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Research Paper

An Examination of Children's Digital Gaming Habits and Preferred Games

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ABSTRACT
Digital games are among the most common reasons children use the internet, and the time children spend playing digital games is increasing day by day. This research aims to identify the characteristics of the digital games most preferred by children, while also examining their digital gaming habits. The study was conducted using a qualitative model with a case study design. The research consists of two phases. In the first phase, data were collected from 356 children regarding the games they play to determine the digital games they play the most. In the second phase, a document analysis was conducted on 14 digital games identified as the most played by the children. As a result of the research, the top three games played most by children were determined to be Pubg, Minecraft, and League of Legends, respectively. It was found that nearly half of the children play digital games every day, their most preferred device for playing digital games is the mobile phone, and there are children who make purchases for games. Additionally, it was determined through the research that the digital games children play have goals such as survival, combat against enemies, completing specific tasks, and developing tactics/skills. It was also found that many online multiplayer games have messaging and voice chat features, and children can add people in the game as friends. It was revealed that many games contain elements of violence and fear, and there are practices within the games that encourage in-game consumption by children. Considering the effects of digital games on children, it can be said that there is a need for systems and applications that will rate and classify these games and guide children and parents in this aspect.

INTRODUCTION

Digital games, also known as video games, are entertainment software based on computer, text, or visuals, which can be played by one or more individuals physically or online via electronic platforms (Frasca, 2001). Digital games within mobile applications are commonly used by children for entertainment, leisure, and increasingly for socialization purposes (Gezgin, 2023). Globally, the growth of the digital gaming sector has surpassed industries such as automotive, energy, and even cinema. Several factors contribute to this remarkable growth. These factors include the widespread use of smartphones and tablets, decreasing hardware costs, the proliferation of computer hardware and consoles, the facilitation of internet broadcasting, the recognition of e-sports as a sport, and the expansion of the age range of mobile gamers due to smartphone usage (Digital Games Report, 2019).

Universally, children's reasons for using information and communication technologies/internet include entertainment, interaction and communication, relaxation and leisure, learning, and information retrieval (Varga & Topic, 2022). It has been observed that 78% of children aged 6 to 9 use the internet, with parents generally present, but 40% of these children surf the internet unsupervised at some point (Pons-Salvador et al., 2022). According to the We Are Social report (2022), 91.5% of internet users in Turkey play digital games, positioning Turkey as the seventh country worldwide with the highest number of video game players. Looking specifically at child users, TUIK (2021) data indicate that among children aged 6-15 who regularly use the internet, gaming and downloading games account for 66.1% of their internet usage purposes. According to TUIK (2021), 36% of children play digital games, with a higher prevalence among boys (46.1%) compared to girls (25.4%).

While some games enhance children's practical thinking, strategy development, analytical thinking, and problem-solving skills, others pose risks to children's development due to negative features such as violence, obscenity, profanity, alcohol, and gambling (Ministry of Health, 2018; Ölmez, 2024). Factors such as screen time, game genre, and content are crucial in digital game playing (Gezgin, 2023). Increased screen time and exposure to age-inappropriate content in digital games can lead to issues such as addiction, anxiety, aggressive behavior, depression, social withdrawal, musculoskeletal problems, and disrupted sleep patterns (Mustafaoğlu & Yasacı, 2018).

When evaluating digital games for children, educational games can support children's development, while entertainment-oriented games can have negative effects on development, especially when played for extended periods (Rosyati et al., 2019). Digital games can enhance children's early learning skills, multitasking abilities, increase awareness, contribute to social development, and facilitate learning concepts and topics (Digital Games Information Platform, 2023). A study evaluating digital games from an

ecological perspective described digital game systems as processes that adeptly shape, change, and frame children's social experiences (Arnott, 2020). Furthermore, digital game-based educational interventions were found to increase children's motivation in mathematics compared to traditional educational methods (Fadda et al., 2022). Additionally, digital games have been found to have the power to alter children's brain structure and function (Rosyati et al., 2019). It has been noted that digital games played for long periods can make it difficult for children to distinguish between reality and fiction, disrupt their interpersonal relationships, and lead to dysfunctions in their daily lives (Karademir et al., 2019; Ministry of Health, 2018). While some digital games improve children's attention, visual-spatial memory, and long-term memory, inappropriate content and age-inappropriate games can lead to negative outcomes such as loss of impulse control in children (Zastrow, 2017). In a study conducted with children in the context of children's rights, Livingstone et al. (2023) found that children perceived digital games as lacking in fundamental qualities such as internal motivation, voluntariness, risk-taking, and safety. This highlights the importance of determining the quality of digital games. In the field of digital game rating, two significant systems are commonly cited as effective: the Pan European Game Information (PEGI) and the Entertainment Software Rating Board (ESRB). PEGI, developed by the Interactive Software Federation of Europe (ISFE) and implemented in 2003, is a rating and classification system established to promote responsible and safe use of digital games and to serve as a guide for consumers when purchasing digital games. PEGI emphasizes the risks children may encounter in game content, such as in-game purchases, violence, sexuality, gambling, drugs, discrimination, and coarse language (Yalçın Irmak & Erdoğan, 2016). Under the PEGI system, five age classification levels (3, 7, 12, 16, and 18) are used (Pan European Game Information, 2017).

Figure 1. PEGI Gaming Age Rating System and Risk Symbols

The ESRB was established in 1994 in the United States with the aim of evaluating and classifying digital games for the interactive entertainment software industry, as well as creating advertising guidelines and online privacy principles. It is considered the first initiative worldwide in the field of digital game rating. ESRB has developed content descriptors in 30 categories to inform users and/or parents about the nature of visual and auditory elements contained in the game's content. By utilizing these descriptors, individuals purchasing the game and/or parents can obtain preliminary information about potential situations they may encounter during gameplay (Figure 2). (Entertainment Software Rating Board, 2024).

