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The Effects of Covid-19 on Communication and Video Game Sector in Turkey: Problems and Policy Suggestions[1]

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Abstract: While the COVID-19 pandemic has led to significant damage in many important sectors especially tourism and transportation as a consequence of the quarantine procedure, the computer applications have been used much more effectively in many areas such the business world, education, shopping and social needs by individuals who have stayed at home as a result of the social distance requirements. In addition to phone applications, the rapid increase seen in video games and social media platforms used for communication has made it necessary to address the issue with its positive and negative aspects. In this study, the benefits and costs of applications regarding the individuals and society, video games, phone applications and other computer applications that have been increased in use during the COVID-19 pandemic will be analyzed through an in-depth review of the relevant literature. Besides, some policy suggestions will be put forth to benefit more from the computer technologies and applications.

Key Words: COVID-19, Video Games, Communication Sector, Turkey.

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COVID-19 Pandemisi'nin Türkiye'de İletişim ve Video Oyunları Sektörü Üzerine Etkileri: Sorunlar ve Politika Önerileri

Öz: COVID-19 pandemisi, beraberinde getirdiği karantina süreçleri ile turizm ve ulaşım sektörleri başta olmak üzere birçok sektörde önemli kayıpların yaşanmasına yol açarken, sosyal mesafe gereklilikleri ile evde kapalı kalan bireylerin eğitimden alışverişe, iş hayatından sosyalleşmeye kadar birçok alanda bilgisayar aplikasyonları çok daha etkin şekilde kullanılmaya başlanmıştır. Telefon uygulamaları yanında, video oyunları ve iletişim için kullanılan sosyal medya platformlarında görülen hızlı artış, konunun olumlu ve olumsuz yönleri ile ele alınmasını gerekli kılmıştır. Bu çerçevede bu çalışmada COVID-19 pandemisi döneminde kullanımları artan uygulamaların, video oyunlarının, telefon uygulamaları ve diğer bilgisayar aplikasyonlarının bireyler ve toplum üzerindeki fayda ve maliyetleri ilgili literature üzerine derinlemesine inceleme yapılarak analiz edilecek ve tespit edilen sorunlara yönelik politika önerileri ortaya konacaktır.

Anahtar Kelimeler: COVID-19, Video Oyunları, İletişim sektörü, Türkiye.

Introduction

Without a doubt, COVID-19 Pandemic is regarded as one of the largest global disasters in recent history, has not been only a serious threat on the health of individuals but it has also created a significant impact on the economy, international relations, political and even social psychology. According to UNDP (2020), the outbreak, which began in China in the last months of 2019, is defined as the most disastrous phenomenon ever seen on a global scale since World War II. Although almost a year has passed since the outbreak started, no concrete treatment method or sign of the decline of the outbreak has been seen in any country.

The precautions to combat the pandemic have been initiated together with the whole world after the detection of the first case in Turkey on March 11, 2020. Although the struggle began within the framework of protecting the health of society and minimizing the risk of transmission of the virus to healthy individuals, it has deeply affected a wide range of sectors such as aviation, tourism, industry and finance. In particular, sectors that are in the supply chain on a global scale and the manufacturing industry have suffered great damage. The TV industry has also suffered from heavy financial losses after the disappearance of live matches and sports broadcasts and decrease in advertising, despite the increasing TV viewing hours due to the requirement of all citizens to stay at home during the quarantine period. On the other hand, it has become a necessity to provide online retail services in textile, food and many other

areas, especially the food and drink sector (medianova.com, 2020a). Table 1 demonstrates the changing consumption habits and digitalization levels in Turkey during the COVID-19 pandemic.

Table 1. Change in Digital Interaction in Turkey During the Covid-19 Pandemic

	← ←DECREASING	INCREASING → →
← ← INCREASING	Fitness	State Banks Public services Mobile retail Online education Home-office Hobby IP TV Market chains
	Electronic Furniture Education Construction	Health sets, Cargo Under wear, Books Local bazaars, Home textile Discount markets Personal care Media, Meditation Social media, Video games
DECREASING → →	Private health insurance Jewellery Automobile	Private banks Second hand sales Spor products
	Carrier planning Rent a car Aviation Transportation channels Hospitality Art and culture	Household chors Spor media

Source: Delloit (2020)

According to Delloit's study (2020), life at home has become of central importance as a result of the transition to a

quarantine period in Turkey in April 2020. The individuals have begun to get used to living at home and created a living space at home, giving up purchasing and stacking food items with panic in the first days of the pandemic in March. People who have to stay indoors due to the necessity of social distance have started to focus their attention to watching TV, online education, online job and video games, avoiding expenses that can be considered luxury for these extraordinary conditions. The requirement to stay at home in addition to the travel restrictions and road controls in major cities has caused individuals to spend more time on internet applications such as virtual socialization, social media communications and video games, which are relatively low cost and also minimize the risk of transmission. During this period, interest in internet applications and TV in Turkey increased by 70%, mobile retail operations increased by 200%, and distance education and work increased by 1.500% in digital interaction (Delloite, 2020:3, 6).

