Screen Time of Gifted Students During The Pandemic Period: A Mixed Method Research

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Abstract

The purpose of this research is to explain the effects of the qualitative results obtained from the data which is gathered from the interviews with gifted students and their parents regarding the screen use of gifted students between the ages of 12-18 on the potential screen addictions of gifted students. This study is mixed methods research. The rationale for choosing mixed methods research is complementarity, based on the fact that results from quantitative and qualitative data clarify and detail each other's results. For the research, explanatory sequential/ (sequential quantitative → qualitative) mixed methods research design was used. Quantitative data of the study were collected through a questionnaire created by the researcher from a group of 160 gifted students aged 12-18 and 100 parents. The data obtained from the questionnaire were analyzed by ratio and frequency analysis. In the light of the findings obtained from the quantitative results, structured interviews were conducted with 16 gifted students and 17 parents with purposeful sampling from the research group. Content analysis technique was used in the analysis of the data obtained from the interviews. Quantitative and qualitative research results were brought together in the mixed methods study and the results were integrated. The findings of the research were explained under sub-headings such as the duration of screen use before and during the pandemic, the number of technological devices used, the time spent in front of the screen, the purpose for which this time was used, and the effects of the time spent in front of the screen on students. With the pandemic, the time spent in front of the screen has increased, the duration of sleep has increased, the purposes of using the screen have changed, and the situation of being uncomfortable and unhappy in case of not being able to reach the screen has increased. As a suggestion to this situation, it is suggested to carry out awareness raising activities for families and children.

Keywords: Gifted students, mixed methods research, Covid-19, screen addiction, parents, effects of the pandemic

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Introduction

Many epidemics have emerged for years, millions of people die due to these diseases, and the world suffers a great deal of damage. When we look at the past, many epidemic diseases have emerged. Today, the new type of coronavirus, which emerged in Wuhan, China, has affected the world and has taken its place among epidemic diseases (WHO, 2020; cited by Ministry of Health, 2021). The high risk of transmission and its lethal effect on different age groups have made the Covid-19 virus the most important health problem of the 21st century (Üstün and Özçiftçi, 2020). The pandemic has changed many things in the world. In order to reduce the course of the epidemic, measures such as, curfews, suspending face-to-face education and closing cafes, and restaurants have been taken. Many countries have decided to close schools and continue education remotely, in addition to the policy of keeping physical distance in order to slow the rate of transmission of the virus (Van Lancker & Parolin, 2020). According to the United Nations Educational, Scientific and Cultural Organization (UNESCO) (2020) data, as of April 13, 2020, schools were closed in 192 countries due to the new type of coronavirus pandemic. This situation affected 99.4% of students worldwide (Eken, Tosun, & Tuzcu Eken, 2020). This situation has forced the transition to distance education. Distance education has been introduced at all levels, including pre-school, primary education, secondary education, high school and higher education. Although face-to-face education was started in certain periods, most of the education was conducted remotely. As of the beginning of the 2021-2022 academic year, face-to-face education has been introduced at all levels in Türkiye. With the effect of the pandemic, the time spent in front of the screen has increased due to the time spent at home and the transition to distance education. According to researchers; It is appropriate children to use the screen for 30 minutes a day in pre-school period, 45 minutes in primary school, 1 hour in secondary school, and 2 hours in high school age. In the pandemic, these times have increased due to online education. Children spent an average of 2-6 hours a day looking at the screen because of distance education. For this reason, attention should be paid to the screen time outside of online education (Öztürk, 2021).

Today, the Internet is very common and is becoming more and more widespread. This dissemination process naturally brings with it negative consequences. These negative effects also include risks that individuals may encounter. These risks include the easy accessibility of sites that are not suitable for their age, the fact that the individuals they encounter on the internet do not have real identities, the possibility of these people being malicious, and the development of addiction to the screen and the internet (İşçibaşı, 2011).

When we look at the relationship between screen use and generations, the rate of screen use has increased the most in the generation Z. It has been determined that the generation Z communicates through the screen more than the other generations, with a rate of 62%. In the

generation Y, this rate is 45%; It has been observed that it is 40% in the generation X. Since various media alternatives are examined, the increase is in the generation Z (Göker and Turan, 2020). In the studies conducted in Wuhan, where the virus emerged, as a result of the closure of children and adolescents to their homes within the scope of social isolation measures during the pandemic process, both the problem of inactivity (Xiang et al., 2020) and the problematic internet use in terms of coping with the situation and escaping from it (Király et al., 2020).) were seen to be faced with (as cited in Öztürk, 2021). In the research conducted by Anadolu University Social Media and Digital Security Education Application and Research Center (SODİGEM), It was observed that the time spent by individuals in our country also wo have access to computers and internet etc. during the pandemic period has increased. As a result of the survey conducted with 293 participants from 73 provinces, 70% of the individuals' computer usage time and at the same time video conversation and video conferencing and 80% of the mobile phone usage time increased (Öztürk, 2021). The increase in screen usage makes us think and also raises the question, "Can we use technology properly?".

During adolescence, when peer acceptance and belonging are important, the most important people in the lives of adolescents are their peers. Therefore, they want to spend more time with their peers (Özbaş, 2021). Students with special abilities can deal with tasks that will not contribute to their own development when they are faced with boredom in the environment where face-to-face meetings are limited during the pandemic period and in the environments where they receive education with individuals with typical development (Çalıkoğlu, 2021). According to Yang and Tung (2004), addicted individuals use the Internet more frequently for entertainment, interaction, and feelings of contentment. Internet addiction, the individual may lose control of his life and even overuse it at a level that makes him forget his hunger and sleep (Usta, 2016). Choi et al. (2009) state that the internet is widely used among students attending secondary education and that internet addiction is increasing among these students. Internet addiction negatively affects students' academic and personal development (Doğan, Işıklar, & Eroğlu, 2008).

According to Koçak (2019), gifted students mostly use computers, tablets or smartphones for playing games and chat. It can be said that as long as screen use is planned in a way that does not create addiction and does not prevent the physical, social-emotional and academic development of the individual, it can be said that digital games support the development of the imagination of the individual, rather than any expected harm. According to Çalıkoğlu (2021), it is not possible and appropriate to completely keep the child away from the screen. Adolescence is the period in which people's identities are formed. At this point, the parents' observations of the child's behavior and the constructive relationship they establish with them are important. Whether families are democratic or oppressive plays an important role in the formation of an individual's identity (Dutar, Çakır, &

Yeşilkılıç, 2018). If the family is in contact with their children and is away from overprotection; The lack of perfectionism and competition reduces the risk of children developing addiction.

The research is important in terms of contributing to the literature in determining the screen time of gifted students aged 12-18 during the pandemic process and the opinions of parents on this issue. In this context, it is believed that educators and parents will help adolescents to take precautions regarding the effects of screen addiction on their physical, social-emotional and academic development. The mixed research question, which is expressed as the main problem of this research, which is designed as a mixed method research in terms of expressing a research process involving the collection, analysis and integration of different research designs, qualitative and quantitative data: How do the qualitative results obtained from the interview data with gifted students and their parents about the screen use of gifted students aged 12-18 during the pandemic period help explain the effects on potential screen addictions?"

Method

In this section information on the study group of the research, the research model, data collection and analysis of the data were presented.

