



## Duration of Gadget Use with Development Level of Five Year Old Children in Pembina State Kindergarten, Southwest Aceh Regency

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### ABSTRACT

Information technology is becoming a human consumption nowadays, many children use gadgets to play, watch videos and learn via gadgets. Using gadgets to access various sites and without parental supervision will have an impact on children's development. This type of research uses observational analytics with a cross sectional study approach. The sample in the research was 70 people with the sampling technique namely total sampling. Data were analyzed using Chi Square. The research results show that there is a relationship between the duration of gadget use and development with a p-value of 0.000. The use of gadgets by children must be controlled by parents so that they do not have a negative impact on children, especially on child development

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## 1. Introduction

Technological developments are very rapid, various types of devices are created to make activities easier for humans (Mappapoleonro & Chairunnisa, 2018). Gadgets are one of the technologies used by humans for communication and have even developed into a means of entertainment and information (Afnan et al., 2020). Gadgets are one of human innovations to meet the demands of the era of globalization. Children, teenagers, adults and parents use these devices (Novianti & Garzia, 2020). Nowadays children, even toddlers, can operate gadgets very well (Joshi, 2020). Based on the results of research conducted by Shirly in India, from 613 parents, 65.1% of children used gadgets for 2 hours per day (Anitha et al., 2021).

The Ministry of Communication and Information said that 79.5% of children use gadget technology to access the internet (Kominfo, 2017). Syifa et al's research results stated that 26% of children were in the category of using gadgets for more than 2 hours per day, 42% were in the medium category with a usage duration of 1 hour or 40-60 minutes a day and 32% were in the low category 5-30 minutes per day. Children use gadgets to open the internet, YouTube and games (Syifa et al., 2019). Parents spend a lot of time working, so many parents don't pay attention to their children and let their

children use gadgets (Novianti & Garzia, 2020). Parents must monitor and supervise children when using gadgets (Maola & Lestari, 2021).

The use of digital media for children 2-5 years is no more than 1 hour per day. Excessive use of gadgets in children and without parental supervision will have a negative impact on health, especially children's development (Nasser et al., 2020), (Council on Communications and Media, 2016), also has an impact on children's social behavior and emotional intelligence (Fitriahadi & Tyastiti, 2020). In developing countries, more than 200 million children experience early childhood development delays (Unicef, WHO, 2016).

Early childhood development is the development of motor skills, cognitive, language, social emotional and self-regulation skills (WHO, Unicef, 2016). A child's physical condition and health greatly influences their development from birth to approximately two years. For ages 3 to 5 years, characterized by efforts to be independent and interact with others. These stages are very important for later life. In the early stages of their lives, around the age of three, children begin to be able to acquire skills as a basis for building knowledge and thought processes (Subarkah, 2019).

A preliminary study by researchers found that almost all children like to play games, watch videos or look at pictures using gadgets. Parents of children said that since using gadgets, children are difficult to remind and don't care when spoken to. If this is left unchecked it will affect the child's development. Therefore, researchers are interested in conducting research on the topic of the relationship between gadget use in children and the child's level of development. This research is important to conduct to see the duration of gadget use and child development so that with the results of this research parents limit and supervise children when using gadgets.

## 2. Methods

This type of research is observational analytic with a cross sectional study approach. The research was conducted on December 15 2021 at the Pembina kindergarten, Southwest Aceh Regency. The sample consisted of 70 people with a sampling technique using total sampling. Development data was collected using the Pre-Developmental Screening Questionnaire (KPSP) for early detection of children's growth and development in basic level health services, while the gadget usage duration questionnaire with a scoring system was low ( $\leq 30$  minutes per day), medium ( $\leq 60$  minutes per day), high ( $> 60$  minutes per day). The data was analyzed univariately to describe the data and bivariately to see the relationship between the duration of gadget use and the child's development level using Chi Square analysis.

## 3. Results and Discussion

### 3.1. Result

#### a. Univariate Analysis

Table 1  
Frequency Distribution of Respondents based on applications opened in the Pembina State Kindergarten, Southwest Aceh Regency

Opened application	Frequency (f)	Percentage (%)
Games	12	17
Videos	38	54
Learning/Education	18	26
Other	2	3
Amount	70	100

Based on table 1 shows that the majority of respondents opened the video, 38 people (17%).

Table 2  
Frequency Distribution of Respondents based on duration of playing gadgets in the Pembina State Kindergarten, Southwest Aceh Regency

Gadget Playing Duration	Frequency (f)	Percentage (%)
Low	5	7
Currently	20	29
Tall	45	64
<b>Amount</b>	<b>70</b>	<b>100</b>

Based on table 2, it shows that respondents with low duration of playing gadgets were 5 (7%) children, medium 20 (29%) children, high 45 (64%) children.

