches, disorders of the skeletal and muscular systems, epileptic seizures, and dry eye syndrome (xerophthalmia) (Griffiths & Hunt, 1998; Horzum, 2011). Moreover, there is an increased risk of obesity among children who engage in more than five hours of digital gaming daily (Berber et al., 2014).

Literature Review

Individuals experience various periods according to their mental, physical, psychological, and social developmental stages. The 10-14 age range is also a period that can be characterized as late childhood or early adolescence (Ertuğrul & Eker, 2019). In the relevant period, children pass from the concrete operational stage to the abstract operational stage and reach a level of maturity close to adults by developing their hypotheses, problem-solving, reasoning, and abstract thinking abilities (Doğan, 2007; Özbay, 2004). Children at this age experience rapid physical growth, such as height and weight gain, development and coordination of muscle and skeletal systems, and maturation of vision (Doğan, 2007; Koç, 2004). Despite having a physically young individual appearance, the quality of social relations of children who experience psychological confusion with their childlike aspects in this age range changes (Blum et al., 2014; Ünalan et al., 2007). It is seen that the socialization process that starts with the family at an early age has shifted to the school environment and friend groups. Gaming is an important activity that ensures children's mental, physical, psychological, and social development (Özer et al., 2006). Instead of playing games with their friends in the schoolyard or on the street, children are inclined to play digital games with the rapid development and spread of information and communication technologies. The long-term use of digital games, which is at the forefront of children's internet activities, causes addiction. Indeed, Mustafaoğlu and Yasacı (2018) have reported that 87.1% of parents think their children are addicted to digital games. Along with digital game addiction, there are various cognitive, physical, and behavioral problems, such as playing games uncontrollably, increasing in-game time, getting anger blocked, ignoring school and social life responsibilities and family relationships, and eating and sleeping disorders (Cham et al., 2019; Horzum et al., 2008). Some studies have reported that digital game addiction has a positive relationship with factors such as anxiety (Karaca et al., 2015), depression (Baş, 2018), social anxiety and low self-esteem (Rooji et al., 2010), anger management, and tendency to violence. Studies also show that more and more children are addicted to digital games. (King et al., 2013; Kuss & Griffiths, 2012). It has been recently observed that digital game addiction causes

incidents resulting in theft, crime, and suicide (Odabaşıoğlu et al., 2007; Ögel, 2012; Yücel & Şan, 2018). In addition, due to digital game addiction is seen that children avoid socializing and have problems with family connections (Kim et al., 2008).

Parents find it difficult to supervise their children's in-game time with digital games and the widespread use of smartphones, tablets, and laptops. This increases the risk of children's digital game addiction (Aksel, 2018). Although children's time on the Internet and digital media is considered worrying by their parents, they may be within normal limits. In addition to the perspectives of children and their parents, who are members of different generations, towards digital devices and digital games, their perception of digital game addiction is also different (Eşgi, 2013). Therefore, identifying children's perceptions and awareness of digital game addiction is important to understand parents' concerns. When literature is examined, studies have been carried out on children's digital game addiction levels and the positive and negative effects of digital games on children (Karagöz, 2017; Mustafaoğlu & Yasacı, 2018). Wan and Chiou (2013) indicated that studies on digital game addiction are generally conducted based on quantitative data aimed at explaining the behavior of addicted users. Similarly, in Turkey, there are also quantitative studies that analyze the level of children's digital game addiction and its effect on their social life and academic success (Torun et al., 2015), its relationship with violence and aggression (Aydoğdu Karaaslan, 2015; Dolu et al., 2010), its effect on the level of loneliness (Çakır & Oğuz, 2017; Öncel & Tekin, 2015) and its relationship with communication (Yılmaz & Biricik, 2017). There are very few studies that examine the relationship of digital game addiction with violence and aggression (Özkan & Hira, 2017; Tutkun et al., 2017). In brief, both international and national studies have largely conducted research on the status and impacts of children who are addicted to digital games. However, in order to understand how addiction develops in children, it is vital to examine the digital game behaviors of both children with high addiction scores (CHAS) and children with low addiction scores (CLAS). Indeed, since children might hide the games they play on mobile devices, children's digital gaming behavior should be analyzed in depth through phenomenological studies (Gökçearslan & Seferoğlu, 2016). In another study, it is emphasized that there is a need for detailed studies to reveal the reasons for children's digital game addiction (Ministry of Health, General Directorate of Health Promotion [MHGDHP], 2018). Understanding how children aged 10 to 14, a critical developmental period, perceive digital game addiction will offer valuable insights for preventing and addressing this risk. Indeed, no in-depth study has been found in Turkey that shows how children between the ages of 10 and 14 are affected by digital games and how they perceive digital games and digital game addiction. The current study aims to reveal digital game addiction from children's perspective between the ages of 10 and 14 and how they are affected by digital games. In line with this purpose, the following research questions below were formulated:

1. How are the digital game habits of CHAS and CLAS to digital games?
2. What does digital game addiction mean for CHAS and CLAS to digital games?
3. How do digital games affect children who are/are not addicted to digital games?

METHOD

The phenomenology research design was preferred in this study to determine how children between the ages of 10 and 14 perceive the phenomena of digital games and digital game addiction. It is important to perform phenomenological analysis to develop datasets and provide a comprehensive definition of the phenomenon (Yüksel & Yıldırım, 2015). Phenomenological studies focus on how participants make sense of a phenomenon through their points of view (Johnson & Christensen, 2014). Digital games are a phenomenon that is preferred and are played by many children and causes addiction to some of them; however, there is no in-depth information about how children make sense of them and how they explain it (Şimşek & Karakuş Yılmaz, 2020)

Research Design

Participants

Data sources in phenomenological research are individuals who have directly experienced the phenomenon under investigation (Yıldırım & Şimşek, 2008). The data source of this study is also children between the ages of 10 and 14 being the addressees of digital game addiction. The criterion sampling method, one of the purposeful sampling methods, was used to select participants. This method aims to study all situations providing a predetermined set of criteria (Yıldırım & Şimşek, 2008). For the selection of the sample, having a high addiction

score and a low addiction score were determined as the main criteria. Within this context, a secondary school in Türkiye's province with a moderate socio-economic level was visited. Children who met the criteria set in this secondary school were informed about the study. The parental consent form was given to 51 children who volunteered to participate in the study. The children of 43 parents who signed the consent form for their children to participate in the study were included. The 24 children included in the study were coded F6H1, M8L2, etc. (Appendix 1). The codes are designed to represent as F6H1 code, F(Female), 6 (Grade 6), H (High Addiction Score), 1 (Participant No. 1) and M8L2 code M (Male), 8 (Grade 8), L (Low Addiction Score),2 (Participant No. 2). Information on gender, grade level, age and digital game addiction levels of the participant children is presented in Appendix1.

Data Collection

The scale Hazar and Hazar (2017) developed was used to determine children's digital game addiction levels. As a result of factor analysis conducted in the scale development process, a structure consisting of the Cronbach alpha coefficient of 0.91 and 24 items and four factors were obtained. These four factors are “excessive focus and conflict towards digital gaming”, “development of tolerance in duration of playing and the value of the game”, “postponement of individual and social tasks”, and “psychological-physiological reflection of deprivation and being hooked on digital games”.

A semi-structured interview form was developed to reveal children's digital game habits and perceptions of digital game addiction and how they are affected by digital games. Firstly, a draft interview form with 12 questions suitable for the research was prepared. Additionally, arrangements for interview form were made in line with feedback received from two field experts working on digital game and digital game addiction. A pilot study was conducted with eight children, a girl, and a boy, from each grade level at secondary school. According to the findings obtained from the pilot study, the interview form was finalized by adding probes to one question.

