08

STUCK IN THE MAGIC SCREEN!

THE EFFECTS OF DIGITAL GAME ADDICTION ON CHILDREN'S DEVELOPMENTAL DOMAINS THROUGH PRESERVICE TEACHERS' LENSES

¡ATRAPADOS EN LA PANTALLA MÁGICA! LOS EFECTOS DE LA ADICCIÓN A LOS JUEGOS DIGITALES EN LOS DOMINIOS DEL DESARROLLO DE LOS NIÑOS A TRAVÉS DE LA PERSPECTIVA DE LOS FUTUROS DOCENTES

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ABSTRACT

Children born into the digital world will not waste time in reaching this new technology. Since every new technology can have positive or negative features, children will get their share of this situation. This study was conducted to investigate the increasing digital game addiction of our children born into the digital world and the effects of digital games on the developmental dimensions of children. The content analysis technique, one of the qualitative research methods, was used in the research. In content analysis, detailed analyses are made and categories are created from situations. 98 preservice teachers who study at Konya Necmettin Erbakan University go on school internships and have the opportunity to observe the children one-on-one who participated in the study. As a result of the content analysis 6 main and 4 sub-themes were found as mental, social, psychological, biological, and communicative and multiple dimension effects of digital games on children. They were subjected to content analysis techniques and supported by the direct quotes of the participants one by one. As a last remark, teachers, policymakers, and parents made some recommendations about the negative effects of digital game addictions.

Keywords: Digital game, Addiction, Preschoolers, Preservice teachers, Qualitative research.

RESUMEN

Los niños nacidos en el mundo digital no perderán tiempo en llegar a esta nueva tecnología. Dado que cada nueva tecnología puede tener características positivas o negativas, los niños tendrán su parte de esta situación. Este estudio se realizó para investigar la creciente adicción a los juegos digitales de los niños nacidos en el mundo digital y los efectos de los juegos digitales en las dimensiones del desarrollo de los niños. En la investigación se utilizó la técnica de análisis de contenido, uno de los métodos de investigación cualitativa. En el análisis de contenido se realizan análisis detallados y se crean categorías a partir de situaciones. 98 futuros profesores que estudian en la Universidad Konya Necmettin Erbakan realizan prácticas escolares y tienen la oportunidad de observar individualmente a los niños que participaron en el estudio. Como resultado del análisis de contenido, se encontraron 6 temas principales y 4 subtemas: efectos mentales, sociales, psicológicos, biológicos y comunicativos y de múltiples dimensiones de los juegos digitales en los niños. Fueron sometidos a técnicas de análisis de contenido y apoyados en las citas directas de los participantes uno por uno. Como último comentario, profesores, responsables políticos y padres hicieron algunas recomendaciones sobre los efectos negativos de las adicciones a los juegos digitales.

Palabras clave: Juego digital, Adicción, Preescolares, Futuros docentes, investigación cualitativa.

