

Impact Digital Technology For Early Childhood Interpersonal Intelligence

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DOI: [10.31004/aulad.v8i3.1110](https://doi.org/10.31004/aulad.v8i3.1110)

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Article Info

Abstract

Keywords:

Technology;
Interpersonal Intelligence;
Early Childhood;
Parents

Currently, technology is widely used by humans, including early childhood. However, technology addiction can also affect how children interact. This can result in interpersonal intelligence, lack of socialization with the surrounding environment, and impaired language development in children. Based on the above issues, the researcher aims to describe the impact of technology on the interpersonal intelligence of early childhood. This research method uses a quantitative descriptive approach with a questionnaire distributed via Google Form to 30 parents at the Nuris Raudhatul Muttaqin Early Childhood Education Center, Tanggamus, Lampung. The results show that many children already use technology, one of which is mobile phones. One of the applications that children often use is YouTube, with 15 respondents out of 30 children. Based on the data obtained, most children use mobile phones for 30 minutes. This is in line with the maximum recommended technology use for children, which is less than 1 hour under adult supervision. In addition, the results of this study found that many parents have implemented restrictions on their children's mobile phone use. They limit the time spent on mobile phones by always accompanying their children when they use the internet, setting an example in limiting mobile phone use, and redirecting them to creative activities and educational games.

1. INTRODUCTIOS

Early childhood is an age where children experience rapid growth and development which is also called the golden age (Akbar, 2020). This is in line with the opinion of Pahrul, et al (2019) that early childhood is a human being who experiences growth and development, where at this time the development of the child's brain is very rapid, therefore this period is called the "golden age". In the early years of a child's life this is an opportunity to create a good and strong foundation. Many research results state that a child's first experience can affect aspects of their development. If the experience the child has is a positive experience, then the child will experience a good influence on developmental aspects. Conversely, if the experience the child has is a negative experience, it will have a negative impact on the child such as behavioral, mental, and social-emotional health.

The golden age of early childhood is seen in the physical and psychological growth and development of children. When viewed from the physical, it will be seen from the weight and height of the body given the nutritional intake consumed by the child. While the psychological development of children can be seen from the level of thinking or intelligence of children, children's intelligence is a derivative of the potential and uniqueness that children carry from birth (Herlinda et al., 2023). Early childhood has special characteristics in showing its identity such as liveliness, enthusiasm, dynamics, and has a great curiosity of what is heard, seen, and felt to respond to the surrounding environment (Susiana, 2019). According to Izzaty (2017) children in the age range of 4 - 6 years are preschool age stages. During the preschool stage, it plays an important role for the next stage (Muniroh, 2013). In addition, family factors, the environment around the child, and education according to the needs of the child need to be made fun (loving area), a conducive place (nourishing) and the need for school and home or appropriate and appropriate treatment of teachers, parents and adults can help child development (Tyas et al., 2022). Therefore, children are not only trained in developmental aspects, but also their intelligence.

However, many parents will feel that their children are learning when their children are able to read, write, and count (Rozi & Maulidiya, 2022). This shows that the intelligence desired by parents is Intelligence Quotient (IQ) intelligence, even though children also need multiple intelligences (Umiarso & Hidayati, 2022). It should be noted that every child has different talents and intelligence, even though they are born twins. Howard Gardner launched the theory of multiple intelligences (Mandira & Usman, 2019). The nine intelligences discovered by Gardner are mathematical logic intelligence, musical intelligence, linguistic intelligence, kinesthetic intelligence, visual spatial intelligence, naturalist intelligence, interpersonal intelligence, intrapersonal intelligence, and spiritual intelligence. One of the intelligences that can be developed in children is interpersonal intelligence. Interpersonal intelligence is a person's ability to socialize with people around him (Lwin et al., 2008). This opinion is in line with Chatib's (2016) opinion that interpersonal intelligence is the ability to have relationships with people around him and children can feel emotionally other people such as temperament, mood, intent and will of others.

