



THE INFLUENCE OF GADGET USE ON CHILDREN'S DEVELOPMENT AT ELEMENTARY SCHOOL AGE

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Abstract

Along with current developments, the impact of globalization has brought various technological developments, changes that are felt in almost all aspects of people's lives, both in the technological, economic, educational and social fields (Hidayat, et al, 2021). Especially in the field of technology, which makes using media and technology a challenge for children's development. A gadget is a small electronic device that has a special function. From day to day gadgets always appear to provide the latest technology that makes human life more practical. There are many negative impacts that gadgets can have, namely that they can harm health, can interfere with children's development, and are prone to action. crime, can affect children's behavior, difficulty concentrating on the real world, disrupted brain function in children (Pre Frontal Cortex), and can become dependent on gadgets (Introvert). Gadget can also have a positive impact on children's development if its use is balanced with interaction with the surrounding environment because it can increase children's creativity and provide broad insight. By allowing minors to use too sophisticated technology such as gadgets, it can change a child's behavior, for this reason the role of parents is very important to supervise, control and pay attention to all children's activities to see better child development. This research aims to find out what impacts the use of gadgets has on students. This research uses the literature review method by analyzing research that is being conducted on a special topic which is part of the scientific field.

Keywords : Gadgets, impact, child development

Introduction

In the current era of globalization, communication tools and technology are increasingly sophisticated, with the emergence of gadgets that can provide several benefits for students' use. Gadgets are sophisticated items created with various applications that can provide various news media, social networks, hobbies, and even entertainment (Widiawati and Sugiman, 2014). According to Mardhi (2015) smartphones can be used as a means to increase students' knowledge about technological advances so that students are not said to be turning a blind eye to progress in the era of globalization. Students can access various educational information using gadgets. As used to search for various information about material that is considered difficult. Apart from being able to bring benefits, gadgets also have an influence and impact on children's development and student learning achievement. Child development is development that occurs in various aspects of a child. Aspects that develop include cognitive, motor, physical, language and psychosexual aspects. Learning achievement is the result or level of ability that students have achieved after following the teaching and learning process within a certain time, in the form of changes in behavior, skills and knowledge (Hidayat & Erfian Junianto, 2017). At this time, the various potentials that exist within humans are developing rapidly. The early age period is a golden period where physical, motoric, intellectual, emotional, language and social development takes place quickly. From birth to approximately two years of age, a child's development is closely related to their physical condition and health. Here, the need for adult protection to

meet their physical and health needs is greater than in later times. The development of his abilities, especially for motoric development, is very rapid. For ages 3-5 years, it is characterized by efforts to achieve independence and socialization. These stages are very important for later life. In the early stages of life, starting at around 3 years of age, children begin to be able to acquire skills as the basis for the formation of knowledge and thought processes. Gadgets are tools used to communicate according to current developments which of course have the benefit of making it easier for people to carry out their daily activities. According to Pebriana (2017), gadgets can influence the thought patterns and behavior of people who use them and feel addicted because they provide a variety of applications that people can easily use in their daily lives. This gadget is also a real form of progress over time. Gadgets are currently used by all levels, both upper and lower middle class. Gadgets also come in many models and shapes and offer many interesting features that can be used by their users (Rozalia, 2017).

Gadgets were initially only used by older people, but nowadays we see that the use of gadgets has no age limit and has even become commonplace for use by people from all walks of life and at any age level. Even in this era, the largest number of gadget users are children aged around 6-12 years. Many things can happen when children who are still in elementary school use gadgets. Looking at the positive side, using gadgets provides positive benefits for children, namely being able to learn online through applications on gadgets which can be accessed anywhere and anytime, according to Mujib (2013) Gadgets can be used as a learning medium, if students use gadgets with high intensity, students will often use the internet and students will achieve learning outcomes. Handrianto (2013) also stated the positive impact of using gadgets in developing imagination and training children's intelligence. Seeing pictures, writing and numbers will foster children's creativity and intelligence and develop their reading, counting and curiosity to solve problems. Apart from providing benefits, gadgets can also have a negative impact on students so that they will cause problems in their learning process. According to Hasanah & Kumalasari (2015), if students often use gadgets excessively, problems will arise in their learning process. This is in line with Saroinsong (2016) who stated that students who frequently use gadgets can harm their interpersonal skills. Another impact that will affect student learning achievement is that instead of having to study, students prefer to rely on gadgets (Harfiyanto et al, 2015). Apart from that, the impact of gadgets is that children will also find it easier to access and download online game applications. This online game certainly reaps a lot of controversy among parents. When these children focus on their gadgets (playing online games) they will ignore the people around them and not listen to someone talking even when the conversation is directed at them. They will be more inclined to be individualists, that is, they don't care about the environment around them. Even though at that age children should leave the house to socialize with their peers to play physical games such as traditional games in their area. Children can also easily download online game applications. These online games certainly have many cons. among parents. When these children focus on their gadgets (playing online games) they will ignore the people around them and not listen to someone talking even when the conversation is directed at them. They will be more inclined to be individualists, that is, they don't care about the environment around them. Even though at this age children should leave the house to socialize with their peers to play physical games such as traditional games in their area.