Research Model

This study is designed as a mixed method research model in which quantitative and qualitative research methods are used together. Mixed methods research is a method that allows to collect and analyze both qualitative and quantitative data to understand research problems, and can simultaneously place these two data types into each other or one after the other, respectively. It can be defined as a research design that can integrate by building on it, using the advantages of integrating these two data types, to obtain comprehensive results, and using special research patterns in planning these operations (Creswell, 2019; Creswell & Plano Clark, 2018). The main reason for using mixed methods research in this study is the complementarity dimension. The purpose of the complementarity dimension in the mixed method study is that one of the results obtained from qualitative or quantitative data is based on clarifying, elaborating and enriching the results obtained from the other (Greene et al., 1989). In this sense, the emphasis on highlighting both methods by addressing the strengths of both qualitative and quantitative data allows researchers to see the general picture of the subject studied and to get answers to different research questions or objectives on complex subjects (Greene et al., 1989; Bryan, 2006). Mixed methods research patterns range from fixed designs to emergent designs. Fixed designs are designs in which decisions about all stages of the research are made and planning is made before starting the study (Creswell & Plano Clark, 2018). This study has a fixed pattern, as the use of mixed methods research was decided before the study started. The explanatory sequential/ (sequential quantitative → qualitative) mixed methods research design used in

this study, which is one of the basic design types, which is one of the categories containing mixed methods research typologies (Creswell & Plano Clark, 2018), is given in Figure 1.
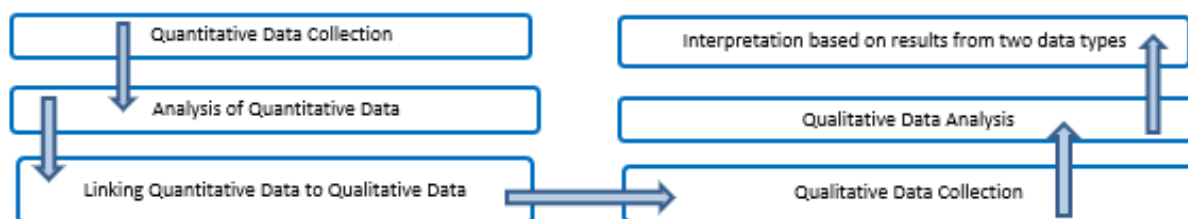

Figure 1. Basic Design: Explanatory sequential/ (sequential quantitative → qualitative) mixed methods research design

Note: Adapted from Toroman (2021) and Creswell and Plano Clark (2018).

The explanatory sequential/ (ordered quantitative → qualitative) mixed methods research design begins with quantitative data collection and analysis that aims to examine trends in a research population or relationships between topics or concepts studied. Subsequently, a connection is made from the quantitative results to the qualitative. As a result of the qualitative data collection carried out, the data are analyzed. Results are explained by qualitative data collection and analysis of the quantitative results obtained. At the point of combining the data, the dialectical pluralism paradigm is used (Creswell & Plano Clark, 2018). Creswell and Plano Clark (2018) suggest that writing details about qualitative and quantitative methods should be compatible with the methodology appropriate to the research design. Since this study was conducted with an explanatory sequential quantitative → qualitative mixed methods research design, the quantitative dimension, method and results of the research were presented first. Then, in the light of the findings obtained from the quantitative results, the qualitative dimension of the research; The determination of the qualitative sample, its method and results are presented. Finally, the quantitative and qualitative results were combined and interpreted.

Quantitative Dimension of the Research

Different quantitative research designs can be used in social science research. Relational research model, one of the scanning models, was used in the research. In the analysis of this research model, the screen time of the gifted students; before the pandemic and during the pandemic period, the mandatory time spent in front of the screen and the changes in the purposes of screen time were compared. Karasar (2018) describes the research model that aims to detect the existence and degree of change between two and/or more variables; referred to as the relational screening model.

The answers to the following sub-problems were sought with the items in the questionnaires applied separately to the gifted students and their parents in quantitative dimension, according to the procedures of the explanatory design, one of the mixed method researches for the mixed question, which is the main problem of the research.

According to gifted students;

Sub-problem 1S: Have the screen times changed during the pandemic period compared to the time before the pandemic?

Sub-problem 2S: Have the screen time purposes during the pandemic period changed compared to before the pandemic?

Sub-problem 3S: Did the awareness of the negative effects of being in front of the screen during the pandemic period change compared to before the pandemic?

Sub-problem 4S: Have the emotional states changed when connections were cut during the pandemic period compared to before the pandemic?

According to the parents of the gifted students;

Sub-problem 1P: Have the screen times of gifted children changed compared to the time before the pandemic?

Sub-problem 2P: Have the screen time purposes of gifted children during the pandemic period changed compared to before the pandemic?

Sub-problem 3P: Has the awareness of gifted children about the negative effects of being in front of the screen during the pandemic period changed compared to before the pandemic?

Sub-problem 4P: Have the emotional states of gifted children during the pandemic period changed when their screen connections were cut off, compared to before the pandemic?

Participants of Quantitative Research

The population of the research consists of gifted students between the ages of 12-18, who are educated in Çanakkale and Edirne in the 2021-2022 academic year, and their parents. Appropriate sampling method was used in determining the sample of the study. While creating the working group, social media platforms that are members of gifted children and their families were used. It is stated that the current method of voluntarily or easily sampling and inclusion of participants in the research is the appropriate sampling method (Christensen, Johnson, & Turner, 2015). Families of gifted children were reached through social media.

In the first stage, the prerequisite features that the gifted students and their parents should have, were determined. The prerequisites for gifted students to take part in the study as a participant are a) volunteering to participate in the study, b) being diagnosed with giftedness from the guidance research center, c) being between the ages of 12-18, d) continuing their education online during the COVID-19 pandemic period. e) to have an environment where the research can answer the quantitative questions on the google form platform. Prerequisite features that parents must have in

order to be a participant in the study a) to volunteer to participate in the study, b) to have a child diagnosed as gifted by the guidance and research center, c) to have a gifted child between the ages of 12-18, d) to have an environment where the researcher can answer the quantitative questions on the Google Form platform, e) It has been determined as being in the same house with a gifted child all day during the COVID- 19 pandemic period. Of the 173 forms answered by the students through the Google Form, 160 of them met the prerequisites. 13 students who were diagnosed with giftedness from private centers or private practice and were outside the age range were not included in the sample. Of the 107 forms answered by the parents, 7 did not meet the prerequisites. The sample of the research consists of 160 gifted students aged 12-18, who received online education during the pandemic process, and the parents of 100 of them. This method is important in terms of accessibility and saves time. The distribution of gifted students in the 12-18 age group participating in the research is presented in Table 1. The Sample, their characteristics and their selection methods should be described in detail and justified.

Table 1. Distribution of gifted students constituting the sample

Variables	Level	Frequency (f)	Percent (%)
Gender	Female	105	65.73
	Male	55	34.27
Education Level	Middle School	54	33.75
	High School	106	66.25
Total		160	100

As seen in Table 1, 66.3% of the gifted students are at high school level and 33.7% are at secondary school level. 65.73% of these participants are female; 34.27% of them are male students.