Data Analysis

The necessary permission was taken from the institution for a scale study to be carried out with children within the scope of the study. Accordingly, the study's data collection process was carried out between February and May 2019. At first, children at schools were informed about the study within the framework of research ethics. After the children had been informed, the parents whose children wanted to participate were given permission. Scores they received from the scale developed by Hazar and Hazar (2017) formed a basis for determining their addiction level. Children can score between 1 and 120 on the scale. In this study, children who scored between 1 and 72 on the scale were considered CLAS, and children who scored between 73 and 120 were considered CHAS (Hazar & Hazar, 2017). The information on the addiction scores of the participants is presented in Appendix 1.

After the scale study was carried out with 43 children, individual interviews were conducted with the children. During the interviews, the children were not informed about the scores they received from the scale and about their addiction status. In order to prevent data loss and save time, interviews were audio-recorded with the participant's permission. Content analysis was performed after the voice recordings were transcribed. The content analysis increases the comprehensibility of the researched phenomenon with the process of data combination by coding data and collecting them under certain themes (Elo & Kyngäs, 2008). In this process, as Karasar (2009) stated, data were coded by the first researcher by considering the purpose of the study and without being detached from the context of the study. Other researchers checked the coding and made arrangements. Temporary themes were created by evaluating the answers given for each question. Intersecting themes were determined and gathered under the same theme, and a code-theme relationship was established. Within the scope of the study, the findings obtained from the interviews were examined, and feedback was received from the field experts. Based on the received feedback, 24 children were included in the study by considering the focus of the study, the amount of data, and the theoretical sampling, which are the three basic principles put forward by Yıldırım and Şimşek (2008) to determine the sample size in qualitative research. With the data obtained from the individual interviews with children, the data depth has been reached in a way that does not cause data repetition. The findings obtained from these data were tabulated to the research questions and presented by direct quotations.

Studies of Validity and Reliability

Due to the preference for a phenomenological pattern, which is one of the qualitative research methods in this study, the strategies by Lincoln and Guba (1985), such as credibility, transferability, dependability, and confirmability, were adopted in order to ensure reliability and validity (as cited in Yıldırım & Şimşek, 2008).

Credibility

- In developing the interview form, opinions from two field experts on Computer Education and Instructional Technology (CEIT) were obtained.
- The pilot study for the interview form was conducted with eight children, one girl and one boy from each grade level.
- While preparing the interview form, a theoretical framework was considered the pattern, and the adequacy of the data obtained to answer research questions was considered.

Transferability

- All phases of the study were explained in detail.
- A criterion sampling method was used to reflect the research topic for the sample selection.
- The raw data were arranged according to the themes revealed and detailed by direct quotations.

Dependability

- All findings of the study were supported by raw data.
- During the interviews, questions were asked of the participants in the same order, and expressions that would affect their opinions were avoided.
- The relationship of research results with research questions was considered.

Verifiability

- Interview data, findings and comments, coding, and themes were noted and were repeatedly controlled.

Research Ethics

In this study, the rules of scientific research and publication ethics were followed in all research processes. Students were given detailed information about the purpose of the study. The student's participation in the study was voluntary, and written permission was obtained from the student's parents before participation. The student's personal information was kept confidential and was not shared with third parties in any way.

FINDINGS

Digital Gaming Habits

This study examines children's digital gaming habits in terms of games and types of games played, digital devices used for digital gaming, digital device ownership, in-game time, and children's age to start digital gaming. Findings related to the children's age to start digital gaming are presented in Figure 1.

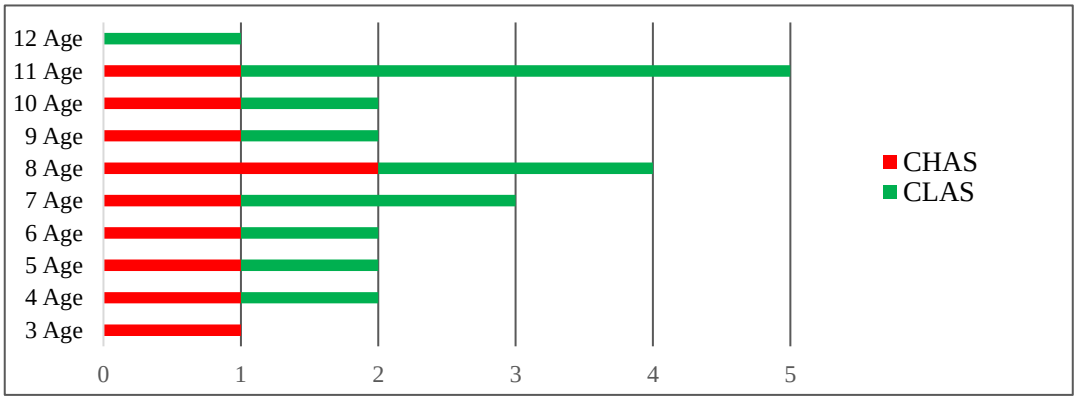

Figure 1. *Children's age to start digital gaming*

As illustrated in Figure 1, the age of starting digital gaming changed between 3 and 12. Participant M6H1, who started playing digital games at an early age, expressed, "When I was two years old, we visited our grandparents. They had a computer. I wanted to play computer games. My father bought me a computer when I

was three years old. I have been playing since I was four years old. "However, it was found that addiction is less common in children who started gaming after nine years old. Participant F7L5, who is CLAS, expressed the age of starting digital gaming, "I started playing games at the age of nine. It was forbidden for me to play on the phone. One day, my brother played games when I was bored at home. He told me to come and play together."

The digital device ownership and which digital devices children play are presented in Table 1.

Table 1. Digital Game Devices Played by Children

Devices	CHAS		CLAS	
	Personal	Co-user	Personal	Co-user
Smartphone	8	3	8	3
Computer (desktop/laptop)	4	5	6	3
Tablet	7	1	3	1
Console	2	1	4	1

*Children can answer more than one regarding the game device they use

As demonstrated in Table 1, smartphones are placed at the top among devices children prefer to play digital games, and computers and tablets follow it. It was observed that the condition of having ICT tools by children is at a considerable rate. It was observed that while almost all CHAS have at least one digital device, some of the CLAS have none. Participant M8H6 expressed, “My smartphone, tablet, and laptop belong to me. We use the console with my brother.” Besides, participant F7L18, who hasn’t got any device, expressed, “I use my cousin’s computer, my mother’s phone, and the PlayStation at the internet cafe.”

Children's preferred ICT tools for playing digital games and the frequency of playing digital games vary. The frequency of digital gaming according to having a high addiction score or low addiction score is presented in Table 2.

Table 2. Children’s In-Game Time (Weekly)

Frequency of Digital Gaming	CHAS	CLAS
0-7 hours a week	1	1
8-14 hours a week	0	6
15-21 hours a week	-	1
22-28 hours a week	5	3
29-35 hours a week	-	2
36-42 hours a week	3	-
42 hours over a week	1	-

As demonstrated in Table 2, all CLAS play 35 hours or less per week, and some of the CHAS are above this duration. Participant M6H1, who plays more than 35 hours weekly, stated, "I play very often. While playing 8-9 hours weekly, I play more on the weekends. Even I stay awake till morning." Participant F7L16, who spends 9-10 hours a week playing digital games, expressed, “I mean, I play every day. One and a half hours.”

To understand children’s digital gaming habits, the frequency of gaming and the kind of games they prefer were analyzed, and the findings are presented in Table 3.

Table 3. Types of Digital Games Played by Children

Types of Game	CHAS	CLAS
Strategy (MOBA, MMO)	8	3
FPS	3	2
Role-playing game (MMORPG, Sandbox, RPG)	5	3
Adventure	2	2
Intelligence	-	3
Simulation	-	1

As demonstrated in Table 3, the most preferred digital games among children are types of strategy games and FPS. It was determined that CHAS prefers strategy and adventure games more, but not intelligence and

simulation games. Participant F5H4, one of the CHAS who plays strategy and FPS games, stated, "PUBG, and generally gun games. My brother also has games. I play them…"On the contrary, participant F7L5, one of the CLAS who prefers intelligence games, stated, "I like word games. I like learning new words."

