

The Contribution of School Projects in the Fight Against Digital Game Addiction

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Abstract

Virtual gaming addiction has become an increasing problem among children and teenagers. This addiction causes negative effects on individuals' economic success, social interactions and emotional states, and social values. Therefore, collaboration between educators, families, and health professionals is necessary to raise awareness about virtual game addiction and reduce the effects of this problem. SOBE (abbreviation in Turkish Virtual Game Addiction Training) is a unique school project initiated with the idea that there is a need to raise awareness among secondary school students about the effects of digital games. This research examines the impact of the SOBE project on 176 secondary school students with quantitative and qualitative methods. Within the scope of our project, 'the Digital Game Addiction Scale' was applied to 176 secondary school students with the support of the school counsellor. Parent-student seminars and information were given about the SOBE Project and the dangers of digital games. A mind and intelligence games club has been created in our school and the students are directed to intelligence games that will contribute to their socialization and develop their attention skills, contribute to their socialization instead of exercises and tournaments and virtual games. By providing training on Canva Web 2 tools, the beneficial and correct use of technology has been brought to the fore. Book reading activities and literacy interviews were organized. SOBE board game and SOBE storybook are designed to raise awareness about the conscious use of technology. The first editions were made and shared with the students of our school. During the implementation period of the project, bulletins containing announcements and explanations about our activities were published in student and parent groups. At the end of 12 weeks, with the post-test, it was examined whether our project was effective in the participants and it was determined that there was a positive difference.

Keywords: *Addiction, Conscious Internet Use, Intelligence Games, Reading Books, Virtual Game Addiction*

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INTRODUCTION

In the modern world, with the rapid advancement of technology, digitalization, which affects the whole world, continues to accelerate after the pandemic in many areas such as access to information, banking transactions, shopping and education. In our country, the first wide area network started to be used in 1986, and with the inadequacy of this network since 1991, METU and TÜBİTAK started a project to create a new network and with the development of the project, the first internet connection was made in 1993 (Ektiricioğlu et al., 2020, p.53).

According to the latest report of TÜİK the proportion of households with internet access in our country was 95.5%, while the rate of individuals using the internet was 87.1%. Today's children and young people born into a digital age have been described as digital natives by American Technologist Marc Prensky. They are more prone and skilled in using the technological tools brought by this age (Benli & Sayar, 2020, p.41).

Marc Prensky refers to today's parents as digital immigrants. Since digital immigrants start learning and using technology at a much older age, it worries them that their children are so involved with technology. As a matter of fact, excessive and uncontrolled use of technology can reveal negative concepts such as mental health disorders and addiction.

American Psychiatric Association (APA), in 'the Manual IV of Diagnosis and Statistics of Mental Disorders (DSM-IV-TR)', determined the 7-item list of addiction criteria for the clinical diagnosis of addiction as follows: tolerance, withdrawal symptoms, excessive consumption, loss of control, constant preoccupation with substance supply, disrupting social, family and work-related responsibilities due to substance use, continuing the use of addictive substances despite the presence of ongoing or recurrent physiological and psychological problems.

In order for a person to be considered addicted, they must exhibit symptoms of at least 3 or more of these 7 criteria in the last 12 months (Hazar & Hazar, 2017, p.205). Addictions are divided into two: Chemical and Behavioural. Studies have shown that individuals with behavioural addictions such as internet, social media, digital game and smartphone addictions show similar symptoms to those with chemical addictions (Ektiricioğlu et al., 2020, p.53).

Technology is one of the main factors that reveal social change (Zeybekoğlu Akbaş & Dursun, 2020, p.2247). However, unconscious and excessive use of technological tools and the internet that make our lives easier can be considered within the scope of behavioural addictions.

Beyond the internet, technological devices such as mobile phones, smart phone applications, digital games and television are making their presence felt more and more each day as a serious danger and addiction risk for our youth (Dinç, 2015, p.35). It is not possible to separate the sub-areas of technology addiction with clear lines. Because phone and internet addiction trigger each other in a cyclical relationship (Karadağ et al., 2015, p.61).