Table 2. Distribution of parents of gifted students constituting the sample

Variables	Level	Frequency (f)	Percent (%)
Parent Type	Mother	84	84
Education Status			
Employment status during pandemic period	Father	16	16
	Primary	2	2
	Secondary	67	67
	University	27	27
	Master's and PhD	4	4
	Not working before	26	26
	Working from home	67	67
	Fired	17	17
Total		100	100

As seen in Table 2, 84% of the 100 parents included in the study are mothers, and 67% of the parents have secondary education, 27% have a university degree and 4% have a postgraduate degree. In the table, it is stated that while 26% of the parents, only 2 of whom are primary school graduates,

did not work before the pandemic, 17% were dismissed during the pandemic process and 67% of them carried out their work from home.

Data Collection Tools of Quantitative Research

In the quantitative part of this research, data were collected through the "Personal Information Form" and the "Screen Time Questionnaire" answered by both gifted students and their parents. The data of the research were collected with an online questionnaire. The online survey method has become a method that has increased in recent years and contributed significantly to researchers in the data collection process (Xiao & Lan, 2017). The advantage of the online survey is that it provides immediate access to research questions on digital platforms through technology, which is an important part of people's lives in today's world. Consent form was obtained from the participants regarding their voluntary participation in the study.

Personal Information Form. The personal information form applied for gifted students was developed by the researcher in order to obtain information about the demographic characteristics of gifted students. These demographic characteristics are; age, class, gender and educational institution. The personal information form applied to the parents of gifted students was developed by the researcher in order to obtain information about the demographic characteristics of the parents. These demographic characteristics are; age, parent type, employment status, education level, and gender of the gifted child.

Questionnaire on the Effect of The Pandemic on Screen Time in Individuals Aged 12-18 (Student). The questionnaire was prepared by the researcher. The questions of the questionnaire were prepared in line with the symptoms of screen addiction and presented to the expert opinion. As a result of expert opinion, the two-stage survey; It has become to include a total of 24 questions, 12 before the pandemic and 12 during the pandemic process. The purpose of this survey is to determine the effect of the pandemic process on the screen use of gifted students and, finally, to form the basis for the selection of samples for the qualitative part of the research. The survey questions consist of questions about the screen time of individuals, their attitudes towards screen use, the tools they use in screen use, and their awareness of the harms of screen use. Although the answering time of the questionnaire is 15 minutes on average, there is no specific time limit.

Questionnaire on the Effect of The Pandemic on Screen Time in Individuals Aged 12-18 (Parents). The questionnaire was prepared by the researcher. The questions of the questionnaire were prepared in line with the symptoms of screen addiction and presented to the expert opinion. As a result of expert opinion, the two-stage survey; It has become to include a total of 24 questions, 12 before the pandemic and 12 during the pandemic. The purpose of this survey is to determine the perceptions of the parents about the effect of the pandemic process on the screen time of their gifted

children, and finally to form the basis for the selection of the sample for the qualitative part of the research. The survey questions consist of questions about the parents' awareness of their children's screen use, their attitudes towards screen use, the tools they use in screen time, and the harms of screen use. Although the answering time of the questionnaire is 15 minutes on average, there is no specific time limit.

Data Analysis of Quantitative Research

Percentage frequency analysis calculations were used in the analysis of the data. "Frequency analysis is a statistical analysis technique that shows the observation frequency and percentage distribution of data." Percentage frequency analysis is used in this study to compare the percentages obtained as a result of the pre-pandemic and pandemic process questionnaires and to decide whether the symptoms of screen use increase in individuals.

Findings of Quantitative Research

In this mixed-methods research, which examines the screen use of gifted students aged 12-18, who are studying at high school and secondary school levels in Çanakkale and Edirne in the 2021-2022 academic year, and the views of their parents on the subject, the findings of the questionnaire items that serve each sub-problem of the quantitative dimension of the research are given in tables.

Sub-problem 1S: According to gifted students, have the screen times changed during the pandemic compared to the time before the pandemic?

Sub-problem 1E: According to the parents of gifted students, did the screen use times of gifted children change compared to the time before the pandemic during the pandemic?

The findings of the questionnaire items that serve the sub-problem regarding the screen time of gifted students before and during the pandemic, and the perceptions of parents towards their children's screen time are presented in Table 3, Table 4 and Table 5.

Table 3. Screen time of gifted students

	1-2 Hours		3-4 Hours		5-6 Hours		7 Hours or more	
	(%)	(f)	(%)	(f)	(%)	(f)	(%)	(f)
Before Pandemic								
Parent	48	48	37	37	10	10	5	5
Student	34.4	55	50	80	11.3	18	4.4	7
During Pandemic								
Parent	4	4	7	7	21	21	68	68
Student	0	0	10	16	33.8	54	56.3	90

Before the pandemic, 34.4% of the students, 55 of 160 students, limited the screen time to 1-2 hours, while during the pandemic, 56.3% of the students, 90 out of 160 students, increased this time to 7 hours or more. What is interesting is that 0% of the students, that is, none of the students

in the sample group, used screen less than two hours a day during the pandemic process. All students have more than 2 hours of screen use. Before the pandemic, 48% of parents stated that their children's screen time was limited to 1-2 hours, while only 4% of these parents stated that it was 1-2 hours during the pandemic process. During the pandemic period, 7 hours or more meets the largest part. It reached 68% with an increase of 63%. In general, in terms of both samples, a decrease is observed in those who say 1-2 hours and 3-4 hours, while an increase is observed in 5-6 hours and 7 hours and more. Screen time has increased during the pandemic process.

Table 4. Mandatory screen time of the gifted students (Lesson, homework, online education, etc.)

	1 Hour		2 Hours		3 Hours		4 Hours	
	(%)	(f)	(%)	(f)	(%)	(f)	(%)	(f)
Before Pandemic								
Parent	51	51	27	27	7	7	15	15
Student	58.1	93	25	40	6.3	10	10.6	17
During Pandemic								
Parent	5	5	3	3	18	18	74	74
Student	11.9	19	5,6	9	16.25	26	66.3	106

Before the pandemic, 51% of parents stated the time their children were forced to stay in front of the screen as 1 hour, while those who chose this option during the pandemic period decreased to 5%. The highest increase occurred in 4 or more hours options. While those who chose 1 and 2 hours were 78 parents before the pandemic, this number decreased to 8 parents during the pandemic. The compulsory stay in students before the pandemic is 1 hour at the most. While these people constitute 58.1% of the sample, those who stayed for 1 hour during the pandemic process constitute 11.9% of the sample. While it was preferred for a maximum of 1 hour in both samples before the pandemic process, it was replaced by 4 hours or more during the pandemic process. In other words, the period of mandatory screen time has increased during the pandemic process.

Table 5. Complaining about time spent on screen of gifted students

	Complainant		Undecided		Not Complainant		No Answer	
	(%)	(f)	(%)	(f)	%	(f)	(%)	(f)
Before Pandemic								
Parent	29	29	23	23	47	47	1	1
Student	25	40	21.9	35	53.1	85	0	0
During Pandemic								
Parent	56	56	13	13	29	29	2	2
Student	41.8	77	18.8	30	31.9	51	1.2	2

Before the pandemic, 29% of parents complained about their children's screen time, while this rate increased to 56% during the pandemic process. Before the pandemic, 25% of the students complained about the time they spent in front of the screen, while this rate increased to 41.8% during the pandemic process. Complaining about screen time has increased during the pandemic process

compared to before the pandemic. 1 of the parents before the pandemic; In the pandemic process, 2 students and 2 parents chose the "no answer" option in the question.