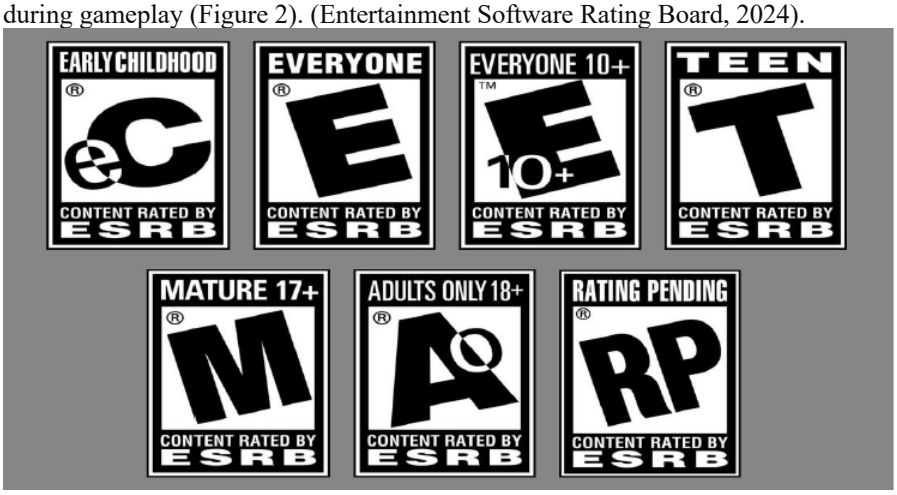

Figure 2. ESRB Digital Game Content Identifiers

In Turkey, there is no specialized unit or legislation for evaluating and classifying digital games. Instead, the evaluation and classification of digital games in the market are carried out by a board whose primary purpose is to evaluate cinema films, using symbols and labels designed for cinema films. To some extent, regulations have been introduced through amendments made to the regulations of the General Directorate of Copyrights and Cinema within the Ministry of Culture and Tourism in 2006. According to these regulations, a reference letter has been arranged to enable the use of symbols and labels specified in the same regulations on carrier materials (Digital Games Report, 2019). The gaming industry encompasses various disciplines such as human resources, investment processes, and marketing, requiring collaboration among relevant experts (Bilişim Vadisi, 2021).

The games available in the market and played by children exhibit a wide variety. Although there is no distinct separation, it can be observed that the digital games played by children are classified into categories such as action, fighting, sports, puzzles, adventure, role-playing, simulation, and strategy (Ölmez, 2024). Nowadays, digital games are classified into three main platforms: personal computer (PC), gaming consoles (PS4, Xbox, Nintendo), and mobile games (Digital Games Report, 2019). Research indicates that digital games have both advantages and disadvantages for children. These effects vary depending on the type of games played and the amount of time spent playing. It has been noted that the game platform Roblox, which was recently banned in Turkey, hosts 50 million games, has 150 million monthly active users, and a total monthly usage time of 3 billion hours (Tozduman Yaralı, 2024). The game, which has a minimum age requirement of 13, is reported to be played by two-thirds of children aged 9 to 12 in the United States, with one-third of users being under the age of 16 (Parks & Kim, 2022).

In a study, the average age at which children start playing digital games was found to be 4.5 ± 1.6 years, with a daily gaming duration of 179.9 ± 122.1 minutes (Mustafaoğlu and Yasacı, 2018). Some digital games have a higher potential for addiction. Therefore, it is important for parents to recognize addictive game types and implement protective measures before addiction occurs (Rosyati et al., 2019). In this regard, awareness of the games preferred by children and their characteristics is crucial (Mustafaoğlu et al., 2018). In this study, which aims to investigate the characteristics of the digital games preferred by children, the following questions were addressed:

What are the most preferred digital games among children aged 7-14?
What are the digital gaming habits of children aged 7-14?
What are the characteristics of the digital games preferred by children aged 7-14?

METHOD

This section outlines the model of the study, the study group, and the collection and analysis of data.

Research Model

The research was conducted using a qualitative model with a case study design. The study consists of two phases. The first phase was carried out to form the study group for the second phase. In the first phase, data were collected from 356 children regarding the digital games they played to determine which games they played the most. In the second phase, a document analysis was conducted on 14 digital games identified as the most played by the children (Creswell, 2014). The first stage of the research is primarily quantitative and exploratory in nature, aiming to identify the most preferred digital games among children aged 7-14 (attending primary or middle school). In the second stage of the research, after analyzing the data collected in the first stage, the most played digital games by children aged 7-14 are determined, and the second stage is conducted in the form of a situational pattern in a qualitative model focusing on digital games (Merriam, 2013).

Study Group

The universe of the study for the first stage comprises children aged 7-14 (Table 1). Due to the inability to determine the exact population of the universe, the minimum number of children required was determined using the formula for the unknown universe sample (n = t^2.p.q) with p=0.5, q=0.5, d=0.05, and t=1.96, resulting in a minimum of 384 children. However, forms with missing data were not included in the study, and the analyses in the first stage were conducted using data from 356 forms. For the second stage of the study, the sample consisted of the 14 digital games identified as the most played by children in the first stage (preferred by at least 10 children).

Table 1. Characteristics of The Children Who Participated in the First Phase of the Research

		n	**%**
Gender	Female	139	39
	Male	217	61
Age	Seven years old	34	9.6
	Eight years old	25	7.0
	Nine years old	36	10.1
	Ten years old	47	13.2
	Eleven years old	42	11.8
	Twelve years old	46	12.9
	Thirteen years old	52	14.6
	Fourteen years old	74	20.8

When Table 1 is examined, it is observed that the first stage of the study included 356 children aged 7-14 attending primary or middle school. 61% of the children (n: 217) were boys, while 39% (n: 139) were female. It is seen that the children participating in the study are predominantly in the age groups of 14 (20.8%), 13 (14.6%), and 11 (11.8%) years old, respectively. For the second stage of the research, the 14 digital games most frequently played by children were included (Table 2).