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81

INTRODUCTION

In the digital world, using technology has become a necessity. The priority that individuals should distinguish when using technology is to use it for a certain purpose within a certain period. But today, it is seen that not all individuals have succeeded in this situation. This situation caused us to divide individuals into two groups' healthy use and problematic use. This study aims to investigate the increasing digital game addiction of our children born into the digital world and the effects of digital games on the developmental dimensions of children. It has been observed that addiction, which is defined as a type of disease, occurs in individuals as a result of problematic use (Eşgi, 2013). While this is the case in individuals, it has become inevitable to see technology addiction together with problematic technology and internet use in children who have not yet gained full impulse control. According to UNICEF's 2017 annual report, one out of every three internet users was a child, and as a result of the widespread use of digital tools, children's access to these tools has become less controllable and therefore more dangerous. It becomes easier for parents to manage their children when they put digital tools in their hands. While some parents are aware of the harms of increased screen time, children's recreational use, especially without academic anxiety, correlates with increased language delay with screen time (Vrinda et al., 2021). Bluemke et al. (2010) have examined the causal relationship between playing violent video games and increases in aggression. Playing a violent game has been observed to cause a significant increase in implicitly aggressive self-concept compared to playing a peaceful game. For generations, researchers have embraced play as a child's most important pursuit. Games are indispensable elements for children. During the game, children become aware of their characteristics and learn the traditional structure of the culture they live in. In this way, they become individuals who adapt to society (Küçükali, 2015). Today, children use technology as a game tool. They spend most of their days playing games on the Internet or watching videos of children playing games. In many countries, technologies are still not fully integrated into perspectives on game-based learning in early childhood education. This is evidenced in international curriculum documents that continue to separate definitions of play from the use of technologies as learning outcomes for young children. Due to the long time spent in front of technology, children have become unable to distinguish between the real world and the digital world, and they have encountered many negative situations that affect their normal lives. Internet addiction is similar to addiction to other technological tools such as television, but it is more dangerous than others (Morahan & Schumacher, 2000); cited in (Eşgi, 2013). Although it divides the researchers that digital games have an educational-instructional aspect into two groups, watching videos of children playing makes them more and more passive. The biggest factor in this situation is that parents give smartphones to children at an early age, watch videos on the phone to eat, and expose them to a smartphone to keep quiet or fall asleep, which leads to increased technology commitment. Digital game addiction is defined as "the person's excessive and compulsive use of the computer or video games, even though it causes social and/or emotional problems, and the player's inability to control the excessive use" (Lemmens et al., 2009). Online games are seen as one of the most addictive activities on the general web. Negative effects on academic performance, anxiety-increasing effects, deterioration of interpersonal relationships, disconnection from reality, youth violence, and criminal behaviors are some of these negative consequences (Wan & Chiou, 2013). In the digital game, children encounter many local and foreign games, and during the game, they are not able to reflect on their selves and they are alienated from the culture they are in. When they try to separate the traditional game according to their developmental purposes; physical play, play with objects, symbolic play, socio-dramatic play, and play with rules. Likewise, when they categorize digital games according to their developmental purposes, it is seen that they classify them as symbolic, motor, imaginary, exploratory, regular, and social (Marsh et al., 2016); cited in Işıklıoğlu (2019). It has been seen that the most affected aspect of children with digital games is their creativity. Some children could not set up their games or use one object instead of another. It has been observed that children who have been exposed to technology for a long time, especially when they have just started kindergarten, cannot communicate with their peers, cannot participate in group games, and have difficulty making eye contact. It is possible to see the effects of digital play even in the pictures made by children. One of the biggest harms of digital games on children is intolerance. When children are bored with digital tools, they always have an alternative at their disposal. For this reason, it is seen that they do not tolerate waiting and losing. One of the most important problems of children born in the digital age is the use of technology. Research is still going on that they affect the development of children in a good or bad way. On the other hand, the relationship between the child and technology is discussed in two aspects. The relationship between technology and children, in terms of text, is related to issues such as violence, consumer culture, and gender (Timisi, 2012). Other studies have focused on the effect of technology on children (Aydogan, 2014; Büyükbakkal, 2007). Besides the very few positive

aspects of digital games (Cesarone, 1994), they also have negative/harmful aspects for children. The negative aspects of these games are divided into spiritual and physical (Setzer & Duckett, 1994; Chiu et al., 2004; Wan & Chiou, 2006). Problems arising from not paying attention to personal care in terms of physical aspects, insomnia, weight problems, psychomotor skill disorders, loss of vision, headache, dry eyes, and being constantly tired can be given as examples. When we examine it from a spiritual point of view, obsessive and aggressive behaviors, development of anti-social behaviors, mechanization, loss of desire, and increased level of anxiety can be given as examples. Apart from these, game addiction can cause social anxiety disorder. Social anxiety disorder (social anxiety/phobia) is a chronic problem that disrupts the individual's interpersonal relationships and causes a decline in quality of life and social functions. Although the number of studies in both respects is high, the number of research studies that deal with the relationship between game culture and technology is very small. Technology is so integrated into the children's lives that they sleep and are awakened by the technological tools and they are so isolated from their environment that they have new friends called "techno-friend". Today technology functions as an electronic narcosis for children, and it seems to reach dangerous dimensions. It is alarmingly seen that children are completely addicted to digital games these days when the Covid -19 strikes the sphere violently. Digital addiction brings some negative effects such as health problems, social problems, academic problems, physical problems, and the like. Digital game addiction takes the shape of an epidemic disease circulating in children, our future generation endangers and puts them in the dead end.