The technology that has developed today certainly has many benefits such as gadgets. However, if you look at the research conducted by the researchers above, it turns out that gadgets have an influence on student achievement. This happens because students have not been able to use gadgets properly. Sometimes when students come home from school and are at home playing with gadgets for an unspecified amount of time, students become dependent. Amelia & Nugraha (2013) stated that when a child's gadget is not in his hand, he will continue to ask for his gadget. So the child can be said to be dependent on gadgets. If a child is dependent, it will affect his learning process. For example, their enthusiasm for learning decreases, they become undisciplined with their time. Even when children are playing, eating, when going to sleep, children will continue to use gadgets. If students often use gadgets, their enthusiasm for learning will decrease, they will be lazy about studying and will not be disciplined with their time. However, in this research there is also the influence of gadgets that have a positive impact on users because they can be used as learning aids that make it easier for students to find the information and learning materials that students need. This agrees with Priatno & Marantika (2017) who state that utilizing information technology has a positive impact on children's achievement, if they remain under parental supervision. In line with Priatno and Marantika Mujib (2013) stated that using gadgets can have a positive impact and can be used as a learning medium for students to achieve learning outcomes. Based on the research studies above, it can be seen the effects that arise when using gadgets. In fact, in the research above, there are positive and negative impacts on using gadgets. There are low, medium and high levels of influence. Lack of proper and correct use of gadgets can have a high impact on student achievement and will result in student learning achievement decreasing. Seeing conditions like this, the author conducted a literature review by looking for several relevant research results. Therefore, the author's aim is to review whether the influence of gadget use can affect children's development.

Research Methodology

This research uses the literature review method. Literature review is an analysis of research that is being carried out on a special topic which is part of a scientific field. In this research, data collection was obtained from articles in online journals. Can be accessed via (<https://scholar.google.co.id/>). Researchers searched articles using the keywords "influence of gadgets" and "student development" and "student achievement". Based on searches for the keywords "gadget" and "student achievement" the researchers obtained various kinds of articles. The criteria for the selected articles were a discussion of gadgets and student development

Result & Discussion

Understanding gadgets

Estimologically, gadget is a term in English which means a small electronic device that has a special function. In Indonesian, gadgets are called "acang". One of the things that differentiates gadgets from other electronic devices is the element of "newness". Gadgets are devices related to current technological developments. Which includes gadgets, for example tablets, smartphones, notebooks, and so on. This means that from day to day gadgets always appear that provide the latest technology that makes human life more practical. Gadgets are small electronic devices that have special functions. These include smartphones such as iPhones and BlackBerries, as well as notebooks (a combination of portable computers such as notebooks and the internet). From this opinion, the author can conclude that, a gadget is an electronic device that has various service features and applications that provide the latest technology that helps human life become more practical and has special functions. According to Al-Ayouby (2017) children will feel more dependent on gadgets because of the many interesting games that are provided and can be used every day compared to studying or socializing in the school environment. According to Witarsa, et al (2018), this gadget can make communication between friends easier even from a distance. By using the applications on these gadgets, children can exchange messages and interact with friends even from long distances. Children can even build relationships and increase friendships from various regions just through small electronic objects such as gadgets.