Table 2. Digital Games Included in The Second Phase of the Research

Digital Games	Codes	n	%
Pubg	PBG	34	9.5
Minecraft	MNC	29	8.1
League of Legends	LOL	28	7.8
GTA5	GTA	24	6.7
Valorant	VLR	21	5.8
Roblox	RBL	20	5.6
Brawl Stars	BWS	16	4.4
eFootball	FTB	14	3.9
Fortnite	FRT	11	3.0
Zula	ZLA	10	2.8
Clash Royale	CLR	10	2.8
Among us	AMG	10	2.8
Battlefield	BTF	10	2.8
Shadow Fight	SDF	10	2.8

*A child could specify more than one game, and games preferred by at least 10 children were included in the research process.
When examining Table 2, it is observed that the most preferred games by children are Pubg (9.5%), Minecraft (8.1%), League of Legends (7.8%), GTA5 (6.7%), and Valorant (5.8%), respectively.

Data Collection

In the first stage of the study, data were collected online through snowball sampling method. Communication with children was established through parents. The "Digital Game Usage Habits Questionnaire," prepared by the researcher in digital format, was sent to parents' mobile phones and shared with their children. In the second stage of the research, a research team of three individuals played the 14 digital games most frequently played by children for at least one hour each, and each researcher individually filled out a form prepared to determine the characteristics of the games.

“Data Collection Tools”

“Digital Game Usage Habits Questionnaire” was developed by the researcher with the primary aim of determining the digital games most frequently preferred by children. The questionnaire consists of a total of 10 questions. Along with the children's gender and age information, the questionnaire includes questions about the digital games they play (ranking five digital games from their favorite to least favorite), where they learned about the game, and whether they make in-game purchases. It is expected that children will complete the questionnaire in an average of 10 minutes.

The second stage of the research was conducted in the form of a situational pattern in qualitative modeling, based on document analysis of the top 14 digital games most preferred by children. A form developed by the researcher was used for document analysis. The form sought answers to questions such as the type of game, age rating, content information, and whether it is multiplayer. After data collection, themes and sub-categories were formed, and document analysis was conducted using content analysis method.

Ethical Considerations

Ethical approval for the research was obtained from the Non-Interventional Clinical Research Ethics Committee of Aydın Adnan Menderes University Faculty of Health Sciences with decision number E-15189967-050.04-508520. Additionally, research information was shared with each child who completed the Digital Game Usage Habits Questionnaire online, and their voluntary consent was obtained.

Data Analysis

As the primary aim of the research, the data obtained from children in the first section of the study were presented in tables with percentages and frequencies calculated to analyze the digital games they played the most. In the second part, qualitative content analysis was conducted using document analysis method, and tables were created and interpreted (Figure 3)**.**

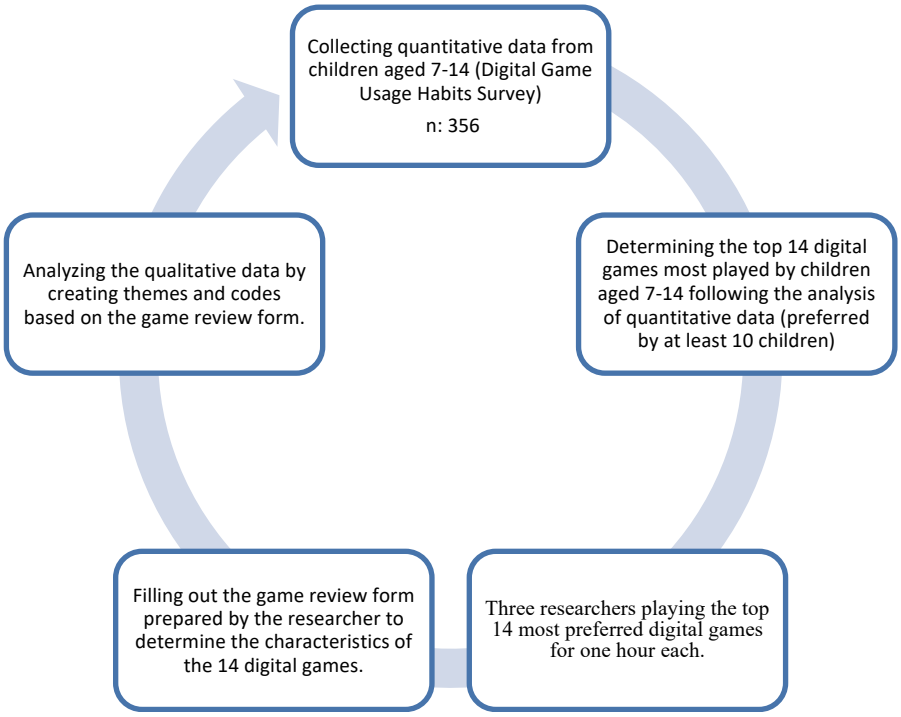

Figure 3. Flowchart of the Research Process

Validity/Reliability

The 14 digital games most frequently played by children were played by three different researchers, and researcher triangulation was performed. Each researcher individually filled out the form prepared by the researcher to determine the characteristics of the games, and the reliability coefficient was calculated using Miles Huberman's (2015) formula. Accordingly, the reliability of data analysis was tested using the formula [Agreement / (Agreement + Disagreement) X 100]. The inter-coder agreement among the researchers was found to be 97%, with consensus reached in areas of disagreement. Additionally, to increase the validity and reliability of the study, examples related to digital games were provided.

FINDINGS

In this section, both quantitative and qualitative data are presented in tables and interpreted. Table 3 provides information on children's digital gaming habits.

