



Family Preventive Efforts in Reducing the Impact of Technology Advances in the Digital Age on Early Childhood

Muhammad Ja'far Nashir^{1,*}, Anita Wardani², Rara Intan Mutiara Fajrin³, Wahyu Widayanti⁴, Orlando⁵

Institut Islam Mamba'ul Ulum, Surakarta, Indonesia^{1,2,3,4}

Shandong University of Science and Technology, Qingdao, China⁵

muhammadjafarnashir@gmail.com¹, aneeta.wayway@gmail.com²,

raraintanmutiarafajrin@gmail.com³, wahyuwidayanti@gmail.com⁴, 1786395532@163.com⁵

**) Corresponding author*

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ABSTRACT

This study aimed to find out what preventive methods are used by families at home to reduce the negative impacts of technological developments in the digital era. The method used in this research was a qualitative descriptive approach involving 9 parents of children aged 4-8 in Sukoharjo. Semi-structured interview techniques were used for data collection. The data analysis technique used data reduction, data presentation, and data verification. The results showed that parents' preventive efforts to mitigate the impact of technology on children include making rules of use by setting time limits on the use of electronic devices, providing healthy and wise examples in using technology tools, encouraging children's outdoor activities, monitoring content consumed by children, encourage open communication with their children by talking about the dangers and benefits of technology openly, teaching digital literacy by teaching children about privacy, online security, and digital ethics, making a daily schedule that balances screen time and other activities, promoting their hobbies and interests, and keeping pace with technological developments.

INTRODUCTION

Technological advances in the digital age have drastically changed the way we live, work, and interact (Lubis & Nasution, 2023). One of the biggest developments is the Internet, which allows for global connectivity and fast access to information. The Internet of Things (IoT) allows devices to connect and communicate with each other, creating more intelligent and automated environments, like smart homes and smart cities.

Technological advances have a huge impact on every aspect of life, no exception to early childhood, they offer significant opportunities and challenges (Wardani et al., 2024). Positively, technology provides access to a variety of interactive educational applications and content, helping in the cognitive

development and learning of children (Ayu et al., 2024). Specially designed applications and software enable children to learn to read, recognize numbers, and even understand the basic concepts of science interestingly. In addition, engaging with technology from an early age can nurture digital skills that are essential to helping children become more comfortable and competent in the use of digital devices in the future (Salehudin, 2020). Creativity is also driven through digital tools that enable children to draw, make music, and tell stories interactively.

In addition to the advantages of the above technology, technological advances in the field of early age have brought significant changes in the way children learn, play, and develop (Azizah et al., 2024). Educational technology (edtech) is becoming one of the major areas, with software and applications designed specifically for early childhood education. Interactive learning apps and platforms offer exciting and educational content, helping children develop basic skills such as reading, writing, and counting through fun games and activities.

Tablets and other digital devices allow access to a wide range of rich educational resources, including videos, interactive storytellers, and educational games (Gusteti, 2024). It encourages independent and creative learning, as well as providing opportunities for children to explore their interests.

Virtual reality (VR) and augmented reality (AR) are also beginning to be used in early childhood education, providing a more immersive and in-depth learning experience. Robotics and other technology-based toys, such as educational robots and STEM kits (Science, Technology, Engineering, and Mathematics), help children develop problem-solving and logical skills from an early age. These toys are designed to teach basic concepts of coding and techniques through games, making learning a fun and challenging process.

Technology also supports communication and collaboration between parents, teachers, and children (Zulfritria et al., 2020). Digital communication platforms allow parents to follow their children's learning progress in real-time, communicate with teachers, and gain resources to support home learning. Digital assessment and reporting systems help teachers track student progress and design more effective and individual learning programmes.

However, challenges also arise as children use technology. It is important to remember that the use of technology in early childhood education must be balanced and well-monitored (Salim, 2022). Parents and educators need to ensure that technology is used as a supporting tool, not a substitute, in the holistic development of children. With the right approach, technological advances can provide great benefits in supporting education and early childhood development (Annisa et al., 2022). Excessive screen time can interfere with physical health, causing problems such as sleep disorders, obesity, and eye fatigue (Dianti et al., 2022).

