

## Examining 8th graders' use of technology in the pandemic period

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### Abstract

Understanding the current and future technology use behaviors of secondary school students who started distance education during the pandemic process is essential to their academic success. The aim of this study is to examine the technology use status of 8th-grade students studying at secondary school during the pandemic period. We used the relational survey model, which is one of the quantitative research methods, in the research. Data was collected by sending the scale to 680 students' parents via link. We used the Dijitalanaliz (Digital Addiction Scale) developed by Dilci as a data collection tool and the Dijitalanaliz technique in the analysis of the data. According to the findings, 1 out of 3 people has digital addiction, while the remaining 2 out of 3 are candidates for addiction. It is an undeniable fact that the duration of digital media usage has increased during the pandemic process.

**Keywords:** Digital addiction; Dijitalanaliz; secondary school; pandemic; technology; withdrawal.

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## 1. Introduction

The year 2021, could be referred to as a year that humankind did not realize while living in it, but when he looks back years later, he realizes it is the end of an era and the beginning of a new one. The name of this age is "Information Age", "Technology Age", "Digital Technologies Age", "Computer Age", "Internet Age" or "Internet Generation Age" as Hollman (2020) called it. Prensky (2001) stated it is not known whether it will be called the "New Digital Age", where the young people whose native language is digital, surrounded by digital objects, look at the elderly as antiques, and perhaps for the first time in history, the young people are more experienced than the old, but as an undeniable fact, technology has great importance on human life. According to Bybee (Bybee, 2000), when he classified the important news headlines of the 20th century, these headlines were directly or indirectly related to technology, and we would relate the developments in the 21st century to technology.

DiGironimo (2011) states that technology, with a metaphor, comprises a triangular prism and that the exterior of this prism includes technology as a tool used, technology as a production/creation process, and people's efforts to learn. We can think of it as a place, and this creates a loop that goes on forever. In this context, the widespread use of radio, television, computers, mobile phones, music players, and the fastest widespread internet together with these devices causes rapid changes in the lives of individuals. According to Masters and Hermann-Werner (2020), the internet, which emerged in a communication experiment by Leonard Kleinrock in 1969, quickly was seen as a great source of communication in education and human life, and its prevalence increased with the smartphone revolution, which we can call portable computers also increased.

These rapid changes have led to substantial changes in the lives and social lives of individuals. Dilci (2015) pointed out that technological developments have changed the lives of individuals to a great extent, and the speed of adoption and use of technology by individuals has increased and continues to increase. Parallel to this pace of change and development, platforms where people can communicate, shop, share photos, videos, or music remotely with the internet and social media tools, which are part of technology, are becoming widespread and are being used more and more by people (Teyfur et al., 2017).

The rapid changes in technology have affected life so much that the concept of generation, which has been called different from each other with the experience of important events until the 1st and 2nd world wars, has recently been separated according to the characteristics of using technology (Kuyucu, 2017). Virtual spaces, which surround the Y and Z generations, the "digitized generations" who are living and almost born into the effects of rapid changes, do not allow the new generation to experience real-life conditions (Dilci, 2020a). Nowadays, besides the efforts of individuals to adapt to these rapid changes in technology, Covid-19, an epidemic disease that concerns the entire world, has been added.

Since the beginning of its existence, many epidemic diseases such as Spanish flu, Hong Kong flu, SARS flu, from the epidemic that emerged in the Peloponnese War in 430 BC have affected humanity. The virus, which was detected in Wuhan city of Hubei province of China in December 2019 and named Covid-19 in January 2020, is extremely contagious, can affect all age groups, and endanger public health, was detected for the first time in March 2020 in Turkey. The disease has spread all over the world and has been declared a Pandemic by the World Health Organization. Covid-19, showing its effect all over the world, has led to changes in lifestyles and conventional social life environments (Özlü & Öztaş, 2020). When we look at history, there has been no discussion or rejection of change, especially when there have been major crises or threats such as Covid-19 (Ossiannilsson, 2021).

According to Dilci (2020), some psycho-social problems will occur in individuals because of the closure of social places such as restaurants, cafes, schools, and universities, and the curfew and restrictions

experienced during the pandemic process, because of having to stay at home. With the declaration of Covid-19 as a Pandemic, it is seen that effective steps have not been taken for psycho-social health, despite the measures that give importance to physical health from the beginning. For this reason, psycho-social problems such as post-traumatic stress, anxiety, worry, and fragility have emerged in individuals belonging to different professions and age groups (Baltacı et al., 2021).

