

The use of digital technologies by preschool children influenced by their families

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Abstract

The work deals with the use of digital technologies by preschool children influenced by their immediate families. In the study, we examine intentional and unintentional behavior of immediate family that causes the usage of digital technologies by their children, which at the same time leads to digital overconsumption and provokes several effects on them. The study aims to discover the reasons behind preschool children's digital overuse. This research also monitors the educational techniques parents apply to digital technologies inside the core family, specifically their children. The basis of the study is qualitative research carried out using the technique of semi-structured interviews with one of the family members – the mother. The research depicts three main categories: time spent on digital technologies by preschool children, reasons underlying the use and limit of digital technologies by preschool children, and family digital education.

Keywords: digital technologies, preschool children, digital education.

Používání digitálních technologií dětmi předškolního věku ovlivněné jejich nejbližší rodinou

Abstrakt

Práce se zabývá nadměrným využíváním digitálních technologií dětmi předškolního věku ovlivněné jejich nejbližšími rodinami. Ve studii zkoumáme záměrné a neúmyslné chování nejbližší rodiny, které způsobuje používání digitálních technologií jejich dětmi, což zároveň vede k nadměrnému používání digitálních technologií a vyvolává u nich několik dopadů. Cílem studie je odhalit důvody nadměrného využívání digitálních technologií předškolními dětmi. Tento výzkum také monitoruje vzdělávací techniky, které rodiče aplikují na digitální technologie uvnitř jádrové rodiny, konkrétně jejich dětí. Základem studie je kvalitativní výzkum realizovaný technikou polostrukturovaných rozhovorů s jedním ze členů rodiny – matky. Výzkum popisuje tři hlavní kategorie: čas strávený dětmi předškolního věku digitálními technologiemi, důvody, které vedou k používání a omezení digitálních technologií dětmi předškolního věku a rodinné digitální vzdělávání.

Klíčová slova: digitální technologie, děti předškolního věku, digitální vzdělávání

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Introduction

In Western societies, most children grow up from an early age in their households surrounded by a broad range of digital technologies. Smartphones, tablets and computers have replaced spontaneous outdoor games and games on natural playgrounds. The constant media bombing warned anxious parents about the dangers of children playing in the streets, empty lands, and native forests, and they were forbidden to play outside without adult supervision. As a result, children quickly learned to prioritize digital toys as overactive outdoor games. One of the reasons behind this phenomenon is the violence on news and fiction television programs that generate fear and contribute to keeping children inside their houses. In a study, mothers said that their children's leisure activity was watching television. (Singer, Singer, D'Agostino & DeLong, 2009) The new way of playing and the access to digital devices as toys cause a change in the culture of childhood and the pressure to grow up too rapidly, the fragmentation of families, the transfer of mothers to the work process, and the reduction of children's playtime. (Miller & Almon, 2009). The "perfect storm" of events changing the culture of the game in connection to digital technologies and children's leisure time is extensive and its

causes, consequences, and solutions are complex. Digital technologies fill parents' lack of attention towards their children, convenient playgrounds, forests, streams, and fields. The time children spend in front of the screen is a complex issue that goes beyond the idea of barely using digital technologies as a nanny.

The use of digital technologies in the family is mainly influenced by the setting of rules for their use by parents, but also by social learning from family members, both parents, and especially from older siblings. One of the consequences of all these phenomena is well-known as digital overuse, which is nothing but, as it was mentioned by Büchi, Festic, & Latzer (2019) and Hill, et al. (2016), an emerging social issue and a subjective phenomenon permeating all kind of people within our society, among them children, in which the use of the internet and technological devices such as smartphones, tablets, computers to cite some exceed the recommendations of the American Academic of Pediatrics (AAP, 2016) of media use, in which it is suggested that children from 2 years old to 5 years old should use digital technologies maximum one hour per day. As far as this study is concerned, we identified three categories of digital use based on the semi-structured interviews carried out with our sample: minimum consumption, digital consumption, and no limit. The last two, and according to the AAP recommendations and the previous definition, will fit into digital overuse.

On the other hand, the electronic universe, a computer-generated landscape of incredible complexity, has become so common to children that they „take it for granted, the same ways adults don't think about air (until it is missing).“ (Negroponte, 1995) The above-mentioned easy access to digital technologies is causing children to abandon outdoor games and become sedentary, which is nothing but playing indoor computer games, watching videos on YouTube, posting pictures on social media, and adapting these practices as a new lifestyle.