With the developments in communication technologies, the traditional understanding of games has changed. The new gaming culture that emerged by transferring gaming tools and methods to virtual environments is expressed as 'digital gaming' (İlgaz Büyükbaykal & Abay Cansabuncu, 2020, p.3). Digital games have become an important entertainment factor

especially for children and young people today. Virtual games, which are initially seen as just a leisure activity or an opportunity to get away from the troubles of daily life, open the door to addiction if the necessary self-control is not achieved.

In the definitions Griffiths and Davies (2005) developed based on pathological gambling addiction criteria, they list the symptoms of gaming addiction as follows: Increased gaming and rumination time, planning future play or recalling past play, feeling bad mood or restlessness when not able to play, Unsuccessful attempts to control gaming time ,Hiding gaming time from family and friends, Failure to fulfil homework and responsibilities, And finally, losing sleep so you can play more, not eating, or spending less time with family and friends.

There are many studies on the desire to play digital games and the process of this desire turning into addiction. One of these studies is 'Skinner's Operant Conditioning Theory'. According to Skinner Age, reward is an effective tool in causing computer games to become addictive. Rewards given regularly to players have become a new way to make friends easily by providing reputation and wealth to individuals in virtual environments. It is seen that game users with high scores and rewards have more friends than other users. The individual is reflexively affected by the new virtual world offered by the game and unconsciously turns to the game. The physiological relief felt during and after playing games causes the individual to play games more often for more relaxation (Sucu, 2012, p.62). However, since adolescence is a transition between childhood and adulthood in which various physiological, psychological and social changes occur, it is a stormy and stressful process that causes imbalances in the adolescent's thoughts, feelings and behaviours. One of the difficulties of the period is the adolescent's deficiencies in life skills such as anger management, conflict resolution, problem solving and communication (Yavuzer, 2011, p.192). The relaxation system in digital games also serves as an escape ramp for the adolescent who encounters various problems during this period. However, this momentary relief causes greater unhappiness by triggering detachment from social life and communication problems within the family. In addition, it causes circulatory, muscular and skeletal system problems due to passive lifestyle and body posture (Hazar et al., 2017, p.321).

The research, which is one of the most comprehensive studies conducted with 912 volunteer participants from 45 countries at the game research unit of Trent University in the UK, found that multiplayer games bring with them some risks (Ilgaz, 2015, p.876) in these environments (Cole & Griffiths, 2007) that provide intense social interaction for the participants. One of these risks is that the social environment created in virtual life distances the person from her real environment over time. This situation has recently been described as 'phubbing' in the literature.

Phubbing, which is defined as the individual cutting off face-to-face communication with others and turning to the phone, refers to the situation of individuals who focus on their own virtual world, even if they are seen as if they are together in the social environment. This process may eventually lead to the formation of self-centred and socially isolated groups of people who have decreased frequency of communicating with each other in real life and prefer to communicate through the virtual world (Yam & İlhan, 2020, p.10). Such risks and the problems brought by the Digital Age reveal the importance of conscious use of technology.

Conscious use of technology means maintaining balance by protecting one's health, privacy and security, as well as using digital tools effectively (Dinç, 2015, p.40). Summarized the process required for conscious technology use as purposeful, limited liability, healthy, safe, active, functional, conscious and honest use. It is obvious that there is a need to take some steps to raise awareness on this issue. In this context, we designed the 'SOBE' game to raise the awareness of our school students by developing a project on digital footprint conscious technology use and internet safety.

On the other hand, applications such as 'Photoshop, Flash and Canva' on technological devices make it possible to create worlds in which our imagination can play a full role. For children with rich imaginations, the digital world can literally turn into a journey of self-discovery. In this context, we provided training on 'Canva' and its application to our students in order to encourage the beneficial and productive use of technology. Using the Canva application they learned in this training, they prepared the bulletins, posters and visuals of our game required for our project. In addition, within the scope of our project, intelligence games trainings, tournaments and book reading activities were held. While selecting these studies, factors such as easy access, economical and convenient (Dinç, 2015, p.32) access, which is the main reason for the rapid spread of internet addiction, were taken into consideration. In our process of combating virtual game addiction, the healing and instructive power of the game was again used. Because intelligence games allow students to develop their intelligence, expand their thoughts and try new things while having fun (Yöndemli & Taş, 2018, p.47).

