

Impact of Gadget Use Cognitive Development

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ABSTRACT

In the current era, it is a time where technology is growing so that technology users can more easily search for many things, both nationally and internationally, with ease and in a short time. This results in a change in the mindset and behavior of humans. One of the technological tools that influence human behavior is a gadget. Gadget is a technological tool that can be used to find information and communicate. Gadgets not only change the behavior of adults but children as well. Early childhood tends to like new things and interesting games that he can find in gadgets. At this time children spend more time with gadgets which will certainly affect children's development, especially in children's cognitive development. Parents must supervise the use of gadgets by children so that the negative impacts caused by gadgets can be avoided. The purpose of this study is to describe the use of gadgets on early childhood cognitive using the literature study method. The literature study uses reference sources, namely articles, journals, and documents that are relevant to the problem to be studied by the researcher. The results of this study are that the gadget facilities provided by parents for early childhood really need close supervision so that the impact of gadgets does not have a negative impact that can hinder children's cognitive development. So, parents can make gadgets as a fun learning medium for children that can improve their cognitive abilities.

Keywords: *The Impact of Gadgets, Cognitive Development, Early Childhood*

1. INTRODUCTION

In the current era, technology development is very rapid. There are many types and features that are brought up by technology which are an important need for humans today. Because technology is needed to find information and communicate anywhere, anytime, at a cost according to the economy of its use. Technology has a positive and negative impact depending on the user how to use it. One type of technology is a gadget that can be used as a communication tool, seeking information, entertainment, and can mine the knowledge of its users. This is what makes humans dependent on gadgets [1].

These gadgets can help improve children's cognitive skills, in developing learning skills faster because gadget features are more interesting for children than books [2]. The use of gadgets in everyday life not only affects adults but in early childhood development it can also affect children's cognitive development.

Early childhood is a child who is aged 0-6 years, this period is often called the Golden Age because this period is a period where child development develops

rapidly and must be developed properly. Because at an early age, is a very rapid development, at this age children are very sensitive and potential in something, children have a very large curiosity. It can be seen that children often question about what they see. In addition, children have their own characteristics that come from genetic factors and environmental factors [3].

Children have many aspects of development, namely moral religion, physical motor, cognitive, social emotional, language and art. This aspect of development is very important, including aspects of cognitive development.

According to [4], cognitive development is a very important aspect because it is the level of intelligence of a person with various interests in generating ideas in learning. Cognitive development is a very significant aspect. For stimulation in cognitive development, it is necessary to develop methods related to cognitive. According to Williams in [5] Cognitive can be translated by how children behave and how to respond to a problem. Good stimulation is very important in developing children's cognitive one way through play and games. According to [6] Play is a fun activity for children and is flexible in nature. By playing, children are free to explore and hone their abilities. When

playing, children will find something that will be conceptualized in their minds that will develop children's cognitive. There are two categories of games, namely traditional and modern games, traditional games are games that come from culture, while modern games are games created from technology, one of which is gadgets [7].

However, gadgets have impacts, both positive and negative, depending on how they are used. Nowadays, gadgets help form children's mindsets in regulating the speed of play, managing strategies and game rules. So that children's cognitive can develop but under parental supervision. In addition, this gadget also has a negative impact if its use is not appropriate, namely language skills, behavior, and the formation of children's character.

So it can be concluded that the impact of using gadgets can affect cognitive development both positively and negatively depending on the supervision carried out by parents.

2. LITERATURE REVIEW

The times are developing very quickly so that development is also experiencing rapid development as well. Gadgets are modern game tools that are often used by children so that they can affect children's development, including cognitive development. Gadgets are electronic devices for example: computers, mobile phones, games and others that can provide information quickly [8].

Children are part of the people affected by the use of gadgets. In this case, the development of the child becomes disturbed if there is no guidance from parents in its use, especially if the child is already dependent on gadgets, it will result in the child not caring about what is around him. Children who are dependent on gadgets, children can forget their daily activities such as studying, eating, bathing, and even communicating are not interested in games that can stimulate physical-motor, cognitive and language development, such as role playing with dolls, playing blocks, etc. Children who are dependent on gadgets will close themselves to their environment, which makes children as individualistic children, of course this will have an impact on their development including cognitive development.