Table 3. Information on Children's Digital Gaming Habits

		n	%
Children's Digital Gaming Status	Digital game players	310	87.1
	Non-digital game players	46	12.9
Surces from which children learn the games they play	From friends	195	54.8
	From family member	73	20.5
	From game videos	156	43.8
	From advertisements	83	23.3
	Other*	37	10.8
Frequency of children's digital gaming	Every day	151	42.4
	Several days a week	126	35.4
	Once a week	54	15.2
	Once a month	9	2.5
	Once every six months	4	1.1
	Once a year	12	3.4
Most used technological devices by children while gaming	Mobile phone	183	51.4
	Computer	89	25.0
	Tablet	74	20.8
	Gaming console	10	2.8
Children's in-game purchasing behavior	Non-paying	262	73.6
	Paying**	94	26.4

*In this category, the responses include: researched, self-discovered, online, YouTube, Play Store.

**The games mentioned by children where they indicated paying money are: Valorant, Roblox, Pubg, Minecraft, Fortnite, Battlefield, League of Legends, eFootball, Need for Speed, Traffic Racer, Counter Strike, Subway Surf, EA FC 24, Genshin Impact, Zula, Stardoll, Red Dead Redemption 2, Hay Day, Kafa Topu, Candy Crush Saga, and Growtopia.

When examining Table 3, it is observed that a high percentage of children participating in the study indicated that they play digital games (87.1%), with friends being the most common source from which children learn about the games they play (54.8%). Additionally, 42.4% of the children play digital games every day, the most commonly used technological device while playing games is a mobile phone with a rate of 51.4%, and 26.4% of the children make purchases while playing digital games. Table 4 provides characteristics of digital games preferred by children.

Table 4. Characteristics of Digital Games Preferred by Children

Name of the Game	Release Year	Type of Game								Age limit*						
		War	Action (fighting, aiming, etc.)	Educational	Sport	Strategy	Simulation	Role play	None	+7	+12	+13	+15	+16	+18
Pubg Mobile	2018	*	*											*	
Minecraft	2011					*	*	*		*					
League of Legends	2009	*									*				
GTA5	2022		*												*
Valorant	2020	*	*			*								*	
Roblox (Math Wall Simulator)	2023			*								*			
Brawl Stars	2018	*	*							*					
eFootball	2022				*				*						
Fortnite	2017	*	*								*				
Zula	2015	*	*										*		
Clash Royale	2016	*	*			*	*			*					
Among us	2018	*						*		*					
Battlefield	2016														*
Shadow Fight	2013		*								*				

*If the age limit for the games was initially specified, PEGI was considered; otherwise, ESRB and Play Store ratings were taken into account.

When examining Table 4, it is observed that the oldest game among the most preferred digital games by children is League of Legends, released in 2009, while the most recent one is Roblox (Math Wall Simulator) released in 2023. Looking at the genres of the preferred games by children, it is seen that they are predominantly in the action and warfare categories. When digital games are examined in terms of age limits, it is found that all games except eFootball have a minimum age limit of +7, and Zula, Valorant, Pubg Mobile, GTA5, and Battlefield games are categorized as +15 and above. Additionally, it is noted that children can enter the game by specifying the age they want during the game, and there are no consequences regarding this matter. Table 5 provides goal of the game.

Table 5. Goal of the Game

Theme	Code	Game Codes
Goal of the game	Survival	MNC, PBG, FRT
	Fight against the enemy	SDF, BWS, VLR, ZLA, LOL, BTF, CLR
	Complete certain tasks	GTA, AMG
	Tactics/skill development	RBL, FTB,

According to Table 5, when the objectives of the digital games preferred by children are examined, it is observed that the games mostly involve the objective of "fighting against enemies." Additionally, among the objectives of the games preferred by children, survival, completing specific missions, and developing tactics are also prominent. Table 6 provides in-game communication.

Image 1. Roblox Skill Development Goal

Image 2. Fortnite Survival Goal

Table 6. In-Game Communication

Theme	Code	Game Codes
In-game communication	Online multiplayer	AMG, CLR, GTA, FRT, BTF, PBG, MNC, FTB, LOL, RBL, VLR, BWL
	Chat	AMG, CLR, GTA, FRT, PBG, MNC, LOL, ZLA, RBL, VLR, BWL
	Voice Chat	AMG, GTA, FRT, PBG, MNC, VLR
	Add players as friends	AMG, GTA, FRT, PBG, MNC, LOL, ZLA, RBL, VLR, BWL, CLR

When examining Table 6 in terms of in-game communication features, it is observed that many of the digital games preferred by children are online multiplayer games that include both text-based and voice chat features. Furthermore, it can be seen that the games allow players to add each other as friends during gameplay and communicate later. Chat environments within the games put children at risk of both verbal abuse and acquiring negative behaviors. For example, in the game Among Us, children can randomly be assigned to either the "Crewmate" or "Imposter" teams, and to successfully complete their tasks, they must not reveal their team to members of the opposing team. Therefore, children may resort to lying and making false accusations in the in-game chat environment to avoid revealing their group. Table 7 provides elements of in-game violence.

Table 7. Elements of In-Game Violence

Theme	Code	Game Codes
Elements of in-game violence	Use of tools (knife, gun, sword, bomb, etc.)	SDF, BWL, WLR, ZLA, LOL, MNC, PBG, BTF, FRT, GTA, CLR, AMG
	Verbal violence (use of abusive language/slang)	WLR, ZLA, LOL, MNC, PBG, BTF, FRT, GTA, CLR, AMG
	Physical violence	SDF, BWL, VLR, ZLA, LOL, MNC, PBG, BTF, FRT, GTA, CLR, AMG

When examining Table 7 for elements of violence in digital games, it is evident that almost all of the games preferred by children contain elements of physical and verbal violence, often involving the use of weapons such as knives and guns. In these games, children can both perpetrate and be exposed to violence. For example, in the game Zula, which encourages violence, being able to

kill more people is considered stronger. Based on player observations within the scope of the research, it has been determined that the game League of Legends contains elements of verbal violence:
Kled: "A tactician? You mean bird-brained (referring to Swain)."
Jinx: "Shot the sheriff, didn't touch the deputy (referring to Caitlyn and Vi)."