The change decided in education in Turkey during the pandemic process is to suspend education in schools as of March 16, 2020, and the Ministry of National Education (MEB) announced to all school stakeholders that the new process will be processed through the Education Information Network (EBA) system as distance education as of March 23, 2020 (Kırmızıgül, 2020). Education in Turkey during the pandemic period is the school where students can follow their classes online or within the EBA TV program, by connecting to the internet from their homes via mobile phone, tablet, or computer, by taking the classes defined for them by their teachers in the EBA system and Zoom application, or through the EBA TV channel on their televisions. It continued as distance education by being announced to students and parents from WhatsApp groups, including administrations, news channels, and teachers.

During the Pandemic period, when social interaction decreased, individuals who could not socialize and were restricted from going out spent more time with technological devices than in the past, and this poses the risk of addiction. Most of the lives of individuals comprise social media, virtual games, and communication. In essence, they change the lifestyles of individuals, with these changes, we included the concept of digital addiction in the lives of individuals (Dilci, 2020b).

According to the definition on the official website of the American Psychological Association, addiction is defined as a state of withdrawal when there is no physical or psychological substance such as alcohol or drugs, while behavioral disorders, substance or internet addiction are the terms equivalent to substance addiction (APA, 2021a). According to Griffiths (1996), withdrawal, which is also mentioned in the definition of addiction by the American Psychological Association, is one sign of internet addiction and in addicts or addict candidates who cannot access the internet for a long time, nervousness, tension, obsessive thoughts about what is happening on the internet and writing movements of the hands intentionally or involuntarily, and it manifests itself psychologically or physically in the individual as delusions about the internet. We can express withdrawal as conditions that occur when someone cannot access the internet games in excessive internet gaming disorders.

Another factor affecting addictions and behaviors is impulsivity. Impulsivity includes the feeling of being unplanned and acting impatiently to gain new experiences without thinking about the end (Andic & Durak Batigun, 2019). Increasing the level of impulsivity also prevents self-regulation in the individual (Arseven, 2020). Performance is the effort that an individual must exhibit to be successful in business or education life, unfortunately, addictions and distractions can affect the work or academic performance badly. Using the Internet and its digital objects has effects on performance.

Another factor related to the use of digital objects and the internet is self-perception. Self-perception encompasses everything about how one sees himself, including pros, cons, limitations, capacity, experience, and environmental factors (Kılıç et al., 2017). Social isolation, which is another factor related to the use of digital objects, is the situation where the distance between the individual and the society arises by the individual, climbing to the top with the pandemic process.

The definition of internet addiction was defined on the website of the American Psychological Association as a behavior pattern that causes problems through online or offline computer use. They stated that this subject is still controversial on the site and that the research in this field is increasing

day by day and there are sub-dimensions such as messaging, gaming, sexual preoccupation, and e-mail (APA, 2021b).

Dilci (2020a) states that individuals with digital object use disorders, experience a lack of empathy, communication problems, thinking disorders, unsociability, and health problems, and they use a computer, the internet, social media, and games to feel happy and express themselves while having problems adapting to the speed of technology that is included in their lives. Walther and Parks (2002) pointed out the social effects of the internet and stated that online interactions increase loneliness, social isolation, and depression. In his book, Dilci (2020a) embodied the extent to which we can encounter digital technology in every aspect of our lives, with examples we encounter in workplaces, schools, classrooms, and homes, and drew attention to the fact that this process can create problems in the long run.

### **1.1. Purpose of the Research**

In the literature study, although there have been some studies on internet addiction, game addiction, or technology addiction, we found no study on the technology use cases of 8th-grade students. Schools were closed during the Covid-19 pandemic, which is a current issue, and the education system switched to distance education, 8th grade students prepared for the High School Entrance Exam (LGS) with both face-to-face and distance education. In this sense, it is important to examine the technology use cases of secondary school students who started distance education through different technological tools. With this aspect, we thought that the research will shed light on interpreting some current and future student behaviors. In this study, we aimed to examine the technology use cases of 8th-grade students during the pandemic process. Within the framework of this purpose, the research problem and sub-problem sentences to be answered are as follows.