The obligations during the quarantine period gives very strong signals that permanent changes will occur in many areas on consumer behavior and lifestyle. For instance, many businesses have reduced their rent, number of personnels and many other fixed expenses by closing their physical spaces, and the reduction in costs has led to changes in the price and service quality of products that will satisfy the consumer. This increase in online services has made the active use of distance education at all levels, the use of banking, finance and even health services possible. Such active use of online technologies has also become quite widespread in the entertainment life and social

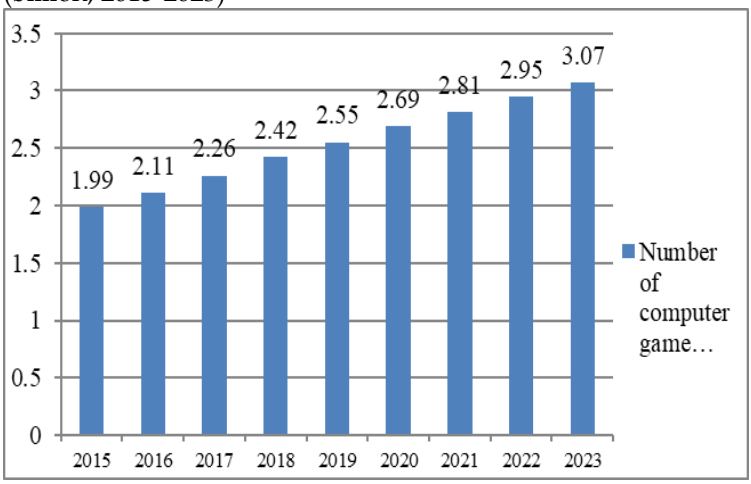
life.

In this context, the aim of this study is to examine the effects of applications such as video games and social media on Turkish society during the COVID-19 pandemic. In the first part of the study, the interest in digitalization and video games in the world, and in the second part, the effects of the trend towards video games in Turkey during the pandemic period will be examined. In the last part of the study, after having a detail review of literature that examines the psychological and physical effects that long-term computer usage, video games and social media use cause on individuals, some policy suggestions will be provided to benefit computer technologies more wisely during the pandemic period.

1. Digitalization in the World and Video Games

The technology revolution that was experienced on a global scale during 1990s, children, adolescents, and even the elderly people had become increasingly interested in this field with the advance of mass media, the internet, information and communication technologies, mobile phones and social media. Figure 1 illustrates the increase in the number of people playing video games on a global scale over the years. According to Figure 1, the number of people playing video games rose from 1.99 million in 2015 to 2.55 billion in 2019 and 2.69 billion in 2020. This number is expected to reach 3.07 billion people in 2023.

Figure 1. The Number of Video Game Players on a Global Scale (billion, 2015-2023)



Source: Statista (2020) *Data between 2021-2023 are estimated

The Asia-Pacific region, viewed at the regional level, is the heart of the video game industry. In this region alone, 1.5 billion computer game players have brought 78.3 billion dollars to the computer game sector in 2020. This region is followed by North America. In 2018, it was calculated that computer game players, on average, allocated $123 every three months to the computer games. In the US, the rate of the total population playing video games rose from 58% in 2013 to 66% in 2018. In previous years, while video games were perceived as a hobby of young men, it has been observed that over time, female players and older people have also started to show more interest in video games (Goup, 2020).

The global computer game market reached $28,733.8 million in 2019. The computer game market average compound growth rate is estimated to rise to $29,029.1 million by %0,26 in 2023; $29,194,4 in 2025; and $29,661.5 by a compound growth

rate of %0,32 in 2030. The increase in computer games on a global scale is relatively lower than expected due to regulatory and restrictive measures that will increase further in the future, and greater sensitivity to privacy issues (The Business Research Company, 2020).

During the COVID-19 pandemic, the interest in video games has increased much more than expected due to the individuals' stress and social distance requirements caused by being at home compared to previous years. Video games on a global scale are expected to reach a sector size of $293.1 billion, with the average compound growth rate in the US increasing 9.3% by 2027. It is predicted that the average compound growth rate of the gaming sector will be 15.6% in the US in 2020 and 12.4% in 2021. It has been found that during the pandemic period alone, the time spent by computer players on the games in the US has increased by 25% compared to the period before the pandemic. The expenses of the hardware for computer games has also been observed to increase rapidly during the pandemic period (Reportlinker, 2020). The Entertainment Software Association (ESA, 2020), stated that during the COVID-19 period that was most severe in the US, there were 214 million video game players, and that these, on average, is in the 35-44 age range (over 65 years of age and 46% male and 63% female) and that they played games to rest, escape from stress, and relax. These instruments, which have been allocated long hours and become a habit for at least 20 years, have become the center of life during the quarantine period. In particular, computer games, paid series and movie streaming platforms and social

media have been indispensable in the quarantine period. Communication models such as Zoom and Skype have also begun to be used as the most basic tools in all areas, especially in education and business life.