Image 3. Use of Weapons in Zula

Image 4. Physical Violence in GTA5

Table 8. In-Game Horror Elements

Theme	Code	Game Codes
In-game horror elements	Existence of creatures	LOL, CLR, FRT, PBG, MNC, SDF, CLR
	Visuals (blood, suddenly appearing on screen, etc.)	LOL, AMG, CLR, GTA, FRT, BTF, PBG, MNC, ZLA, VLR, BWL, SDF
	Sounds (voice announcements-killer hunter, revenge, etc.)	LOL, GTA, PBG, MNC, ZLA
	Injuring/killing	LOL, AMG, CLR, GTA, BTF, PBG, MNC, ZLA, VLR, SDF

When examining Table 8 for elements of horror in digital games, it is observed that many games played by children include creatures, visuals, and sounds containing horror elements, along with numerous scenes of killing or injuring. For example, in the game Minecraft, when examining the horror elements, the creature called Enderman attacks the player when they look at its upper legs, body, or head. Another creature, Creeper, approaches the player from behind and explodes to kill them. Table 9 provides encouraging in-game consumption.

Image 5. Creature in Minecraft

Image 6. Character in League of Legends

Table 9. Encouraging In-Game Consumption

Theme	Code	Game Codes
Encouraging in-game consumption	In-game purchases (costumes, powers, weapons, attributes, etc.)	SDF, BWL, VLR, RBL, ZLA, MNC, PBG, BTF, FRT, CLR, AMG, LOL
	In-game reward (new character, feature, etc.)	SDF, BWL, VLR, RBL, ZLA, FTB, MNC, PBG, BTF, FRT, CLR, AMG, LOL
	Advert	ZLA, FTB,

When Table 9 is examined for features that encourage consumption in digital games, it is noted that many games feature in-game purchasing options for items such as costumes, characters, and power. Additionally, several games have in-game reward systems for leveling up, earning gold, or points. Furthermore, only Zula and eFootball games included advertising content. For instance, in

the game Zula, players can watch ads to earn extra rewards. During these ads, one of them promotes another game featuring elements of violence against women and children. The second advertised game promotes gambling-related betting ads. women and children. The second advertised game promotes gambling-related betting ads.

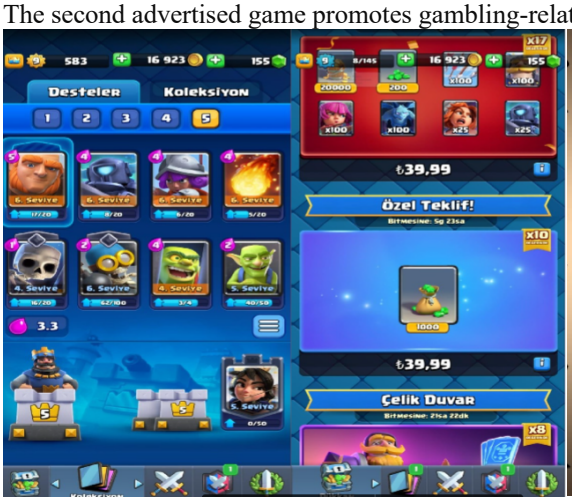

Image 7. Clash Royale In-Game Purchase

Image 8. Shadow Fight In-Game Purchase

Image 9. Battlefield In-Game Rank-Increasing Medal Rewards

DISCUSSION

The aim of the research was to examine the digital gaming habits and preferences of children aged 7-14, as well as the characteristics of digital games they prefer. The results of the study revealed that 87.1% of the children participating in the research played digital games, 77.8% played digital games at least a few days a week, they mostly learned about the games they played from their friends, the most used digital devices for gaming were mobile phones and computers, and 26.4% of the children made in-game purchases. According to the ICT Usage Survey in Children conducted by TUIK (2021), 58.4% of children aged 6-15 stated that their parents thought they played too many games, 47.3% of regular digital game players played more games than planned, 42.6% said that playing too many games affected their responsibilities, 42.3% spent too much time playing games, and 28.0% felt restless and unhappy when not playing digital games (TUIK, 2021). Karayagiz Muslu and Aygun (2020) found in their research that digital game addiction was more common among male children, low-income and educated families, and primary school children with computers and game consoles. Therefore, it can be said that a large proportion of children in middle childhood play digital games, and their gaming habits may vary depending on environmental factors.

As a result of the research, the most preferred games by children were Pubg, Minecraft, League of Legends, GTA5, Valorant, Roblox, and Brawl Stars, respectively. These games generally fall into the category of warfare and action. Research also shows that the most loved digital games by children are violent games (Aydoğdu Karaaslan, 2015; Gentile, 2004). However, games most preferred by children such as Pubg, Among Us, and Clash of Clans are considered inappropriate for elementary school children (Gezgin, 2023). Among the common characteristics of these games considered unsuitable for elementary school children, intense violence and fear elements can be cited.

Another result of the research revealed that the digital games preferred by children were mostly in the action and warfare genres. According to TUIK (2021), 54.3% of children aged 6-15 who stated that they play digital games regularly played war games, 52.0% played adventure/action games, 41.8% played strategy games, 27.5% played simulation, and 26.5% played sports, and 19.1% played role-playing games. When the types of digital games played by children are examined by gender; it was determined that war games are the most played by boys aged 6-15 with a rate of 68.4%, and adventure/action games are the most played by girls with a rate of 44.3% (TUIK, 2021). This result of the research confirms in parallel with the literature that action and war games are more preferred by children. The fact that action and warfare games are more exciting and intriguing is thought to be the reason for their preference by children.