For this research, we put across two social concepts regarding cultural generation. First is the alpha generation, in which the technological revolution has produced indelible marks. Computers, tablets, and gaming platforms are evolving at a dizzying pace, opening new horizons for discovery, learning, and acting for people of all ages. On the other hand, children from the baby boom generation did not need computer mice and joysticks to play with their hand-made toys. They merely played with them (Frost et al., 2012).

Rethinking and reconstructing the nature of playing for children is a process of learning from history and recalling evidence about the way children used to play. Nowadays, playing, digital technologies, and children's daily routines are highly intertwined, on that account, it is a challenge for parents to find a balance between the use of digital devices and comprehensive social development in their children. Currently, neuroscientists are trying to gain evidence about play, non-gambling and digital technologies and their impact on children's brains. (e.g., Amen, 2010; Bloom, Coyle & Georgopoulos, 2010; Brown, 2009; Panksepp, 2010; Pellis & Pellis, 2009; Ratey, 2008)

Because of the above, we should consider digital technologies as a means to an end, which is to enhance children playing processes. The challenge currently is how to balance spontaneous play and time spent on digital technologies and separate the constructive effects of using technologies from the destructive consequences. The claim promptly is to expand collaborative research across disciplines that have to do with children's play processes. The findings of this research aim to help scholars, families, and organizations of each country to perform a positive role in the changing culture of the nature of play in children.

Children's use of digital technologies has grown rapidly over the last decade, affecting children's upbringing and family lifestyle. This problem highlights key questions, for example, how much time devoted to digitally mediated activities can affect children, whether in a positively or negatively way. (Turkle, 2011; Bell, Bishop & Przybylski, 2015; George and Odgers, 2015). As reported by George & Odgers (2015) on that account, the question of the following research is not if children use digital technologies, but why, how much, and for what reasons.

2 Methods

This research aims to describe and analyze the reasons underlying the digital overuse by preschool children influenced by their parents, mostly their mothers. Specifically, it attempts to answer the following aims:

General objective

To find out the reasons behind the digital overuse by preschool children at home

Specific objectives

- To recognize the conditions behind an immediate family influence on the use of digital technologies by preschool children at home
- To determine the amount of time children use digital technologies at home
- To analyze parental behaviors against and for the use of digital technologies by preschool children at home

Because of the above, we decided to mainly use a type of qualitative research approach known as a semi-structured interview. It is a guided conversation useful for the interviewer to broach a specific subject based on a topic and is carried out through a list of open-ended questions. On that account, it is feasible for the interviewer to have a wide variety of possibilities when collecting information about the matter at stake. Where freedom takes relevance since it allows both the interviewee to express their

mind freely and the interviewer to inquire in an in-depth way about the sources that will shape their research area. (Jamshed, 2014)

Considering the above-mentioned objectives and the characteristics of the sample, the previous qualitative approach was chosen, in which the views and the experiences of parents of preschool children were collected and examined. The study was conducted with one of the parents, in all our cases it was the mother. They were selected intentionally. The aim is to maximize diversity and collect data from diverse backgrounds. Different family backgrounds were selected to increase the unlikeliness of the participants. Three of them achieved higher education. One participant only graduated from university. They are from the Zlin and Olomouc regions of the Czech Republic. Two mothers are living in a city and two in the countryside.

Data were collected face-to-face. Each interview took more than 1 hour. They were done in October 2021 and held in a friendly home atmosphere in the parent's house or the workplace of the researcher. All interviews were accurately recorded on the dictaphone and completed with notes. After that, the recordings were transcribed manually and anonymized. Gradually, the researcher was delving the opinions of the participants. This provided a whole picture of the interviewee's conceptions about the use of digital technologies by their children at home. On further reading, it was found the specific concepts around the use of digital technologies in sensitive places were rescued from the interviews. These sensitive places; they were then analyzed and coded using an inductive approach. The segments were composed of different lengths, for example, from three words to six words. After obtaining all the codes, they were systemized according to significance, and then divided into three categories: time spent on digital technologies by preschool children, reason underlying the use and limit of digital technologies by preschool children, and family digital education.