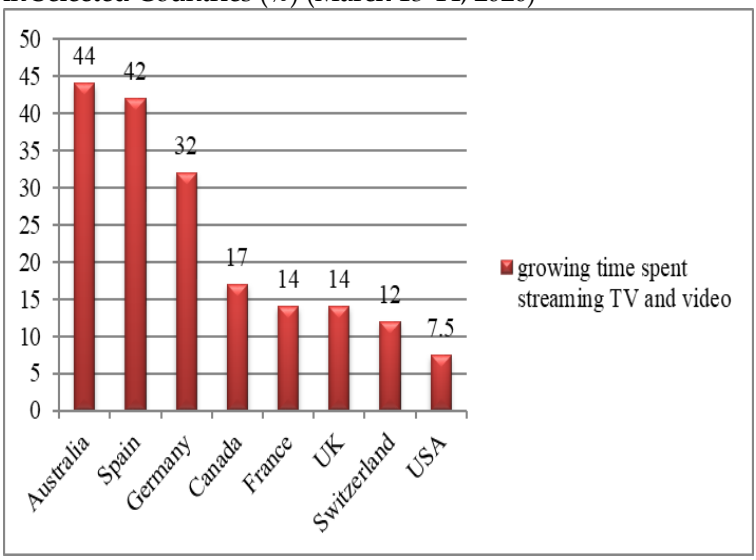
In addition, applications such as VRChat, which have recently become prevalent among the younger generation around the world, have managed to attract more video players to this age group by offering new thrills through virtual reality, opportunities to participate in different social environments and replace the character the players have idealized. Applications like VRChat promise individuals who are tired of their daily routine work and private life the opportunity to communicate with the whole world, form friendships, express themselves, and play video games by taking the place of the preferred game character (VRChat, 2020). On the other hand, as a new development in the rapidly developing video game sector, new online events such as in-game concerts have been taking place to spark interest and provide satisfaction of users. For example, Travis Scott performed in the video game Fortnite, and 12.3 million people watched the online concert at the same time, setting an important record in February 2019 ((BBC News, 2020).

Although the IT technologies have become a "volunteer need" and an inevitable part of modern life, many years ago, in 2007, American Medical Association (AMA) was warned by American Psychiatric Association (APA) and suggested that excessive video game playing and spending excessive time in social media should be recognised as "dependecy and mental disorder (Science News, 2007).

2. Media and Computer Games in the Pandemic Period

Due to the global quarantine requirements of the pandemic, approximately 1/3 of the world's population has had to stay indoors. “Social distance” protocols have been implemented in all countries. Education has been continued through distance education modules at all universities, starting with the most prestigious universities in the world, such as MIT and Harvard. Distance education has also been applied at all levels of education beginning from preschool. Doubtlessly, the business world has been most severely affected by this process. Applications such as Zoom, Microsoft Teams, Wezone have started to be utilized essentially for remote jobs with computer-aid and remote access (Medianova, 2020c). It is aimed that people establish as little relationship with each other as possible by methods such as the "stay at home" rule, which is quite contrary to the nature of a person who is a social being; carrying out “home-office” works at home as much as possible within the framework of mandatory conditions, and transitioning to limited working hours and working alternately in workplaces. In order to reduce the spread of the pandemic, staying at home with the family or alone has led individuals who have to break away from social life to spend more time with television, social media and other technological communication and entertainment tools. Figure 2 describes daily TV and video viewing percentages in selected countries during the quarantine period.

Figure 2. Increase of TV and Video Viewing During Quarantine in Selected Countries (%) (March 13-14, 2020)

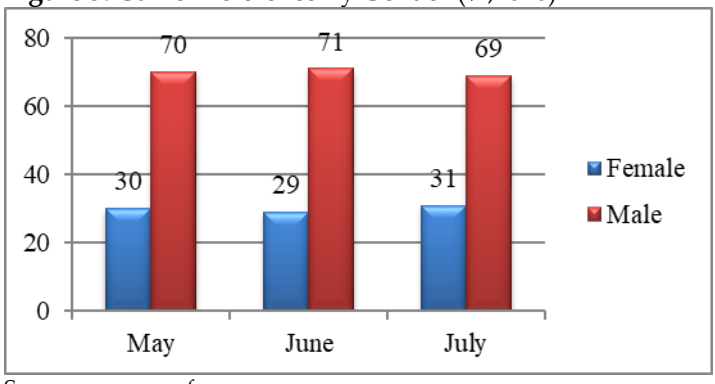


Source: www.medianova.com (2020b)

According to Figure 2, Australia represents the highest rate with a 44% increase in TV and video viewing in the quarantine on March 13-14, 2020. Australia is followed by Spain with an increase of 42% and Germany with an increase of 32%. Among the selected countries, the least increase is in the United States with 7.5%. It has been observed that there is a tendency mainly to computer games in this country. The situation in Turkey has not been very different from the global trend. Dumanoğlu (2020) noted that spending money on computer games has increased by 25% during the pandemic period, and although spending before the pandemic was more intense between 19.00-24.00, this time period has shifted between 14.00-19.00 after the quarantine. Steam Database, an important computer platform, has also announced that it has broken its own record by reaching 20 million players instantly as a result of the