Understanding child development

According to Fivi (2010:117) Development is increasing ability (skill) in more complex body structures and functions in a regular and predictable pattern as a result of the maturation process. Development concerns the process of differentiation of body cells, body tissues, organs and organ systems which develop in such a way that each can fulfill its function, including emotional, intellectual and behavioral development as a result of interaction with its environment. Development is a mental change that takes place gradually and over a certain time, from simple abilities to more difficult abilities, for example intelligence, attitudes and behavior. This mental change process also goes through a maturation stage first, for example the ability to sit and stand. According to Encep Sudirjo and Alif (2018), development is the process of changing the functional capacity or working ability of the body's organs towards a state that is increasingly organized (reliable) and specialized (according to their respective functional abilities). Development can occur in the form of quantitative and qualitative changes. Quantitative changes are changes that can be measured. Qualitative changes are changes in form, getting better, smoother, and so on, which basically cannot be measured. For example, a baby who can't walk yet > staggers 2-3 steps > runs smoothly for several steps. According to Rati Dwi (2017:3) growth and development are two different events but cannot be separated. Santrock (in Masganti, 2017) defines development as the pattern of change that begins at conception and continues through the life span. Santrock states that early childhood development includes aspects of physical, cognitive, social emotional, social context, moral, language, self-identity and gender development. Kail and Reese (in Masganti, 2017) explain that the scope of early childhood development includes independence, moral, social, language, physical and cognitive development. According to Baltes (in Christiana, 2014: 3) development includes gains (growth) and losses (decline), so throughout an individual's life, apart from growth there is also decline. For example, when children enter school, their knowledge and cognitive abilities increase, but in general their creativity decreases because they often have to follow certain rules that are too strict, which actually hinders their creativity. Another opinion, according to Bijau and Baer (in Enung, 2010), states that psychological development is a progressive change that shows the way organisms behave and interact with their environment. A happy childhood is the basis for children, through learning children will develop and be able to learn new things. Development is the process of change in growth at a time as a function of maturity and interaction with the environment (Libert et al in Enung, 2010).

Children's brain development power

The development of the brain at a young age is so rapid, it is optimal if at this time parents can optimize their child's abilities. Children's enthusiasm for various stimuli is quite high, coupled with their curiosity about things and their preference for imitating what they see. Not only that, children's memory is still very high. Brain development at this age of children is very good, it is very unfortunate if there is a lack of parental support in improving children's abilities. According to Jovita Maria Ferliana, Psychologist from Royal Taruma Hospital, from a neurophysiological perspective, the brains of children under 5 years old are still at a developmental stage. Children's brain development will be more optimal if children are given direct sensory stimulation. For example, touching objects, hearing sounds, interacting with people, and so on. If children under 5 years old use gadgets continuously, especially if they are not accompanied by their parents, the result is that the children only focus on the gadgets and do not interact with the world around them. During the first year, a child must develop a basic trust, the second year he must develop it leading to the discovery of his own identity. Then, when children are around 2-3 years old, they learn a lot about various kinds of coordination and visiomotor skills. Sensomotor activities can be integrated into coordinated activities. This is important, for example, when modeling a picture or object. What is seen with the eyes must be moved by motor skills into a certain pattern. Around the third year, all locomotor patterns can be mastered. These activities do not escape the role of information media and technology along with children's development.

The early age period is a golden period where physical, motoric, intellectual, emotional, language and social development takes place quickly. From birth to approximately two years of age, a child's development is closely related to their physical condition and health. Here, the need for adult protection to meet their physical and health needs is greater than in later times. The development of his abilities, especially for motoric development, is very rapid. For ages 3-5 years, it is characterized by efforts to achieve independence and socialization. These stages are very important for later life. In the early stages of life, starting at around the age of 3 years, children begin to be able to acquire skills as the basis for the formation of knowledge and thought processes. Childhood is often referred to as The Golden Age, namely the golden age, where all the advantages or privileges possessed during this period will not be repeated a second time. That is why this period is often referred to as the determining period for the next life. In the golden age, this is also a golden opportunity for intervention that can accelerate the development of children's lives. If this period is simply released from the supervision of parents or educators, it will usually be detrimental to the child's future growth. According to Snowman, as quoted by Padmonodewo, the characteristics of preschool children (3-6 years) include: physical, social, emotional and cognitive aspects of children. Descriptively, these characteristics are as follows: (1) Children's Physical Development Observations on physical development reveal that growth is a growth process starting from the head to the feet and also a growth process starting from the middle towards the edges of the body, and gross motor development develops first. before fine motor skills. Control of the head and hand muscles is achieved before control of the leg muscles. In the same way, children can control their arm muscles before they can control the fine motor skills in their hands needed to perform tasks such as writing and cutting with scissors (2) Children's Social Development One element of social development is personality development. The role of parents is to provide many opportunities for children to build confidence, make various choices and experience success from the choices they make themselves. In addition, helping children to recognize their own needs and feelings is important in building children's trust. Children must feel that their ideas are good ideas and that other people respect those ideas. (3) Children's Emotional Development Pre-school children tend to express their emotions freely and openly. Angry attitudes are often shown by children at that age. Jealousy in kindergarten children often occurs. They often compete for the teacher's attention. High emotions at this age are more caused by psychological problems than physiological problems (4) Children's Cognitive Development, Jean Piaget explained that cognitive development consists of four stages of development, namely: Sensorimotor Period (age 0-2 years); Preoperational Period (2-7 years of age); Concrete Operational Period (8-11 years of age); and Formal Operational Period (age 11 years to adulthood). The preoperative thinking stage is characterized by the function of symbols, namely the use of symbols or signs to express or explain an object that is not currently with the subject. Pre-school children generally have skills in language, they represent objects with words and pictures. Most of them like to talk, especially in groups. It is best if children are given the opportunity to speak, some of them need to be trained to be good listeners.