The main research question is as follows:

1. What are the technology use cases of 8th-grade students in the pandemic process?

The sub-questions of this research are:

- a. Does the addiction rate of 8th-grade students in the pandemic process differ according to gender?
- b. Does the distribution of the duration of use of digital media used by 8th-grade students during the pandemic process differ according to gender?
- c. What are the digital channels that 8th-grade students prefer daily during the pandemic process in terms of time allocation?
- d. What sub-dimensions do 8th-grade students' digital media preferences in the pandemic process focus on according to the gender variable?

## **2. Method**

In this section, the design of the research, the quantity of the study group, the characteristics of the data collection tool used in the research, how to get and analyze the data are given. We used the quantitative research method in this study.

### **2.1. Research Pattern**

In this study, we use the relational survey model, which is one of the quantitative research methods. Relational research is studies conducted to get the strength and direction of the relationship between two or more variables. In relational research, we should apply the tools necessary to collect the desired

data without the intervention of the researcher. The relational model is a type of research that examines relationships and connections (Büyüköztürk et al., 2013).

## 2.2. Population and Sample

The universe of the research comprises the parents of the 8th-grade students in secondary schools affiliated to the Ministry of National Education in the city center of Sivas. According to this, 8897 students' parents constitute the population, it was decided to take at least 511 people for sampling from 8897 people with a 2% error level and 2% deviation amount. We used the appropriate sampling method in forming the sample of the study because of the pandemic conditions. In the convenient sampling method, the researcher determines the sample to comprise the most accessible respondents (Büyüköztürk et al., 2013). The numbers related to the parents of the 8th-grade students in secondary schools in Sivas city center in the 2020-2021 academic year, which contributed to the research, are given in Table 1.

**Table 1:** *Number of parents who contributed to the research in Sivas city center*

	N	Female Student Parent	Male Student Parent
Number of Parents	680	400	280

According to Table 1, the study group comprises 680 people, including 400 female and 280 male parents. Looking at the percentage of those who took part in the study, we saw that 58.8% of the female students' parents and 41.2% of the male students' parents.

## 2.3. Data Collection Tool

As a data collection tool in the research, we used the Digital Addiction Scale developed by Dilci, Universal Journal of Educational Research has published the validity and reliability study of the scale (Dilci, 2019). Participants should fill in the Dijitalanaliz, comprising 40 items in a five-point Likert type, by writing the e-mail address, parental status, gender, class information, marital status information, and which digital objects they are in contact with, the digital media contacted, and the average contact time in minutes.

Dijitalanaliz (The Digital Addiction Scale) comprises five sub-dimensions: "Withdrawal", "Impulsivity", "Low Performance", "Low Self-Perception" and "Social Isolation" and a total of 40 items. In this study, we found the sub-dimension reliability of the scale to be .91 for withdrawal, .94 for impulsivity, .85 for poor performance, .84 for low self-perception, .84 for social isolation, and .98 in total. The scale was prepared in a five-point Likert type and was graded as "I strongly disagree=1", "I do not agree=2", "I am undecided=3", "I partially agree=4", and "I totally agree=5". The highest score that the participants can get from the scale is 100, and the lowest score is 20. The higher the scores of the participants from the scale, the higher their addiction level.

## 2.4. Procedure

We created a link for implementing the Dijitalanaliz scale and we sent a link to the parents of the students in the classroom groups via WhatsApp class groups of secondary schools in Sivas city center during a period when 8th-grade secondary school students were receiving distance education. We asked the volunteers of the parents to fill in the Dijitalanaliz scale comprising 40 questions in 1 month according to their children's digital usage habits. Also, parents were informed that the time to

complete the scale would be 20 minutes at the most. We designed 1 month for the scale, 750 students' parents took part, and we completed the data collection process in time. Before the data analysis process, we sorted out the data we collected because 70 students' parents filled the scale incompletely, and we proceeded to the analysis of the data collected with the scale filled by 680 student parents in total.

## 2.5. Analysis of Data

We used the Dijitalanaliz technique in the analysis of the data. The technique is including especially digital addiction; It is an internationally valid technique based on the analysis of artificial intelligence and algorithmic-rhythmic relational discourses on causality relations related to behavioral problems with pedagogical content (Dilci, 2020a). With this technique, we got the following data.