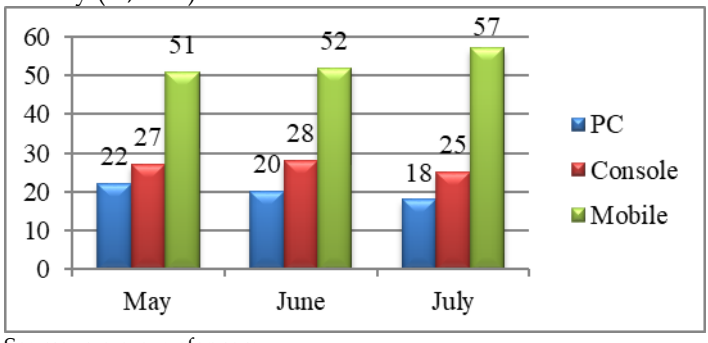
quarantine due to the coronavirus pandemic (Blake, 2020). Figure 3 in which the preferences of the computer players by gender is described shows the change between the months of May-July 2020. According to Figure 3, female-male computer player distribution increased in July in favor of female participants. The distribution ratio of women increased to %31-%69 in July 2020 in comparison to the ratio of May that was %30-%70.

Figure 3. Game Preference By Gender (%,2020)



Source: www.oyunfor.com

Figure 4. Game Preferences During the Pandemic Period in Turkey (%,2020)



Source: www.oyunfor.com

Figure 4 represents the preferences for computer games. According to Figure 4, 22% PC, 27% console and 51% mobile games were preferred in May 2020, while 18% pc, 25% console

and 57% mobile games were preferred in July 2020. According to these data, there is a growing interest in mobile games during the pandemic period. On the other hand, with the "normalisation" approaches starting from June including the return to business life, the allowance to visit shopping malls, cafes and other social environments as well as touristic areas, resulted in a decrease of computer games and social media usage by 15% in June and by %20 in July, compared to the spring months (www.oyunfor.com).

Considering the increase in game preferences by province, as shown in Table 2, İstanbul takes the first place. Besides Istanbul, there are also the largest cities of Turkey such as Izmir, Ankara, Konya, Bursa and Eskişehir showed an increasing demand to video games.

Table 2. Distribution of Game Preference by Provinces

Order	May	June	July
1	İstanbul	İzmir	İstanbul
2	İzmir	İstanbul	İzmir
3	Ankara	Ankara	Ankara
4	Konya	Bursa	Bursa
5	Bursa	Eskişehir	Konya

Source: www.oyunfor.com

In summary, the time spent with computer entertainment, which has been quietly occupying more and more space in our lives for a long time, has increased even more due to "stay at home" and social distance in line with the requirements of the pandemic. But many studies point to the negative effects of excessive use of computer games and social media in individuals, especially in children, adolescents and young people.

Playing computer games for a long time in young people brings problems such as cyber-communication addiction, violence, aggression, and exposure to excessive information input (Rehbein, Kleimann and Mößle, 2010:1). On the other hand, internet addiction, which has been frequently expressed recently, can negatively affect not only children and adolescents, but also all layers of society from all age groups.

3. Literature Review

Computer and video game manufacturers claim that gaming during the COVID-19 pandemic contributes significantly to reducing the stress that the pandemic caused on individuals. According to the statements of these companies that they base on experts, playing computer games has positive effects such as keeping individuals' brain activities and mood higher, feeling better, and making them more resistant to anxiety and depression. Besides, supporters of computer claim that computer games could be beneficial in advancing education quality, creative thinking, problem solving and taking responsibility in groups (Reportlinker, 2020). In addition, as a result of the striking developments in electronics and information technology, video games are now used in many different areas. Due to that, computer games are regarded as “leisure-time activity and a nice way to keep up with technology" even by those who are not in the sector. However, curiosity about playing games, especially among children and young people, soon began to present habit and addiction problems. (Chiu, Lee and Huang, 2004:571).

In summary, in addition to publications that argue that

computer games can be useful in different ways, in social life, in business and educational processes, there are also studies that point to the many physical and emotional disadvantages these games create on individuals. In many scientific studies, there are findings that playing computer games for long periods result in game addiction, loneliness, panic disorders, depression, alcohol abuse, decline in academic achievements, eating disorders, and obesity. Due to the Covid-19 pandemic, people were encouraged not to enter crowded places and, if possible, not to leave their homes with the slogans "social distance" and "stay home, stay safe", which began to be applied by all countries, especially during and after the quarantine period. Especially young people who remain indoors showed a greater interest in games. In addition to computer games, mobile games have become more popular, and a high increase has been observed from young ages to middle and old age groups. Spending long hours in front of the computer may indicate negative effects on the rhythm of daily life and on the psychology of individuals. It has often been observed in the growth in sales of computer and video games, which increased during the pandemic, that the consumers are not only adolescents, but also adults. In this context, policymakers, academicians and the public began to focus more elaborately on this issue. Recently, there is more understanding that intense computer gaming negatively affects the daily lives of individuals. At this point, a large number of scientific studies have been brought into the literature, which have reached conclusions that digital games, video games and social media are addictive and negatively affect daily life.