Sub-problem 2S: According to gifted students, have the screen time purposes during the pandemic period changed compared to the pre-pandemic period?

Sub-problem 2P: According to the parents of gifted students, have the screen time purposes of gifted children during the pandemic period changed compared to before the pandemic?

Table 6, Table 7, Table 8 and Table 9 present the findings of the questionnaire items that serve the sub-problem of gifted students' purposes of the screen time before and during the pandemic, and parents' thoughts of children's purposes of the screen time.

Table 6. Purpose of screen time of gifted students

	Online Education and Research		Social Media		Game		Entertainment	
	(%)	(f)	(%)	(f)	(%)	(f)	(%)	(f)
Before Pandemic								
Parent	62	62	56	56	49	49	52	52
Student	65	104	78.8	126	44.4	71	61.9	99
During Pandemic								
Parent	97	97	61	61	49	49	57	57
Student	93.8	150	78.1	125	50	80	56.3	90

In this part of the questionnaire, the sample groups were given the opportunity to choose more than one option. Before the pandemic, 62% of parents ticked the online education option, while it increased to 97% during the pandemic. While there was an increase in entertainment and social media options during the pandemic period, the rate of those who chose the game option did not change. While there has been an increase in online education, social media and games among students, there has been a decrease in entertainment options. The highest increase in students has been in the online education option. increased from 65% to 93.8%. According to students and parents, while the time spent on online education increased during the pandemic process, the time allocated for entertainment decreased according to students.

Table 7. Number of technological tools used by gifted students

	1		2		3		4 or more	
	(%)	(f)	(%)	(f)	(%)	(f)	(%)	(f)
Before Pandemic								
Parent	37	37	43	43	9	9	11	11
Student	34.4	55	45	72	16.2	3	4.4	7
During Pandemic								
Parent	4	4	40	40	36	36	20	20
Student	14.4	23	41.9	67	30.6	49	13.1	21

It is seen that there are 2 most preferred technological tools before and during the pandemic. The biggest increase in student results was determined in the option of owning 3 technological tools. While 3 students with 3 technological devices were 16.2% of the sample before the pandemic, individuals with 3 technological devices during the pandemic period increased by 46 people and reached 30.6%. In the parents' answers, the number of those who said that their children used 1 technological device was 37, while this number decreased to 4 after the pandemic. In parents, there was an increase of 25% in maximum 3 technological device options. There has been an increase in the number of technological tools used during the pandemic process.

Table 8. Using screen time as a tool to avoid responsibility

	Yes		Maybe		No		No Answer	
	(%)	(f)	(%)	(f)	(%)	(f)	(%)	(f)
Before Pandemic								
Parent	50	50	18	18	31	31	1	1
Student	28.7	46	21.3	34	49.4	79	0.6	1
During Pandemic								
Parent	40	40	19	19	40	40	1	1
Student	50	80	18.8	30	30	48	1.2	2

While 50% of parents thought that their children used the screen as a tool to avoid responsibilities before the pandemic, this rate dropped to 40% during the pandemic period. Those who advocate using the screen as a tool have decreased. While 28.7% of the students stated that they used the screen as a tool to avoid responsibilities before the pandemic, this rate was seen as 50% during the pandemic process. There has been an increase in those who argue that use the screen as a tool. 1 person from the parents before the pandemic, 1 person to the pandemic process; Among the students, 1 person before the pandemic and 2 people during the pandemic period give "no answer" to the question. Parents and students have opposite opinions.

Table 9. Social interaction on-screen

	Yes		Maybe		No		No Answer	
	(%)	(f)	(%)	(f)	(%)	(f)	(%)	(f)
Before Pandemic								
Parent	60	60	8	8	30	30	2	2
Student	71.3	114	8.8	14	18.1	29	1.9	3
During Pandemic								
Parent	71	71	9	9	19	19	1	1
Student	83.1	133	6.9	11	8.8	14	1.2	2

It is seen that the social interactions of the students increased on the screen during the pandemic (81.3) compared to the pre-pandemic (71.3). According to their parents, their children's social interactions on the screen increased during the pandemic (71%) compared to the pre-pandemic period (60%). Social interaction on the screen has increased during the pandemic period.

Sub-problem 3S: According to gifted students, has their awareness of the negative effects of being in front of the screen during the pandemic period changed compared to before the pandemic?

Sub-problem 3E: According to the parents of gifted students, has the awareness of gifted children about the negative effects of being in front of the screen during the pandemic period changed compared to before the pandemic?

The findings of the questionnaire items that serve the sub-problem regarding the awareness of gifted students and their parents about the negative effects of being in front of a screen before and during the pandemic are presented in Table 10, Table 11 and Table 12.

Table 10. Awareness of the negative effects of being in front of a screen

	There is awareness		Not sure		There is no awareness		No Answer	
	(%)	(f)	(%)	(f)	(%)	(f)	(%)	(f)
Before Pandemic								
Parent	50	50	31	31	18	18	1	1
Student	35.6	57	21.9	35	40.6	65	1.9	3
During Pandemic								
Parent	61	61	14	14	23	23	2	2
Student	50	80	18.8	30	30	48	1.2	2

Before the pandemic, 50% of parents stated that they were aware of the negative impact of being in front of the screen of their children, while this rate increased to 61% during the pandemic period. While 35.6% of the students stated that they realized that looking at the screen had a negative effect on them before the pandemic, this rate increased to 50% during the pandemic period.

Table 11. The negative effect of screen time on daily work

	Yes		Maybe		No		No Answer	
	(%)	(f)	(%)	(f)	(%)	(f)	(%)	(f)
Before Pandemic								
Parent	24	24	10	10	64	64	2	2
Student	9.4	15	31.3	50	59.4	95	0	0
During Pandemic								
Parent	41	41	19	19	39	39	1	1
Student	41.3	66	21.9	35	36.9	59	0	0

2 of the parents did not answer this question in the pre-pandemic part and 1 during the pandemic period. All of the students answered this question in both phases of this questionnaire. According to the answers from the parents, the number of those who said "Yes" increased by 17, while the number of those who said "No" decreased by 25. While 9.4% of the students stated that screen use prevented their daily work before the pandemic, 41.3% of the students stated that screen use prevented their daily work during the pandemic period. While the number of people who think

that screen time prevents doing their daily work during the pandemic period has increased, the number of those who say that they do not prevent it has decreased.

Table 12. Sleep deprivation because of screen time

	Yes		Maybe		No		No Answer	
	(%)	(f)	(%)	(f)	(%)	(f)	(%)	(f)
Before Pandemic								
Parent	24	24	10	10	64	64	2	2
Student	65	104	16.2	26	17.5	28	1.2	2
During Pandemic								
Parent	42	42	17	17	40	40	1	1
Student	41.9	67	13.1	21	44.4	71	0.6	1

Students stated that they were less sleep deprived because of the screen during the pandemic (41.9%) than before the pandemic (65%). According to parents, their children are more sleep deprived during the pandemic (42%) than before the pandemic (24%).

Sub-problem 4S: According to gifted students, did the emotional states they display during the pandemic period when their screen connections were cut off changed, compared to before the pandemic?