From the problems caused by gadgets, parents must be aware of the impacts that gadgets will cause that can damage the development of children who will become the nation's next generation. This requires serious handling.

2.1. Gadgets

Gadgets are tools related to today's technological developments, namely mobile phones, tablets, notebooks, etc. This gadget can make it easier for humans to find

information and communicate anywhere and anytime. Gadgets are also one of the most influential technologies in today's era. The use of gadgets is already owned by everyone, not only urban communities, but also people whose economy is middle to lower.

Gadgets are electronic devices that have many functions to offer. Gadgets provide various facilities such as communication media, news, can access knowledge, not only that gadgets provide games and YouTube. With this facility can attract parents, teenagers and children. From the above opinion it can be concluded that, gadgets are electronic devices that have the latest features and applications that can help simplify human life.

2.2. Early Childhood Development

Cognitive is a process that occurs in the nervous system when humans are thinking. This cognitive development develops gradually, in line with the development of physical development and nerves that are in the center of the nervous system or brain [9] Cognitive development is one aspect of human development concerned with knowledge which means how humans learn and think environment. [10].

Cognitive development of early childhood includes: 1) learning and problem solving, with the process of solving problems in everyday life in an easy and understandable way by the community and being able to apply the knowledge that has been obtained; 2) logical thinking, covering various differences, classifications, patterns, taking initiative, planning, and recognizing cause and effect; and 3) symbolic thinking, including the ability to recognize, mention, and use the concept of numbers, recognize letters, and be able to represent various objects and their imagination in the form of images (Permendikbud No. 137 of 2014, in [11]. In achieving cognitive development, children will be stimulated according to their age, in children 4-6 years the scope of cognitive development is divided into 3, namely: 1) learning and problem solving, 2) logical thinking and 3) symbolic thinking. Researchers focus on cognitive development with the scope of logical thinking on the level of achievement of development children's in object classification. [12].

Thus, it is concluded that early childhood cognitive development is a way of how children think in meeting their surrounding environment so that their knowledge can increase. So the ability to think children can explore themselves, other people, animals and plants, as well as various objects around them so that they can gain this knowledge.

2.3. Impact of Gadget Use on Early Childhood Cognitive Development

Use of gadgets is inseparable from the impact it will give, especially for early childhood, both positive and negative impacts for early childhood depending on how it is used.

The games that children do are usually doodling in picture books, playing hide and seek, and other games that use simple game tools, but nowadays children are more interested in playing with modern games, namely games in gadgets. Games that are often played by children are usually distributed through scribbles in picture books or guessing puzzles with simple game tools, but nowadays, technology is considered to help in developing children's cognitive skills quickly and better because now the game can be done by children at electronic devices such as interactive applications, video games, and other applications based on educational programs available on various types of devices on gadgets or smartphones [2].

Technological developments that are happening now in the field of information and communication have an impact on the use of tools called gadgets. Gadgets have benefits, namely helping in preparing work, filling spare time, making it easier to find information and even being entertainment. The use of gadgets can have both good and bad impacts, especially for early childhood if it is not monitored by parents or those closest to them. In the current era, early childhood prefers to play with gadgets rather than listen to their parents' orders and are often angry when given orders by their parents. This is one of the effects of children's addiction to using gadgets. In giving gadgets to children without adult or parental supervision, it will tend to have a negative impact on children.

[2] argues that if children play puzzles, draw, count, and watch educational videos according to the age of the child, then the gadget will have a positive impact which will increase the ability to remember, language so that children's cognitive development will increase rapidly. But there must be parental supervision so that children are not addicted to playing gadgets. Children who are addicted to gadgets cognitively will be able to develop knowledge and thinking skills through games contained in gadgets. Early use requires parental supervision so that children's development can develop optimally (For example: through smartphones or computers that have applications for drawing and coloring, arranging blocks/pictures which of course have a positive impact on children's brain development. With gadgets, children will also more eager to learn because this kind of application is usually equipped with the latest features that can improve children's imagination skills. The use of gadgets as learning media has a positive effect on improving children's thinking and brain power [13].