The Influence of Gadgets on Child Development

The influence of gadget use on children's development has positive and negative impacts, namely as follows:

1. Positive impact

Increase knowledge. According to Dhani Rizki Syaputra, he concluded that by using technologically advanced gadgets, children can easily and quickly get information about their duties at school. For

example, we want to browse the internet anywhere and anytime we want to know. In this way, from the internet we can increase our knowledge. Expanding Friendship Networks. Gadgets can expand friendship networks because they can easily and quickly join social media. So, we can easily share with our friends. Make Communication Easier. Gadgets are tools that have sophisticated technology. So everyone can easily communicate with other people from all over the world. Training Children's Creativity. Technological advances have created a variety of creative and challenging games. Many children who fall into the ADHD category benefit from this game because of its high level of creativity and challenge. According to Baihaqi and Sugiarmun, ADHD itself is an abbreviation for Attention Deficit Hyperactivity Disorder, which is a developmental disorder in increasing children's motor activity, causing children's activities to be unusual and tend to be excessive.

2. Negative impact

Disrupting Health. Gadgets can disrupt human health because the effects of radiation from technology are very dangerous for human health, especially for children aged 12 years and under. The effects of excessive radiation can cause various dangerous diseases. Can interfere with child development. Gadgets have sophisticated features such as cameras, videos, games and so on. These features can disrupt the learning process at school. For example, when the teacher explains a lesson in front of one of the students playing with his gadget behind him or it can also be used as a tool for things that can lead to a negative direction. **Vulnerable to Crime.** Everyone must have something that has the ability to update anywhere. So people who want to commit crimes can easily find it from the results of updates which can be said to be too frequent. **Can Influence Children's Behavior.** According to Ratih Ibrahim, "Technological advances have the potential to make children quickly satisfied with the knowledge they have acquired so that they consider what they get from the internet or other technology to be the most complete and final knowledge." In fact, there are so many things that must be explored through the traditional learning process and the internet cannot replace the depth of knowledge. If we don't pay close attention, there will be a tendency for future generations to become a generation that is quickly satisfied and tends to think shallowly. Technological advances bring many conveniences, the next generation has the potential to become a generation that cannot stand difficulties. In other words, children will think or feel that life should be easy and in the end children try to simplify problems and try to avoid difficulties. Technological advances speed up everything and without realizing it, children are conditioned to not tolerate delays. As a result, children become weaker day by day in terms of patience and concentration and quickly demand that people give them what they want immediately.

This is in line with the opinion of Rahmalah & Astuti, (2019) that the gadgets used by young children are a factor that has a negative impact on the nation's character values which are reflected in the character of early childhood (Rahmalah, Astuti, 2019). **Physical motor aspects.** Children are more often engrossed in playing games on their gadgets, so they rarely do motor or physical movement activities such as running, playing ball, or playing other games that involve other developmental aspects. Gadgets make children stay longer in one place, which causes them to move less, which has a negative impact on physical motor skills. The use of gadgets among young children every day for a long duration can cause various problems related to physical health in children. According to Sunita & Mayasari (2018) excessive use of gadgets can have an impact on several physical health problems including: children experiencing sleep disorders (insomnia), tense nerve muscles causing dry eyes due to being in front of the screen for too long, children can experience back pain, children experience hearing problems due to wearing earphones for too long, so children also have a high potential for obesity due to lack of physical motor movement. Apart from that, gadgets can also have a direct impact on children's development through several aspects, including: (1) **Cognitive aspects.** Cognitive aspects can be seen in the child's minimal level of ability to focus or concentrate on lessons or when the learning process is in progress. This was also conveyed by Harsela & Qalbi, (2020) that children tend to be dependent on gadgets, which has an impact on decreasing focus or concentration when children study. Based on the results of Bangsawan's research (2022) conducted in Teluk Pulau Raya Village, West Tanjung Jabung Regency, it was concluded that there is a negative influence of gadget use on cognitive development in early childhood if used irregularly. (2) **Language aspect.** The negative impact that arises related to children's language development is that children's active communication with peers is usually less fluent. According to Yulsyofriend, (2019) the use of gadgets in early childhood has a negative effect on children's language or speaking abilities because gadgets hinder children's direct communication interactions with their surrounding environment. Furthermore (Pangastuti, 2017) also said that children who play with gadgets too often are claimed to often lose basic communication skills, namely understanding expressions that mark changes in