Sundaray and Galimotu (2020) investigated how individuals over the age of 18 who had a habit of playing internet games were affected by computer games during the quarantine period of the COVID-19 pandemic. During the quarantine period of the COVID-19, high rates of two main problems, such as loneliness and panic disorder, were identified in people who played computer games intensively.

Rho et al. (2018) conducted a survey of 3,568 Koreans in 2014 to identify the negative effects of online games on individuals in South Korea. Among the internet game players surveyed, there were 481 individuals with psychological disorders. The following social behavior disorders were observed: functional and dysfunctional impulsivity, anxiety, self-control difficulties, excessive effort to achieve a goal, excessive spending, allocating time for games instead of work during weekdays, decline in social relationships outside the internet and participating in the friend gatherings, an increase in the membership of the gaming community. These behaviors suggested that internet games led to various psychological and social disorders. The authors also emphasized that individuals with these disorders should receive clinically supported treatment based on the high numbers reached within the subject group.

Brunborg, Mentzoni, and Froyland (2014) found that as the time spent playing video games increases, individuals may face more depression problems in their study of 1928 adolescents aged 13-17. They also found that the academic achievements of these adolescents also fell considerably. Lemola et al. (2011) examined whether computer games played between

22.00 in the evening and 06.00 in the morning led to depression in their study of 646 adolescents and young people between the ages of 13-30. The researchers found that adolescent individuals in the 13-17 age range were the most vulnerable and fragile group to depression when they played video games between 22.00 and 24.00 at night. They found that in teenagers aged 18-22, computer games played after 02.00 at night pose a greater risk of depression as they become a habit. Frölich, Lehmkuhl and Döpfner (2009); Mazurek and Engelhardt (2013); Shara and Mahindru (2015) also pointed out that excessive video game play in children can lead to addiction and permanent psychological problems in teenagers.

In a study conducted for parents of primary school students in Turkey, Çakır (2013) found that families put restrictions on their children's computer use and play time and are aware of the importance of limited computer use in their children's academic achievements.

Lemmens, Valkenburg and Peter (2011a) evaluated the pathological problems caused by playing computer games in adolescents on a total of 851 adolescent children (49% are girls), 540 of whom play computer games (30% are girls) in the Netherlands. It was observed that the incidence of pathological disorders increased in adolescents who played computer games for 6 months and longer. It was found that physical aggression increases not only during games, but also in daily life, especially in adolescents who play violent computer games. Even worse, it was predicted that the violence tendency would increase exponentially as more violent games are played, espe-

cially in male adolescent children. Based on the fact that boys were more interested in violent computer games, the authors emphasized that the pathological problems that arise from games would be more prevalent in boys. In a similar study by Lemmens, Valkenburg and Peter (2011b) pointed out the lack in social skills, lack of confidence, and loneliness were the most common behavioral disorders in adolescents who played violent games for more than 6 months.

Rehbein, Kleimann and Mößle (2010) found an addiction to video games in 3% of boys and 0.3% of girls in their comprehensive study, in which they included 44,610 male and female students in the period of 2007-2008 in Germany. This rate indicates the need for clinical support. Low school achievement, truancy, less sleep, more restricted leisure activity, and, most dangerously, a higher rate of suicidal tendencies were observed in students who were considered to be addicted to video games. The authors highlighted the need to revise the health and education policies with these risks in consideration. In their study of 4508 children, Sharif and Sargent (2006) also showed that schoolchildren spending excessive time watching TV, movies and playing video games had a negative impact on their educational success.

Gangwisch et al. (2010) examined the relationship between depression and the failure to comply with the bedtime set by parents and inadequate sleep time in children. The authors found a bidirectional relationship between insufficient sleep and depression. Conducting a similar study, Higuchi et al. (2005) showed that playing computer games until late hours led

to delays in falling asleep. Dworak et al. (2007) also pointed out that spending long hours on computer games negatively affected the sleep quality and vocabulary in schoolchildren.

Weaver III et al. (2009) examined the effects of video games on adults and investigated the roles of individual and environmental factors in this interaction. 45.1% of women who were overly engaged in video games had more depression and lower overall health than those who did not play video games. Both male and female video game enthusiasts were found to have a greater dependence on internet-based social platforms and a greater predisposition to social media use.

Wang et al. (2008) examined the satisfaction rates of adolescents who spent their free time with computer games with their research on adolescents between the ages of 13-18, consisting of 134 people in Taiwan. According to the findings of the study, although the young people who participated in the study expressed their satisfaction with spending their free time playing computer games, serious decrease in the educational achievements of these young people was found. The research also found that as the frequency of web surfing increases, the level of enjoyment of life and satisfaction with the standard of living gradually decreases.