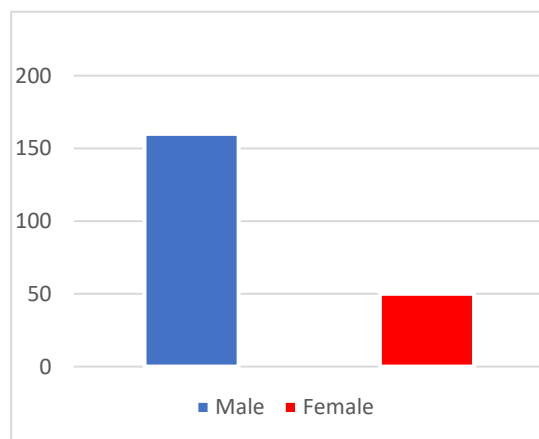
## 3. Results

In this section, we have included the findings got based on the data collected for the questions in the problem and sub-problem sentences of the research and comments on these findings.

### 3.1. Findings and Interpretation on the First Sub-Problem

In this section, we have included the findings and comments regarding the first sub-problem. Table 2 shows the findings related to the first sub-problem of the study, "Does the addiction rate of 8th-grade students in the pandemic process differs according to gender?"

**Table 2:** *Distribution of technology addiction rates according to gender variable in the pandemic process of 8th-grade students*

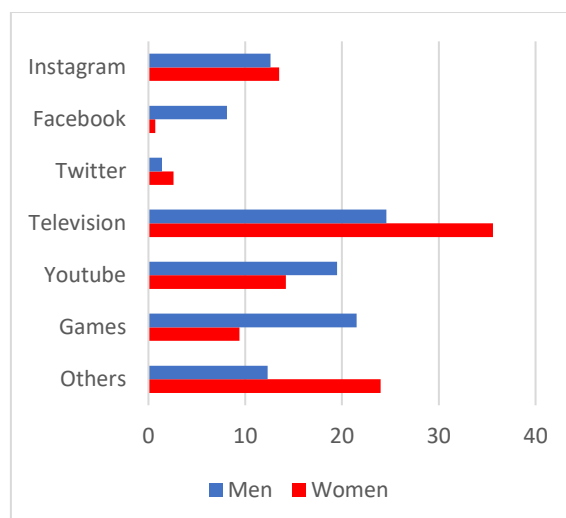


When we look at the distribution of addiction rates by gender, we found that 160 male students out of 210 students with a rate of 71.4% have a significantly higher digital addiction rate than 50 female students with a rate of 28.6%.

### 3.2. Findings and Interpretation on the Second Sub-Problem

In this section, we have included the findings and comments regarding the second sub-problem. Table 3 shows the findings related to the second sub-problem of the study, "8. Does the distribution of the duration of use of digital media used by primary school students during the pandemic process differ according to gender?"

**Table 3:** *Distribution of usage time of 8th-grade students on the related digital media according to gender variable during the pandemic.*



When we look at the distribution of usage time on the relevant digital media in a day according to the gender variable; The women and men taking part in the study stated that the digital medium they spend the most time on is television. According to the gender variable, television takes first place with 24.6% for men and 35.6% for women.

According to the research data, the second digital medium where the participants spend the most time is games with 21.5% for men, while other media with 24% for women. Looking at the research data, YouTube is the third digital medium where participants spend the most time. According to the gender variable, men (19.5%) and women (14.2%) chose YouTube as the third digital medium where they spend the most time.

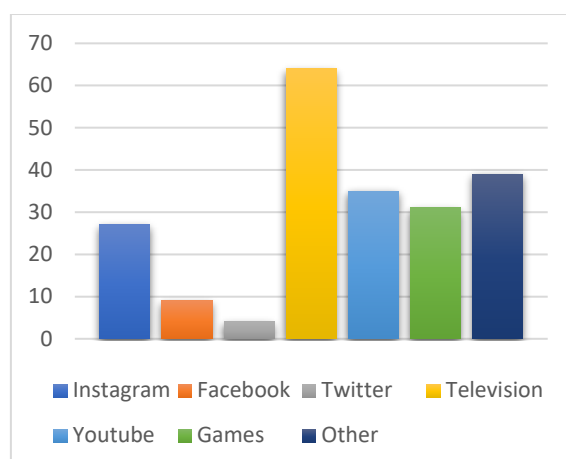
According to the research data, Instagram is the fourth place where participants spend the most time in digital media. According to the gender variable, 12.6% of men and 13.5% of women chose Instagram as the fourth digital medium where they spend the most time. Looking at the research data, the fifth digital media where the participants spend the most time, men chose other media with 12.3%, while women chose the game with 9.4%. According to the research data, the digital channels that spend the least time are Facebook with 8.1% and Twitter with 1.4% for men, while Twitter with 2.6% and Facebook with 0.7% for women are in the last places.