When the age limits of the games played by children were examined because of the research, it was determined that two games (GTA5 and Battlefield) had an age limit of +18, two games (Valorant and Pubg Mobile) had an age limit of +16, and one game (Zula) had an age limit of +15. PEGI (Pan European Game Information), primarily referred to as the age limit for the research, approves the suitability of the game for players of certain ages by rating video games in 38 European countries (Digital Games Information Platform, 2023). It is noteworthy that the most frequently preferred games of the children in the research group are above the age group in terms of containing elements of violence and sexuality. Besides being entertaining and intriguing, it is stated that the violence content in digital games may have a normalizing effect on the use of violence as a problem-solving method by children (Toran et al., 2018). Many studies have shown that playing violent digital games increases aggression and violent tendencies in children and leads to desensitization to violence (Brown & Bobbowski, 2011; Lemmens et al., 2011). In this respect, it is considered developmentally inappropriate for children to play violent games as it is thought that violence elements in games may have a normalizing effect on children.

The games examined within the scope of the research were analyzed in terms of the game's objective, in-game communication, violence in the game, fear elements, and features encouraging in-game consumption. As a result of the examination, it was determined that the digital games preferred by the 7-14 age group have the objectives of survival, fighting against enemies, completing certain tasks, and developing tactics/skills. It was observed that most of the games can be played online with multiple players, that the games have features of in-game messaging and voice chat, and therefore, the features of adding people as friends at the end of the game are present. In this respect, when it is considered that children can add people playing different roles in games as friends and chat, this situation can be said to make children vulnerable to abuse. Because environments like digital game platforms where children are present are often preferred by malicious adults to abuse children (BBC, 2022). Also, when violence elements in the examined games are examined, it is seen that both physical and verbal violence are frequently included. Since violence is a learned behavior and children are in the process of developing decision-making and judgment skills, they are more susceptible to risks in this regard. Furthermore, a study on children aged 10-16 showed that computer and video games are more closely related to violence among children than television (Janssen et al., 2012). Anderson (2004) also emphasized that violent video games increase arousal levels, blood pressure, and heart rate in children, increase the likelihood of violent behavior, and desensitize them to violence. The fear and negative impact created by monsters/creatures in the examined digital games can affect the behavior of children in elementary school. This fear and created negative effect can lead to morale, anxiety, and insecurity in children (Solak and Sargin, 2018). In the examined digital games, it was observed that reward mechanisms are effectively used in terms of encouraging in-game consumption, and there are practices that urge children to spend money on features such as advancing to the next level or becoming stronger. Brock et al. (2021) argued in their studies that digital game consumption is part of the gambling process through in-game purchases of treasure chests or bets. Therefore, informing children about the elements they may encounter in the games they play and parental awareness are considered one of the most important interventions to prevent the formation of addictive behaviors in the future.

In a recent study, it was found that 47.9% of children spend less than an hour, 8.1% spend less than one to two hours, and 6.1% spend more than two hours playing video games per day. Compared to children who do not play video games, those who spend more time playing video games have more externalization problems, weaker positive social behaviors, and lower self-confidence. It was discovered that self-esteem plays a mediating role in the relationship between moderate and high levels of video game use and children's psychosocial well-being, and the importance of improving children's self-esteem for children experiencing psychosocial problems related to video game players was emphasized (Sun and Li, 2024). Restepo et al. (2020) showed that problematic internet use is associated with problematic psychiatric disorders, physical health problems, feelings of worthlessness, and sleep disorders in children and adolescents. The fact that children can enter the game by stating the age they want shows that determining an age limit for games is not sufficient in terms of making children vulnerable to games. In this respect, the mediation role that parents undertake in their children's technology use, including their digital gaming habits, is considered important. Unlike traditional parenting roles, it is necessary for parents who take on the role of mediation to use active mediation (such as discussing issues such as cyberbullying, sexual messaging, and online fraud with children) as well as restrictive mediation (banning, setting limits) in reducing risks (Benedetto and Ingrassia, 2021; Livingstone et al., 2017). For this, parents need to be knowledgeable about the content of the games their children play. It has been found that as parents' education levels increase, their awareness of children's internet use increases, and they apply more control (Pons-Salvador, 2022). Parental attitudes towards children's screen time, and the child's age are related to children's screen use (Nevski and Siibak, 2020). Fehrenbacher et al. (2020) considers digital parenting education as a preventive intervention that should be at the primary level in terms of effective parenting strategies. The expectation of parenting today requires parents to be both extremely vigilant and awake as agents and to be reliable confidants for their children. However, parents need to do this in a way that allows children's subjectivity to self-manage (Magnussen, 2024).

In conclusion, the gaming habits of children born into a digital world have also been influenced by this process. In addition to educational use, children play digital games especially for entertainment purposes. The use of digital games in the design of educational interventions can be an important factor in increasing children's motivation (Fadda et all., 2022). However, it is known that digital game addiction in the primary school period increases children's levels of loneliness (Erden and Bulut, 2023). What is important here is not so many children playing digital games, but what the game they play is, its duration, content, and suitability for age. In this respect, being informed about the subject by parents will enable them to choose appropriate games for their children. It is necessary for parents to know the games their children play and to introduce their children to age-appropriate games. Playing games is a child's right. Digital games are based on content and applications determined by adults as the interest of children. In this

respect, it is a necessity to involve children as participants in the digital game design processes from the perspective of children's rights. It is considered important for parents to be knowledgeable about digital games to protect their children from the risks of digital games. In this respect, it would be useful for schools to organize seminars or trainings for parents on digital games. The game industry should consider the views and suggestions of all sectors involved throughout the process since it encompasses many different disciplines. With the implementation of a rating and classification system such as the Pan European Game Information (PEGI) and the Entertainment Software Rating Board (ESRB) in Turkey, guides can be created to guide parents and children on digital games. In addition, in future research on digital games, an examination can be made of the importance of children's identification with characters, in terms of costumes, physical, and emotional characteristics of characters in games.