2.1 Findings

2.1.1 Time spent on digital technologies by preschool children

This category aims to identify the amount of time children spend using digital technologies and the way preschool children use them. All preschoolers from the families included in the research have access to and use digital technologies actively. The time they spend on them is highly variable. In the collected data, it was possible to identify three models of children's use of digital technologies:

- (1) Minimum consumption from 0 to 10 minutes per day: The children who took part in this research used digital technologies for about 10 minutes a day, or they do not use them at all some days.
- (2) Digital consumption 60–120 minutes. The child uses digital technology more often and the parents respect it. In addition to children's movies, he or she often watches

videos on YouTube that are not primarily designed for their age category. The resulting time of digital consumption is about two hours a day, as one mother described it “...he spends on those digital technologies about an hour or two a day...”

- (3) No limit – Digital technologies are used by children for a large part of the day; from the moment children come from kindergarten to the time they go to bed. A participant in the interviews described the situation as follows: “...The boys use tablets and mobile phones a lot. They sometimes use them for two hours and sometimes all the time. They use my mobile phone and play. And then they watch TV, in which they commonly find fairy tales. I could say they watch two fairy tales a day...” For example, a mother said about her daughter: “...she’s on it most of the time. I think she’s addicted to it, which is wrong...”

Parents tend to downplay digital consumption to children. When we asked the parents how much time their children spend on digital technologies, they answered that their children use it regularly by listing fairy tales and movies and using mobile applications.

Children are often very strong players, as they are negotiating what types of digital technologies, movies, series, and mobile applications they consume.

2.2 Reasons for the use and limit of digital technologies by preschool children

We found specific reasons underpinning the use of digital technologies by preschool children. We came to the following results and causes behind the consumption of digital technologies by preschool children, the factors that influence the increase and drop of children’s digital consumption, as well as the conditions that reduce its level. The major thesis of this category rests on the fact that parents are the ones who decide the extent of children’s digital consumption and define its form since the relationship between a preschool child and his or her parent is completely asymmetrical in power, a preschool child is not autonomous concerning the use of digital technologies.

2.2.1 Parental needs

Parental needs are a crucial and key category. During the analysis of the data, we identified a link between children’s use of digital technologies and specific parents’ needs. For instance, mothers often supply digital technologies to preschool children for specific purposes; to dedicate time to household, work, daily routine, self-care, or to parental manipulation. Digital technologies can thus serve as a means of “digital eating”. Children who do not like to eat, according to the response of a mother, can calm down while watching the tablet and eat more easily. “...mainly at lunch or dinner time.... because he refused to eat, and he only ate while watching a fairy tale on the tablet...”

On that account, and due to the regularity in parents' behavior towards their children, the last acquire regular life habits, which seem to be hidden, superficial, and unarmful, but are perceived by mothers as natural. However, the specific goals of the use of digital technologies address parents' purposes more than children's well-being.

The analysis of the data showed three basic variants when it came to mothers' use of their time: work, household, and hobbies. It was also found that these three variants prevail over appropriate children's digital technologies consumption. The most important variant for mothers is to have some free time for themselves. To cite an example, one mother told us about the following situation: *"...when I am cooking, I need some calm, therefore I give my child a tablet..."*

To cite an example, we can recall the next circumstance *"...well, when we come home and I have to do something, I can distract my daughter by giving her my mobile phone to listen to songs on YouTube or watch some children's videos..."*

Home routines in the families of preschool children include activities necessary to keep the household, for instance, cooking, washing, ironing, and cleaning, and they have a significant impact on the time spent on digital technologies by preschool children. How home routines are set up in the families shows how much time a child can spend using them. As it is seen in the following statement *"...when I need time for cooking, and both of my children bother me, I give them food, a drink and a cell phone..."* Furthermore, parents mentioned in the interviews their work as a key aspect to their time *"...well, during the time I work or do something, I give my child a mobile phone..."* or *"...when my husband and I have a home office and we both need to work, we seat our children in front of the TV..."* Parental needs are a major determinant of digital overuse by preschool children. At the same time, it should be emphasized that the primary goal here is not to fill up children's necessities, but the needs of parents. Concerning the amount of use of digital technologies by children, it can be claimed that the stronger parents express their needs, the more time children spend using digital technologies.

The abovementioned subcategory is a variable that determines the form of children's use of digital technologies.

2.2.2 Parental discourse about the frequent use of digital technologies

The discourse in the examined families is typically characterized by different conceptions around the use of digital technologies. All parents in the research sample adhere to their views on children's use of digital technologies, but these views do not comprise a coherent and logical whole.