someone's feelings. Meanwhile, this ability is an urgent asset when communicating directly with their friends. (3) Socio-emotional aspect. The use of gadgets also has a negative impact on young children who actively interact passively with gadgets. Marinding, (2020) stated that gadgets are indeed a tool that has a negative impact on children's socio-emotional abilities because this can be seen in the reality that children who spend more time playing with gadgets often have no concern for their social environment. So in general what happens is that children lack an understanding of social ethics. There is an influence of the seriousness of gadget use on socio-emotional abilities in early childhood (Febriati & Fauziah, 2020). Frequent use of gadgets by young children results in children being less concerned with their social environment. Children prefer to play using gadgets rather than playing with their peers in their environment. There are 2 behaviors of children with socio-emotional development disorders that often appear in schools related to the influence of gadgets, namely (1) there are some children who do not want to be left behind by their parents when they enter the classroom to take part in the learning process, so parents give gadgets for the children to take to school. (2) the attitude often shown by children is that children are less interested in playing with peers they have just met and tend to prefer to be alone while playing with gadgets during break times (Efastri, 2022). Pangastuti, (2017) also said that children more often

In Romo's opinion, playing with gadgets for a long period of time and doing it continuously every day can make children develop into antisocial personalities. This happens because these children are not introduced to socializing with other people. Apart from that, it also has the potential to encourage children to form superficial relationships. Time to chat directly is reduced because now time is taken up to enjoy everything in solitude.²⁹ Then according to Mohammad Nazir, there are several impacts of gadgets on children's development, including the following:³⁰ 1) Difficulty concentrating in the real world. Addiction or addiction to gadgets will make children easily bored, restless and angry when they are separated from their favorite gadgets. When a child feels comfortable playing with his favorite gadget, he will have more fun and enjoy being alone playing with that gadget. As a result, children will have difficulty interacting with the real world, making friends and playing with peers. 2) Disruption of PFC Function. Technology addiction can further affect a child's brain development. PFC or Pre Frontal Cortex is the part of the brain that controls emotions, self-control, responsibility, decision making and other moral values. Children who are addicted to technology such as online games, their brains will produce the hormone dopamine excessively which results in disrupted PFC function. 3) Introvert. Children's dependence on gadgets makes them think that gadgets are everything to them. They will be confused and restless if separated from these gadgets. Most of their time is spent playing with gadgets. As a result, not only is there a lack of closeness between parents and children, children also tend to become introverts.

Conclusion

In an era like this, it cannot be denied that globalization has brought technology to become more advanced and more sophisticated. Gadgets are a creation of small technology with a multitude of benefits that are provided and can facilitate human activities in their daily lives. Even now, the use of gadgets has become commonplace among society, where gadgets are able to penetrate all groups, from the old to the young, even to children. Gadgets do have a positive impact on children's thinking patterns, namely helping children regulate their playing speed, develop strategies in games, and help improve children's right brain abilities. But behind these advantages, we need to realize that gadgets can also have a bad impact on children's development. Various radiations in gadgets can damage a child's nerve tissue and brain if the child frequently uses gadgets. Apart from that, it can also make users addicted or want to keep playing the applications in it, reducing the child's active power and the child's ability to interact with other people. Children become less interactive and prefer to be alone in their comfort zone with gadgets. This gives rise to an individualistic attitude in children and a lack of caring attitude towards others, both parents, friends and other people. . Therefore, the role of parents is very necessary, namely that they must always monitor and supervise their children when using gadgets.

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