Children's Perception of Digital Game Addiction

To reveal children's perception of digital game addiction, their opinions on how they define it, what they liken digital game addiction to, and their opinions related to situations that cause addiction have been analyzed. In this context, the analysis results of their explanations of children's digital game addiction are presented in Table 4.

Table 4. The Explanations of Digital Game Addiction by Children

Digital Game Addiction	CHAS	CLAS
Playing intensively	9	
Being hooked on digital games	7	8
Being preoccupied with digital games	4	3
Making an impression on life	1	1
Postponing something	1	-
Feeling bad without digital games	-	1
Requiring effort to quit digital games	-	1

As demonstrated in Table 4, children mostly explained digital game addiction as "playing intensively." Participant M6H8 expressed, "Digital gaming excessively, gaming until midnight, and even being unable to stop." Some children evaluated digital game addiction as "being hooked on games." The statement of participant F8H5 was that "Children focus on games played by devices like PlayStation, smartphones, and computers, and they never care what's happening around the world." Another statement frequently expressed by CHAS and CLAS was "being preoccupied with digital games." Participant M6L13 stated, "Digital game addiction is to think just about games by depending on them and spend all day on them, not lessons."

The results of the analysis of the metaphors expressed by children for digital game addiction are summarized in Table 5.

Table 5. The Metaphors Related to Digital Game Addiction

Metaphors	CHAS	CLAS
Substance addiction	6	5
Daily habits	2	2
Bad friend	-	2
Need	1	-
Stupidity	1	-
Monster	-	1

As illustrated in Table 5, most of the children liken digital game addiction to substance addiction, such as cigarettes, alcohol, and drugs. Participant M7L15 stated, "It is like smoking addiction. A cigarette addict cannot stand without smoking. Similarly, a game addict cannot stand without gaming." Similarly, participant F8L14 stated, "It is similar to substance addiction because you want to use it over and over when you start to use substances."

Besides substance addiction, children also created different metaphors for digital game addiction. According to Participant F7L18, who emphasizes digital game addiction as a bad friend, "It is like bad friends because it may end badly when you are addicted to them. It causes death like a blue whale". Participant F7H11 likened digital game addiction to stupidity as follows: "If I look at myself from this perspective, I am like a little stupid. I prefer to play games on my smartphone, although there are several places to visit, such as parks, forests, and so forth."

When children's opinions about reasons for digital game addiction were analyzed, some children expressed that games cause addiction due to the characteristics they have. The opinion of participant M7H7, emphasizing the environment provided by digital games to the player, was that "Digital games cause excessive addiction. Because it is his world that he creates, and no one can ask him what to do. He does whatever he wants, and he

does freely.” On the other hand, children explained that factors such as completing missions, winning the game, and passing to the next level cause addiction. Participant M7H12 pointed out, “You have become very ambitious. You have fun as you play. You think you can do better, and so you become addicted." Some children also indicated that the element of entertainment in digital games can cause addiction. Participant F7L19 expressed, “When you start to play a game if you like it, you want to play it continuously. Entertainment is a factor that causes digital game addiction.” Moreover, participant F7L19, who indicates the reason why digital games cause addiction varies by person, expressed that “...I can be addicted because I am exhilarated. Someone also becomes addicted since they play and spend time with friends.”

The Effects of Digital Games

Children’s opinions on the effects of digital games were analyzed. The analysis found that digital games affect children academically, socially, physically, and psychologically. The analysis results related to the effects of digital games on academic performance are presented in Table 6.

Table 6. The Effects of Digital Games on Academic Performance

Academic Effects	CHAS	CLAS
Failure in exam scores	4	3
Improving foreign language	3	3
Distractibility / Dysmnesia	2	4
Neglect of tasks and responsibility	4	2
Acquisition of problem-solving ability	2	1
No Academic effect	1	1

As demonstrated in Table 6, most of the CHAS stated that digital games have a positive effect on improving their foreign language knowledge and skills, while most of the CLAS stated that there are negative effects, such as distractibility or dysmnesia. In this respect, participant F5H4 stated, "I play mathematical games, and they help me in mathematical operations and problem-solving." Participant M5L24 said, "I can benefit from educational games to learn some English words." However, participant F8H5 indicated the negative effects of digital games: "... Before starting to play digital games, I always used to get high scores in exams. My grades have been decreasing more and more since I started digital gaming."

The analysis results related to the effects of digital games on children’s social life are presented in Table 7.

Table 7. The Effects of Digital Games on Children’s Social Life

Social Effects	CHAS	CLAS
Social isolation	5	3
Disruption of family relationships	2	4
Friendship and communication in digital games	3	2
The ease of communicating with foreigners	-	1
Encouraging to play basketball and play the guitar	1	-
None	1	1

As demonstrated in Table 7, two children expressed that digital games do not affect their social lives. On the other hand, participant M6H9, who thinks that there are negative effects on social life, expressed, "I sometimes prefer to play digital games instead of socializing with my friends." According to Participant F6H10, "I can't talk much to my surroundings. And when I speak, I stutter. I don't like that at all. I don’t like it, but I play it anyway." Participant M8H2 expressed how much it affected their social life, "I stayed at home because of digital games; I had no reason to go out." Participant M7L22 explained the disruption of family relationships from the same perspective: “When my parents insist on not playing, I become furious to play. Then, they shut down the computer. So, we cannot get along with each other anymore.”

The results of the analysis related to the effects of digital games on children’s psychology are presented in Table 8.

Table 8. The Effects of Digital Games on Children's Psychology

Psychological Effects	CHAS	CLAS
No psychological effect	4	7
Increasing violence tendency	3	1
Entertaining	1	2
Relaxing	1	-
Being pessimistic/ introverted	1	-
Being obsessed with digital games	-	1
Getting selfish	1	-

As demonstrated in Table 8, approximately half of the children expressed that digital games have no psychological effect. While CHAS mostly expressed the effects of increasing the tendency to violence, CLAS also stated the effects of entertainment. Participant M6H8 said, "I think it causes me to argue with others." On the other hand, participant F7L16 said, "I think digital games are entertaining, so I forget what keeps my mind busy."

Children also pointed out the physical effects of digital games. Children mostly mentioned eye diseases among the physical effects. Participant F7L17 stated her physical problem, "Digital games are harmful to my eyes. Besides, I sometimes have arthralgia". Also, other effects stated by children were that digital games cause skeletal and muscular system disorders and weight gain. Participant F8H5 explained her health condition, "I have pain in my fingers. My eye pain gets more and more. Even I have a headache. While playing games, I have pain in my waist that results from slouching."

The results of the analysis related to the effects of digital games on children physically are presented in Table 9.

Table 9. The Effects of Digital Games on Children Physically

Physically Effects	CHAS	CLAS
Eye diseases	6	3
Body pain (waist, neck, back)	4	1
Weight gain	2	2
Inactiveness	2	1
Finger pain	1	1
Slouching	-	1
None	2	4

As demonstrated in Table 9, children mostly expressed eye diseases regarding the physical effects of digital games. However, children stated that digital games cause weight gain and body pain. Participant F8H5 indicated, "My fingers started to hurt a lot because of playing games. My eye pain has become worse and worse. I have a terrible headache. For example, my back hurts when I stand upright because I slouch too much." Participant F7L17 expressed digital games' negative effects: "It was harmful to my eye health, and sometimes my joints hurt."

DISCUSSION & CONCLUSION

This study aims to conduct an in-depth investigation of digital game addiction and how they are affected by digital games from the perspective of children between the ages of 10-14. Following the study's purpose, children's digital gaming habits, how they perceive digital game addiction, and how digital games affect children are examined.