Punamäki et al. (2007) examined the effects of age and gender factors on the use of information and communication technologies such as digital gaming, web surfing, mobile phone usage rate, and social media. The researchers also included complaints such as muscle spasms and other health complaints

that may arise due to the use of ICT in individuals aged 12, 14, 16 and 18. According to the research results, boys played digital games and preferred online services more than girls, while girls were more prone to mobile phone applications. Intensive use of ICT also indicated a more problematic general health condition. It was found that the study participants between the ages of 16-18 slept less, feeling more tired after they wake up in the morning. Moreover, boys who played video games intensively and girls with excessive mobile phone use were found to be more fragile in terms of health, with the increase in problems such as muscle spasms, sleep disturbances and fatigue. Hakala et al. (2006) pointed to a similar problem and emphasized that excessive computer use increases neck, shoulder and back pain in adolescents.

In their research on players, Bessiere, Seay, and Kiesler (2007) examined the effects of multiplayer onliner games developed by using a variety of design tools and character creation software on the identity of gamers. In the study, where the main characters of World of Warcraft were used as examples, it was observed to what extent players would idealize game heroes in their selves. Individuals participated in the study identified themselves as more inferior than the game heroes, while idealizing them by making a connection between themselves and the character in the game they were playing. It was that players who did not consider themselves psychologically sufficient preferred to develop virtual idealized identities through these game heroes.

Kautiainen et al. (2005) showed that watching TV, play-

ing digital games (video, computer, and console games), and increased computer use in children and adolescents may have been one of the main causes of overweight and obesity. The researchers have revealed that in a study on 6515 adolescents and young people aged 14, 16 and 18 in 2001, sitting at a computer generated the risk of weight gain in both sexes, but this situation was more apparent in girls than in men. Vicente-Rodríguez et al. (2008) in a similar study in Spain, they calculated that 1960 boys and girls between the ages of 13 and 18 had an increased risk of gaining excess weight by 26.8% for each increased hour of TV viewing and 9.4% if they played video games on weekends. Furthermore, the study found that playing video games on weekends in men increased the risk of being overweight by 21.5% per hour.

Griffiths, Davies and Chappell (2004) examined the demographics of 540 individuals, 431 of whom were male, who had a habit of playing computer games. Demographic characteristics of the participants such as gender, age, marital status, educational level and occupation, were examined. The average age of the participants playing computer games was 27.9, and more than half of the participants were single (55.5%); 4.5% were divorced or living separately; and 30% were married individuals. Most of the participants were college students or people with lower educational attainment, with 13% having higher education. Only 25% of participants have a job in the field of computer technology. Many of the computer game players in the study stated that the social aspect of the game was the most important reason for preferring that game. A small proportion

of the people involved in the study stated that they played computer games for more than 80 hours a week, and they admitted that they sometimes gave up family, spouse/child, work, school and education, sleep, and time that could be evaluated in different ways to play games.

Chui, Lee, and Huang (2004) found that video game addiction in children and adolescents led to hostile behavior toward their immediate surroundings, severe social behavior disorders, and significant declines in educational achievement in Taiwan. In a study that investigated factors that increased the video game addiction, researchers found that factors such as growing problems in domestic relationships in children and adolescents, as well as finding the current rhythm of life boring and searching for unusual excitement, were factors that increased the addiction in video games.

4. Policy Suggestions

Video games and computer use, which were initially leisure activities among children and adolescents, now find a place in all areas of life. The sharp change of the pandemic in social life will also lead to the formation of new habits in our daily life rhythm and possibly we have developed the permanent patterns in the pandemic. Improvements arising from necessity in distance education models from kindergarten to university education, the effective use of remote access and home-office applications in business life, services offered to homes in the retail sector and remote access public services will probably be permanent in our daily life in certain ways in the post-pandemic period.

It is necessary to integrate computer technologies with human life to switch to alternative models that we can make use of them as much as possible, instead of the traditional perspective that prefers to avoid them by putting IT technology-related problems at the center. There are also important initiatives for this purpose in the world. While the virtual concerts placed in video games develop new perspectives in the understanding of music-cinema and entertainment, universities such as Harvard and MIT, which are among the most prestigious education centers in the world, have initiated distance education models. Similar practices have also been implemented in Turkey. Council of Higher Education has left the universities the initiative to conduct classes remotely or face to face. In this way, universities have had the opportunity to test the education models that will be applied in the post-pandemic period, with some courses being done remotely and some face to face by switching to the hybrid model.

While applications such as Zoom and Skype were communication models that were quite distant in the early stages of the pandemic, they now accepted virtual meetings as a part of daily life. In this way, many costs from workplace costs to personnel costs, from traffic to transportation costs have been reduced. On the other hand, it is possible to benefit in many areas by considering the psychological development and social status of individuals from different age groups. As the computer is a part of business and social life, the use of video games in education will be a very important step. Especially in kindergarten, primary and secondary education level, with the cooperation of

pedagogues, psychologists and educators, it is possible to use these games in many fields from foreign languages to mathematics, from science to literature.