According to the intelligence games course curriculum published by the Ministry of National Education, intelligence games include the gamified version of all kinds of problems and are an effective tool in helping students gain problem-solving skills. Reasoning is required quickly and accurately to achieve the goal in intelligence games. Reasoning, along with systematic problem solving skills, is one of the most important mental skills that learners will use throughout their lives (MEB, 2013). The SOBE game and intelligence games we prepared on the subject of conscious technology use have been among the most productive activities of our project.

One of the areas that digital game addiction causes the most harm is the habit of reading books. The colourful world of the Internet and smartphones has attracted students and reduced their interest in books. However, especially the logical reasoning and reading comprehension skills that her books can provide are among the basic achievements that our education system wants to give to students. For this purpose, reading activities and author interviews were held with the participants in our school to make our students love reading again. In addition, in order to include parents in our process of combating virtual game addiction, educational books on child education were identified and book reading and evaluation days were organized.

METHODOLOGY

In this project, 'the Digital Game Addiction Scale' was applied as a pre-test to a group of 176 5th, 6th, 7th and 8th grade students studying in Tavşanlı Şeyh Edebalı İmam Hatip Secondary School, with permission from the scale owner. A project work team was formed in our school by examining the results of this five-point likert-type scale we applied in November, 2023. This team, which includes teachers, students and participants from the

school administration, has prepared a 12-week training program to combat digital game addiction under the guidance of the school psychological counsellor.

Our SOBE (Virtual Game Addiction Training) project was introduced to the target audience by organizing student and parent seminars on digital game addiction and conscious internet use. Within the scope of the project, activities such as intelligence games exercises and tournaments, book reading and author interviews, family book reading hours, story writing and the design of the SOBE game were carried out. In addition, our students were given training on Canva Web 2 tools for conscious internet use. The realized and planned activities were also announced to our parents and students through bulletins prepared by our students on Canva. Compiling the children's story written by our students into a digital book, again using the Canva application. In addition, it was understood from the observations and interviews at the beginning of the training that the participants played digital games mostly in the evening hours. For this reason, parents were included in the project and a parent book reading hour was created, and family reading time was determined between 20:00 - 20:40 every evening. When the 12-week training period was completed, the scale used in the research was re-applied. The results of this Survey, which was applied as a Post-Test, were analysed with the SPSS program with the help of an expert under the guidance of the project consultant. These results were evaluated in the light of observations regarding the students' gender, grade level, internet usage habits and time spent playing digital games. At this point, it is possible to see the SOBE project we carried out as a research in which qualitative and quantitative data are evaluated together.

Since the skewness and kurtosis values in the normality tests performed on the data set were distributed between -1.5 and +1.5, the assumption that the data was normally distributed was accepted and the research data was analysed statistically by applying the Independent Sample T test, one of the parametric tests.

FINDINGS

The data obtained as a result of the application of the Questionnaire called Digital Game Addiction Scale was measured with Cronbach's Alpha, a frequently used analysis method in social sciences. The reliability coefficient result, which is a criterion for the repeatability of research results, was 0.902 for this research. According to this model, values between $0.80 \leq \alpha < 1.00$ are considered 'highly reliable'. Therefore, the survey applied within the scope of our project can be considered as highly reliable.

Table 1. Reliability Analysis Result

Cronbach's Alpha	N of Items
0,902	16

SPSS program was used in the analysis of the scale results, and since the skewness and kurtosis values in the normality tests performed on the data set showed a distribution between -1.5 and +1.5, the assumption (Tabachnick & Fidell, 2007) that the data was normally distributed was accepted and the research data were analysed statistically by applying 'Independent Samples T Test', one of the parametric tests. In addition, some questions containing demographic information were asked to understand the students' gender, class, internet usage habits and duration. These questions aim to evaluate the results of the scale in

the light of the demographic information in question. The table containing this demographic information in this part of the study is given below.