Sub-problem 4P: According to the parents of the gifted students, did the emotional states of the gifted children during the pandemic period when their screen connections were cut off changed, compared to the pre-pandemic period?

Table 13 and Table 14 present the findings of the questionnaire items that serve the sub-problem regarding the emotional state of gifted students before and during the pandemic, when the screen connections of the children were cut off.

Table 13. Feelings of unhappiness, restlessness without access to screen

	Yes		Maybe		No		No Answer	
	(%)	(f)	(%)	(f)	(%)	(f)	(%)	(f)
Before Pandemic								
Parent	21	21	15	15	63	63	1	1
Student	6.3	10	23.1	37	68.8	110	1.9	3
During Pandemic								
Parent	27	27	29	29	42	42	2	2
Student	21.9	35	21.3	34	55.6	89	1.2	2

During the pandemic period (21.9%), the rate of feeling unhappy and uneasy when the students were away from the screen increased compared to the pre-pandemic period (6.3%). According to the parents, the rate of feeling unhappy and restless when their children stay away from the screen increased during the pandemic (21%) compared to the pre-pandemic period (27%).

Table 14. Negative perspective on life when staying away from social media

	Yes		Maybe		No		No Answer	
	(%)	(f)	(%)	(f)	(%)	(f)	(%)	(f)
Before Pandemic								
Parent	60	60	15	15	23	23	2	2
Student	27.5	44	26.2	42	44.6	71	1.3	9
During Pandemic								
Parent	30	30	46	46	22	22	2	2
Student	32.5	52	18.8	30	46.9	75	1.9	3

Before the pandemic, 27.5% of the students said that they looked at life negatively when they were away from social media, while this rate was 32.5% during the pandemic process. Before the pandemic, 15% of the parents were not clear that their children could look at life negatively if they were away from social media, while the rate of those who are not clear during the pandemic period is 46%. While the rate of those who answered "yes" was 60% before the pandemic, it decreased to 30% during the pandemic period. Parents have less information about their children's perspectives on life during the pandemic than they did before the pandemic.

Qualitative Dimension of the Research

Creswell (2016) likens qualitative research to an intricate fabric formed by a mixture of fabrics of different colors and textures and various materials. The most common patterns used in qualitative research are phenomenological, ethnographic, embedded theory, action, narrative and historical research (Gürbüz & Şahin, 2016). Phenomenology was used in the qualitative dimension of this study, in which the screen use of gifted students aged 12-18 years and the views of their parents on this issue were investigated. In this design, which focuses on facts that individuals are aware of but do not have in-depth and detailed knowledge (Büyüköztürk et al., 2011), it focuses on evaluating the experiences of individuals by highlighting their perceptions and experiences from their own perspectives (Saban & Ersoy, 2019) (Miller & Brewer, 2003). It is to define the essence of experience and to make a universal description based on individuals' expressing "what" and "how" they experience (Creswell, 2016). In this research, it will be described how gifted students experience screen time during the pandemic process.

Participants of Qualitative Research

Purposive sampling model was used within the scope of the study. With purposeful sampling, researchers aim to work with individuals who have experience or knowledge about the basic phenomenon or key concept they are examining in their studies (Creswell, 2019). Accessibility is important, as well as being willing to participate and the ability to communicate experiences and thoughts in an open, sincere, expressive and reflective way (Bernard, 2002). It is stated that the number of participants in phenomenological studies can vary between 5 and 25 items (Patton, 2002;

Creswell, 2016; Rubin & Babbie, 2016). It was previously stated that 160 gifted students and 100 parents participated in the quantitative phase of this research, which was carried out with a mixed method. In the personal information form, questions were also asked about whether they wanted to take part in the qualitative dimension of the research, whether they wanted to share contact information so that they could be reached, and whether they could spare time to answer the interview questions sincerely. Among the participants in the quantitative dimension of the research, 68 gifted students and 43 parents who answered positively to these questions were contacted via e-mail and their invitations to participate in the structured interview were repeated. As a result of the correspondence, 16 gifted students and 17 parents constitute the research group of the qualitative stage.

During the interview, the students were addressed by their names, but during the reporting phase, a coding was made as S1, S2…. Information about the students is shared in Table 15. 11 of the 10 high school and 6 secondary school students in the study group consisting of 9 female and 7 male gifted students are students of BİLSEM (Science, Art and Education Center).

Table 15. Demographics of the gifted students that are in the study group

Student	Gender	Education Level	BİLSEM student status
S1	Female	Middle-School	Yes
S2	Female	High School	Yes
S3	Female	Middle-School	Yes
S4	Female	High School	Yes
S5	Male	Middle-School	Yes
S6	Male	Middle-School	Yes
S7	Female	High School	No
S8	Male	Middle-School	Yes
S9	Female	High School	No
S10	Male	Middle-School	Yes
S11	Female	High School	Yes
S12	Male	High School	No
S13	Female	Middle-School	Yes
S14	Female	Middle-School	Yes
S15	Male	Middle-School	No
S16	Male	Middle-School	No

During the interview, parents were addressed by their names, but at the reporting stage, P1, P2 …. coding was done. 10 of the parents are the parents of the gifted students in the study group. Information about the parents is shared in Table 16. In the group consisting of 11 mothers (1 single-10 married) and 6 fathers (2 single-4 married), 6 of the parents have secondary education, 8 have a university degree, 2 have a master's degree and 1 have a doctorate degree.

Table 16. Demographics of the parent that are in the study group

Parent	Parent Type	Age	Marital Status	Education	Work Status During Pandemic	Child's Gender	Child's Education Status
P1	Mother	46	Single	University	Worked from home	Male	High School
P2	Mother	37	Married	Middle School	Didn't work before	Female	Middle School
P3	Mother	39	Married	Middle School	Worked from home	Female	Middle School
P4	Mother	33	Married	Middle School	Didn't work before	Male	Middle School
P5	Father	41	Married	Master's Degree	Worked from home	Female	Middle School
P6	Mother	39	Married	PhD	Worked from home	Male	High School
P7	Father	47	Single	University	Laid Off	Female	High School
P8	Mother	36	Married	Middle School	Didn't work before	Male	Middle School
P9	Father	42	Single	University	Worked from home	Female	Middle School
P10	Mother	33	Married	Middle School	Laid Off	Male	Middle School
P11	Father	39	Married	University	Worked from home	Male	High School
P12	Mother	40	Married	University	Worked from home	Male	Middle School
P13	Mother	34	Married	Middle School	Laid Off	Female	Middle School
P14	Mother	42	Married	Master's Degree	Worked from home	Male	Middle School
P15	Father	43	Married	University	Worked from home	Female	Middle School
P16	Mother	38	Married	University	Worked from home	Female	Middle School
P17	Father	47	Married	University	Worked from home	Female	High School

Data Collection Tool and Data Collection Process of Qualitative Research

In the qualitative aspect of the research, structured interviews were conducted with the participants by using the structured form and interview technique. The structured interview includes a predetermined set of questions. In the interview technique, which aims to determine the parallelism and difference between the information given by the interviewed participants (Yıldırım & Şimşek, 2016), questions are asked to each participant in the same way and with the same words (Karagöz, 2017). In order to test the clarity of the interview questions, a pilot study was conducted with two gifted students and two parents. Pilot study is the process of testing the planned research and revising it according to the results obtained (Gall, Gall, & Borg, 2007). As a result of the pilot interviews with parents and students, no changes were made to the interview questions. The data obtained from the pilot interview study were not included in the research findings.