MATERIALS AND METHODS

The content analysis technique, one of the qualitative research methods, was used in the research. In content analysis, detailed analyses are made and categories are created from situations that the participants constantly talk about or focus on. From these categories to subcategories, data is brought together and interpreted after a systematic separation. The main purpose is to identify relationships based on concepts and to explain the collected data (Tetmem et al., 2014).

Participants

To the pre-service teachers studying in the department of preschool teaching, "How do you think Digital Games affect the developmental dimensions of children, considering all the developmental dimensions of them?" were asked to share their observations and thoughts. The answers given by the pre-service teachers to the question were evaluated by subjecting them to content analysis.

The universe of the research consists of students studying in the pre-school teaching department of Konya Necmettin Erbakan University. The sample of the research consists of 98 preservice teachers who study at Konya Necmettin Erbakan University, go to school internships, and have the opportunity to observe the children one-on-one. Of the preservice teachers participating in the research, 89 are girls, 9 are boys, and the average age is 21.6.

Data Analysis

The content analysis technique was used to determine the concepts and relationships in the collected data. Many factors emerge during in-depth studies. For this reason, the data is handled and analyzed in a multidimensional way. The data obtained was analyzed in four stages: (1) coding the data, (2) finding the codes, categories, and themes, (3) organizing the codes, categories, and themes, and (4) defining and interpreting the findings (Eysenbach & Köhler, 2002; Miles & Huberman, 1994). Based on the frequency values, which developmental dimension was most affected was revealed in frequency and percentile slices. In line with the interviews with the pre-service teachers, their views on digital games were evaluated according to their developmental dimensions. In this study, mental, social, psychological, biological, communicative, and multidimensional themes were developed as criteria. At this point, the sentences that the participants said about the digital game were examined and it was found which developmental dimension they addressed. In the interviews, it was determined that the pre-service teachers gave answers that appealed to more than one developmental dimension, and this situation was examined under the theme of multidimensionality. 46 of the answers given by the pre-service teachers were excluded from the study because they did not address the developmental dimensions and the above-mentioned criteria, and 52 answers were included in the study.

RESULTS AND DISCUSSION

As a result of the content analysis, 6 main themes and 4 sub-themes were found to have mental, social, psychological, biological, communicative, and multiple dimension effects of digital games on children they are objected to (table 1).

Frequency and percentage distribution according to the developmental dimensions of the study are given below.

Table 1: Frequency distribution of digital games on children's developmental domains.

Developmental Domains	Frequency (f)	%
Mental Dimension	7	%13,46
Social Dimension	9	%17,30
Psychologic Dimension	8	%15,38
Biologic Dimension	4	%7,69
Communicative Dimension	3	%5,76
Multiple Dimensions		
Dual Dimensions	9	%17,30
Triple Dimensions	9	%17,30
Quartile Dimensions	1	%1,92
Quantal Dimensions	2	%3,84
Total	52	% 100

source: own elaboration.

Mental Dimension Effects of the Digital Games:

It was determined that 13.46% of the pre-service teachers used the sentences that appealed to the mental dimension the most in the sentences they formed.

Participant (26): Outdoor games allow the child to learn by living and discovering life by themselves. In this way, the child acquires some skills such as cooperation, cooperation, problem-solving, and creative thinking. The child, who enjoys learning by living life in this way, realizes that digital games are fictional, incompatible with real life and that these games are fake and limited. Outdoor games both prevent digital addiction and teach children where the game is played and what real life is like by raising awareness and experimenting.

