J-EDUCATion
JOURNAL OF EDUCATIONAL STUDIES
e-ISSN: 3023-8145
Eğitim Araştırmaları Dergisi

The Effect of Technology and Internet on Preschool Children's Developmental Areas

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Abstract:

21st-century kids are more tech-savvy than their predecessors. The impacts of technology on children's brains and their socio-emotional, cognitive, and physical development have received a lot of attention as a result of this rise in use. A lot of this research is still in its early stages, particularly the brain-based studies. Furthermore, studies usually find very weak correlations between child outcomes and technology use; it is unclear if technology causes these results, and tiny impact sizes raise questions about the implications for kids in the real world. Legislators in numerous nations have generally set stringent guidelines for kids' computer use despite these worries. This document outlines what has been persuasively demonstrated after reviewing a portion of the research on the impacts of technology on children's cognitive, physical, socioemotional, and brain development. In order to provide practical, evidence-based suggestions and to get a deeper understanding of how technology impacts children, it also highlights areas in which further high-quality research is required.

Keywords: Technology, Internet, Preschool Children, Developmental Area

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Teknoloji ve İnternetin Okul Öncesi Çocukların Gelişim Alanlarına Etkisi

Öz:

21. yüzyıl çocukları, kendilerinden öncekilere kıyasla teknolojiye daha meraklı. Teknolojinin çocukların beyinleri ve sosyo-duygusal, bilişsel ve fiziksel gelişimleri üzerindeki etkileri, kullanımdaki bu artışın bir sonucu olarak büyük ilgi görmüştür. Bu araştırmaların birçoğu, özellikle de beyin temelli çalışmalar henüz başlangıç aşamasındadır. Ayrıca, çalışmalar genellikle çocuk sonuçları ve teknoloji kullanımı arasında çok zayıf korelasyonlar bulmaktadır; teknolojinin bu sonuçlara neden olup olmadığı belirsizdir ve küçük etki boyutları, gerçek dünyadaki çocuklar için sonuçlar hakkında sorular ortaya çıkarmaktadır. Birçok ülkedeki yasa

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koyucular, bu endişelere rağmen çocukların bilgisayar kullanımı için genellikle katı kurallar belirlemiştir. Bu belge, teknolojinin çocukların bilişsel, fiziksel, sosyo-duygusal ve beyin gelişimi üzerindeki etkilerine ilişkin araştırmaların bir kısmını gözden geçirdikten sonra ikna edici bir şekilde ortaya konanları özetlemektedir. Pratik, kanıta dayalı öneriler sunmak ve teknolojinin çocukları nasıl etkilediğini daha iyi anlamak için, daha fazla yüksek kaliteli araştırmaya ihtiyaç duyulan alanları da vurgulamaktadır.

Anahtar Kelimeler: Teknoloji, İnternet, Okul Öncesi Çocuklar, Gelişim Alanı.

Article History

Article arrival: *19 July, 2023* ***Accept****: 27.Oct.2023* ***Publish:*** *10.11.2023*
Article type: *Research article*
Article language: *English*
Citation: Uşaklı, H. (2023). The effect of technology and internet on preschool children's developmental areas. *Journal of Educational Studies (J-EDUCAT).* 1(1), p. 44-.55.
Doi: 10.5281/zenodo.11531807

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Introduction

Today, as in many countries of the world, the place and importance of technology in our country is increasing day by day. The Internet, on the other hand, is a worldwide widespread and ever-growing communication network, where many computer systems are interconnected, and it is a technology that emerged after people's desire to "store, share and easily access the information produced" increasing day by day. Technology has become an important part of our lives and has become widespread in every field. The widespread use of technology enables us to access the information we want instantly, saves time and makes our lives easier.

Internet, gaming and social media addiction can be seen in all ages and genders (Özcan, 2016). Pre-school education is the educational process that includes all the experiences of the child from birth to primary school age (Aral, 2000). During this period, children learn by modelling. Mothers and fathers are the most effective models in the development process of children. While the place and importance of technological devices in our lives is increasing,

the use of technological devices by parents at home and the interest and curiosity of preschool children in technological tools are increasing. The gradual increase in this interest has also affected the developmental areas of preschool children. Although pre-school children do not acquire literacy skills, they are specialized in the use of technological tools. Despite the opinions pointing to the benefits of introducing technology to children at a young age, there are findings that this technology can be harmful to the development and health of children if it is not used correctly (Arısoy, 2009; Griffiths, 1995).