Table 3  
Frequency Distribution of Respondents based on the Development of 5-Year-Old Children in the Pembina State Kindergarten, Southwest Aceh Regency

Child development	Frequency (f)	Percentage (%)
In accordance	13	19
Doubtful	26	37
Deviation	31	44
<b>Amount</b>	<b>70</b>	<b>100</b>

Based on table 3, it shows that the majority of children's development is in the deviation category, 31 people (44%).

## b. Bivariate Analysis

Table 3.  
Relationship between duration of playing with gadgets and the level of development of 5 year old children in the Pembina State Kindergarten, Southwest Aceh Regency

Duration of playing gadget	Development of 5 year old children						Total		P-Value
	In accordance		Doubtful		Deviation		F	%	
	F	%	F	%	F	%			
Low	5	7.1	0	0	0	0	5	7.1	0,000
Currently	4	5.7	16	22.9	0	0	20	28.6	
Tall	4	5.7	10	14.3	31	44.3	45	64.3	
Total	13	18.6	26	37.1	31	44.3	70	100	

Based on Table 3, it shows that from the duration of playing the respondents were low, 5 (7.1 %) of them had appropriate development), the duration of playing gadgets was moderate, 4 (5.7%) of them had appropriate development and 16 respondents had doubtful development, the duration of playing gadgets was high, gadgets were high, 4 respondents ( 5.7%) of them had appropriate development, 10 (14.3%) were doubtful and 31 (44.3%) had developmental deviations. The results of bivariate analysis showed that there was a relationship between the duration of playing gadgets on the development of children aged 5 years and p- value 0.000.

## 3.2 Discussion

The results of this research show that long-term use of gadgets is closely related to children's development. The majority of children spend quite a long time with gadgets. From the results of the analysis, there were 32 people (44.3%) who played with gadgets for a long time and there were deviations in their development.

According to Imron, the rapid development of technology has a big influence on aspects of life, one of which is the pattern and way of raising children by parents. Parents allow their children to use gadgets for reasons of fear that their children will miss out on technological developments and so that their children learn during their growth and development period. The facts show that gadgets have no effect on children's growth and development and are only one-way. Two-way interaction between children and mothers is necessary for children's growth (Imron, 2017).

The influence of devices on children is like two sides of a coin. When parents ignore their children playing on their gadgets, this can be positive, but it can also be negative. It's actually a neutral device. They are simply tools that, depending on how they are used, can have positive or negative effects (Nirwana et al., 2018) Yohana et al.'s research results state that it is difficult for children to eat because they use too many gadgets (Yohana & Mulyono, 2021) research conducted by Nugraha et al. gadgets have an effect on children's speech (Nugraha et al., 2019).

Other negative impacts of using gadgets on children include: children's dependence on gadgets, difficulty concentrating, access to negative information, reduced socialization, exposure to radiation from gadgets, disruption of the PFC (Pre Frontal Cortex) and introversion (Yannuansa et al., 2020). Research conducted by Hosokawa et al stated that the use of smartphone and tablet type gadgets greatly influences children's behavior (Rikuya Hosokawa, 2018).

Children who are addicted to Gadgets not only experience socio-emotional development disorders, but they also experience changes in social behavior, such as hyper-tantrums, emotional instability, not caring about the environment, social problems, like to be alone, disrupt communication, and become unwilling to socialize (Widodo & Wartoyo, 2020). According to the results of research conducted by Nugraha et al, gadgets have a negative effect on toddlers' speech development, parental supervision is needed to limit children from using gadgets to less than 2 hours per day (Nugraha et al., 2019).

Parents play a very important role in controlling gadget use and blocking sites that are inappropriate for children (Suzana et al., 2020). Parents must establish a close relationship with their children and not use technological media to reduce their children's emotions because it will limit their children's emotional development (Bozzola et al., 2018).

#### 4. Conclusion

Gadgets are devices that can be used by anyone, with developments many sites can be opened using gadgets. The use of gadgets can have positive and negative impacts depending on the person who accesses the information. The results of research conducted by researchers show that there is a significant relationship between the use of gadgets and the development of five year old children in the Pembina State Kindergarten, Southwest Aceh Regency. The limitations of this research are that it is difficult to condition the children and because the children were not close to the researchers, some felt uncomfortable. The researcher suggests that future researchers add the variable of parental supervision in the use of gadgets.

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