Games have a positive and negative impact. negative impact When children play games from gadgets that can stimulate learning, stimulate knowledge, which will have a good impact on children's cognitive development, but if we give children games that contain violence, pornography, fights will have a bad impact on children's development [14].

2.4. Solutions from Gadget Addiction to Early Childhood Cognitive Development

Setianingsih in [15] To maximize supervision of children when playing with their gadgets, there are several important things that need to be considered, namely: 1) making the parents' personal email account an account children's main activities, so that all children's internet activities are directly integrated and monitored in parents' email accounts, 2) for social media applications, only allow children to make friends and follow friends of the same age, 3) make No Gadget regulations from sunset to midnight nine nights. This is an effective prime-time for children to learn, 4) for elementary or kindergarten age children, children should be limited to playing gadgets for no more than two hours per day, 5) parents must be role models by not showing high intensity in using gadgets, 6) Don't scolding children blindly when they find out they are exposed to negative content in cyberspace. It is better to provide assistance, direction, and explanations that are appropriate and easily understood by the child's language.

Regarding efforts to prevent the use of gadgets on the use of gadgets, namely, parents' opinions on the use of gadgets in children, 2) parents' views on the impact of using gadgets for children, 3) efforts carried out by parents to prevent dependence on the use of gadgets, gadgets 4) obstacles in preventing dependence children to gadgets, 5) parties who help in preventing children's dependence on gadget use

3. RESEARCH METHODS

This study aims to determine the impact of using gadgets on cognitive early childhood. The method used in this research is a research study literature, where is the data retrieval system in this study sourced from books or journals analyzed based on existing problems. Literature study is a study used in collect information and data by assistance with various materials available in libraries such as documents, books, magazines, historical stories, etc. [16]. According to [17], literature study is a data collection technique by conducting a review study of books, literature, notes and reports that have to do with the problem being solved. Based on the research, namely the impact of using gadgets on early childhood cognitive, this type of research is a literature study by examining several journals related to children's language development. The results of various literature reviews will be used to see the impact of gadget use on early childhood cognitive.

4. RESULTS AND DISCUSSION

Technology today is growing rapidly. One example of technology is gadgets, every individual already has a gadget in the form of a laptop, smartphone and so on. Users today are not only adults but children. Children have now become active consumers where many electronic products and gadgets make children their target market. The impacts caused by these gadgets are very

diverse, therefore adults must monitor the use of gadgets for children, so that gadgets are used properly and can develop children's development, especially cognitive development.

The results of the [18] research, Gadgets have a negative and positive impact on children's cognitive development, which depends on the intensity of the duration of children using gadgets, the type of applications used by children and supervision when playing gadgets. The negative impact is a decrease in concentration, loss of focus and a decrease in learning achievement. And the positive impact is that it is easier for children to gain new knowledge, such as getting new vocabulary and imitating movements and songs.

Research by [19] shows that the social development of early childhood will be affected by the gadgets they have. The bad impact given by gadgets in excessive use of gadgets has a very bad impact on children's social and emotional development. Such as being an individual who is difficult to get along with, being a loud child, having trouble sleeping, having low creativity, and the threat of intimidation that the child will receive. The solution to the excessive use of gadgets in early childhood is that parents play an important role in regulating the use of gadgets, guiding in all the rules in using gadgets, giving time rules in playing gadgets so that gadgets do not become a problem in the social development of early childhood.

[20] The results show that 5 out of 10 children who start to become addicted to smartphones have decreased cognitive abilities. Children are too unfocused on learning and only remember the games they play at home

5. CONCLUSION

Current developments make technological developments increasingly rapid. One of the technological developments is gadgets. Various kinds of gadgets are, smartphones, laptops, etc., which are very much needed in modern times. Gadgets are not only used by adults but early childhood also use gadgets.

Gadgets have positive and negative impacts on children's development, especially children's cognitive development. If the gadget is used properly and with the correct usage rules, it will have a good impact on children's development, on the contrary if there is no supervision from parents, children will become addicted to gadgets that make children lazy to learn and communicate with their environment which causes not optimal child development.

We can conclude that adult or human supervision is very important so that children's development can develop optimally.