While doing all these studies, the dark side of the internet and the addictive aspects of computer games in children and young people should not be ignored. The length of time spent in front of the computer and on social media, and the purpose for which they are found are very important. From the games that will be preferred as leisure activities to the game models that will be used for educational purposes, cooperation and follow-up should be paid attention to. In this context, it is of vital importance for the authorized public bodies, families and educational institutions to train and supervise children and young people in using technology rationally.

Conclusion

Beginning at the end of 2019, the COVID-19 pandemic has significantly affected the information industry along with other sectors. However, while other sectors have seen significant reduction, the information industry, video games and mobile gaming market have started to develop with an exponential rate compared to previous years. There is no doubt that the obligations of the quarantine period has had a great share in this result. The necessity of maintaining education, work and social life from home has also led to an increase in the time spent at the computer and phone. In addition, individuals who have broken off from social life due to social distance have started to socialize mainly through video games and social media. As a result of being at home, individuals who have begun

to spend more and more hours at the computer have often started to experience problems such as decreased communication in the family and social environment, and sleep problems. On the other hand, it is a very rational solution to make the maximum utilization of rapidly developing computer technologies in these inevitable conditions. Information technologies play a very important role to realize the processes in the healthiest, safest and fastest way in the fields of business, education, media and communication. In the face of children and adolescents devoting excessive time to computer games and social media, it would be a rational solution for parents to supervise their health and education issues by taking the necessary precautions, and for adults to spare time for video games in a reasonable time within the framework of plausibility. In addition, it is possible to use video games not only for fun and free time, but also under the supervision of pedagogues and educators in many different academic fields, especially foreign language learning, by making them a part of the education. Children can be encouraged to play games that will improve their sensitivity to the environment, animals and nature with various game content; children's creative sides can also be strengthened with games that require dexterity and creative intelligence.

References

BBC News (2020). Fortnite's Travis Scott virtual concert watched by millions. https://www.bbc.com/news/technology-52410647

Bessiere, K.; Seay, F.; and Kiesler, S. (2007). The ideal Elf: Identity exploration in World of Warcraft. Cyberpscyhology

and Behavior, 10(4), 530-535.

Blake, V. (2020). Steam breaks another record with 20 million concurrent users online today. March 15, 2020. https://www.gamesradar.com/steam-breaks-another-record-with-20-million-concurrent-users-online-today/

Brunborg, G. S.; Mentzoni, R. A.; and Froyland, L. R. (2014). Is video gaming, or video game addiction, associated with depression, academic achievement, heavy epidemic drinking, or conduct problems? Journal of Behavioral Addiction, 3(1), 03 February 2014, 27-32.

Chiu, S.-I.; Lee, J.-Z.; and Huang, D.-H. (2004). Video game addiction in children and teenagers in Taiwan.Cyber Psychology and Behavior, 7(5), 571-581.

Çakır, H. (2013). Bilgisayar oyunlarına ilişkin ailelerin görüşleri ve öğrenci üzerindeki etkilerin belirlenmesi. Mersin Üniversitesi Eğitim Fakültesi Dergisi, 9(2), Ağustos 2013, 138-150.

Delloit (2020). Küresel Covid-19 salgınının Türkiye'de farklı kategorilere etkileri – II. Mayıs 2020. file:///C:/Users/Ayfer%20Gedikli/Downloads/kuresel-covid-19-salgininin-turkiyede-farkli-kategorilere-etkileri-sayi-2.pdf

Dumanoğlu, M. (2020). Corona virüs sonrası PC oyun satışları %30 arttı. https://tr.sputniknews.com/turkiye/202003211041652535-koronavirus-bilgisayar-oyunlarina-ilgiyi-artirdi/

Dworak, M.; Schierl, T.; Bruns, T.; Strüder, H. K. (2007). Impact of singular excessive computer game and television exposure on sleep patterns and memory performance of school-

aged children. Pediatrics, November 2007, 120(5), 978-985.

ESA (2020). 2020 essential facts about the video game industry. https://www.theesa.com/wp-content/uploads/2020/07/Final-Edited-2020-ESA_Essential_facts.pdf

Frölich, J.; Lehmkuhl, G.; and Döpfner, M. (2009). Computer games in childhood and adolescence: relations to addictive behavior, ADHD, and aggression. Z Kinder Jogendpsychiatr Psyhother, September 2009, 37(5), 393-402.

Gangwisch, J. E.; Babiss, L. A.; Malaspina, D.; Turner, J. B.; Zammit, G. K.; Posner, K. (2018). Earlier Parental Set Bedtimes as a Protective Factor Against Depression and Suicidal Ideation. Sleep, 33(1), 97-106.

Goup, C. (2020). Number of active video gamers worldwide 2015-2023. https://www.statista.com/statistics/748044/number-video-gamers-world/

Griffiths, M. D.; Davies, M. N. O.; Chappell, D. (2004). Demografic factors and playing variables in online computer gaming. Cyberpsychology and Behavior, 7(4), 479-487.