It has been observed that when children use technology more than necessary, it also affects their children's social-emotional development, language development, cognitive development, and motor skills. It has been observed that children in this period have a positive effect on their development when they use technological tools in place and on time. However, if the child spends too much time on technological tools and uses them out of their needs, it has a negative impact on the child's developmental areas. In the next part of the study, the effects of technology in the development areas will be given.

The Effect of Technology on Social and Emotional Development

Social and emotional development is the child's ability to express himself, to be in harmony with himself and his environment, and to control his emotions. Internet and gaming addiction can lead to social emotional learning problems in children (Uşaklı, 2017).

When activities, studies or games with technological tools are played, it causes the child to complete the task given to him and to enjoy it. Since technological devices attract the attention of children, educational games, songs or videos suitable for their development increase the child's motivation. When asked to complete educational games suitable for the development of the child on the computer or tablet, the child's ability to take responsibility develops.

However, if the technological tools are not used in their place and time; (1) Decrease in

the child's outdoor games, (2) Increases his orientation towards individual games rather than group games, (3) It prevents the socialization of the child, (4) It causes a decrease in peer relations, (5) The decrease in peer relations has led to a decrease in the child's face-to-face communication. (6) Excessive use of technological devices brings along some health problems such as depression, low self-esteem, shyness, emotional and social skills deficiencies. It also hinders the development of the child's cooperation and sharing skills and the child's ability to take responsibility.

The Effect of Technology on Language Development

Language development is the acquisition, storage and use of words and symbols in accordance with the rules of the language. The environmental factors and cultural structure of the child have affected language development. His school and preschool teacher helped him use this development. Turkish activities in pre-school, reading stories, completing the story and the questions asked at the end of the story support the language development of the child. Technology can have an important place in language development through the motivation and opportunities it provides. For example, with appropriate software, children can construct more complex and longer sentences and speak more fluently. (Akkoyunlu, 2002)

When all these are done, the language development of the child is supported positively. However, it has both positive and negative effects. The child's spending too much time on technological devices isolates the child from the world and prevents him from establishing relationships with those around him. This makes it difficult for the child to start the conversation and cannot express his thoughts correctly. It prevents the construction of sentences and the development of vocabulary according to syntax rules.

The Effect of Technology on Cognitive Development

Cognitive development includes the development of active mental activities such as perceiving the world around the individual, understanding, learning, remembering, reasoning, decision making and problem solving. Preschool children are expected to acquire developmental characteristics in these areas. The use of technological tools in place and on time supports positively influencing cognitive development.

Activities or studies to be done with technological tools attract the attention of the child in the cognitive field and enable him to concentrate his attention. The use of technological tools in the preschool period develops children's high-level skills such as creativity, critical thinking and problem solving. Studies or activities with technological tools affect the cognitive field of the child positively when the gains and indicators are appropriate. When the studies or games presented in the technological environment are in accordance with the vitality principle, it helps to facilitate the use of the skills acquired by the child in real life. When the activities or games are suitable for the acquisitions, they are embodied in the technological environment, allowing children to learn more easily and acquire the acquisitions more easily.

Despite all this, excessive use of technological tools; (1) It has prevented children from using their mental activities effectively. (2) It has led to the emergence of attention problems. (3) It has negatively affected his ability to understand his feelings and thoughts. (4) It negatively affects cognitive functions (impulse control, self-regulation, mental flexibility, ability to understand the thoughts and feelings of others) (Nathanson, Sharp, Aladé, Rasmussen & Christy, 2013).

Effect of Technology on Motor Development

Motor development is the voluntary mobilization of the organism in parallel with the physical growth and development of the central nervous system. While children spend time immobile for a long time with technological devices negatively affect their gross and fine motor

development such as large and small muscle skills, hand and eye coordination, hand and eye coordination develops when moving the mouse in the necessary direction, clicking or using the keyboard in computer use (Akkoyunlu, 2002).