All interviews during the data collection process were conducted via the online platform "Zoom". Before the interview, the accessibility of all participants to the "Zoom" program was checked. The interviews were conducted on a standard questionnaire in order to reduce bias and avoid guiding questions. Interviews started after the participant parents and all the parents of the participating gifted students allowed the interviews to be recorded and their consent was obtained. It was ensured that every positive and negative statement was recorded. In the interviews made over Zoom, the participant's state, movements and emotions were noted by the researcher. During the

interviews, the researcher asked the participant after the interview question, and after the answer sentence given when she deems necessary, in order to reach the main meaning and deeper answers, the researcher asked "What exactly do you mean by this?", "What does this mean?", "Can you explain a little more?" , "Can you give an example?" questions such as While the longest interview within the scope of the related interviews lasted 54 minutes; The shortest interview lasted 37 minutes.

The audio recordings obtained were transcribed by the researcher by hiding the names, and content analysis processes were carried out by taking the opinions of field experts in line with these transcripts. In the analyzes obtained, the condition of the researcher to report the findings honestly was fulfilled by directly transferring the statements of the participants (Creswell, 2016). The interview questions of this study, which examines the effect of the pandemic on screen time in individuals aged 12-18, are presented in Table 17.

Table 17. Interview questions

Applied Group	Questions
Gifted student group	- What are your thoughts on your screen time during the pandemic period? - What do you think about the effects of being on the screen for a long time during the pandemic period? - How do you think the pandemic period affects your screen time purpose? - How do you behave when you are disconnected from the screen?
Parent Group	- What are your thoughts on the screen use time of your gifted child during the pandemic period? - What do you think about the effects of your gifted child being on the screen for a long time during the pandemic period? - How do you think the pandemic process affects your gifted child's screen time? - How does your gifted child behave when the screen is disconnected?

Validity and Reliability of Qualitative Research

The concepts of credibility, transferability, objectivity and consistency are used for validity and reliability in qualitative research (Merriam, 2009; Yıldırım & Şimşek, 2016). Mertens (2019) states that for the credibility of a qualitative research, strategies such as long-term interaction, peer review, participant confirmation and variation should be used, and the researcher can summarize what the participant said at the end of an interview and ask whether the notes reflect what the person wants to express. The actions that support the validity and reliability of the qualitative dimension of this research are given in Table 18.

Table 18. Actions that support the concepts of validity and reliability of qualitative research

Concept	Action
Credibility	Communication was established with the participants.
	The rationale and purpose of the research are explained.
	In the interviews, the sincere interaction was ensured as much as possible.
	Expert opinion was taken in the preparation of the interview questions.
	A pilot study was conducted.
	At the end of the interview, the participant's thoughts were summarized, and his confirmation was obtained.
	Attention was paid to the collection of qualitative data to support the quantitative data.
	Direct quotations reflecting the views of the participants were mostly included.
Transferability	Purposeful sampling was chosen. The research process is described in detail.
Objectivity (confirmability)	Acted diligently to reach the results objectively.
	An environment has been created where the participants can express themselves easily.
	Records are reported in accordance with codes and themes.
	Opinion was obtained from another expert.
Consistency (reliability)	The researcher has a PhD in the field of gifted people.
	During the research, the researcher paid attention to the conceptual framework of the findings.

Data Analysis of Qualitative Research

Content analysis method was used in the analysis of the data obtained from the interviews. In the content analysis process, similar data are brought together around certain concepts and themes (Yıldırım & Şimşek, 2016). In this process, the following steps were carried out. The recordings of interviews with gifted students and parents were converted into written form without any changes. The written data, the answers given by the gifted students and parents to each question were coded by the researcher according to the most prominent themes. In the theme determination study, another expert working in the field independently of the researcher read the written data and created the categories. The researcher and the expert came together, and the categories gathered under four themes were determined from the interviews held with the gifted students and parents, and a consensus was reached on the themes and categories.

Findings of Qualitative Research

The findings of the qualitative research consist of the themes under the headings of screen time, the effects of being in front of the screen for a long time, the purpose of screen time, and the mood when they have no screen time.

Findings on Screen Time. In the interviews, in order to examine the screen time of gifted students during the pandemic period, the gifted students and their parents answered the question to determine what their thoughts were about the screen time during the pandemic period. The findings are presented in Table 19 and Table 20, respectively.

Table 19. Gifted students' own thoughts on screen time

Themes	Categories	Codes	Expression samples from Documents
Screen time considerations	Opinions of gifted students on screen use time before the pandemic.	Optimum duration of use (4)	*"Before Corona, I only played with my tablet for as long as my family allowed." (S5)*
			"I used my computer for two hours on weekends." (T7)
		Long term use (7)	*"Before pandemic, I was on my smartphone for more than three hours a day." (S12)*
	Opinions of gifted students on screen time during the pandemic	Long term use (10)	*"Because the classes were online, I was in front of the computer for almost 8 hours a day." (S16)*
			"Just like everyone else during the pandemic, I was stuck on the computer or tablet a lot, except for the lessons." (S8)
		Obligation (4)	*"During the pandemic, I entered EBA and listened to lectures. The teachers made it compulsory for us to attend the classes. On the other hand, the teachers at BİLSEM also gave online lessons. I wish they didn't make it compulsory." (S10)*
		Discontent (2)	*"During the pandemic, I had to attend all of the classes. I had to stay in front of the screen for almost 7 hours a day. For someone like me who doesn't even like to use a smart phone, it is very boring to listen to lectures and do homework on the screen." (S13)*
		Wasted time (2)	*"Teachers who were not very proficient in technology, trying to make the lessons online, took too long to process and connect to the lessons. I was working by myself in front of the screen much more than necessary for me to learn my lessons well. While my ostensibly screen time was very long, it was also a lot of time wasted." (S4)*

Table 20. Parents' thoughts on screen use time of gifted students

Themes	Categories	Codes	Expression samples from Documents
Screen time considerations	Parents' thoughts on screen time of gifted students before the pandemic	Optimum duration of use (4)	*"Before the pandemic, we only allowed my son to use his computer for gaming on weekends." (P8)*
			"Before the pandemic, my daughter was using a certain time a day to do her homework and research." (P16)
		Long term use (6)	*"Before the pandemic, we couldn't take her smartphone away from her. She was hanging out on social media or playing games on the computer for a long time." (P1)*
	Parents' thoughts on screen time of gifted students during the pandemic	Long term use (10)	*"Before the pandemic, my son was spending a lot of time on computer games. During the pandemic, he also spent more than half of the day in front of a computer or tablet because he was doing their classes online." (P11)*

	Obligation (6)	*"He used to use his tablet while researching something. During the pandemic process, he was forced to go to the computer and stayed on screen for a long time because he had to listen to lectures and do his homework." (P15)*
	Discontent (3)	*"I'm worried about my child spending so much time in front of a screen. The psychologist we went to said that he was a young person at risk of becoming a technology addict. I think this process made him more screen addicted." (P6)*

Findings on the effects of prolonged screen time. In the interviews, in order to examine the screen time of gifted students during the pandemic period, gifted students and their parents answered the question to determine their thoughts on the effects of being in front of the screen for a long time during the pandemic period on gifted students. The findings are given in Table 21 and Table 22, respectively.