### 3.3. Findings and Interpretation on the First Sub-Problem

In this section, we have included the findings and comments regarding the third sub-problem. Table 4 shows the findings related to the third sub-problem of the study, "What are the digital channels that 8th-grade students prefer daily during the pandemic process in terms of time allocation?"



**Table 4:** *Distribution of 8th-grade students in terms of time allocation of digital channels they prefer daily during the pandemic process*



When we listed the arithmetic averages of the digital media contact rate in minutes per day within the working group; television was in the first place with 64 minutes, other digital channels were in the second place with 39 minutes, YouTube was in the third place with 35 minutes, the game was in the fourth place with 31 minutes, Instagram was in the fifth place with 27 minutes, Facebook was in the sixth place with 9 minutes and Twitter was in the seventh place with 4 minutes.

### 3.4. Findings and Interpretation on the First Sub-Problem

In this section, we have included the findings and comments regarding the fourth sub-problem. Table 5 shows the findings related to the fourth sub-problem of the study, "What sub-dimensions do 8th-grade students' digital media preferences in the pandemic process focus on according to the gender variable?"

**Table 5:** *Distribution of 8th-grade students' digital media preferences during the pandemic process by sub-dimensions*

Sub-Dimensions	Male	Female	$\bar{X}$
Withdrawal	10,20	9,41	9,74
Impulsivity	9,94	9,01	9,39
Performance	9,14	7,30	8,05
Self-Perception	9,00	7,37	8,04
Social Isolation	7,56	6,95	7,20
Total	45,84	40,04	42,42

According to the research data, withdrawal, which is one of the sub-dimensions of the Dijitanaliz scale, has the highest score, with an arithmetic average of 9.74 among all the other sub-dimensions. According to the gender variable, the withdrawal sub-dimension has the highest score both in men with 10.20 points and in women with 9.41 points.



The other sub-dimension of the scale, impulsivity, has the second-highest score, with an arithmetic average of 9.39 points. According to the gender variable, the impulsivity sub-dimension has the second-highest score both in men with 9.94 and women with 9.01. Performance, another sub-dimension of the scale, has the fourth-highest score, with an arithmetic average of 8.05 points. According to the gender variable, the performance sub-dimension is the third-highest score with 9.14 in men, while it is the fourth-highest score with 7.30 in women.

Self-perception, another sub-dimension of the scale, is the third-highest sub-dimension with an arithmetic average of 8.04 points. According to the gender variable, the self-perception sub-dimension is the fourth-highest score with 9.00 in men, while it is the third-highest score with 7.37 in women. Social isolation, another sub-dimension of the scale, has the lowest score with an arithmetic average of 7.20. According to the gender variable, the social isolation sub-dimension has the lowest scores among the five dimensions in the scale, with a score of 7.56 for men and 6.95 for women.

#### 4. Discussion

In this study, as a result of examining the technology use status of the students in the study group during the pandemic process, according to the data collected from 680 8th grade students' parents, we found that 210 students were digitally dependent. We found that the ratio of digitally addicted students among other students taking part in the research is 30.9%, and almost 1 out of every 3 students has digital addiction. According to the research, 150 of the addicted students are male and 60 are female.

When we review the literature, we have seen that men are more prone to digital addiction in different studies. A study conducted by Andic and Durak Batigun (2019) with 331 undergraduate students in Turkey, stated men are a riskier group in terms of internet addiction than women. In another study conducted by Mertoğlu (2020) with 1118 secondary and high school students in Turkey, he saw that among the participants, males were higher than females with a 62.5% addiction rate. In a different study conducted in Turkey, Karaca and his friends (2021) with 2121 secondary school students, stated that the mean internet addiction scores of males were statistically much higher than females. In other studies, conducted in Turkey and abroad, we have seen that male students' internet addiction rates are higher than female students (Andreassen et al., 2016; Balcı & Gülnar, 2009; Bozkurt et al., 2016; Dong et al., 2020; Kısa, 2018; Koca & Tunca, 2019; Laconi et al., 2015; Öner & Çakır, 2019; Taylan, 2015; Ulaş Karaahmetoğlu, 2020). On the other hand, in two separate studies conducted in Turkey, Balcı and Gülnar (2009) and Ceyhan (2010) stated that gender does not have a distinctive effect on internet addiction.