Purpose of the Research

It is aimed to examine the effects of technological tools on the developmental areas of preschool children. It is aimed to examine how the technological devices and internet use, which are spent more than necessary time, affect the developmental areas of children, and how the technological tools used in place and on time affect the development

Methodology

In this study, qualitative research model was used to obtain reliable information. In this study, the document analysis method, one of the qualitative research methods, was used. In this study, document analysis was used as a stand-alone data collection method. Within the scope of this study, articles and master's theses written between 2000-2019 on the effect of technology on children's development areas were examined. In order to reach these documents, a literature search was made from sites such as Google Academic and National Thesis Center. In this study, which was carried out by the method of document analysis, work was continued on 9 articles and 3 master's theses. In this study, descriptive analysis method was used in the analysis of the data obtained from the document review. In this method, data is interpreted according to previously determined themes.

Results

The findings of this study were obtained by examining the researches on 'The Effect of Technology on the Development Areas of Preschool Children'. The obtained data has been tabulated. In this section, the findings related to the problems of the research are given.

The article written between the years 2000-2019 on the analysis of the studies on the "Effect of Technology on the Development Areas of Preschool Children", the years of the master's theses, and the results are shown in the table below.

Table 1

Years of Study on The Investigation of the Effects of Technology on the Development Areas of Pre-School Children Between 2000-2019

No	Year of Publication	Frequency
1	2000	1
2	2002	1
3	2008	2
4	2009	2
5	2013	1
6	2015	1
7	2018	2
8	2019	2

In the Table 1 above, the annual frequencies of the studies on the "Effect of Technology on the Development Areas of Preschool Children" are given. The studies on the "Effect of Technology on the Development Areas of Preschool Children" are given in the form of a pie chart. 1 study in 2000, 1 study in 2002, 2 studies in 2008, 2 studies in 2009, 1 study in 2013, 1 study in 2015, 2 studies in 2018, 2 studies in 2019. The most studies were done in 2008, 2009, 2018 and 2019.

Table 2

Types of Studies Conducted on The Effect of Technology on the Development Areas of Pre-School Children Between 2000-2019

No	Type of Operation	Frequency
1	Article	**9**
2	Master Thesis	**3**

In the Table 2 above, the frequencies of the types of studies on 'The Effect of Technology on the Development Areas of Preschool Children' are given. Studies on 'The Effect of Technology on the Development Areas of Preschool Children' are given in the form of a pie

chart. There are 9 articles and 3 master's thesis types.

Table 3

Methods of the Studies Conducted on the Effect of Technology on The Development Areas of Pre-School Children Between 2000-2019

No	Types of Operation	Frequency
1	Descriptive Method	**7**
2	Quantitative Method	**5**

The study methods of the studies on 'The Effect of Technology on the Development Areas of Preschool Children' are given in the form of a pie chart. In 7 of the articles, descriptive method was used as study methods. Descriptive method was used in 2 of the working methods of the Master's Theses, and quantitative method was used in 3 of the Master's Theses.

In the table above, the frequencies of the methods of the studies on the "Effect of Technology on the Development Areas of Preschool Children" are given.

Table 4

Data Collection Tools of the Studies Made on The Effect of Technology on The Development Areas of Pre-School Children Between 2000-2019

No	Data Collection Tool	Frequency
1	Information Collection Form	**1**
2	Survey of parents' opinions on technology use by preschool children	**2**
3	Social skills assessment scale	**1**
4	Technology survey form	**1**

In the table above, the frequencies of the data collection tools of the studies on the "Effect of Technology on the Development Areas of Preschool Children" are given.