Meanwhile, according to Amriani & Halifah (2024) interpersonal intelligence possessed by early childhood is the ability to interact, understand, and develop good relationships with others. Interpersonal intelligence refers to an individual's ability to understand and interact effectively with others. It involves sensitivity to others' moods, feelings, temperaments, motivations, and the ability to cooperate in group settings (Lwin et al., 2008; Chatib, 2016). For early childhood, this intelligence manifests in behaviors such as the ability to form friendships, show empathy, resolve conflicts, take leadership roles, and engage in cooperative play (Amriani & Halifah, 2024; Musfiroh, 2008; Suparno, 2013). Children with strong interpersonal skills are often socially active, emotionally sensitive, and responsive to the needs of others. This interpersonal intelligence has characteristics such as being able to perceive and distinguish moods, intentions, motivations, understand other people's feelings, easily cooperate with others, be able to respond, be able to organize their friends to do tasks, have many friends and be able to establish relationships with their friends, can be a leader, not shy, can express affection, can solve problems or disputes, be sensitive to the environment, be able to empathize with their friends, have sensitivity in recognizing and reading other people's thoughts, and have great attention to their friends so that they often know the news around them (Musfiroh, 2008); Lwin et al, 2008; Suparno, 2013; Dimitri et al. , 2019; Kusumawati & Yasin, 2020; Putri et al, 2020; Agustin et al, 2021; Nurfadilah & Rahman 2021; Idham et al, 2023).

From the above opinion, intelligence is very important to develop in children. This is because it is useful for children to adulthood to overcome problems with other people and the social environment (Kurniasih, 2021). In developing interpersonal intelligence, the environment around children should be able to encourage the development of children's interpersonal intelligence. If a child's interpersonal intelligence is low, they will become shy, have difficulty controlling their emotions, have difficulty interacting with new environments, lack sensitivity, do not care, are selfish, often offend others, show anti-social behaviors that can lead to aggressive attitudes. If this is not corrected, it will have a negative impact on children until adulthood (Hartati, 2005; Lwin, et al. 2008; Hariyati & Nurhafizah, 2023).

The activities that can be done to develop interpersonal intelligence are drawing, gardening, camping, outbound, and storytelling activities (Agustin et al, 2021), animation videos (Hariyati & Nurhafizah, 2023), treasure hunt games (Putri et al, 2020), educational games based on local culture *sumbang duo baleh* (Fitri & Rakimahwati, 2022), collaborative learning (Amriani & Halifah, 2024), outdoor learning activities (Rindiani, E.Y. & Dwijayanti, I., 2024; Handayani et al, 2019), blended learning method ((Herlinda et al, 2023), play method (Jazilurrahman et al,

2022; Athiyatullah et al, 2022), guessing game method (Sunarti, 2022). pretend play (Karim & Fiorentisa, 2021), and role play method (Tyas et al, 2022; Manila, 2022; Susiana, 2019). In addition, to encourage the development of interpersonal intelligence in early childhood involves an environment that can support the development of children's interpersonal intelligence, positive interactions with adults or peers, and examples of good social relationships (Amriani & Halifah, 2024). One of the problems in the development of early childhood interpersonal intelligence is the dependence on online games, technology (gadgets, computers, laptops and others), and the internet.

Many children are already addicted to technology. Various kinds of technology have been designed to be easily used and obtained, one of which is by children. Addiction to playing technology makes it difficult for children to break away from technology. The effects of addiction to playing technology will have a negative impact on early childhood who are in the golden age period. If the use of technology is not under the supervision and assistance of parents, then children can use technology without time limits and watch shows that are not suitable for their age. Therefore, adults around children must be able to educate without taking away children's rights to access digital information effectively (Suryaningsih, R. & Yon, A.E., 2021). There is also a negative impact of using technology for children, namely the ability of social interaction in children. Here are the signs of children addicted to technology loss of interest in activities (the internet addict's mind is constantly focused on internet activities), talking about technology intensively, often disputes an order if he/she thinks it may prevent access or delay the use of technology, the child will be easily offended, as a result of which the child's mood is volatile, selfish, difficult to share time between technology use and communicating with others, often lying, children will do various ways to keep using their technology even though it disturbs their sleeping hours (Pebriana, 2017), addicts will feel anxious when they cannot access technology, accessing the internet without any time limit and forgetting about time. (Aheniwati, A., 2019), children are accustomed to one-way communication (with technology) so that children will be difficult to play with and will be very angry if they are disturbed while playing their technology (Puspita, 2020).