Nevertheless, or perhaps precisely due to the above-mentioned view, digital technologies constitute a considerable part of the daily routine in the families taking part in this research. Parents own digital devices, and use them, but do not think too much about their impact on their lives and their children's lives. These non-analysis is well

depicted in a participant's answer to the question of how a mother would explain to her child what digital technologies are. This specific question astonished the selected participant, as illustrated by the following answer: *"...Is there any easier question? These are all the boxes which you turn on and control with buttons, it properly looks like small TVs, and you can play games, videos, YouTube, I don't know how else I would explain it..."* and also: *"...Well, I would say it is all related to tablets and a computer. Everything that you can accomplish through them..."* Another appreciation about this question: *"... I don't know how to explain it, she knows what the internet is, digital technology, tablet, computer..."* just another point *"...her child does not ask her what digital technology is..."*

Although parents did not explain accurately what digital technologies are, at one point in interviews they expressed absolute certainty when saying that *"...it is part of this era..."*, *"...I am not outright against them..."*, another opinion about it *"...they must work shoulder by shoulder with the challenging times..."*, participants also recognized technology as part of their children's lifestyle *"...I cannot rived him from it; he needs to get used and recognize digital technologies..."* In addition, parents realize, that the child may learn in an undesirable way by utilizing digital technology. Precisely, this fear is directed toward vulgarism. The abovementioned is seen by this statement: *"...children should not have the freedom to decide what they do on that computer, for example, I found out in retrospect that they were looking at Pat and Mat and it was a rude version..."*

Another concern of parents is the fear of creating an addiction to digital technologies *"...if children maintain digital technologies on a large scale, they will only stare at the mobile phone and arise against addiction..."* They agree that most of the children are dependent on the use of digital technologies. Their opinion prevails about this situation when mentioning that: *"...She wants to use her tablet all the time. She is addicted to it..."*

On the other hand, the active participants stated how the use of digital technologies can be beneficial for preschool children. They manifested that digital technology could be a source of gaining knowledge, supplementary information, and food for thought, as stated as follows: *"...when they learn some new information then they want to talk about it. For example, which is the largest fish in the world? They can recognize the information and transmit it..."* the example is about learning, but this time the importance of this process is perceived as positive: *"...digital technologies improve skills in general. It broadens horizons..."*

Another award-winning property is that digital technology endures the ability to inspire children to obey. We could take a mother's strategy for instance *"...if you are not going to do this, you will not use the computer, and he obeys immediately..."* On the contrary, the parent underestimates the real consumption of digital technologies, emphasizing that for children digital technology is only the second choice in a situation where it is impossible to do something else, which at the same time implies manipulation from parents of their children: *"...at home, if there is bad weather or we have to stay and everything is done, he can play computer games..."*

Interestingly, these two variables (parental discourse and parental needs) interact with each other. While parental needs typically increase the rate of children's use of digital consumption, the parental discourse about the use of digital technologies instantly reduces it.

2.3 Family digital education

In the previous categories, parental needs and parental discourse were properly identified. There is also intentional parental behavior that aims to affect a child's relationship to digital technologies and their digital habits. This specific category is devoted to this phenomenon. Building healthy principles for managing digital technologies begins inside the family. Initially, it is the parents who can supervise the children and develop active habits and healthy environments around digital technologies. Family digital education represents ways of parental behavior that lead to influence children's consumption of digital technologies and their effects. All participants in the research sample have some sophisticated techniques regarding family digital education, which will be mentioned in the following lines. The essence of family digital education is that children use digital technologies as little as possible.

In the following passages, we describe the specific forms that digital education takes in the studied families. This description will be structured according to the personal strategies of family digital education, which are restricting access to digital technologies, parental control, co-use, and conversations about digital technologies.