Table 21. Opinions of gifted students about the effects of being in front of the screen for a long time

Themes	Categories	Codes	Expression samples from Documents
Effects of being in front of the screen for a long time	Opinions of gifted students on their awareness of the negative effects of being in front of the screen for a long time	Awareness (8)	*"I've never been in front of a screen for this long before. In the short or long term, I think staying in front of the screen for a long time will cause us negativity." (S9)* *"Maybe we don't see the negative impact right now, or we think so. However, I think we will get the result of this in the following years." (S3)*
	Opinions of gifted students on the negative effects of being in front of the screen for a long time	Health (5)	*"Because of screen time my eyesight has gotte worse." (S2)* *"I have scoliosis. I don't like online classes at all. We listened to the lecture with our camera on. We used the computer to do our homework. No matter how much I wear my corset, I attribute the increase in my pain to my constant sitting during the pandemic." (S16)* *"Being in front of the screen for a long time makes me unhappy." (S1)* *"My sleeping pattern has changed. I think I am not getting enough sleep. I guess this makes me more aggressive." (S11)*
		Daily routines (2)	*"I think that I don't take the time I need for my self-care, and I don't take care of myself because I stay in front of the screen for that long." (S7)* *"Both my mother and father were doing their work from the screen. The fact that we all had to be in front of the screen for a long time during the pandemic process caused us to have task sharing problems in our family from time to time." (S4)*

Table 22. Parents' thoughts on the effects of being in front of the screen for a long time in gifted students

Themes	Categories	Codes	Expression samples from Documents
Effects of being in front of the screen for a long time	Opinions of parents about the negative effects of being in front of the screen for a long time in gifted students	Awareness (7)	*"Unfortunately, we cannot control computer use outside of lessons. Family friends we interviewed say the same about their children. Will this process we live through make our children addicted to technology?" (P4)*
			"Schools being closed, and lessons being held remotely will cause them to continue with very incomplete information in the later stages of their education life. Moreover, staying in front of the screen for such a long time will cause dissatisfaction with the usual learning environments and the school environments they will demand in the future will also change." (P14)
	Parents' thoughts on the negative effects of being in front of the screen for a long time in gifted students	Health (11)	*"My son has attention deficit hyperactivity disorder. Having to stay in front of a screen for a long time for lessons and homework was very difficult for a distracted child like him. We had to readjust the doses of his medication." (P6)*
			"The fact that his father could not come home from the hospital during the pandemic had disrupted our family order. The fact that I work from home on the screen and my daughter's screen time for a long time has affected the way we eat. We mostly ordered take-out food. In this process, we both gained a lot of weight." (P3)
			"Exposure to screen light for a long time caused sleep problems in my daughter. That's what the psychologist said. He has just started to establish his new sleep pattern." (P13)
		Daily Routines (4)	*"Sometimes, even if she didn't have a lesson, she stayed in front of the screen for a long time, I think, to escape from her responsibilities." (P7)*

Findings on Screen Usage Purpose. In the interviews, in order to examine the screen time of gifted students during the pandemic process, gifted students and their parents answered the question to determine what their thoughts were about the purpose of screen time during the pandemic period. The findings are given in Table 23 and Table 24, respectively.

Table 23. Thoughts of gifted students on screen usage purposes

Themes	Categories	Codes	Expression Samples from Documents
Considerations for screen time	Opinions of gifted students on screen usage purposes before the pandemic	Social Media (6)	*"Before Corona, I used to hang out more on social media sites from my smartphone. During the pandemic period, I could not even follow the posts of the people I loved very much on social media."* (S3)
		Entertainment (9)	*"At first, I thought I would play more computer games since we were staying at home during this period. I was wrong. Before the pandemic, I used to spend my weekends playing computer games."* (S11)
		Doing Homework (3)	*"I used to research the homework given by our teachers on the internet."* (S14)
			"They still haven't bought me a smartphone. My connection with the screen was while I was doing homework from my sister's tablet or the laptop used by everyone in the house." (S8)
	Opinions of gifted students on screen time purposes during the pandemic process	Social Media (8)	*"In the process, I also added a tik tok to my social media accounts. I was bored of doing classes online. It's not for me at all."* (S16)
			"While using my smartphone primarily to follow my friends' posts on Facebook and Instagram, I used my father's laptop to attend classes." (S4)
		Entertainment (3)	*"My family could not control my computer use because we spent the whole day at home and the lessons were online. I used the opportunity and played a lot of games."* (S12)
		Doing Homework (7)	*"It was very practical to do and send our homework over the internet."* (S9)
		Having Lessons (10)	*"Of course, we didn't do online classes before. I used the computer mostly to attend the lesson and then I played games if our parents allowed it."* (S15)

Table 24. Parents' thoughts on screen time purposes of gifted students

Themes	Categories	Codes	Expression Samples from Documents
Considerations for screen time	Parents' thoughts on screen use purposes of gifted students before the pandemic	Social Media (4)	*"He hasn't been on social media since the day we bought the smartphone."* (P5) *"I think he is mostly on social media."* (P10)
		Entertainment (8)	*"He was passing his time with computer games because we only allowed him to turn on his computer on the weekends."* (P4)
	Parents' thoughts on screen use purposes of gifted students during the pandemic process	Social Media (4)	*"When he wasn't attending classes, he was making videos on Instagram the most."* (P3)

	Entertainment (7)	*"Although he told us that he was studying, I could not control what he was doing because the lessons were on the internet. I think you spend a lot of time playing games." (P12)*
	Doing Homework (12)	*"He was a responsible kid ever since he was little. In addition to his lessons, he used the computer a lot so that his homework was researched and there was no lack of knowledge." (P7)*
	Having Lessons (13)	*"He wanted to learn his lessons very well because he was going to take the university exam next year. He used to attend classes and study. He was watching a video on You Tube when it got too narrow." (P6)*

Findings on Mood Swings During Screen Connection is Cut. In the interviews, in order to examine the screen time of gifted students during the pandemic process, the gifted students and their parents answered the question to determine what their thoughts were about the mood change when the screen connection was cut during the pandemic process. The findings are given in Table 25 and Table 26, respectively.