Children's Habits of Digital Gaming

Digital games are present in children's daily lives, regardless of whether they have a high score of digital game addiction. However, it was revealed that there are differences in the frequency and duration of digital gaming between CHAS and CLAS. It has been observed that the in-game time of non-addicted children does not exceed 35 hours. The fact that the weekly in-game time exceeds 41 hours is considered an indicator of addiction (Wan & Chiou, 2013). In the study conducted with 667 digital gamers between the ages of 11 and 54, digital game addiction was positively related to the time spent on games (Blinka & Mikuska, 2014). In another study conducted with 605 digital game players, players with low psychological endurance played games for over 45 hours (Canale et al.,

2019). Lewis (2016) also indicated that even though digital gaming causes several problems in people's lives, playing games frequently is a signal of addiction. In other many studies, it is mentioned that excess in-game time is positively related to addiction (Derin & Bilge, 2016; Gökçearslan & Günbatar, 2012; Karagöz, 2017; Kurtbeyoğlu, 2018). The fact that children determined to have a high addiction score in this study play more frequently and more games weekly shows similarity to the studies in the literature. On the other hand, some children's in-game time was found to be 7-14 hours a week, even though they were determined to have a high addiction score in this study. This situation can be explained by the limitation of children's in-game time due to several reasons, such as exam periods or time limitations by parents. Indeed, from interviews with parents, Taştekin (2019) states that some parents restrict their children's time spent on digital games. Based on the findings in the present study and studies in the literature, the excess of in-game time is an important factor that leads to an increase in addiction. However, Kneer et al. (2014) noted that uninvolved parents who do not care or neglect their children while they play are risk factors for their children to develop game addiction. In this context, it is clear that families' tendencies on children's in-game time are also important.

It was determined that children's age to start playing digital games changes between the ages of 3 and 12, and the majority of children who started playing games after the age of nine had low addiction scores. The age to start digital gaming decreases day by day. Toran et al. (2016) have indicated that the age to play digital games decreases to 1 -1,5; however, the intensive use of digital games is observed after five years old. Demirtaş Madran and Ferigül Çakılcı (2014) underline that as the age to play digital games decreases, gamers become more addicted and encounter some serious side effects. The study carried out by Karagöz (2017) with 740 children in the 6th and 7th grades shows that digital game addiction increases with age. As stated in the literature, children's age to start digital gaming is an effective factor for their addiction.

In the current study, the most preferred and used digital game devices were smartphones and computers, tablets, game consoles, and television, respectively. In the studies conducted with different age groups in the literature, it is seen that the majority of participants mostly prefer smartphones as a digital game device (Ceylaner & Yanpar Yelken, 2017; Dursun & Eraslan-Çapan, 2018; Kurtbeyoğlu, 2018; Yiğit, 2017). Similarly, this study also showed that the rates of CHAS who have their own smartphone are higher than those of CLAS. The research conducted by Balıkçı (2018) with children between the ages of 10 and 19 shows that %94 of children have smartphones, and they mostly prefer smartphones for digital gaming. Moreover, the study conducted by Bülbül and Tunç (2018) with university students demonstrates that addiction is higher in persons who have smartphones at a young age. The mobility of smartphones and playing online games via smartphones with Internet access make it difficult for gamers to control in-game time. When considering that children do online activities without their parents' permission (Mascheroni & Ólafsson, 2014), the fact that children have a smartphone can trigger addiction because it can be easy to hide online activities from their parents.

In this study, it was found that children preferred strategy games more than others. Strategy games generally are war and economic games. The research conducted by Karagöz (2017) with 740 children between the ages of 11 and 13 indicates that strategy games are positively related to addiction. Bekar (2018) and Kurtbeyoğlu (2018) have emphasized that the rate of not quitting the game for those who play games like war, strategy, and so forth is higher than others. Also, Aleksic (2018) points out that the type of game affects the duration of digital gaming, and time spent on intelligence games is less than on action/sports games. In this study, it was revealed that mind games and puzzles were preferred only by CLAS.

Children's Perception of Digital Game Addiction

The expressions used by children to describe digital game addiction are compatible with the explanation of Lemmens et al. (2009), who state, "even if it causes several problems and playing games excessively and obsessively." In this context, it can be said that children have information about digital game addiction. Besides, children commonly liken digital game addiction to substance addiction. It was found that children express similar metaphors in the study by Hazar et al. (2017) conducted with 364 children between the ages of 10 and 14. The fact that children liken digital game addiction to substance addiction, which is difficult to treat and quit, shows that they are aware of the dimensions of this risk.

Half of the participants expressed that the immersive nature of digital games causes addiction. The variation in digital games, the attractiveness of graphics and images (Nazlıgül et al., 2018), and factors such as arousing interest and character design affect addiction (MHGDHP, 2018). It can be considered that these features make digital games fascinating and cause addiction. Indeed, Lemmens et al. (2009) defined mood modification, which is one of the criteria of digital game addiction, as gamers being inclined to the game to get rid of distress because

they experience the entertainment of digital games and experience this feeling over other feelings. In this study, children explained that digital games cause addiction because they are pleasurable and entertaining. Wood (2008) indicates that when digital game players cannot find anything to do, they tend to play digital games and fulfill their entertainment needs. Besides, most participants who said they played digital games to complete a task or win were CHAS. Also, gradual transition scores and competition in digital games become attractive and pave the way for addiction (MHGDHP, 2018). Another factor in the fact that addicted children continue to play the game is that they do not want to give up the character they have created (Wood, 2008). Furthermore, some of the addicted children consider digital games as a world where they can be isolated from real life and make decisions autonomously (King et al., 2013). Although children often liken digital game addiction to substance addiction, the fact that they have many reasons to play makes it more difficult to prevent and cope with its risk.

The Effects of Digital Games on Children

The children expressed positive and negative opinions while evaluating the effects of digital games. Expressing positive opinions, children mentioned that digital games mostly contribute to foreign language learning. Digital games in foreign language education facilitate vocabulary learning (Ceylaner & Yanpar Yelken, 2017). Some children stated that digital games improve their foreign language because most digital games are based on a foreign language, and the dialogues, names of tools, menus, and instructions in digital games are in a foreign language, and even they sometimes need to communicate with foreign players. In addition, children stated that digital games improve their problem-solving skills. Developing problem-solving skills, increasing imagination, and improving visual intelligence are among the benefits of digital games (Smith, 2004; Yalçın & Bertiz, 2019). Some children also indicated that digital games negatively affect their academic success. The fact that as well as CHAS, CLAS also stated that the decrease in their academic success could be interpreted as their being in the risk group. Karacaoğlu (2019) underlines that academic success decreases while addiction increases, and Kuss and Griffiths (2012) indicate that gamers who play digital games excessively have difficulty fulfilling their responsibilities in daily life. Similarly, children said they ignore their tasks, such as doing homework, going to school, and solving problems, because they play digital games. In this context, it can be said that there is a thin line between the benefits and harms of digital games in terms of children's academic success.

While evaluating the social effects of digital games, children explained that they have problems with their family relationships and are isolated from the social environment. In the literature, children have similar problems due to digital games (Kim et al., 2008; Köse, 2013); it is seen that many addicted players are phobic about socialization, and this phobia increases digital gaming behavior (Kneer et al., 2014). Children's need to spend more time socializing with their friends than their families is normal for this age period (Doğan, 2007). However, it is seen as worrying that children communicate with people they do not know while playing digital games and their efforts to socialize in virtual worlds (Bilgin, 2015). Similarly, Dönmez (2018) underlines that most children make new friends in digital games, and some even meet these virtual friends in the real environment. It was concluded that their preference to socialize with people they meet in digital games rather than the people around them, like their family or friends, negatively affects their social development.

Children often mentioned the physical effect of digital games in their interviews. They stated that digital games cause visual impairment, eye burning, eye irritation, eye pain, and xerophthalmia. Visual impairment is a problem experienced by many people who play digital games regardless of whether they are addicted or not (Kuss & Griffiths, 2012; Mustafaoğlu & Yasacı, 2018). It is usual that children express easily noticeable situations such as eye diseases and musculoskeletal problems, which manifest themselves as pain and physical appearance. It was seen that another physical effect explained by children is to gain weight. Digital games cause weight gain and even obesity due to remaining still for a long time and irregular eating habits. (Berber et al., 2014; MHGDHP, 2018). Aksoy (2018) determines a statistically meaningful relationship between digital game addiction and obesity. The findings related to the relationship between digital game addiction and weight gain are available both in the current study and in other studies in the literature. Children stated that they also have pain in their hands, wrists, and joints because of digital gaming. Griffiths and Meredith indicate that Carpal Tunnel Syndrome, headache, and backache can occur depending upon the excessive use of digital devices (as cited in., Hazar et al., 2017). Children need to do sports activities when their physical growth and development are most intense in both their physical and social, cognitive, and psychological development (Coknaz, 2016; Koç, 2004). However, it is seen that digital game addiction prevents children from living this period healthfully.