Table 2. Demographic Information for Participants

Gender	N	%	%
Girl	103	58,5	58,5
Boy	73	41,5	100,0
Class	N	%	%
5.grade	57	32,4	32,4
6 th grade	27	15,3	47,7
7 th grade	33	18,8	66,5
8th grade	59	33,5	100,0
Gaming Status	N	%	%
No	23	13,1	13,1
Yes	153	86,9	100,0
Total	176	100,0	

According to Table 3, it can be said that of the 176 students who participated in the survey, 103 were female and 73 were male and the distribution of students at class level was close to each other. It is also seen that 153 of 176 participants play digital games. This number corresponds to 86.9% of the total participants. Participants who scored 3 or more on at least 4 of the 7 items in the 5-point digital game addiction scale developed by Associate Professor Aylin Yalçın were described as game addicts. Accordingly, it was determined that the average of 21 of the 153 students in our research who stated that they played virtual games was 3 or above. Therefore, it is possible to describe these students as virtual game addicts. These data support the problem on which the project set out.

Table 3. Analysis of Pre-test and Post-test Results

Gender	N	M	SD	P
Pre-test Girl	103	1,84605	,712235	,001
Boy	73	2,21135	,771924	
Post-test Girl	103	1,66470	,637304	,000
Boy	73	2,08072	,742529	

The standard percentage value determined for this research, in which the digital game addiction scale was used, was taken as .05. Accordingly, when the significance value is found to be ($p < .05$) it is accepted that there is a significant difference between the results. When the results of the survey applied during the project were examined, the significance value between male and female students in both the pre-test and post-test was found to be $p < .000$.

Since the significance value was $p < 0.05$, it was determined that there was a significant difference between the pre-test and post-test results of this research in terms of digital game playing levels of all participants. These results suggest that the 12-week SOBE (Virtual Game Addiction Training) project was effective on the digital game playing rate of 176 students. Opinions were also given from teachers and parents to support these findings.

As can be seen from Table 4, it can be said that there is a statistically significant difference between male and female students in the pre-test and post-test results. This difference also manifests itself in the average values of the scale. Based on the average values in this Table, it is understood that the level of digital game addiction in boys is higher than in girls. Again, in these results, although the post-test averages of male students decreased compared to the pre-test, it is noticed that they have a higher rate of playing games compared to females.

From the interviews conducted during the research, it was understood that more than half of the students played digital games not on their own phones but on someone else's devices. As a matter of fact, it is known that 81 of the 176 students participating in the application have their own phones and 95 of them do not have a phone. On the other hand, when looking at the digital game addiction levels of students who own smartphones, it is noticed that the level of playing digital games is higher than others. In this case, having the smartphone at hand at all times makes it easier for the individual to engage in such tendencies and brings with it a risk factor in increasing the level of addiction.

Table 4. Digital Games Most Played by Participants

Digital Game	Number of Students Playing
Pubg	43
Roblox	42
Mine Craft	33
PES	29
Brawl Stars	20

According to the findings we obtained from our interviews regarding the digital games played by the students, the 5 games that the participants played intensively are given in table 5. When the games played were examined at the grade level, it was seen that certain games were played more frequently in some classes. Although the number of people who were informed about games through their classmates was not higher than the general participant, the average of digital game addiction was higher than other groups. Considering this situation, it is possible to state that there is interaction between students.

DISCUSSION AND CONCLUSION

In the present study, in which the digital game addiction level of 176 participants was measured using 'The Digital Game Addiction Scale' in the period covering the date of November 2023- January 2024, it was seen that 153 of our students played digital games and 21 of these students played games at the addiction level. A 12-week SOBE (Virtual Game Addiction Training) project was carried out with the participants, in which they took part in

fun activities. In order to completely reverse the peer effect, which is the most important reason for the spread of technology addiction, and to create a positive peer culture, our project was applied to all participants, by including game-addicted students as well as non-addicted and non-gaming students.