From the above opinions, it can be seen that the use of technology in early childhood can affect social interaction. So to avoid the adverse effects of technology, parents need to accompany and guide their children when using technology and discipline children so that they do not experience dependence which causes a negative impact on child development (Pebriana, 2017). The negative impacts caused by excessive use of technology are wrong use of technology access in children by accessing sites that should not be seen at their age easily, can cause children to tend to become introverted. Spending hours on the internet can make children become addicted and become an introvert, alienating themselves from the environment because they are too comfortable in cyberspace, children's desire to commit violent or criminal acts. Children access adult videos or movies such as action, crime, or mafia movies. From watching these movies, children will be obsessed or follow violence like in the movie (Aheniwati, A., 2019), disruption of eye health due to staring at technology for too long (eyes will feel tired or even minus), and difficulty sleeping because children who are addicted to technology will have disturbed or irregular sleeping hours (Munisa, 2020).

Therefore, it is very important for parents to protect their children from negative content and provide usage limits to avoid the negative impact of using technology so that children's behavior is in accordance with their age and can avoid watching shows that they are not supposed to see or even imitate (Aheniwati, A., 2019). Therefore, it is very necessary for parents and teachers to supervise the use of technology in early childhood. Because it can cause addiction and habits that lead to increased use of technology in children which will be difficult to avoid. (Hudi et al, 2022).

In addition to the negative impact of using technology, there is also a positive impact, namely helping to improve, hone creativity, and children's intelligence. Because in technology there are good applications that can be downloaded such as coloring, counting, learning to read, and learning to write applications that can help children be interested in learning (Fujiawati, et al., 2020). In addition, children can get complete information and knowledge (Aheniwati, A., 2019). In research proposed by Belletich & Villarreal (2017) the use of technology without parental assistance will have a negative impact on children's emotional development, interaction, and motor skills. However, if parental supervision of technology is good then children can enjoy playing activities, understand self-control, and avoid dependence. Therefore, researchers want to review the impact of using technology for children after an early age and parents' efforts to limit the use of technology in children.

From the results of Barovich et al's (2020) research, the use of technology in learning media through applications can improve children's abilities. Therefore, educators need to understand the use of learning technology, its operating procedures, and how to interact with technology with students during the learning process (Barovich et al., 2020). From the results of Asmawati's (2021) research, gadgets can have a positive impact as long as there is a good parental role. Gadgets can be used by parents to train children to draw, recite, color, recognize letters, read, recognize numbers, and count. Therefore, the role of parents is very important in guiding, supervising, and educating to avoid the misuse of gadgets by children. From the results of research by Dwistia, et al (2024) on Generation Alpha children who grew up in the digital era, parents must utilize technology as a learning medium. However, they must pay attention to the development of children's social and emotional interactions.

Therefore, there is a need for collaboration between parents, educators, and the community in helping this young generation maximize their potential for a better future. However, challenges such as gadget addiction and lack of socialization mean that parents need to set clear limits on technology use while still allowing freedom for exploration. Research by Christine, et al (2021) found that Generation Alpha children still lack interaction in the domestic environment. Therefore, it is important for parents to pay attention to developing their children's social skills at home, which may be neglected amid the increasing use of gadgets and digital technology. Even though Generation Alpha children are familiar with online social interaction, social skills outside of gadgets and digital technology should be trained by parents in the family context (Christine, Karnawati and Nugrahenny C, 2021). The results of research by Ayunina and Zakiyah, 2022, found that religious values can train children to face moral and ethical challenges in the digital age. Therefore, it is important for parents to train their children not only in technological aspects of parenting, but also to integrate important moral values in educating their children (Ayunina and Zakiyah, 2022). Based on research by Hartania & Puspitasari (2023), the intensity of gadget use among 5-6-year-old children at Pertiwi Kindergarten in Muara Lembu Village is relatively high. Children more often choose to play with gadgets than interact with their environment. Meanwhile, children's interpersonal communication skills are in the moderate category, characterized by low interest in communicating and only expressing their feelings when asked by the teacher. The results of the study show a significant correlation: the higher the intensity of gadget use, the lower the children's interpersonal communication skills. The study by Pardede & Watini (2021) concluded that gadget use for more than 2 hours per day in early childhood has positive and negative effects. The positive effect is that it helps stimulate children's motor skills. However, the negative impacts are more dominant, especially on emotional development (children are easily angered, difficult to control, talk to gadgets) and moral development (lack of discipline, reduced study time, more time spent playing games and watching YouTube). Gadgets also affect social development, for example, children imitate violent content and become arrogant towards their friends. Apart from gadgets, other media such as television also affect children's social development. From the results of the above explanation, this article has updates such as the limited number of articles discussing the impact of technology on the intelligence of early childhood, the limited number of previous researchers using samples in the same area, and the limited number of studies revealing the applications that children often use. This study aims to describe the impact of technology use on children's interpersonal intelligence and how to limit children's use of technology. Therefore, researchers are interested in scientifically examining the impact of technology use on children's interpersonal intelligence and how to limit children's use of technology. Through this scientific article, it is hoped that parents will be motivated to limit the use of technology by their early childhood children.