Although some children stated that digital games are fun and relaxing, children often mentioned the negative effects. Particularly, CHAS expressed that digital games increase their tendency to violence. Çakıcı

(2018) presents that addicted children express their anger more than non-addicted children. In the literature, there is also evidence showing that the tendency to violence increases as game addiction increases (Aydoğdu Karaaslan, 2015; Balıkçı, 2018; Baş, 2018; Güvendi et al., 2019). The explanations of CHAS about the increase in the tendency to violence caused by digital games indicate that they are aware of the psychological effects they have. The psychological effects expressed by children that include refrainment, fatigue, being introverted, pessimistic, and depressed can be associated with anxiety. Karaca et al. (2015) point out that there is a positive relationship between game addiction and anxiety and adds that both can be a cause or a result of each other. In the literature, there are studies in which digital game addiction is associated with depression and anxiety disorder (Baş, 2018) and with depressive mood, loneliness, social anxiety, and negative self-perception (Rooji, 2010). Even Canale et al. (2019) noted that digital games can be used to cope with stress. Accordingly, it can be said that digital game addiction may be the cause or result of psychological problems.

Recommendations

Based on the results obtained from the study, digital game addiction is tried to reveal from the eyes of children between the ages of 10-14. The research findings are limited to 24 children between the ages of 10-14 who participated in the study and with the year the data were collected. In addition, the determination of children's digital game addiction status in the study was not based on clinical information but was determined by using the Hazar and Hazar (2017) scale. Accordingly, the following recommendations can be listed given the findings obtained from the study:

- Parents can manage their children's in-game time to assess their digital game addiction status.
- Training can be organized to increase parents' awareness that children's introduction to digital games at an early age causes addiction, and that guides them to take precautions in this regard.
- It may be beneficial for parents to install a parental control application on their children's mobile devices to control their children's digital in-game time and guide their activities in the digital world.
- When children want to play digital games, it may be helpful for parents to direct their children to games such as intelligence and puzzles.
- Studies can be conducted that examine the reasons behind children's continuance of gaming behavior despite being aware of the risk of addiction to digital games.

Children's interest in digital games should be directed towards educational games that positively affect their cognitive and academic development. The relevant stakeholders, especially parents, teachers, and researchers, can conduct common studies to determine and disseminate these games.

- To reduce the time children spend on digital games and prevent them from becoming game addicts, they can be encouraged to participate in in-school or out-of-school activities that support their growth and development, such as sports, folklore, music, painting, and handicrafts.
- By considering that digital game addiction may be the cause or result of psychological problems, children can be followed up by experts periodically through performing game addiction and psychological screening tests.

Statements of Publication Ethics

We declare that the study has no unethical problems, and ethics committee approval was obtained from Atatürk University Social and Human Sciences Ethics Committee (Date: 14/02/2019 Decision No: 03/01).

Researchers' Contribution Rate

Researchers' Contribution Rate (You may modify this table according to your article)

Authors	Literature review	Method	Data Collection	Data Analysis	Results	Discussion & Conclusion
Author 1's name	☒	☒	☒	☒	☒	☒
Author2's name	☒	☒	☒	☒	☒	☒
Author 3's name	☐	☐	☒	☒	☒	☐
Author 4's name	☒	☒	☒	☒	☒	☒

Conflict of Interest

This study has no conflict of interest.

REFERENCES

Aksel, N. (2018). *Ortaokul öğrencilerinin dijital oyun bağımlılığı ile öz denetim ve sosyal eğilimleri arasındaki İlişkinin incelenmesi [Analyzing the relationship between the digital game addiction of secondary school students and their both self-control and social tendency]*. Master's thesis, Ordu Universty.

Aksoy, Z. (2018). *Adölesanlarda oyun bağımlılığı, yaşam biçimi davranışları ve etkileyen faktörler [Game addiction, life style behaviours and affecting factors in adolescents]*. Master's thesis, Marmara Universty.

Aleksic, V. (2018). Early adolescents' digital gameplay preferences, habits and addiction. *Croatian Journal of Education 20*(2), 463–500. https://doi.org/10.15516/cje.v20i2.2583

Aslan, A., Turgut, Y. E., & Yılmaz, T. K. (2019). Game, environment and peer effect on children on the digital gaming habits in game arcades. *Journal of Computer and Education Research*, *7*(14), 480-495.

Aydoğdu Karaaslan, İ. (2015). Dijital oyunlar ve dijital şiddet farkındalığı: Ebeveyn ve çocuklar üzerinde yapılan karşılaştırmalı bir analiz [Digital games and digital violence awareness: A comperative analysis made on parents and children]. *International Journal of Social Studies*, *8*(36), 806-818.

Balıkçı, R. (2018). *Çocuklarda ve ergenlerde çevrimiçi oyun bağımlılığı ve agresif davranışlar arasındaki ilişkinin incelenmesi* [*The relationship between online gaming addiction and aggressive behaviours]*. Master's thesis, Fatih Sultan Mehmet Vakıf University.

Baş, M. (2018). Ergenlerde dijital oyun bağımlılığı ile psikolojik ve davranışsal bulgular arasındaki ilişkinin incelenmesi [Investigation of the relationship between psychological and behavioral findings and digital game dependency in adolescents]. *Atlas Journal*, *4*(9), 492-498

Bekar, B. (2018). *Dikkat eksikliği ve hiperaktivite bozukluğu olan ve olmayan çocuklarda bilgisayar oyun bağımlılığı [Video game addiction in children with and without attention deficit and hyperactivity disorder]*. Master's thesis, Kalyoncu University

Berber, M., Karadibak, D. & Uçurum, G. S. (2014). Adolesan dönemde ekrana bağlı aktivitelerin hamstring kas uzunluğu, reaksiyon zamanı ve vücut kitle indeksi üzerine etkisi [The effect of screen based activities on hamstring muscle length, reaction time and body mass index ın adolesans]. *Journal of Dokuz Eylül University Faculty of Medicine*, *28*(1), 1-6. https://dergipark.org.tr/download/article-file/53593

Bilgin, H. C. (2015). *Ortaokul öğrencilerinin bilgisayar oyun bağımlılık düzeyleri ile iletişim becerileri arasındaki ilişki [The relationships between computer game addiction level of junior high school students and their's communication skill]*. Master's thesis, Pamukkale University.

Blinka, L. & Mikuška, J. (2014). The role of social motivation and sociability of gamers in online game addiction. Cyberpsychology: *Journal of Psychosocial Research on Cyberspace*, *8*(2). http://dx.doi.org/10.5817/CP2014-2-6

Blum, R. W., Astone, N. M., Decker, M. R., & Mouli, V. C. (2014). A conceptual framework for early adolescence: a platform for research. *International Journal of Adolescent Medicine and Health, 26*(3), 321–331.

Budak, O. (2017). Dijital çocuk oyunlarına çocuk gelişimi ve okul öncesi öğretmenlerinin ve annelerinin bakış açısı. [The views of child development and pre-school teachers and mothers towards digital children's games*].International Journal of Educational Sciences, 4*(13), 158–172.