LIMITATIONS

In this study, which aimed to examine the digital gaming habits of children and the characteristics of the digital games they prefer, there are some limitations. In the research, children's opinions were sought to determine the digital games they played the most. This may have created a methodological limitation in terms of the children's game reports not accurately reflecting reality due to factors such as reluctance to disclose information to their parents or not wanting the game they played to be revealed. Additionally, the collection of qualitative data is based on the researcher's one-hour gaming experiences, which could also be considered a limitation in terms of validity. Particularly, experiences in digital games used as a space for socialization may vary depending on the child and the individuals they interact with in the game. Therefore, it is recommended that future research examines the experiences of the games examined in this study based on the experiences of the children. In addition, it may be suggested that future research enriches information regarding children's relationships and experiences with digital games by incorporating data collected from parents and teachers.

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REFERENCES

Anderson, C. A. (2004). An update on the effects of playing violent video games. *Journal of Adolescence*, *27*, 113-122. https://doi.org/10.1016/j.adolescence.2003.10.009

Arnott, L. (2020). An ecological exploration of young children's digital play: framing children's social experiences with technologies in early childhood. *Early Years*, 49-66.

Aydoğdu Karaaslan, İ. (2015) . Dijital oyunlar ve dijital şiddet farkındalığı: ebeveyn ve çocuklar üzerinde yapılan karşılaştırmalı bir analiz. *Uluslararası Sosyal Araştırmalar Dergisi, 8*(36), 806-818. Doi: 10.17719/jisr.2015369545

Benedetto, L., & Ingrassia, M. (2021). Digital parenting: Raising and protecting children in media world. *Parenting: Studies by an Ecocultural and Transactional Perspective*, 127-148.

Bilişim Vadisi (2021, 10 Mart). Re-Think dijital oyun e-çalıştayı sonuç raporu 2021. Retrieved from: https://bilisimvadisi.com.tr/wp-content/uploads/2022/05/Dijital_Oyun_Calistay_Raporu-Re-Think.pdf

British Broadcasting Corporation. (2022, Şubat 23). Children able to enter virtual strip clubs in the metaverse. Retrieved from: https://www.bbc.com/turkce/ haberler-dunya-60491537 23 Şubat 2022.

Brock, T., & Johnson, M. (2021). The gamblification of digital games. *Journal of Consumer Culture*, *21*(1), 3-13. https://doi.org/10.1177/14695405219939

Brown, J.D., & Bobkowski, P.S. (2011). Older and newer media: Patterns of use and effects on adolescent's helath and well-being. *Journal of Research on Adoloescence*, 21(1), 95-113. Doi: 10.1111/j.1532-7795.2010.00717.x

Creswell, J. W. (2014). *Nitel, nicel ve karma yöntem yaklaşımları araştırma deseni*. (S. B. Demir, Çev. Ed.), Eğiten Kitap: Ankara.

Damar, M. (2018). Medyanın çocuklarda korku ve şiddete etkisi. N. SAargın (Ed.) *Sanal alem/medya şiddeti içinde* (s. 1-22). Ankara: Hegem.

Dijital Oyunlar Bilgi Platformu. (2023, 15 Mart). PEGI Yaş Sınıflandırmaları. Retrieved from: https://www.guvenlioyna.org.tr/pegi

Dijital Oyunlar Raporu, 2019. (2024, 10 Mart). https://www.guvenliweb.org.tr/dosya/RjARy.pdf

Entertainment Software Rating Board (2024, 12 Mart). Tools For Parents. Retrieved from: https://www.esrb.org/

Erden, E., & Bulut, S. (2023). İlkokul ve ortaokul öğrencilerinde dijital oyun bağımlılığı ve yalnızlık. *İbn Haldun Çalışmaları Dergisi*, *8*(2), 127-138. https://doi.org/10.36657/ihcd.2023.111

Fadda, D., Pellegrini, M., Vivanet, G., & Zandonella Callegher, C. (2022). Effects of digital games on student motivation in mathematics: A meta-analysis in K-12. *Journal of Computer Assisted Learning*, *38*(1), 304-325. https://doi.org/10.1111/jcal.12618

Fehrenbacher, C., Schoeny, M. E., Reed, M., Shattell, M., & Breitenstein, S. M. (2020). Referral to digital parent training in primary care: Facilitators and barriers. *Clinical Practice İn Pediatric Psychology*, *8*(3), 268. https://doi.org/10.1037/cpp0000367

Frasca, G. (2001). Rethinking agency and immersion: video games as a means of consciousness-raising. *Digital Creativity*, *12*(3), 167-174. https://doi.org/10.1076/digc.12.3.167.3225

Gentile, D. A., Lynch, P. J., Linder, J. R., & Walsh, D. A. (2004). The effects of violent video game habits on adolescent hostility, aggressive behaviors and school performance. *Journal of Adolescence*, 27, 5-22. https://doi.org/10.1016/j.adolescence.2003.10.002

Gezgin, D. M. (2023). *Çocuklarda problemli teknoloji kullanımı, olumsuz etkileri ve çözüm önerileri.* Paradigma: Çanakkale.

Janssen, I.; Boyce, W.F., & Pickett, W. (2012). Screen time and physical violence in 10 to 16-Year-Old Canadian Youth. *Int J Public Health*, *57*, 325-331.