2. METHODS

This study employed a quantitative approach using a survey method to obtain measurable data on the patterns of digital technology use among early childhood students. This approach was chosen because it enables researchers to describe factual conditions without testing hypotheses or examining causal relationships. The research was conducted at Nuris Raudhatul Muttaqin Early Childhood Education Center in Tanggamus Regency, Lampung, using purposive sampling, with 30 parents selected as respondents based on their direct role in supervising their children's technology use. Data were collected from May 20 to June 5, 2024, through a structured questionnaire distributed via Google Forms. The instrument consisted of five indicators: (1) the duration of children's technology use, (2) the types of applications accessed, (3) the observed behavioral impacts, (4) challenges faced by parents in limiting screen time, and (5) forms of parental supervision and restrictions. Instrument validity was tested using expert judgment and the Pearson Product-Moment correlation in SPSS 25. The collected data were analyzed using descriptive statistical techniques, including frequency and percentage analysis, to describe the actual conditions and trends in children's digital technology use and its implications on interpersonal development (Figure 1).

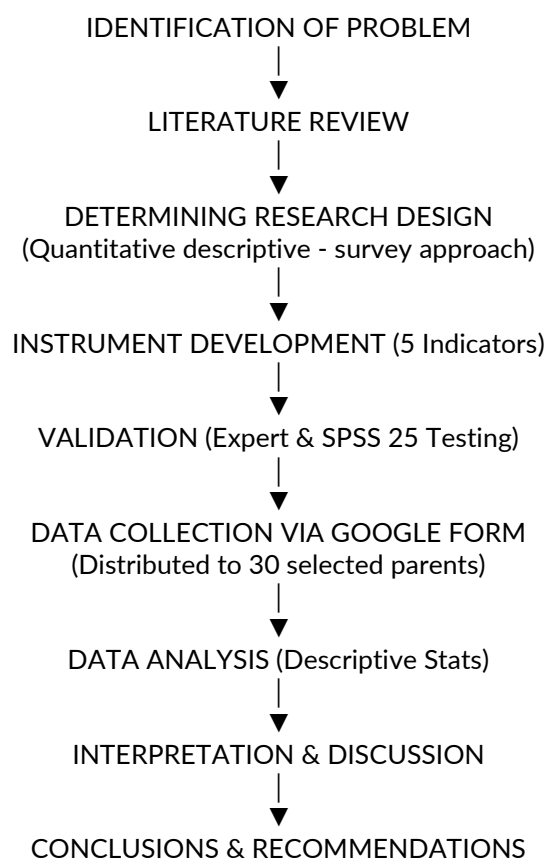


Figure 1. Research Flowchart

3. RESULT AND DISCUSSION

This research was conducted with parents who have children aged 4 to 6 years old. Parents who have 6-year-old children totaled 21 children, 5-year-old children totaled 7 children, and 4-year-old children amounted to 2 children. Children who were given the use of cellphones totaled 30 children. This compares best with Herman's opinion (2016) Children 3-4 years old, can already use almost complete sentences. Therefore the importance of being given technology through multimedia, by playing spiritual songs or children's songs and playing children's cartoon movies that are educational with the assistance of teachers and parents so that it can be seen how with the assistance of teachers and parents so that it can be seen how the child's ability to learn and can develop the child's ability with the assistance of teachers and parents. children's ability to learn and can develop children's abilities with technology. Children aged 5-6 years can be introduced to computer hardware (hardware) that children can see and hold directly. Children can see and hold directly, for example: CPU, Monitor, Mouse, Keyboard, and Printer. The introduction of hardware must be equipped with explanation of the function of each tool by directly practicing (learning by doing).