Bülbül, H. & Tunç, T. (2018). Telefon ve oyun bağımlılığı: ölçek incelemesi, başlama yaşı ve başarıyla ilişkisi [Phone and game addiction: scale analysis, the startıng age and its relationship with academic success]. *Süleyman Demirel The Journal of Visionary, 9*(21), 1-13. https://dergipark.org.tr/download/article-file/511044

Canale , N. , Marino , C. , Griffiths , MD , Scacchi , L. , Monaci , MG ve Vieno , A. (2019). The association between problematic online gaming and perceived stress: The moderating effect of psychological resilience. *Journal of Behavioral Addictions, 8*(1),174–180. DOI: 10.1556/2006.8.2019.01.)

Cham, S., Algashami, A., Aldhayan, M., McAlaney, J., Phalp, K., Almourad, M. B., & Ali, R. (2019). Digital addiction: Negative life experiences and potential for technology-assisted solutions. In World Conference on Information Systems and Technologies (pp. 921–931).

Ceylaner, S. & Yanpar Yelken, T. (2017) Ortaöğretim öğrencilerinin, dijital oyunların İngilizce kelime öğrenimine katkısına yönelik görüşleri [Views of secondary school students on the contributions of digital games to their vocabulary knowledge in English]. *Bartın University Journal of Education, 6*(1), 346-364. Doi:10.14686/buefad.29498.

Çakıcı, G. (2018). *Ergenlerde dijital oyun bağımlılığı ve öfkeyi ifade etme biçimleri arasındaki ilişkinin incelenmesi.* [*Examination of the relationship between digital game addiction and forms of expressing anger in adolescents*]. Master's thesis, Haliç University.

Çakır, Ö. & Oğuz, E. (2017). Lise öğrencilerinin yalnızlık düzeyleri ile akıllı telefon bağımlılığı arasındaki ilişki [The correlation between high school students' loneliness levels and smart phone addiction]. *Mersin University Journal of Education, 13*(1), 418–429. http://dx.doi.org/10.17860/mersinefd.290711

Çoknaz, H. (2016). Motor Gelişim Boyutuyla Çocuk ve Spor [Sports and children with regard to their motor development]. *Marmara University Journal of Sport Science, 1*(2), 83–91. DOI: 10.22396/sbd.2017.18

Demirtaş Madran H. A. & Ferigül Çakılcı, E. (2014). Çok oyunculu çevrimiçi video oyunu oynayan bireylerde video oyunu bağımlılığı ve saldırganlık [The relationship between agression and online video game addiction: a study on massively multiplayer online video game players]. *Anatolian Journal of Psychiatry,15*, 99-107. Doi:10.5455/apd.39828

Derin, S. & Bilge, F. (2016). Ergenlerde İnternet bağımlılığı ve öznel iyi oluş düzeyi [Internet addiction and the level of subjective well-being in adolescents]. *Turkish Psychological Counseling and Guidance Association, 6*(46), 35-51.

Doğan, Y. (2007). İlköğretim çağındaki 10-14 yaş grubu öğrencilerinin gelişim özellikleri [The developmental characteristics of 10 to 14 years old elementary school students]. *Uludag University Faculty of Arts and Sciences Journal of Social Sciences, 8*(13), 155–187.

Dolu, O., Büker, H. & Uludağ, Ş. (2010). Şiddet içerikli video oyunlarının çocuklar ve gençler üzerindeki etkileri: saldırganlık, şiddet ve suça dair bir değerlendirme [Effects of violent video games on children: an assessment on aggression, violence and delinquency]. *Journal of Forensic Sciences, 9*(4), 54-75. academia.edu.documents/41631072/

Dönmez, Ş. (2018). *Çevrimiçi oyun bağımlılığının bilinçli farkındalık ve yaşam doyumu ile ilişkisi* [*The relationship among online gaming addiction, mindfulness, and life satisfaction*]. Master's thesis, Fatih Sultan Mehmet University.

Dursun, A. & Eraslan-Çapan, B. (2018). Digital game addiction and psychological needs for teenagers. *Inonu University Journal of the Faculty of Education, 19*(2), 128-140. Doi:10.17679/inuefd.336272

Elo, S.,&Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing, 62*(1), 107-115.

Ergüney, M. (2017) İnternet'in okul öncesi dönemdeki çocuklar üzerindeki etkileri hakkında bir araştırma [A research on the effects of Internet on preschool children]. *Ulakbilge, 5*(17), 1917-1938. Doi:10.7816/ulakbilge-05-17-10

Ertuğrul, F. & Eker, E. (2019). Ön Ergenlik Döneminde Zorbalık Davranışı ile Bazı Sosyo-Demografik Değişkenler Arasındaki İlişkinin İncelenmesi [Peer Bullying and Relationship Betweeen Sociodemographic Characteristics of Teenanagers]. *Aydın Journal of Humanity and Society, 5*(2), 117-140. Retrieved from https://dergipark.org.tr/en/pub/aitdergi/issue/52700/695041

Eşgi, N. (2013). Dijital yerli çocukların ve dijital göçmen ebeveynlerinin internet bağımlılığına ilişkin algılarının karşılaştırılması [Comparison of digital native children's and their digital ımmigrant parents' perceptions related to Internet addiction]. *Hacettepe University Journal of Education, 28*(3), 181-194

Gentile, D. (2009). Pathological video-game use among youth ages 8 to 18: A national study. *Psychological Science,20*(5), 594–602.

Gökçearslan, Ş. & Günbatar, M., S. (2012). Ortaöğrenim öğrencilerinde İnternet bağımlılığı [Internet addiction in secondary school students]. *Educational Technology Theory and Practice, 2*(2), 10–24.

Gökçearslan, Ş. & Seferoğlu, S., S. (2016). Ortaokul öğrencilerinin İnternet kullanım biçimleri: Riskli davranışlar ve fırsatlar [The use of the ınternet among middle school students: risky behaviors and opportunities]. *Kastamonu Education Journal,24*(1), 383-404. http://yunus.hacettepe.edu.tr/~sadi/yayin/Gokcearslan-Seferoglu_InternetRiskler_KSEF-2016-24.1.pdf

Griffiths, M. D. & Hunt N. (1998). Dependence on computer games by adolescents. *Psychological Reports, pp. 82,* 475-80

Gülçek, E. (2018). *Çocuk kültürü ve dijital oyunlar: Elazığ FMD kursu öğrencileri üzerine sosyolojik bir çalışma* [*Children's culture and digital games: A sociological study on Elazığ FMD course students*]. Master's thesis, Fırat University.

Güvendi, B., Demir, G. T., & Keskin, B. (2019). Ortaokul öğrencilerinde dijital oyun bağımlılığı ve saldırganlık [Digital game addiction and aggression in secondary school students]. *OPUS International Journal of Society Researches,11*(18), 1194-1217.

Hazar, Z. & Hazar, M. (2017). Çocuklar için dijital oyun bağımlılığı ölçeği [Digital game addiction scale for children]. *Journal of Human Sciences* (14)1, 203-216. Doi:10.14687/jhs.v14i1.4387

Hazar, Z., Tekkurşun Demir, G., Dalkıran, H. (2017). Ortaokul öğrencilerinin geleneksel oyun ve dijital oyun algılarının incelenmesi: karşılaştırmalı metafor çalışması [Investıgatıon of the traditional game and digital games perceptions of middle school students: comparative metafor study]. *Spormetre 15*(4), 179-190.https://dergipark.org.tr/download/article-file/600214

Horzum, M., B., Ayas, T. M & Çakır Balta, Ö. (2008). Çocuklar için bilgisayar oyun bağımlılığı ölçeği [Computer game addiction scale for children]. *Türk Psikolojik Danışma ve Rehberlik Dergisi,3*(30), 76-88.

Horzum, M., B. (2011). İlköğretim öğrencilerinin bilgisayar oyunu bağımlılık düzeylerinin çeşitli değişkenlere göre incelenmesi [Examining computer game addiction level of primary school students in terms of different variables]. *Eğitim ve Bilim Dergisi,36*(159), 56-68.

Johnson, B. & Chiristensen, L. (2014). Educational research. Quantitative, qualitative, and mixed approaches (S. B. Demir, çev. ed.). Eğiten Kitap.