Within the scope of this project, which we carried out under the thematic title of combating addiction, a research was conducted based on the idea of whether school projects would be effective in reducing virtual game addiction. When the pre-test and post-test data are examined, it can be said that The SOBE project implemented in our school reduced the rate of playing digital games. The opinions of our teachers and parents also support the scale results.

Considering the individual factors related to computer game addiction, it is known that men are 2-3 times more at risk than women (Dursun & Eraslan Çapan, 2018, p.132). When the results of the research we conducted in our school are examined according to gender variable, it is a finding that is compatible with the literature that boys play more digital games than girls.

Nowadays, it is observed that the age of smart phone usage is decreasing. As a matter of fact, according to the information obtained during the project process, 81 of the 176 students at the secondary school level stated that they played the digital game with their own phones. When the results of students playing games with their own phones are evaluated together with the pre-test and post-test, a more striking result is observed. The average of students who play digital games with their own phones is higher than others. Based on this, it can be said that measures such as preventing children from owning a phone at an early age are important in the fight against digital game addiction.

The age at which individuals begin engaging with digital games and acquire their first mobile phone has been identified as a significant factor influencing game and phone addiction. Research indicates that as the age of first exposure to games and mobile phones decreases, the likelihood of addiction to both increases. Consequently, the initiation age is recognized as a crucial antecedent of addiction. These findings underscore the importance of parents limiting young children's exposure to such Technologies and implementing preventive measures at an early stage to mitigate the risk of addiction. For example, the prohibition of mobile phone use in primary, middle, and high schools in France serves as a notable preventive measure in this regard (Bülbul & Tunç, 2018, p.10). The results of this study are consistent with our findings.

PEDAGOGICAL IMPLICATIONS

When our research results are evaluated, it is understood that students who have their own phones are at greater risk for digital game addiction than students who do not. It was also noticed that male participants were more prone to game addiction than girls. When we examine the results obtained in this study, it can be said that school projects can contribute to the fight against game addiction.

LIMITATIONS AND RECOMMENDATIONS

This research, which examines the contribution of school projects to the fight against digital game addiction, is limited to secondary school students only. Other types of addiction other than digital game addiction were not included in the study. Our research results were evaluated in the context of the activities carried out within the scope of the SOBE project. Contribution can be made to the field by developing different school projects on combating addiction.

By expanding The SOBE project to other schools, the results can be re-examined in a larger sample. The SOBE game in Annex 4, Annex 5, Annex 6 developed within the scope of our project can be produced as a box game and used in schools to raise awareness about conscious internet use, cyber bullying and game addiction. One of the most important factors that trigger addiction during adolescence is communication problems and conflicts within the family. Parents can be given training on family communication and parenting skills. In our research conducted with 176 participants, it was seen that 125 of the students who played digital games played in the evening hours. This situation puts more responsibility on families in the fight against addiction. As we did within the scope of our project, half an hour to 1 hour every evening can be used as family book reading time to raise awareness about being the right role model for children. In our research, addiction levels of students with their own devices were higher. Nowadays, even students in the 2nd and 3rd grades have their own phones and this makes family education inevitable. Therefore, by providing regular training programs and guidance services for parents, the family should be aware of technological use and their children should be encouraged to develop healthy digital habits. Families should be made aware of not buying phones for their children at an age when self-control and personality are not yet developed. Perhaps one of the prerequisites for members of society to become healthy adults is to have healthy children and adolescents. In this context, it is important to create and implement preventive mental health programs that reduce children and adolescents' dependence on technology, in cooperation with the ministry, non-governmental organizations and universities. Tournaments to encourage students to learn intelligence games to diversify their hobbies and discover their talents can be increased.

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Declaration of AI Use

The authors acknowledge that none of the artificial intelligence tools or platforms have been used in the preparation of this manuscript.

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