This research was conducted with parents who have children aged four to six years old. Parents who have six year old children totaled twenty-one children, five year old children totaled seven children, and four year old children amounted to two children. Children who were given the use of cellphones totaled thirty children. This compares best with Herman's opinion (2016) Children between three until five years years old, can already use almost complete sentences. Therefore the importance of being given technology through multimedia, by playing spiritual songs or children's songs and playing children's cartoon movies that are educational with the assistance of teachers and parents so that it can be seen how with the assistance of teachers and parents so that it can be seen how the child's ability to learn and can develop the child's ability with the assistance of teachers and parents. children's ability to learn and can develop children's abilities with technology. Children aged between five and six years can be introduced to computer hardware (hardware) that children can see and hold directly. Children can see and hold directly, for example: CPU, Monitor, Mouse, Keyboard, and Printer. The introduction of hardware must be equipped with explanation of the function of each tool by directly practicing (learning by doing)

In contrast to the opinion of Nugraha et al (2019) that children aged 2-5 years should be limited to using cellphones for a maximum of 1 hour under supervision. Limited in the use of cellphones for a maximum of 1 hour under the supervision of adults. Supervision of an adult. In order to reduce children's exposure to radiation from the cellphone screen. Excessive cellphone use in children will interfere with children's mentality such as

Hyperactivity Disorder (ADHD), which makes children lose focus and have difficulty controlling their behavior (Sundus, 2017). In addition, it causes the effect of addiction (Pramono et al, 2021), and the lack of development of cognitive abilities because children only sit quietly while playing cellphones. Cognitive abilities because children only sit still while playing cellphones (Yahman & Rakhmawati, 2019). Meanwhile, the children in this study used cellphones with a stretch of time as in the following Table 1.

Table 1. Table time limit for children using cellphones

Use	F
15 Minutes	8
20 Minutes	3
30 Minutes	10
1 Hours	7
2 Hours	2
More that 2 Hours	0
Total	30

From the table it can be seen that more use cellphones for 30 minutes. Figure 2. is the percentage.

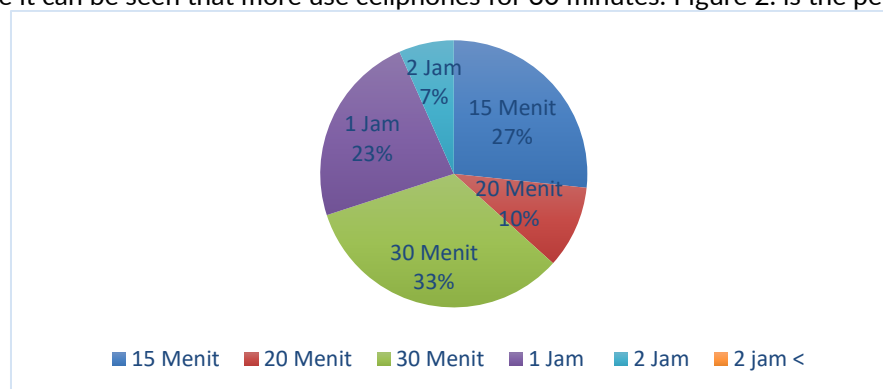


Figure 2. Percentage Time Limit For Children Using Cellphones

While the children in this study use cellphones by opening applications such as the following Table 2

Table 2. Apps accessed by children

Applications	F
Youtube	15
Tiktok	7
Game	10
Instagram	2
WhatsApp	1
Solidkids	1
Total	30

From the table it can be seen that more use the Youtube application as many as 15 children. The following is the percentage.