According to the research data, there are similarities and differences between the digital channels where the participants spend time. The digital medium where the participants spend the most time is television, which we see as possible to be a digital medium that can someone access at any time in all homes. According to Çiğdem (2010), the prevalence of television reaches rural areas. According to the results of the research carried out by Dilci (Dilci, 2020a) using the Dijitalanaliz scale, he found that the most used digital product is television.

While other channels are in the second place for women in terms of usage time, gaming is the second most time-spent medium for men, while using time and digital channels differ according to gender. When we review the literature, we saw that the playing time was more in males (Ayhan & Köselören, 2019; Dilci, 2020a; Lemenager et al., 2021). Considering the internet usage habits during the pandemic process, the choice of games through digital channels invites digital addiction to a large extent (Baltacı et al., 2021). The reason for playing virtual games, the rate of which has increased significantly during

the pandemic process, is that the games do not end, and the games constantly update themselves (Öner & Çakır, 2019).

YouTube ranks third in terms of usage time for both women and men, YouTube is one of the most common and known video sharing sites. YouTube seems to be problematic enough to cause addiction to the music, movies, short videos, game videos, and vlog content it offers in different genres (Balakrishnan & Griffiths, 2017). In the study conducted by Dilci (2020a), using the same scale, he found women preferred YouTube more than men in terms of gender variables, unlike this research.

We identified Instagram as the fourth digital medium where participants spend the most time in terms of usage time. Instagram is a social media application where individuals can share photos, comment, watch live broadcasts, receive likes, and give likes. In a study conducted by Kircaburun and Griffiths (2019) with 333 Instagram users who are high school and university students in Turkey, they concluded the participants see Instagram as an escape that

When we look at the usage times, the fifth digital media that spends the most time is games with 9.4% for women, while it is other media with 12.3% for men. It can be shown that instead of spending time with virtual games, women mostly communicate with their friends via social media because they follow social networks more closely than men, maintain their social relations over the internet and actively use social networks (Chittaro & Vianello, 2013).

When we look at the two digital channels that spend the least time according to their usage times, we see that women and men prefer Facebook and Twitter social media networks the least. In two different studies conducted by Kircaburun and Griffiths (2019) and Siste and her friends (2020) stated that the use of Instagram among young people became widespread and Facebook and Twitter applications passed their usage period. According to the findings got in this sense, we thought that family members also used the Facebook application, therefore, younger age groups avoid using the same social media as their family members. On the other hand, we think that the Twitter application does not attract the attention of younger age groups since people mostly used the content of the Twitter application as a status notification and news sharing channel, while there are fewer images and videos.

In the results of the research, according to the arithmetic averages of the time used in digital media, the contact of the participants with television is high. According to Dilci (2020a), 97.4% of society watches television. According to the results of the research, other digital objects following the television are, respectively; other channels include YouTube, games, Instagram, Facebook, Twitter.

When we looked at the sub-dimensions of the Dijitalizasyon scale according to the gender variable, we found withdrawal as the sub-dimension with the highest score and the highest intensity. It is known that withdrawal has an important role in predicting and explaining internet addiction and digital usage habits. In the social media addiction scale development study conducted by Liu and Ma (2018) with 619 university students in China, they stated addicted individuals experience withdrawal when they cannot access the internet and they give emotional reactions in the face of this situation. In a study conducted by Stieger and Lewetz (2018) by allowing 152 volunteer social media users in Germany to download applications to their phones, they concluded that users who do not use social media for a week have a feeling of boredom and longing for social media. In this sense, as the withdrawal scores of individuals increase, the risk of addiction also increases at the same rate.

From the research findings, we determined that the second most concentrated sub-dimension of the participants on the Dijitalizasyon scale was impulsivity. According to Andreassen and her friends (2016), high impulsivity is a common feature in internet addiction and digital use disorders. In other studies in

the literature, we saw that there is a positive correlation between impulsivity and internet addiction (Andic & Durak Batigun, 2019; Li et al., 2019; Lin, 2020; Zhang, 2021).