2.3.1 Restricted access to digital technologies

Restricting children's access to digital technologies is a cornerstone and the most common technique when it comes to family digital education. The principal aim is both to reduce the time children spend on digital technologies, and to typically prevent inappropriate applications and videos from being used. Time restriction is one of the strategies parents use to control the use of digital technologies, but they are also sure that it implies a process "*...the less, the better, but you cannot voluntarily cut them off completely...*" The use of digital technologies is limited by defining rules. The basic rule applied to almost all families in the sample is that children must not use digital technologies on their own without asking an adult. If a child uses them, some parents in the research sample try regulating the time their children spend on them "*...I try controlling the time my child spends watching TV...*"

2.3.2 Parental control

Monitoring how long and for what purposes children use digital technologies is a prerequisite for the restrictive measure described above. The key goal is to identify the time children use digital technologies and the kind of content they consume. Classically, this practice is implemented by parents looking at the browsing history of the computer, tablet, or phone. This strategy is implemented by some parents also adding other technological tools *"...I try to control the time my daughter spends on digital devices. I use an application where you can monitor everything she watched, and how long she spent on every website, I can also under control the kind of content she watches and inspects it remotely. It is possible to establish a time limit there, for example, 2 hours daily..."* Some families do not provide monitoring. As it was said by one of the participants in the interviews, *"...I do not oversee what he is doing and when he embraces the technological device..."*

2.3.3 Parental strategies towards an appropriate use of digital technologies

Common use can be characterized as a specific situation where a parent and a child watch television or play computer games together. The essential goal of this practice is to provide the child with a sense of support and encourage the relationship between the child and the parent, as well as to maintain an accurate overview of what series, computer games and applications the child has been consuming and for how long. The above practice is applied by one of the parents who took part in the research interviews, *"...we sit in front of the TV together. We monitor what our kid watches, and talk about it..."*

Besides, the use of digital technologies frequently involves a conversation about a film, series, video, or mobile application. Conversations during the time families use digital technologies together can be considered the most meaningful and effective way in which parents educate their children about their responsible relationship with digital technology. The primary goal of these talks is to increase the child's understanding of the topic.

In this subcategory, family digital education was described as a set of deliberate and purposeful actions that parents develop to influence their children's relationships with digital technologies. To this end, parents use techniques, such as restricting access to digital technologies, monitoring, sharing digital technologies, and talking about the responsible use of digital technologies.

Conclusions

This study aimed to find out the reasons behind digital overuse by preschool children. One cause underlying this overuse has to do with some parental needs. The parents who took part in the interviews described the use of digital technologies by their children as a means to get time for the household, work, daily routine, and self-care, and also serving as a way of manipulation. Derived from this strategy used by parents to gain time for themselves, children are overusing digital technologies due to a lack of parental sensibility, supervision and specific usage rules.

It is worth mentioning that these parents should restrict the use of digital technologies by their children since it has caused a series of issues inside the core family. First, it is possible to identify a sort of isolation and loneliness; in practice, it is the way parents pass the responsibility of taking care of their children to any technological device, which leads children to interact only with the virtual world.

Second, there is also a noticeable addiction to digital technologies by children. This dependence on digital technologies could turn into a disease characterized by the uncontrolled use of digital technologies, which leads children to sleep disorders, constant fatigue, non-compliance obligations, and home rules violations.

Besides, the most challenging the problem is that digital overuse leads children to passivity, aggression, lack of concentration, and absent mind. As a result, they also have demonstrably worse learning and vocabulary skills, they cannot sufficiently develop their motor and manual abilities. To overcome these issues, it is not enough to deprive the use of digital technologies since they can cause withdrawal symptoms such as stress, anxiety, and irritability.

One interesting solution to this problem is prevention, which helps the child from reaching such a stage of addiction to basic rules about the use of digital devices at home. Prevention has also to do with the replacement of digital technologies a daily. For instance, when children get bored, they should do different activities; take trips with their families and friends, play with toys, draw or paint, and go to the playground, among others. The time spent by children without using digital technologies helps them to progressively find different and more comprehensive ways of entertainment.

The use of digital technologies needs to be compensated by other activities that are not dependent on digital media. On that account, digital education takes relevance, although parents have a fundamental responsibility for the child's development and some notions about the correct use of digital technologies, they must gain more knowledge and proper information about the impact of digital overuse by their children in this area of upbringing.

This study has addressed only the target audience of preschool children and their parents. The limitations of this study are clear: small research sample and the use of only one research method.

Despite the presence of extensive international research on the use of digital technologies by children, most studies are very limited because they have small samples, and are conducted in developed countries and are mostly cross-sectional in design. (Choi, 2018) Future research should focus on strengthening this base. Current gaps in the area that require further research include:

- Relationships between parents and children in the digital world (how they have changed along the years)
- How do the time children spend using digital technologies affect their well-being?

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