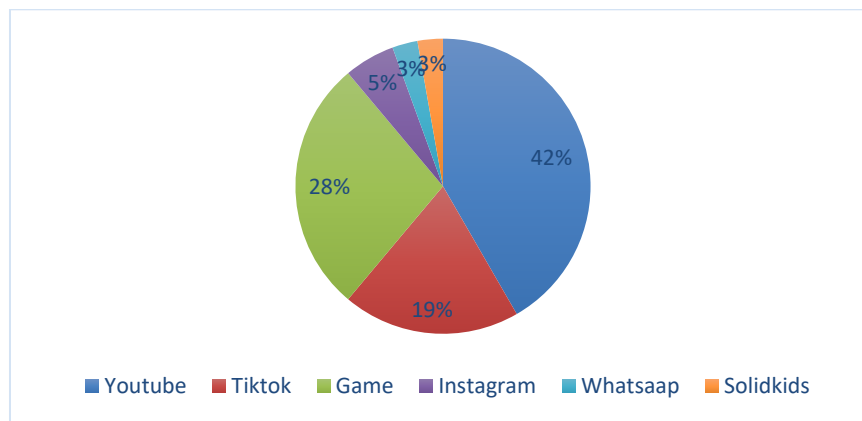


Figure 3. Apps Accessed By Children

From the application chosen for children to learn, it is expected not to interfere with the intelligence and development of children. However, many parents complain that the adverse effects of cellphones for children become disrupted children's sleep, addiction, anxiety, interfere with learning time, difficult to interact with others, emotional, imitate bad words in YouTube videos, irritable, closed personal, damage the eyes, damage children's creativity, and disrupt children's language development. This opinion is in line with the opinion of Damayanti et al (2020) that the adverse effects of using cellphones can make children emotionally unstable (when addicted to cellphones and make it a routine activity, when the child's cellphone is asked by parents, they will scream and cry), forget time, lazy to eat, difficult to advise, lazy to study, red eyes, lack of hearing when called, have a desire to have something the same as what they are watching, do not focus when communicating, lazy activities, reduced appetite or even forget to eat, speech delay, experience developmental disorders in children's motor skills, and have an impact on the development of their intelligence. From the above opinion, it is known that the adverse effects of using technology, one of which is cellphones on children, will have an impact on children's social or decreased interpersonal intelligence. Therefore, it is necessary to provide restrictions on the use of cellphones, parents admit to providing restrictions with the following Figure 3.



Figure 3. Parents Provide Restrictions On The Use Of Cellphones For Children

The percentage picture above, we can see that many parents have imposed limits on the use of cellphones on children, but there are also parents who have not set limits for children. If the child usually knows when to stop playing cellphones, there is no problem as long as it is in accordance with the limits of cellphone use according to their age. However, if children do not know that they have limits on cellphone use, there will be many negative impacts that will affect their development. Based on the opinion of Setianingsih et al (2018) excessive use of cellphones without supervision and limits will lead to negative characters in children such as children having difficulty focusing on learning and being easily agitated, such as when children are busy playing or watching on cellphones, and parents ask to stop, the child will be difficult to ask to stop and may be emotional (angry). The results of the data also show that the child's language skills will be disrupted, which can affect the child's ability to communicate with others. As a result of children's addiction to cellphones, it can make children rarely communicate with others as a result the child will have difficulty in making or connecting words when speaking and speaking in circles (convoluted) so that it makes the interlocutor difficult to understand (Aminingrum, 2023). Actually, giving cellphones to children is good provided that the use is appropriate and according to the age of the child. In addition, parents need to apply the right time limit when children are using cellphones to avoid the negative impact of excessive cellphone use (Pramono et al., 2021). This opinion is in accordance with the opinion of Aminingrum (2023) that parents who can control and apply limits in the selection of content or media containing positive information will have a positive impact on child development.

In addition to adverse effects, there are also good effects of using cellphones. In the results of this study, it can be seen that the good impact of using cellphones is to increase insight, respond quickly, increase vocabulary, be able to count reading, increase creativity, find ways to learn, memorize short letters, and entertain. The positive impact of cellphones for children according to Alia & Irwansyah (2018) are (1) Can increase children's insight. Children will very easily find various information from cellphones but it is the parents who must find and provide information from these cellphones while still providing supervision and limits; (2) Can add friends from relationships that children build without being limited by distance and time. In this case, the role of parents is obliged to supervise the friendships that are established in their children in order to prevent children from falling into bad associations. (3) Making it easier for children to find and know the latest information by using cellphones. However, parents must choose the latest information that is suitable for children. (4) Children can increase basic knowledge, namely reading, counting, and other knowledge by utilizing educational technology for basic knowledge. This is so that children learn fun, easily understand basic knowledge, and are not easily bored. (5) Parents can use technology as a solution so that their children do not easily feel bored when learning. Through available applications for learning and interactive videos related to learning in children, children will be more interested in learning and not easily feel bored, because technology has a large selection of educational programs that are fun and educational for children. (6) Building children's creativity, from the information that children can get from technology, children can practice their creativity by realizing the insights they get. (7) Can make children more fluent in technology, especially information technology. If from an early age children can operate or use technology, and learn how to make something related to technology, of course children can be more fluent with technology.