REFERENCES

[1] R. Rosdiana, K. Wuladar, and G. B. Geroda, "Dampak Penggunaan Gadget pada Pelajar di SMP Negeri 33 Samarinda," *J. Abdimas Mahakam*, 2018, doi:

<https://doi.org/10.24903/jam.v2i1.292>'.

[2] Sundus, "The Impact of using Gadgets on Children," *J. Depress. Anxiety*, vol. 7, no. 1, 2018.

[3] P. H. Pebriana, "Analisis Penggunaan Gadget terhadap Kemampuan Interaksi Sosial pada Anak Usia Dini," *J. Obs. J. Pendidik. Anak Usia Dini*, vol. 1, no. 1, pp. 1–11, 2017.

[4] Khadijah, "Pengembangan Kognitif Anak Usia Dini," *Medan Perdana Publ.*, vol. 1, no. 1, pp. 27–39, 2016.

[5] F. Harsela and Z. Qalbi, "Dampak Permainan Gadget dalam Mempengaruhi Perkembangan Kognitif Anak di TK Dharma Wanita Bengkulu," *J. PENA PAUD*, vol. 1, no. 1, 2020.

[6] S. Marlina and R. Pransiska, "The Effectiveness of Traditional Games on the Development of Social Ability of Children in Kindergarten of Baiturridha Padang Pariaman," 2018, doi: <https://doi.org/10.2991/icece-17.2018.57>.

[7] A. Wijayanti and Y. B. Gunawan, "Students' Perceptionstowardsthe Utilizationof 'Whatsapp'For Vocabularyteaching And Learning," *ADJES (Ahmad Dahlan J. English Stud.*, vol. 5, no. 2, pp. 78–91, 2018.

[8] P. A. Chusna, "The Effect of Gadget Media on Children's Character Development," *Res. Dyn. Relig. Soc. Commun. Media*, p. 316, 2017.

[9] M. Jamaris, *Orientasi dalam Psikologi Pendidikan*. Jakarta: Ghalia Indonesia, 2013.

[10] Desmita, *Developmental Psychology*. Bandung: PT Youth Rosdakarya, 2010.

[11] I. T. Nur, M. K. Hossain, and M. Archajee, "Study on Bacteriological and Physicochemical Conditions of Fish Hatcheries Water Along with the Antimicrobial Traits," *Int. J. Life Sci.*, vol. 8, no. 2, pp. 262–270, 2020.

[12] S. Arimbi, Y. D. Saparhayuningsih and M. Ardina, "Improving Cognitive Development through Mind Mapping Activities," *Sci. J. Potential*, vol. 3, no. 1, pp. 64–71, 2018.

[13] Elfiadi, "The Impact of Gadgets on Children," *Itqan*, vol. 9, no. 2, pp. 97–110, 2018.

[14] Z. V. Rivai, *Manajemen Sumber Daya Manusia untuk Perusahaan dari Teori ke Praktik*. Jakarta: PT Raja Grafindo Persada, 2015.

[15] J. Syifa, Layyinat Setianingsih, Eka Sari Sulianto, "Dampak Penggunaan Gadget terhadap Perkembangan Psikologi pada Anak Sekolah Dasar," *J. Ilm. Sekol. Dasar*, vol. 3, no. 4, pp. 527–533, 2019.

[16] Mardalis, *Metode Penelitian suatu Pendekatan Proposal*. Jakarta: Bumi Aksara, 1999.

[17] M. Nazir, *Metode Penelitian*. Bogor: Ghalia Indonesia, 2014.

- [18] H. Febey and Q. Zahratul, "The Impact of Gadget Games in Affecting Children's Cognitive Development in TK Dharma Wanita Bengkulu," *PENA PAUD J.*, 2020.
- [19] P. Miranti and L. D. Putri, "Waspada Dampak Penggunaan Gadget Terhadap Perkembangan Sosial Anak Usia Dini," *J. Cendekiawan Ilm. PLS*, vol. 6, no. 1, pp. 58–66, 2021.
- [20] Y. Sawitri, I. A. Yannaty, S. I. Widyastika, T. D. Harumsih, and H. F. Musyarofah, "Dampak Penggunaan Smartphone terhadap Perkembangan Anak Usia Dini," 2019.