Table 25. Thoughts of gifted students on mood changes when the screen connection is cut

Themes	Categories	Codes	Expression Samples from Documents
Mood changes during screen connection is cut	The thoughts of gifted students about the emotional state they display when the screen is connection is cut.	Bad Temper (8)	*"The sudden disconnection of the internet in the middle of the lesson was driving me crazy." (S9)* *"Especially in the winter, the electricity was often cut off. I was very angry when the internet was disconnected during the game." (S12)*
		Anxiety (5)	*"At times, the modem in our house could not handle 3 connections at the same time, slowing down or breaking down. I was very worried, especially when it was in mathematics lessons, that I would not be able to connect." (S2)*
		Moodiness (5)	*"During the pandemic days, we could only meet with my friends on social media. Even though I wanted to connect to the internet on my phone when there was a connection problem in the home internet, I used to spend the night in a state of embarrassment when I finished it in a short time before." (S14)*
	Thoughts of gifted students about their behaviors when screen connection is cut	Damaging technological devices (9)	*"When my phone is out of charge, if the electricity is also cut off, I sometimes have to throw it because I can't charge it." (S5)*
		Trying to come up with solution (2)	*"If the internet connection problem was from our house, I was going to my uncle's house downstairs." (S15)* *"I would definitely check their charge overnight in case my smartphone or tablet ran out of charge. If the internet went out while on the computer, I was connecting from my smartphone." (S4)*

Table 26. Parents' thoughts on mood changes when gifted students are disconnected from the screen

Themes	Categories	Codes	Expression Samples from Documents
Mood changes during screen disconnection	Parents' thoughts on the emotional state of gifted students when they are disconnected from the screen	Bad Temper (10)	*"Some days it took a long time for the teachers to login to class. Also, my daughter got very angry when the internet was cut off in the middle of the lesson." (E4)* *"He didn't care much when his connection was lost during the lesson, but he got very angry if the internet connection was lost while playing." (E12)*
		Unhappiness (3)	*"He is using a smartphone. If the internet package runs out while surfing on social media, he will give a hard time to us." (E1)* *"The disconnection of the internet makes him very unhappy. He once said that he becomes very miserable (E7).*
	Parents' thoughts on the behavior of gifted students when the screen is disconnected	Trying to come up with solution (2)	*"I don't know how many times he would turn the modem on and off." (E8)* *"When the internet is cut off, he immediately tries to log in from my or his father's mobile phone because he usually ends his internet before the end of the month." (E3)*
		Damaging technological devices (9)	*"Once, his teacher was going to tell a very important subject, and that day he could not turn on the computer screen. His computer was old, it turns out the screen card was burned. He was so angry that he closed the lid of the laptop with a fury and caused it to fall apart." (E9)*

Discussion, Conclusion and Recommendations

The mixed research question, which is expressed as the main problem of this research, which is designed as a mixed method research: "How do the qualitative results obtained from the interview data with gifted students and their parents about the screen use of gifted students aged 12-18 during the pandemic period help explain the effects on potential screen addictions?" The quantitative and qualitative results of this study, which was conducted with the descriptive sequential (quantitative → qualitative) mixed methods research design, were combined.

As a result of the research, it was determined that the time of the individuals to look at the screen and the situations in which the individuals are pessimistic and unhappy in the absence of access to the screen increase, the use of the screen negatively affects their sleeping patterns and doing their daily work, and the number of devices with a screen increase. This situation increases the complaints about screen time in individuals and prevents individuals from doing their daily work and fulfilling their responsibilities. While individuals' purposes of using the screen during the pandemic period have shifted to the field of education, the number of people using the screen as a means of

entertainment has decreased. In addition, the number of people who received complaints about screen time from the environment has increased. In terms of sleep, individuals stated that they did not experience insomnia due to screen time during the pandemic period. On the contrary, the number of people who declared this opinion during the pandemic process has decreased.

The results of this research and the results of the few pandemic screen addiction studies in the literature overlap with each other. In Öztürk's research in 2021, it was determined that physiological, sociological, mental and psychological changes occur in individuals with social isolation during the pandemic process, and one of the psychological changes is information technologies and screen addiction. It has been determined that these addictions also affect the sleep quality of individuals. These results are in agreement with our research. The reason for this addiction has been determined as the restriction of activities in social life and the alternative of social media to this situation. In our research, it was observed that it was mostly due to online education.

In the research conducted by Göker and Turan in 2020, it was stated that together with social isolation, individuals see social media, technological devices and screens as saviors. Individuals stated that they use them as a tool to reduce the stress and anxiety brought about by social isolation. It has been stated that this situation may cause individuals to develop addiction to these tools. This research also showed that the majority of individuals (50%) use screen time to avoid responsibilities. The two studies support each other.

In the qualitative research conducted by Erol and Erol (2020), the views of parents on their children's screen use during the pandemic process were taken. Most of the parents stated that when their children are bored at home, they give them technological devices (tablets, phones, televisions, etc.). The reason for this behavior is to prevent their children from exhibiting behavioral problems at home. Some of these parents are worried that this will turn into screen addiction. When the statement of one of the parents is examined, this concern appears more clearly. This statement was "Already, televisions were empty, people had to turn to things like social media tablets, I think this increased this screen addiction." is the expression. In this study, 68% of the parents stated that their children's screen time is 7 hours or more and the number of technological devices used is excessive. The results of the two studies show similarity.

In the study conducted by Sülün, Yayan, and Düken (2021), 56.8% of the youth in the sample group stated that they slept more than eight hours a day and 40% stated that they used smartphones all day. Looking at the results of this study, 65% of the youth stated that screen time does not affect their sleep. Before the pandemic, 41.9% argued that screen time affected their sleep. In other words, the pandemic process had a positive effect on students' sleep.

In Aboud's research in 2021, results indicated that school closures and isolation have led parents of gifted children to experience a higher psychological burden and more family conflict than normal. In their self-regulated learning, gifted have experienced changes. Covid-19 has also disrupted their daily activities and prevented their free movement, making them feel like they are not doing something important, resulting in adverse effects such as sleep disorders, depression, isolation, frustration, and loss of motivation. Most gifted students often have negative online learning perspectives, indicating it as inefficient and lacking in effectiveness and connections.

Most of the studies have mentioned the benefits of online education via screen. While we are asked to continue the education, we can benefit from the positive aspects of it, as it is mentioned in the literature, if trainings on addiction are also provided. While taking advantage of this positive aspect of the screen, it is extremely important to pay attention to the screen addiction, which is the negative aspect of it. It has been mentioned that in the pandemic, online education covers the entire education system. In this process, the fact that we are constantly in front of the screen due to education increases the risk of addiction.

Based on the results obtained from the research, suggestions are presented under two headings. In the first title; While suggestions for the participants were presented based on the findings obtained as a result of the research, under the second heading; Suggestions for researchers who will study the effect of the pandemic on screen addiction in the coming years are included.

Suggestions for Participants Based on Research Findings:

- Individuals should be made aware of the negative effects of screen time and control should be provided.

- Individuals should be supported to turn to sports or art branches or activities that will increase physical activity in order to get away from the screen and to develop both their physical and social aspects.

- Addictive use of social media, internet, mobile phone and computer should be limited, and the specified period of use should not be exceeded.

- Parents should also be made aware of screen time, and they should behave in a way that will be a role model for their children.

- An order should be established in the use of the screen time and the harmony of the whole family should be ensured.

Recommendations for Researchers Working on the Effects of the Pandemic on Screen Addiction

- This study was conducted with gifted students aged 12-18 and their parents. Similar studies can be conducted with other age groups.

- In this study, gifted students between the ages of 12-18 were discussed. In similar studies to be conducted, the issue of screen addiction in parents can be addressed.

- Learning difficulties and screen addiction in students with ADHD can be addressed in similar studies.

- The number of people in the sample group of this research can be increased.

Conflict of Interest

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Credit Author Statement

The author confirms that he had all responsibilities for the following: conceptualization of the study and design, data collection, data analysis and interpretation of the findings, and preparation of the manuscript.

Ethical Statement

Ethics committee approval within the scope of the research has been obtained from the Çanakkale Onsekiz Mart University ethics committee of scientific research with the decision numbered 22/17 on 15.12.2022.

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