Hakala, P. T.; Rimpelä, A. H.; Saarni, L. A.; Salminen, J. J. (2006). Frequent computer-related activities increase the risk of neck-shoulder and low back pain in adolescents. European Journal of Public Health, October 2006, 16(5), 536-541.

Higuchi, S.; Motohashi, Y.; Liu, Y.; and Maeda, A. (2005). Effects of playing a computer game using a bright display on presleep physiological variables, sleep latency, slow wave sleep and REM sleep. Journal of Sleep Researches, September 2005,

14(3), 267-273.

Kautiainen, S.; Koivusilta, L.; Lintonen, T.; Virtanen, S. M.; Rimpelä, A. (2005). Use of information and communication technology and prevalence of overweight and obesity among adolescents. International Journal of Obesity (London), August 2005, 29(8), 925-933.

Lemmens, J. S.; Valkenburg, P. M.; Peter, J. (2011a). The effects of pathological gaming on aggressive behavior. Journal of Youth Adolescence, 40, 38-47.

Lemmens, J. S.; Valkenburg, P. M.; Peter, J. (2011b). Pscyhosocial causes and consequences of pathological gaming. Computer in Human Behavior, 27, 144-152.

Lemola, S.; Brand, S.; Vogler, N.; Perkinson-Gloor, N.; Allemand, M.; and Grob, A. (2011). Habitual computer game playing at night is related to deressive symptoms. Personality and Individual Differences, 51, 117-122.

Mazurek, M. O. and Engelhardt, C. R. (2013). Video game use in boys with autism spectrum disorder, ADHD, or typical development. Pediatrics, August 2013, 132(2), 260-266.

Punamäki, R.-L.; Wallenius, M.; Nygård, C.-H.; Saarni, L.; and Rimpelä, A. (2007). Use of information and communication technology (ICT) and perceived health in adolescence: The role of sleeping habits and waking-time tiredness. Adolescence, August 2007, 30(4), 569-585.

Rehbein, F.; Kleimann, M.; and Mößle, T. (2010). Prevalence and risk factors of video game dependency in adolescence: Results of a German nationwide survey. Cyberpsychology, Behavior, and Social Networking, 13(0), 1-9.

Reportlinker (2020). Global video games industry. Mar-

ket Report. September 2020.

Rho, M. J.; Lee, H.; Lee, T.-H.; Cjo, H.; Jung, D.; Kim, D.-J.; and Choi, I. Y. (2018). Risk factors for internet gaming disorder: Psychological factors and internet gaming characteristics. International Journal of Environmental Research and Public Health, 15(40), 1-11.

Science News (2007). American Psychiatric Association considers 'Video Game Addiction'. 26 June 2007. https://www.sciencedaily.com/releases/2007/06/070625133354.htm

Sharif, I. and Sargent, J. D. (2006). Association between television, movie, and video game exposure and school performance. Pediatrics, October 2006, 118(4). 1961-1070.

Sharma, M. K. and Mahindru, P. (2015). Video game addiction: Impact on teenagers' lifestyle. Case Report. National Medical Journal of India, November-December 2015, 28(6), 282-283.

Sundaray, A. and Galimotu, N. C. (2020). Effects of video games on individuals during COVID-19 lockdown in India. The International Journal of Indian Psychology, 8(2), April- June 2020, 188-192.

Statista (2020). Number of active video gamers worldwide from 2015 to 2023. https://www.statista.com/statistics/748044/number-video-gamers-world/

The Business Research Company (2020). PC games market-global forecast to 2030. https://www.thebusinessresearchcompany.com/report/pc-

games-market

UNDP (2020). COVID-19 pandemic-humanity needs leadership and solidarity to defeat the coronavirus. https://www.undp.org/content/undp/en/home/coronavirus.html

VRChat (2020). Why you should join VRChat. https://hello.vrchat.com/

Wang, E. S.-T.; Chen, L. S.-L.; Lin, J.Y.-C.; Wang, M. C.-H. (2008). The relationship between leisure satisfaction and life satisfaction of adolescents concerning online games. Adolescence, Spring 2008, 43(169), 177-184.

Weaver III, J. B.; Mays, D.; Waver, S. S.; Kannenberg, W.; Hopkins, G. L.; Eroğlu, D.; and Bernhardt, J. M. (2009). Health-risk correlates of video-games playing among adults. American Journal of Preventive Medicine, October 2009, 37(4), 299-305.

www.oyunfor.com (2020) Oyun satışları. https://www.oyunfor.com/blog/turkiye-de-en-cok-oyun-alisverisi-yapan-iller-belli-oldu

www.medianova.com (2020a). The impact of coronavirus on the streaming industry. https://www.medianova.com/en-blog/2020/03/23/the-impact-of-coronavirus-on-the-streaming-industry, 23 March 2020.

www.medianova.com (2020b). What is the current scenario of the ınternet with coronavirus? https://www.medianova.com/en-blog/2020/04/08/can-covid-19-possibly-cause-a-failure-of-the-internet

www.medianova.com (2020c)., https://www.medianova.com/en-blog/2020/04/08/can-covid-19-possibly-cause-a-failure-of-the-internet