Karaca, S., Gök, C., Kalay, E., Başbuğ, M., Hekim, M., Onan, N. & Unsal Barlas, G. (2015). Ortaokul öğrencilerinde bilgisayar oyun bağımlılığı ve sosyal anksiyetenin incelenmesi [Investigating the association between computer game addiction and social anxiety in secondary school students]. *Clinical and Experimental Health Sciences, 6*(1), 14-9. Doi:10.5152/clinexphealthsci.2016.053

Karacaoğlu, D. (2019). *Çocuklarda bilgisayar oyun bağımlılığı ile aile ilişkileri arasındaki ilişkinin incelenmesi*[*Investigation of the relationship between computer gaming addiction and family relationships among children*].Master's thesis, İstanbul Sabahattin Zaim University.

Karagöz, D. B. (2017). *İnternet bağımlılığı ve bilgisayar oyun bağımlılığı yaygınlığının, ilişkili etkenlerin incelenmesi.* [*İnternet addiction, computer game addiction prevalence and related factors investigation]*. Specialization thesis, Kocaeli University.

Karasar, N., (2009). *Bilimsel Araştırma Yöntemi* (19. bs.)*[Scientific Research Method (19th ed.)]*. Ankara: Nobel.

Kaşıkçı, D., Çağıltay, K., Karakuş, T., Kurşun, E., & Ogan, C. (2014). Türkiye ve Avrupa'daki çocukların İnternet alışkanlıkları ve güvenli İnternet kullanımı [Internet habits and safe İnternet use of children in Turkey and Europa]. *Education and Science*, *39*(171), 230.

Kim, E. J., Namkoong, K., Ku, T. & Kim, S. J. (2008). The relationship between online game addiction and aggression, self-control and narcissistic personality traits. *European Psychiatry,23*(3), 212-218. Doi:10.1016/j.eurpsy.2007.10.010

Kim, Y. & Smith, D. (2015). Pedagogical and technological augmentation of mobile learning for young children interactive learning environments. *Interactive Learning Environments,25*(1), 1–13. Doi:10.1080/10494820.2015.1087411

King, D. L., Delfabbro, P. H., Zwaans, T. & Kaptsis, D.(2013). Clinical features and axis I comorbidity of Australian adolescent pathological Internet and video game users. *Australian & New Zealand Journal of Psychiatry, 47*(11) 1058–1067 DOI: 10.1177/0004867413491159

Kneer, J., Rieger, D., Ivory, J. D., & Ferguson, C. (2014). Awareness of risk factors for digital game addiction: interviewing players and counselors. *International Journal of Mental Health and Addiction,12*(5), 585-599

Koç, M. (2004). Gelişim psikolojisi açısından ergenlik dönemi ve genel özellikleri [Adolescence period and its general characteristics in terms of developmental psychology].*Erciyes University Journal of Social Sciences Institute 1*(17), 231–238.

Kowert, R. ve Oldmeadow, J. A. (2013). (A) Social reputation: exploring the relationship between online video game involvement and social competence. *Computers in Human Behavior*, *29*(4), 1872-1878.https://www.sciencedirect.com/science/article/pii/S074756321300099

Köse, Z. (2013). *13-14 yaş grubu ergenlerin bilgisayar oyunlarını oynama alışkanlıklarının ve sosyalleşme durumlarının araştırılması* [*The research on 13- 14 age group adolescents' habits of playing computer games and socialising status: The case of Kütahya*]. Master's thesis, Afyon Kocatepe University.

Kurtbeyoğlu (2018) *Ortaokul öğrencilerinin demografik özelliklerinin oyun bağımlılığı ile ilişkisi* [*Demographic characteristics relationship between game addiction of middle school students*]. Master's thesis, Bahçeşehir University.

Kuss, D.J. & Griffiths, M.D.(2012). Online gaming addiction in children and adolescents: A review of empirical research. *Journal of Behavioral Addictions, 1*(1), pp. 3–22 DOI: 10.1556/JBA.1.2012.1.1

Lemmens, J. S., Valkenburg, P. M., & Peter, J. (2009). Development and validation of a game addiction scale for adolescents. *Media Psychology,12*(1), 77-95. http://dx.doi.org/10.1080/15213260802669458

Lewis, M. S. (2016). *Massively multiplayer online roleplaying gaming: Motivation to play, player typologies, and addiction*. Doctorate thesis, The Ohio State University.

Lin, Y. H.,& Hou, H. T. (2015). Exploring young children's performance on and acceptance of an educational scenario-based digital game for teaching route-planning strategies: a case study. *Interactive Learning Environments,24*(8), 1967-1980. https://www.tandfonline.com/doi/full/10.1080/10494820.2015.1073745

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage Publications.

Mascheroni, G.,& Ólafsson, K. (2014). Net children go mobile: Risks and opportunities. http://eprints.lse.ac.uk/55798/1/Net_Children_Go_Mobile_Risks_and_Opportunities_Full_Findings_Report.pdf

McKinley, R. A., McIntire, L. K., & Funke, M. A. (2011). Operator selection for unmanned aerial systems: comparing video game players and pilots. *Aviation, Space, and Environmental Medicine, 82*(6), 635-42.

Mustafaoğlu, R. & Yasacı, Z. (2018). Dijital oyun oynamanın çocukların ruhsal ve fiziksel sağlığı üzerine olumsuz etkileri [The negative effects of digital game playing on children's mental and physical health]. *Journal of Dependence, 19*(3), 51-58. http://dergipark.org.tr/bagimli/issue/38282/44702

Nazlıgül, M. D., Baş, S., Akyüz, Z., Yorulmaz, O. (2018). İnternette oyun oynama bozukluğu ve tedavi yaklaşımları: sistematik bir gözden geçirme [Internet gaming disorder and treatment approaches: a systematic review]. *Addicta: The Turkish Journal on Addictions, 5*(1), 13-35.

Odabaşıoğlu, G., Öztürk, Ö., Genç, Y. & Pektaş, Ö., (2007). On olguluk bir seri ile internet bağımlılığı klinik görünümleri [The clinical profile of İnternet addiction via a serie of 10 patients]. *Journal of Dependence*, 8, 46-51

Ögel, K. (2012). *İnternet bağımlılığı: İnternet'in psikolojisini anlamak ve bağımlılıkla başa çıkmak (3. bs.) [Internet addiction: Understanding the psychology of the Internet and coping with addiction (3th. ed.)].* İş BankCultural Publications.

Özbay, Y. (2004). *Gelişim ve öğrenme psikolojisi* (5.bs). PegemA Yayıncılık.

Özkan, A. & Hira, İ. (2017). Dijital medya ve sosyalleşme: 6-12 yaş çocukların sosyalleşmesine dair ebeveyn görüşleri (İstanbul örneği) [Digital media and socialization: parents view on 6-12 age children socialization (İstanbul case)]. *The Journal of Kesit Akademy* (9), 245-270.

Öncel, M. & Tekin, A. (2015). Ortaokul öğrencilerinin bilgisayar oyun bağımlılığı ve yalnızlık durumlarının incelenmesi [An analysis on computer games addiction of secondary school students and their loneliness conditions]. *Journal of Educational Sciences, 2*(4), 7-17.

Özer, A., Gürkan, A. C. & Ramazanoğlu, O. (2006). Oyunun çocuk gelişimi üzerine etkileri [Effects of games on development of children]. *Fırat University Journal of Oriental Studies,4* (3), 54-57.

Radyo ve Televizyon Üst Kurulu (RTÜK) (2016). Medya okuryazarlığı araştırması [Media literacy research]. Ankara

Rooji, A. J., Schoenmakers, T. M., Vermulst, A., Eijnden, R. J. J. M. & Mheen, D. (2010). Online video game addiction: identification of addicted adolescent gamers. *Addiction*, 106, 205-212. Doi:10.1111/j.1360-0443.2010.03104.x

Smith, G. (2004). How do computer games affect your children? *Eurasian Journal of Educational Research (EJER), 17*(9), 72-80.