Participant (32): In other words, a child is raised in a virtual environment without a social environment. When he enters real life, he cannot develop the ability to do even the smallest things by himself, let alone stand on his own feet. The child may prefer the games played in the digital environment for reasons such as not having a friend to play with outside, looking for an environment where he can meet his game needs, and looking for an activity he likes to do.

Social Dimension Effects of the Digital Games:

The most mentioned developmental dimension in the review was the social developmental dimension. It was determined that 17.30% of the pre-service teachers used the sentences that appealed to the social dimension the most in their sentences.

Participant (16): The feeling of competition given in digital games evolves into a feeling of sharing while playing together on the street. The egocentric feeling given in the digital environment evolves into picking up a fallen friend on the street. Digital games encourage non-sociality, the digital environment is artificial, but the street environment is the natural environment. As a result, the child who learns to share, befriend, overcome defeat, to lift the ground on the street does not need the artificial life of the digital environment. This shows us that street games prevent digital addiction.

Participant (48): A child who spends his time watching television and playing with a tablet will develop a digital addiction after a while. However, the child's opportunity to socialize will disappear. Preventing and hindering this situation will undoubtedly be possible if the child spends time outside with his peers. However, the digital platform does not provide this to children; they are left alone and just immersed in the screen. But most importantly, it will prevent the child from establishing activities dependent on technological devices in the house.

Participant (21): What is the condition of the flower plucked from the soil; It is similar to the situation of children exposed to digital games, although it is appreciated by attracting everyone's attention to the water or a vase at the beginning, it will dry out over time after a while. Children who are addicted to digital games are like putting a flower in a vase. Even if it initially supports the development of the child's VC, after a while, it will prevent the child's creativity and development of social skills.

Psychologic Dimension Effects of the Digital Games:

The developmental dimension, which was mentioned in the third place in the examination, was the psychological

dimension. It was determined that 15.38% of the pre-service teachers used sentences that appealed to the psychological dimension the most in their sentences.

Participant (13): Chickens raised indoors are unhealthy and unproductive. The foods they produce are not as popular as the others. They always lead their lives in need of someone. They become stressed and unhappy. Children playing digital games are just like these chickens rose indoors. These kids can use tablets, phones, computers, etc. They live addicted to digital gaming tools. If they are removed from their environment, it becomes very difficult for them to adapt to the environment and people. Children in this situation cannot communicate with other people, they can do their daily routines in a narrow space reserved for them, but they may get bored and depressed over time. It is difficult for them to achieve success in their life. They cannot be productive and efficient. They cannot lead a healthy life. They are unaware of nature and the environment. They become unhappy.

Participant (35): Playing games in the open air will not cause burns in the eyes, pose and sleep disorders like the games played on the screen, and will not cause psychological problems with family and friends as it will cause them to feel sluggish, nervous, stressed, and have communication problems with their family or friends. However, children who spend a long time in front of the television, phone, and computer in a closed environment cannot discharge their energy and relax, which can turn them into nervous, introverted individuals with mental problems. Digital addiction is like looking at life through a small window.

Biological Dimension Effects of the Digital Games:

The developmental area mentioned in fourth place in the review was the biological developmental dimension. It was determined that 7.69% of the pre-service teachers used sentences that addressed the most biological developmental dimension in the sentences they formed.

Participant (8): A child's digital addiction means that he is always in the same place, looking at the same spot and spending time in a virtual environment, but when we look at the games played on the street in the field, it is seen that all development areas are affected positively. While playing on the street allows the child to express his inner energy with the movements in the game, in digital addiction, the child cannot healthily discharge his energy.