Inappropriate use of technology devices by children in terms of content, duration, frequency, and posture as they use technology boosts poses a variety of health risks, including developmental problems, musculoskeletal problems, lack of physical activity, obesity, and inadequate sleep quality (Mustafaoğlu et al., 2018). In addition, reliance on technological devices can reduce direct social interaction and physical activity which is essential for motor and social development. There is also a risk that children will be exposed to inappropriate content, despite parental control, as well as a potential negative impact on focus and concentration, where facilitating technology can impede the development of critical problem-solving skills (Ayu, 2023).

To maximize the benefits of technology while reducing its negative impact, parents need to implement healthy usage strategies (Putri & Herlambang, 2024). This includes setting screen time limits according to health recommendations, choosing the right educational content, and engaging in the use of technology with children. Active guidance from parents in the use of the device, as well as ensuring a balance with non-digital activities, such as playing outside, reading books, and engaging in art and

handicrafts, is essential (Munawar et al., 2019). Parents also need to maintain good digital literacy to guide children in the smart use of technology and collaborate with schools to support balanced digital learning. With a careful approach, technology can be a valuable tool in supporting early childhood development without sacrificing important aspects of traditional learning and play experiences.

The role of the family in reducing the impact of technological progress on early childhood is crucial (Nugroho et al., 2022). Parents should implement strict surveillance and accompany their children in using digital devices, ensuring that the content accessed is in line with healthy moral development. Life balance is a key principle, so parents need to limit screen time and encourage physical and social activities, such as playing outdoors, engaging in mosque activities, and joining worship. In addition, parents act as examples of the wise use of technology by showing healthy ways of interacting with digital devices (Santosa, 2021). They also need to educate children about digital literacy, including ethics of internet use and privacy protection, as well as using technology for positive purposes.

Good communication in the family, with open discussions about the use of technology and joint fun activities, can strengthen family ties and reduce the dependence of children on digital devices for entertainment. Through a balanced approach, families can guide their children into wise and noble technology users (Fithri, 2024). Preventive efforts to mitigate the impact of technological progress on early childhood are essential to ensuring healthy and balanced development. Technology offers many benefits, such as access to information and educational content, but also carries potential risks such as physical health disorders, social development problems, and inappropriate content exposure (Yusri et al., 2024).

The importance of family preventive efforts lies in the ability to cope with potential problems before they develop into serious challenges. For example, by setting strict screen time limits and choosing age-appropriate content, parents can prevent sleep disturbances and other health problems caused by excessive use of digital devices. In addition, providing guidance and guidance in the use of technology can help children develop healthy digital literacy, preparing them to use technology wisely and safely (Jung, 2018). Rich non-digital activities, such as playing outside, reading books, and social interaction, also need to be promoted to ensure that children get a holistic learning experience. These preventive efforts, including parental supervision and the cultivation of positive values from an early age, not only protect children from the negative impact of technology but also help them develop the essential skills necessary for life in the digital age while ensuring that they grow into balanced and empowered individuals. Based on the background that has been described above regarding the importance of family prevention efforts, the researcher was interested in conducting research related to what prevention methods were carried out by parents at home to reduce the negative impact of technological developments on early childhood in this digital era.

METHOD

The method utilized in this research was a qualitative descriptive approach. The purpose of this study was to present an objective overview of the actual situation, drawn from the findings of observations, interviews, and documentation involving 9 parents of children aged 4-8 in Sukoharjo. This research explored how these families manage the impact of digital technological advancements. The research methodology emphasized firsthand field observation, followed by systematic data collection, processing, and comprehensive analysis. Descriptive research was chosen to gain insight into how families address the effects of technological progress on their children. Semi-structured interview techniques were used for data collection, allowing researchers to pose questions more freely and openly, without the constraints of a rigid questionnaire. The study focused on observation sites in the Sukoharjo. The data analysis followed an inductive approach, involving three main steps: data reduction, data presentation, and data verification.

RESULTS AND DISCUSSION

Based on interviews with 9 respondents, the following outcomes were observed. The result of the interview with the first resource person, Mother G. To mitigate the negative impact of technological advances on early childhood, Mother G created rules of use by setting time limits for the use of electronic devices daily. Another thing that's done is to set up gadgets-free zones, like dining rooms and bedrooms, where children are forbidden to eat with playing gadgets and also before bed are prohibited from using gadgets. The method of time limitation in using gadgets is in line with a study conducted by Nikken & Schols (2015) stated that parents in the Netherlands need to limit the use of gadgets further to children aged 0-7 years.