There is also an opinion according to Annisa, et al (2022) that the positive impact on children's language development is that it can support the addition of new vocabulary both general and foreign languages. It can also help the development of cognitive abilities and coordination of children's hands and eyes and children can learn other cultures. In the data results by the parents also mentioned that when facing challenges in limiting children from playing cellphones, namely cranky, difficult to balance cellphones and learning, difficult to regulate, dependence, anger, anxiety and lying. Therefore, parents divert it to other activities to reduce cellphone use, namely setting time limits, limiting the content viewed, selecting applications, diverting to other games, making time rules, and telling children the dangers of playing cellphones for too long. from the results of research data, it can be seen that parents have made efforts to prevent the negative impact of cellphones. There are also other suggestions to prevent the negative impact of gadget use on children are (1) Parents provide time limits to children in using cellphones. For example, children are allowed to use cellphones under the supervision of parents when children have finished studying and doing assignments. (2) When children use cellphones, there must be adults to accompany and supervise children using the internet. (3) Parents become role models for their children, one of which is by setting limits on the use of cellphones when needed so that children can imitate not to interact with cellphones too often. (4) Parents make various creative games with children, so that children are distracted from cellphones. Creative activities can be seen for example in educational parenting videos (Aminingrum, 2023).

Actually, the use of children's technology media with parents can limit the content accessed by children, help accelerate learning, build good interactions between children and parents, help children understand related media content watched, and help children apply it to the real world (Limardi et al., 2019). There are also other benefits, namely being able to introduce how to apply technology to support the education process, can reduce the use of bad gadgets, can teach children to use gadgets wisely, and children can understand the functions and benefits of cellphones to children (Nurhayati, 2023).

The influence of cellphones on children is very important for parents to understand so that children are more focused in their use of cellphones. The results of this study are expected to motivate parents to supervise and limit the use of cellphones for young children. In addition, parents must better understand the applications that their children will use, the limits of use, and how to restrict their children from accessing content that is not suitable for them. The limitations of this study include the distribution of questionnaires in the form of Google Forms due to approval from the school and parents, limited analysis, no direct observation, and no in-depth interviews with parents. Recommendations for future researchers include efforts to educate parents so that they understand the limitations of cellphone use, the benefits of cellphones for children, and appropriate applications for children; conducting more detailed interviews with parents, observing cellphone use among children, and exploring the long-term impact of parenting styles on child development.

4. CONCLUSION

Currently, technology is widely used by all circles, even from an early age. This can have a negative impact on children after an early age, one of which is the lack of development of children's interpersonal intelligence. Children will focus on technology, for example cellphones that are widely used. As a result, children are less socialized with the surrounding environment, there are also other problems, namely the development of children's language is disrupted, so children will also have difficulty in responding to interactions with others. In addition to the impact of hunting, there is also a positive impact, namely adding insight, quick response, increasing vocabulary, being able to count reading, adding creativity, finding ways to learn, memorizing short letters, and entertaining.

The good impact of technology will be absorbed by children if parents wisely choose useful shows and can discipline children in the use of technology. The results of this study are expected to motivate parents to supervise and limit the use of cellphones for young children. In addition, parents must better understand the applications that their children will use, the limits of use, and how to restrict their children from accessing content that is not suitable for them. The limitations of this study include the distribution of questionnaires in the form of Google Forms due to approval from the school and parents, limited analysis, no direct observation, and no in-depth interviews with parents. Recommendations for future researchers include efforts to educate parents so that they understand the limitations of cellphone use, the benefits of cellphones for children, and appropriate applications for children; conducting more detailed interviews with parents, observing cellphone use among children, and exploring the long-term impact of parenting styles on child development.

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