Şimşek, E., & Karakuş Yılmaz, T. (2020). Türkiye'de Yürütülen dijital oyun bağımlılığı çalışmalarındaki Yöntem ve sonuçların sistematik incelemesi [Systematic review of Method and Results of Digital Game Addiction Studies Conducted in Turkey]. *Kastamonu Education Journal, 28*(4), 1851-1866. doi: 10.24106/kefdergi.3920

Taştekin, E. (2019). *Ortaokul öğrencilerinin dijital oyun oynama alışkanlıklarının öğrenci ve veli bakış açısından incelenmesi* [Review of the secondary school students' digital game playing habits from both students and parents perspectives]. Master's thesis, Balıkesir University.

Ministry of Health, General Directorate of Health Promotion[MHGDHP T.C. Sağlık Bakanlığı Sağlığın Geliştirilmesi Genel Müdürlüğü (2018), Dijital oyun bağımlılığı çalıştayı sonuç raporu [Digital game addiction final report]. Ankara. https://dosyamerkez.saglik.gov.tr/Eklenti/30051,yenidijitalpdf.pdf?0

Toran, M, Ulusoy, Z., Aydın, B., Deveci, T. & Akbulut, A. (2016). Çocukların dijital oyun kullanımına ilişkin annelerin görüşlerinin değerlendirilmesi [Evaluation of mothers' views regarding children's use of digital game]. *Kastamonu Education Journal,24*(5).

Torun, F., Akçay, A. & Çoklar A. N. (2015). Bilgisayar oyunlarının ortaokul öğrencilerinin akademik davranış ve sosyal yaşam üzerine etkilerinin incelenmesi. *Karaelmas Journal of Education, 3*(1), 25-35. http://ebd.beun.edu.tr/index.php/KEBD/article/view/47.

Turgut, Y. E. & Kursun, E. (2020). Mobile Internet Experiences of the Children in Turkey and European Countries: A Comparative Analysis of Internet Access, Use, Activities, Skills and Risks. *Eurasian Journal of Educational Research,20*(88), 225-248. Retrieved from https://dergipark.org.tr/en/pub/ejer/issue/57483/815431

Tutkun, Ö., F., Demirtaş, Z., Açıkgöz, T. & Demirel Tekşal , S. (2017). Televizyon ve dijital oyunların ortaokul öğrencilerinin şiddete eğilimine etkisi [The effect of television and digital games on secondary school students' tendency to violence]. *Pesa International Journal of Social Studies*,*3*(2), 83-91.

TURKSTAT, Turkish Statistical Institute (2021). Hanehalkı bilişim teknolojileri (BT) kullanım araştırması [Household information technology (IT) usage research]. https://data.tuik.gov.tr/Bulten/Index?p=Hanehalki-Bilisim-Teknolojileri-(BT)-Kullanim-Arastirmasi-2021-37437#:~:text=%C4%B0nternet%20kullanan%20bireylerin%20oran%C4%B1%20%82,%77%2C5%20oldu%C4%9Fu%20g%C3%B6r%C3%BCld%C3%BC.

Ünalan, P., Kaya, Ç. A., Akgün, T., Yıkılkan, H., &İşgör, A. (2007). Birinci basamakta ergen sağlığına yaklaşım [Approach to adolescent health in primary care: scientific letter]. *Turkiye Klinikleri*, 27, 567-576.

Wan, C.-S.,& Chiou, W.-B. (2013). Ergenler İnternet oyunlarına neden bağımlılar: Tayvan'da bir mülakat çalışması [Why adolescents are addicted to Internet games: an interview study in Taiwan]. (F. Kenevir, Çev.*) Journal of Social Sciences, 7*(14), 411-418. https://scinapse.io/papers/1568442930

Wood, R.T.A. (2008). Problems with the Concept of Video Game "Addiction": Some Case Study Examples. *Int J Ment Health Addiction, 6*, 169–178. https://doi.org/10.1007/s11469-007-9118-0

Yalçın, S. & Bertiz, Y. (2019). Üniversite öğrencilerinde oyun bağımlılığının etkileri üzerine nitel bir çalışma [Qualitative Study on the Effects of Game Addiction on University Students]. *Science, Education, Art and Technology Journal (SEAT Journal), 3*(1), 27-34.

Yıldırım, A. & Şimşek, H. (2008). *Sosyal bilimlerde nitel araştırma yöntemleri (6. Bs.) [Qualitative research methods in the social sciences (6th ed.)].* Seçkin Yayınevi.

Yılmaz, A. & Biricik, Z., (2017). Sağlık iletişiminde dijital medya kullanımının çocuk sağlığı üzerine etkileri: sosyal medya ve çevrimiçi oyunlar üzerine bir inceleme [Effects of the digital media usage on children's health in health communication: A research on social media and online games].*Journal of Atatürk Communication, 14* /(Health Communication Special Issue).

Yiğit, E. (2017). *Çocukların dijital oyun bağımlılığında ailelerin bazı değişkenler açısından incelenmesi* [*The investigation of families in children's digital game addiction in terms of some variables*]. Master's thesis, Yüzüncü Yıl University.

Yücel, G. & Şan, Ş. (2018) Dijital oyunlarda bağımlılık ve şiddet: blue whale oyunu üzerinde bir inceleme [Addiction and Violence in Digital Games: A Review on the Blue Whale Game]. *Online Academic Journal of Information Technology, 9*(32), 87-100. Doi:10.5824/1309-1581.2018.2.006.x

Yüksel, P.,& Yıldırım, S. (2015). Theoretical frameworks, methods, and procedures for conducting phenomenological studies in educational settings. *Turkish online journal of qualitative inquiry, 6(*1), 1-20.

APPENDIX

Appendix1: Demographic Characteristics of the Participants

Code	Grade	Gender	Age	Addiction Status	Addiction Scores
M6H1	6	Male	12	CHAS	112
M8H2	8	Male	13	CHAS	79
M6H3	6	Male	12	CHAS	86
F5H4	5	Female	12	CHAS	98
F8H5	8	Female	14	CHAS	89
M8H6	8	Male	13	CHAS	112
M7H7	7	Male	13	CHAS	80
M6H8	6	Male	12	CHAS	81
M6H9	6	Male	12	CHAS	79
F6H10	6	Female	12	CHAS	77
F7H11	7	Female	13	CHAS	77
M7H12	7	Male	13	CHAS	78
M6L13	6	Male	12	CLAS	67
F8L14	8	Female	14	CLAS	35
M7L15	7	Male	12	CLAS	65
F7L16	7	Female	13	CLAS	46
F7L17	7	Female	13	CLAS	39
F7L18	7	Female	13	CLAS	26
F7L19	7	Female	13	CLAS	45
M7L20	7	Male	13	CLAS	57
M6L21	6	Male	12	CLAS	36
M7L22	7	Male	13	CLAS	51
M5L23	5	Male	10	CLAS	67
M5L24	5	Male	11	CLAS	50

Appendix2: Interview Form

1. How old are you? Do your parents work? What is their educational status?

2. What do you do in your spare time?

3. What do you think about the game? The game is like ……, because …….

4.What comes to your mind when you think of digital games? (Digital games are mobile games, video games, online games, and computer games where data is entered with tools such as a keyboard or joystick and is displayed through the screen)

5. Do you play digital games?

-How long have you been playing games?

-Who did you meet with digital games?

-Which devices do you use to play games? (Computer, desktop, tablet, smartphone, game console)

-Does the device you play with belong to you or do you have it in your room?

-How often and how long do you play? (Every day (once a day, more than once), every few days, one day a week, on weekends, one per month)

6. What kind of digital games do you play? Which game do you play the most?

7. How do you feel while playing digital games?

8. How do you want to feel while playing digital games? What do you aim for?

9. What is the place and importance of digital games in your life? (Above what, after what?)

10. What benefits did digital games have for you? Can you explain?

11. Do you think digital games harm you? Can you explain? (Is there anyone around you that you think s/he has been harmed by digital games? What kind of damage do you think they have?)