The result of the interview with the second resource person, Mother R. To mitigate the negative impact of technological progress, Mother R did so by giving a healthy and wise example of using technology tools, such as using them only when working or when you need them. Parents don't need to use technology when accompanying their active children. This is in line with the research conducted by Chaudron & Beutel (2015) stated that parents need to show a good way the use technology in front of their children.

The result of the interview with a third resource person, Mother N. To mitigate the negative impact of technological advances, Mother N encouraged children's outdoor activity. Like exercising, or doing any other physical activity. When in the morning and the afternoon Mother N invited her children to just walk around or play in the park near the house, this was done so that the child was not passive at home playing gadgets. Other research also supports this and states that too many children now spend too much time indoors, often interacting with gadgets. They are not exercising enough. Their learning about nature comes from books and teachers, not from direct exploration of natural phenomena. These problems affect most modern American children, and then researchers promote green screens to minimize screen time in children (Paulsen & Andrews, 2019).

The result of the interview with the fourth resource person, Mother W. To mitigate the negative impact of technological progress, W's mother is obliged to monitor the content consumed by her child. Mother W checks and selects apps, games, and content that fit the age of her children. W's mother also uses a parent control feature on the device to monitor the child's activity while using the gadget. Chassiakos et al. (2016) in his research also revealed that setting restrictions on access to content as well as monitoring children in accessing content can reduce the negative impact of technology.

The result of the interview with the fifth resource person, Mother S. To mitigate the negative impact of technological progress, Mother S encourages open communication with her child by discussing the dangers and benefits of technology openly with the child and inviting the child to discuss what they see and do in the digital world. Communication is considered an effective approach by some parents as expressed by Benedetto & Ingrassia (2021) in her research. Parents should communicate well with their children to reduce the risk of using technology and teach them how to use technology correctly and wisely.

The result of the interview with the sixth resource person, Mother A. To reduce the negative impact of technological advances on children, Mother A teaches digital literacy by teaching children about privacy, online security, and digital ethics. Mother A also gives insight into how to recognize and avoid harmful content. It is also applied by mothers in the country of Poland to mitigate the impact of technological advances, compulsory digital literacy taught from small to child, therefore parents must have knowledge and skills in digital literature (Tomczyk & Potyrała, 2021).

The result of the interview with the seventh resource person, Mother Y. To reduce the negative impact of technological advances on the child, Mother Y regulates the daily routine of her children. Making a balanced daily schedule between screen time and other activities such as learning, playing, and resting

is something that is done by the mother of Y. The Mother of Y also ensures that the child has sufficient and quality sleep. In a study conducted by Ramadani (2024), European countries such as Belgium, Denmark, Ireland, Italy, Portugal, Romania, and the United Kingdom show a strong link between excessive screen time and increased levels of depression, separation from reality, and trauma. Therefore, making a balanced timetable like that done by Mother Y is considered effective in reducing the negative impact of technological advances such as gadgets in European countries.

The result of the interview with the eighth resource person, Mother C. To reduce the negative impact of technological advances on the child, Mother C encourages the child's hobbies and interests in addition to playing with gadgets such as exploring hobbies and interests outside of technology, such as music, art, or sports and allowing taking courses or classes that can develop their talents because the negative impacts of technology are highly remarkable by mother C. Thus, it is important to take measures to prevent children from watching electronic exercises excessively under the supervision of a proper caregiver (Al Sagr & Al Sagr, 2020).

The result of the interview with the ninth resource person, Mother P. To reduce the negative impact of technological progress on the child, mother P should follow up on technological developments. Mother P argues that parents need to keep learning and following technological developments to understand their children's digital world. This is in line with research conducted by (Canpolat & Karadaş, 2024) stated that parents should learn about technology developments to reduce the negative impact of technology because children today spend more time with technology.

CONCLUSIONS

Based on interviews with nine parents in Sukoharjo, each parent had ways of reducing the negative impact of their technological advances. They made rules of use by setting timelines for use of electronic devices, giving healthy and wise examples in using technology tools, encouraging children's outdoor activities, monitoring content consumed by their children, promoting open communication with their children by talking about the dangers and benefits of technology openly, teaching digital literacy by teaching children about privacy, online security and digital ethics, making a daily schedule that balances screen time and other activities, encourages childrens' hobbies and interests, and the last one is to follow technological developments.

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