From the findings of the research, the third most concentrated sub-dimension of the participants in the Dijitalizasyon scale is performance. Looking at the literature, performance is used for lectures as academic performance or interpersonal communication as social performance (Kısa, 2018). Academic or social addictions negatively affected performance (Arseven, 2020; Flisher, 2010; Köksal et al., 2013; Tsitsika et al., 2011).

From the research findings, the fourth most concentrated sub-dimension of the participants in the Dijitalizasyon scale is self-perception. While self-perception may have positive or negative thoughts about himself, individuals with high self-perception can also cope with negative situations as people who know themselves well, while individuals with low self-perception may not know their shortcomings and excesses (Berber Çelik & Odacı, 2012). Studies in the literature have found a negative relationship between problematic internet use and self-perception (Bozkurt et al., 2016; Kraut et al., 1998; Young & Rogers, 1998). This means that as problematic internet use in individuals increases, low self-perception emerges.

From the research findings, the least concentrated sub-dimension of the participants in the Dijitalizasyon scale is social isolation. Social isolation is the state of not communicating with people. In the studies in the literature, we saw that the long-term use of digital products causes social isolation (Dilci, 2020b). At the same time, the increasing use of digital products with social isolation also increases the risk of addiction (Baltacı et al., 2021; Kraut et al., 1998; Young & Rogers, 1998).

The main conclusions reached according to these findings are as follows; In the small age groups that we call our future, almost 1 out of 3 people has digital addiction, while the remaining 2 out of 3 are candidates for being addicted. It has been demonstrated by many domestic and international studies that the duration of digital media usage and internet addiction have increased during the pandemic process (Alheneidi et al., 2021; Baltacı et al., 2020, 2021; Dong et al., 2020; Elhai et al., 2020; Gómez-Galán et al., 2020; Islam et al., 2020; King et al., 2020; Lemenager et al., 2021; Potas et al., 2021; Siste et al., 2020; Sun et al., 2020). While digital addiction or problematic digital product use is one of the biggest problems of societies, from young age groups to adolescents and adults, it has become an even bigger problem with the pandemic.

## 5. Conclusion

This research contributes to the current knowledge by asserting; including 8th-grade students who were not included in the research of examining the technology situations during the pandemic process and this study supports other studies carried out during the pandemic and finding that the use of technology has increased. With this study, we have fulfilled the purpose of understanding the technology use cases of 8th-grade students in the pandemic process, which we determined at the beginning.

Technology, with its good or bad sides, is a phenomenon that takes place in our lives and will continue to do so. However, according to the findings in this study, we saw that digital addiction is a problem among 8th-grade students. At the point of solving this problem, as educators, as academicians, as parents, as people who shape the society, as non-governmental organizations, as those who are worried about their country and its future, everyone and every segment should take an active role in the solution of this problem, each of us, individually and as a whole, everyone has a role to play. We should consider excessive use of technology and issues related to addiction, and the following issues should be addressed as a priority:

Technology, the internet, mobile phone, computer, and game addictions should be added to the definitions, and types of addiction and treatment methods should be developed. Families should discover and experience ways to spend quality time together by making a digital diet with their children. To raise individuals with technology literacy in schools, we should include subjects related to technology education in the curriculum.

Every educator should have information about technology addiction and pass this information on to both their families and students. With the guidance service in schools, we should direct students to traditional games and areas where they are talented. It is important to convey the knowledge that technology is a tool, not a goal.

### **5.1. Limitations**

There are some limitations to this research. First, the research is limited to the people that the Dijitaliz technique reaches via the internet. Second, since Dijitaliz is a technique used online, its limitation is the internet literacy status of people using digital technologies. Despite these limitations, the findings of our study have important implications.

### **5.2. Recommendations for Practitioners**

In this section, we present suggestions for future studies by other researchers. We can suggest that the researchers apply the Dijitaliz scale used in this research to the students, and use applications that can prevent the students from digital addiction characteristics from becoming addicted by taking precautions beforehand and using them in schools.

Researchers can examine the duration of digital media usage and the reasons for preferring preferred digital media. Researchers can do studies to prevent digital addiction for younger age groups. To combat digital addiction, it is necessary to reach more information, do more research, and take part in non-governmental organizations working in this field.

#### **5.2.1. Suggestions to Researchers**

Researchers can research by reaching participants from different age groups by using the Dijitaliz.

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