Participant (44): Forcing and exposing children to digital games is like picking a flower from the same soil in terms of their physical development. Postural disorders in a child are like a flower slowly bending its neck after being plucked. For a long time, tablets, phones (etc.) devices have caused deterioration in the skeletal system. A child addicted to digital cannot use his energy properly, but a child playing street games discharges his energy, learns many things and when he comes home, he does not need a digital device to have fun.

Communicative Dimension Effects of the Digital Games:

The communicative development dimension was mentioned in fifth place in the study. It was determined that 5.76% of the pre-service teachers used sentences addressing the communicative development dimension the most in their sentences.

Participant (37): Digital games are virtual. Since the child has no friends in the virtual environment, the child is deprived of the environment in which he can communicate and feel. The child realizes that there is no communication and interaction like the games played on the street and shared with friends in other games played in digital environments since in street games, everything is experienced and shared as real. In games in digital environments, everything is done based on "as if".

Participant (29): Digital addiction is a problem based on family. When families constantly play with phones, computers, and tablets next to the children, the children take their families as an example and get caught up in the mystery of this magical world with curiosity. After playing once and twice, they can't get themselves off the digital platform. He continues his life as asocial, not talking to anyone, isolated from the outside world. Children playing digital games are like fish in an aquarium; they cannot interact with anyone, play the game they want, travel where they want, and do events. They stay connected to digital or online games all the time. He cannot recognize life.

Multi-Dimension Effects of the Digital Games:

In the examination, it was seen that the development dimensions mentioned in the sixth row were more than one in some sentences. This part is also divided into sub-dimensions as 2, 3, 4, and 5 dimensions according to the development dimensions mentioned in it.

Dual Dimension Effects of the Digital Games:

In the examination, it was determined that 17.30% of the pre-service teachers used sentences containing at most two different dimensions biologic-social and communicative-social in their sentences under the subheading of the dual dimension. At the end of the sentences given as examples below, the dimensions mentioned in the sentence are written in parentheses.

Participant (18): Education also includes psychomotor behaviors; the child needs movement and socialization to be able to overcome the psychomotor development tasks of the child's age in the best way. The child meets this need in the best way with his friends on the street, not in front of digital devices at home (biological-social)

Participant (6): Digital addiction is a problem based on family. When families constantly play with phones, computers, and tablets next to the children, the children take their families as an example and get caught up in the mystery of this magical world with curiosity. Plays once plays twice, and they can't get himself off the digital platform. He continues his life in a way that is disconnected from the outside world and does not talk to anyone who is asocial.

Triple Dimension Effects of the Digital Games:

In the examination, it was determined that 17.30% of the pre-service teachers used sentences containing at most three different dimensions communicative-social-psychologic and biologic-social-communicative in their sentences under the triple dimension subheading. At the end of the sentences given as examples below, the dimensions mentioned in the sentence are written in parentheses.

Participant (40): when a child playing technological games start playing field games, they will communicate in real terms, socialize, spend their energy as they wish, and reduce the level of anxiety and stress that inevitably occur in daily life (communication-social-psychological).

Participant (14): No virtual environment can reflect reality. It is valid in-game. Children who enjoy real games do not prefer digital games. In addition, street play directly affects the child's muscle skills and social development. Digital addiction, on the other hand, negatively affects physical development and communication skills, such as sitting disorder. To summarize, street games prevent digital addiction. It also supports socialization and positive physical development.

Quartile Dimension Effects of the Digital Games:

In the examination, it was determined that under the quartile dimensions sub-heading, the pre-service teachers used sentences containing at most four different dimensions as biologic-communicative-psychologic-social in the sentences they formed 1.92%. At the end of the sentences given as examples below, the dimensions mentioned in the sentence are written in parentheses.

Participant (39): Playing games in the open air will not cause burns in the eyes, pose and sleep disorders like the games played on the screen, and will not cause problems with family and friends as it will cause them to feel sluggish, nervous, stressed, and have communication problems with their family or friends.