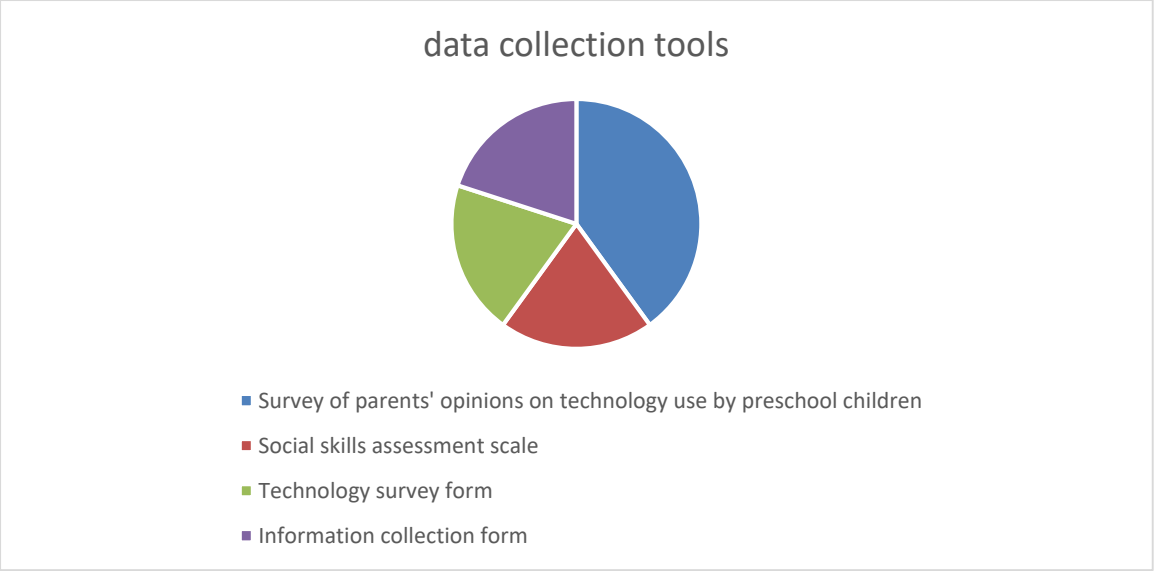

Figure 1. *Data Collection Tools*

The data collection tools of the studies on 'The Effect of Technology on the Development Areas of Preschool Children' are given in the form of a pie chart. Information collection form tool was used in 1 of the article. In the second part of the Master's Thesis, a survey of parents' opinions about the technology use of preschool children was used. Social skills assessment scale was used in 1 of the Yuksel Bachelor's Thesis. Technology questionnaire was used in 1 of the Master Thesis.

Conclusion

In this study, it is aimed to examine the studies on 'The Effect of Technology on the Development Areas of Preschool Children' between 2000-2019. Studies were mostly carried out at pre-school education level. Study types are mostly master's thesis. Studies were carried out mostly in 2008, 2009, 2018 and 2019. Studies were carried out mostly with descriptive method. Various scales were used as data collection tools.

Technology has become an important part of our lives and has become widespread in every field, and the benefits of the internet are increasing day by day, with the advancement of

technology. Preschool children take their parents as a model in terms of their developmental characteristics. When parents spend too much time on technological devices, their children are also affected by this, and they begin to attract their attention. Technological developments are variable and have affected preschool children with their effects, types, types and duration. Technological devices, which have positive and negative effects in developmental areas, have also affected the physical and psychological areas of preschool children. It is important that preschool children use technological devices in a supervised and controlled manner, as it will positively affect their developmental areas.

Children in the twenty-first century are more tech-savvy than previous generations. Because of this increase in use, there has been a lot of focus on the effects of technology on children's brains and their socio-emotional, cognitive, and physical development. Much of this research, particularly brain-based research, is still in its early stages. Furthermore, research frequently reveals extremely modest correlations between technology usage and child outcomes; whether technology is to blame for these outcomes is unknown, and small impact sizes raise concerns about real-world consequences for children. Despite these concerns, legislators in several nations have established standards for children's technology use, which are typically restrictive. This study examines some of the research on the impacts of technology on children's brain, cognitive, socio-emotional, and physical development, and summarizes what has been convincingly shown. It also identifies areas where further high-quality research is needed to better understand how technology affects children and to help the creation of effective, evidence-based guidelines. 'Children's internet use time, children's online content selections, parental management of their children's internet usage, parental measures for children's internet usage, internet impacts on children' are the findings. The findings and advice offered are believed to be beneficial to parents in terms of their children's proper internet usage attitudes. Because of the

numerous recent technological breakthroughs, parenting children of today's generation presents a unique set of obstacles. There's no doubting that technology has a huge impact on our lives and the lives of our children. Children's growing social skills, relationships, health, and overall ability to focus can all be harmed by technology.

Research and Publication Ethics

In this study, all rules specified in the "Directive on Scientific Research and Publication Ethics of Higher Education Institutions" were followed. None of the actions specified under the second section of the Directive, "Actions Contrary to Scientific Research and Publication Ethics", have been carried out.)

Disclosure Statements

1. Contribution rate statement of researchers: Author 100%
2. No potential conflict of interest was reported by the author.

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