Karademir Coşkun, T. & Filiz, O. (2019). Okul öncesi öğretmen adaylarının dijital oyun bağımlılığına yönelik farkındalıkları. *Addicta: The Turkish Journal on Addictions*, 6, 239−267. Doi: http://dx.doi.org/10.15805/addicta.2019.6.2.0036

Lemmens, J. S., Valkenburg, P. M., & Peter, J. (2011). The effects of pathological gaming on aggressive behavior. *Journal of Youth and Adolescence*, 40(1), 38–47. https://doi.org/10.1007/s10964-010-9558-x

Livingstone S., Ólafsson K, Helsper E. J., Lupiáñez-Villanueva F., Veltri, G. A., & Folkvord F. (2017). Maximizing opportunities and minimizing risks for children online: The role of digital skills in emerging strategies of parental mediation. *Journal of Communication*, *67*, 82-105. https://doi.org/10.1111/jcom.12277

Livingstone, S., Ólafsson, K., & Pothong, K. (2023). Digital play on children's terms: A child rights approach to designing digital experiences. *New Media & Society*, 1-21. https://doi.org/10.1177/14614448231196579

Magnussen, M. L. (2024). Becoming a bad mother: exploring ruling relations in the Norwegian welfare state from the standpoint of a Somali single parent. *Families, Relationships and Societies*, *13*(1), 2-16. https://doi.org/10.1332/204674321X16690151461326

Merriam, S. B. (2013). *Nitel araştırma*. (Selahattin Turan, Çev. Ed.). Ankara: Nobel.

Miles, M. B., & Huberman, A. M. (2015). *Nitel veri analizi.* (Sadegül Akbaba Altun & Ali Ersoy, Çev. Ed.). Ankara: Pegem.

Ministry of Health (2018). *Dijital oyun bağımlılığı çalıştay raporu*. Ankara.

Muslu, G. K., & Aygun, O. (2020). An analysis of computer game addiction in primary school children and its affecting factors. *Journal Of Addictions Nursing*, *31*(1), 30-38. Doi: 10.1097/JAN.0000000000000322

Mustafaoğlu, R., & Yasacı, Z. (2018). Dijital oyun oynamanın çocukların ruhsal ve fiziksel sağlığı üzerine olumsuz etkileri. *Bağımlılık Dergisi*, *19*(3), 51-58.

Mustafaoğlu, R., Zirek, E., Yasacı, Z. & Razak Özdinçler, A. (2018). Dijital teknoloji kullanımının çocukların gelişimi ve sağlığı üzerine olumsuz etkileri. *Addicta: The Turkish Journal on Addiction*, 5, 227–247. http://dx.doi.org/10.15805/addicta.2018.5.2.0051

Nevski, E., & Siibak, A. (2020). The role of parents and parental mediation on 0–3-year olds' digital play with smart devices: Estonian parents' attitudes and practices. In *Digital Play and Technologies in the Early Years*, 5-19.

Ölmez, E. (2024). *"Ebeveynim dijital oyun rehberim" aile eğitim programının çocukların dijital oyun bağımlılıkları ile dijital oyun ebeveyn rehberlik stratejilerine etkisi.* [Unpublished master's thesis]. Çankırı Karatekin Üniversitesi.

Pan European Game Information (PEGI) (2024, 10 Mart). Parental Control Tools. Erişim adresi: https://pegi.info/

Pons-Salvador, G., Zubieta-Méndez, X., & Frias-Navarro, D. (2022). Parents' digital competence in guiding and supervising young children's use of the Internet. *European Journal of Communication*, *37*(4), 443-459. https://doi.org/10.1177/02673231211072669

Restrepo, A., Scheininger, T., Clucas, J., Alexander, L., Salum, G. A., Georgiades, K., ... & Milham, M. P. (2020). Problematic internet use in children and adolescents: associations with psychiatric disorders and impairment. *BMC psychiatry*, *20*, 1-11.

Rosyati, T., Purwanto, M. R., Gumelar, G., Yulianti, R. T., & Mukharrom, T. (2020). Effects of games and how parents overcome addiction to children. *Journal of Critical Reviews*, *7*(1), 65-67.

Sun, X., & Li, X. (2024). Video game time and psychosocial well-being in chinese children: the mediating role of self-esteem. *Journal of Child and Family Studies*, 1-12.

Toran, M., Ulusoy, Z., Aydın, B., Deveci, T. & Akbulut, A. (2016). Çocukların dijital oyun kullanımına ilişkin annelerin görüşlerinin değerlendirilmesi. *Kastamonu Eğitim Dergisi*, *24*(5), 22–63.

Tozduman Yaralı, K. (2024). Dijital Oyunları Yasaklamak Çözüm Mü? Akademik Akıl. Retrieved from: https://www.akademikakil.com/dijital-oyunlari-yasaklamak-cozum-mu/kevsertyarali/

TUIK (2021). Çocuklarda Bilişim Teknolojileri Kullanım Araştırması, 2021. Retrieved from: https://data.tuik.gov.tr/Bulten/Index?p=Cocuklarda-Bilisim-Teknolojileri-Kullanim-Arastirmasi-2021-41132

Varga, V., & Topić, M. K. (2022). The Children's motivation for digital technology use: parents and children's perspective. *Primenjena Psihologija*, *15*(3), 305-326.

We Are Social (2022). Digital 2022: Another Year of Bumper Growth. Retrieved from: https://wearesocial.com/uk/blog/2022/01/digital-2022-another-year-of-bumper-growth-2/

Yalçın Irmak, A. & Erdoğan, S. (2016). Ergen ve genç erişkinlerde dijital oyun bağımlılığı: Güncel bir bakış, *Türk Psikiyatri Dergisi*, *27*, 128-137.

Yan, Z. (2006). What influences children's and adolescents' understanding of the complexity of the Internet? *Developmental Psychology*, *42*(3), 418. https://doi.org/10.1037/0012-1649.42.3.418

Zastrow, M. (2017). News Feature: Is video game addiction really an addiction? *Proceedings of The National Academy of Sciences of The United States of America*, *114*(21), E4316-E4316.