Quantal Dimension Effects of the Digital Games:

In the examination, it was determined that 3.84% of the pre-service teachers used sentences containing at most five different dimensions as mental-biologic-communicative-psychologic-social in their sentences under the quintuple dimension subheading. At the end of the sentences given as examples below, the dimensions mentioned in the sentence are written in parentheses.

Participant (50): A child's digital addiction means that he is always in the same place, looking at the same point and spending time in a virtual environment on the contrary when we look at the games played on the field, it is seen that it affects all development areas positively. (All dimensions)

Participant (23) They want to play computer games all the time. Children become individuals who are far from social and unable to communicate. As a result of this addiction, they cannot discharge their physical energy away. Academic achievements may decline. All fields of work are adversely affected. They gain excessive weight from sitting in front of the screen all the time. However, when we look at the games played on the field and the street, it is seen that it affects all areas of development positively.

CONCLUSIONS

Digital tools will develop and renew day by day and will increasingly maintain their place in our lives. For this reason, children born into the digital world will not waste time in reaching this new technology. Since every new technology can have positive or negative features, children will get their share of this situation. Digital games create both beneficial and harmful results for individuals. Considering the benefits; of literacy (Cesarone, 1994), and quick thinking (Horzum et al., 2008), the harmful (touching) aspects of digital games are; the deterioration of family and social relations, a negative change in school and work-life (NIMF, 2005), or the formation of addiction. Experiencing general communication problems with the environment (Jeong & Kim, 2011), aggressive behaviors (Demirta & Çakılcı, 2014), personality changes, decreased emotions, hyperactivity 8 (hyperactivity), learning disorders, early childhood development due to excessive and inefficient consumption of time. maturation, psychomotor (psychomotor) disorders, antisocial (antisocial) behaviors, loss of free thought, increase in argumentative/hostile attitude, decrease in academic achievement (Griffiths, 1997; Chiu et al., 2004), avoidance of reality and life, weight problems, confusion between dreams and reality, boredom, and

loss of sensation are among the most frequently reported complaints (Horzum et al., 2008; Chiu et al., 2004; Hauge & Gentile, 2003; Setzer & Duckett, 1994); Wan & Chiou, 2006). Rare physical problems reported in the last twenty years can be counted as wrist pain, neck pain, elbow pain, Nintendonitis, peripheral nerve disease (peripheral neuropathy), urinary incontinence, fecal incontinence, and epilepsy seizures. They may not have developed directly due to prolonged playing, but it should be considered that they develop due to sitting in the same place for a long time and being inactive (Griffiths, 1997). In Avcı & Er's (2019) research on digital addiction, preschool, and primary school teachers were asked about the problem behaviors observed in addicted children. They observed that some behaviors such as aggressive and aggressive behavior, inability to focus, communication disorder, lack of attention, perception problems, alienation from social environments, and being constantly on the move occur frequently.

Today, the existence of children playing traditional games is almost non-existent. Although children are directed to such games in schools, they lose their interest in traditional games over time. The colorful and pompous world offered by digital tools is more attractive to them. Children cannot put a limit on their wishes and desires because they cannot fully gain the ability to control their impulses. Here, the greatest responsibility falls on families and educators. Even if families are sensitive in reaching or using digital tools for their children, they cannot keep them away enough. Families should be aware of the appropriate and adequate use of technology and should choose the healthiest one for their children.

Since the parents will be the first people that the child will take as an example, the family should be a good example in the use of technology for the child. It should encourage children to use technology reasonably and should provide a balance for the development of the child by aiming to allocate time for other activities and games that support his development.

We can ensure that children benefit from activities that support their development by keeping them away from technology by directing them to various activities or various sports activities to improve the quality of children's time.

For children to benefit from traditional or outdoor games that support their development at the highest level, alternatives can be created for children to spend their time outside of school by establishing playgroups or regional playgrounds in cooperation with various organizations.

By establishing various children's clubs, children can choose an area according to their interests and spend enough time in that area.

Alternative spaces can be created for children's interests and needs, where they can be intertwined with nature and create new formations by making use of natural materials.

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