

## Early Childhood Language Development of Gadget Users Viewed from Behavioristic Theory

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### Abstract

Nowadays, gadgets can be utilized as a tool to stimulate children's language growth and development. The research is intended to determine the response of early childhood due to the use of gadgets screen as a stimulus for children's language development viewed from behavioristic theory. There are 3 subjects in this research, namely early childhood aged 30-50 months. This research method employs a naturalistic approach. The result reveals that gadgets as a stimulus for early childhood language development viewed from behavioristic theory show different responses, namely 2 children give a negative response and 1 child with a positive response. The negative response is the child experiences speech delays, while the positive response is the child master's foreign vocabulary and is more expressive in retelling what the child watches from the gadget. Furthermore, it can be concluded that gadget as a stimulus for language development generates negative and positive responses for early childhood, so that adults should be judicious in facing the children by paying attention in some cases, such as timing in using gadgets, content, types of assistance, and giving them many proportions to interact directly.

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## INTRODUCTION

Nowadays, gadgets are not only utilized as a medium for entertainment and playing media, but also used as a stimulus for early childhood' growth and language development. Early childhood experiences a rapid language growth and development which often called the golden age (Nursih et al.: 2019).

In that age, children's language development depends on the obtained stimulation. Stimulation in the aspects of language development is needed because human life cannot be separated from utilizing and mastering language (Priyantini et al., 2020). Children's language mastery according to behavioristic theory is obtained through stimuli from the environment. This means that children as passive recipients, do not play an active role in the process of developing verbal language (Brodin & Renblad, 2019).

The development of verbal language from the environment obtained by children in this digital era is replaced by a device that can only communicate in one direction, namely gadgets. In this research, the gadget is positioned as an active stimulus to determine the results of the response to children's language development. In the past, gadgets are used by the middle to upper-class economies only, but recently they are used by all groups of people, including children (Nugraha et al., 2019).

According to a survey conducted throughout 2016 by Association of Internet Service Provider of Indonesia (Asosiasi Penyelenggara Jaringan Internet Indonesia/APJIII), it is found that 132.7 million Indonesians are connected to the internet and 62.7 million people access it via smartphones or other gadgets. The survey results in 2018 show that internet users in Indonesia increase up to 103 users.

Based on the research results of Ministry of Communication and Informatics (Kominfo) and UNICEF on the behavior of children and adolescents in Indonesia in using the internet, it is concluded: 1) there are 98% of children and adolescents who know about the internet and

79.5% of them are internet users (Zaini & Soenarto, 2019). Association of Internet Service Provider of Indonesia (Asosiasi Penyelenggara Jaringan Internet Indonesia/APJIII) also conducted survey about internet users in Indonesia in the year of 2020, it was found that due to the Covid-19 pandemic since March 2020 there were 196.7 million or 73.7% as active users.

In Indonesia, especially Central Java, early childhood uses gadgets to access education, game, and watch videos from the Youtube application (Nuhla et al., 2018). Watching videos from the YouTube application on gadgets is still a matter of debate if it is used to determine the effectiveness of stimulating language development of children (Roseberry et al., 2017).

Therefore, the research is intended to determine the response of early childhood due to the use of gadgets as a stimulus for their language development viewed from behavioristic theory. This research can be useful for adults, especially parents who have early childhood, to pay more attention to children's language development when they use gadgets since early childhood.

## METHOD

This research method was a qualitative naturalistic approach. It was naturally examined the language development of early childhood (30-50 months) who were accustomed to using gadgets for more than 1 hour a day. This study focuses on observing children's language development in terms of behavioristic theory, which means observing children's responses to aspects of language after being stimulated by playing gadget at home for more than one hour a day.

There were 3 subjects, namely A, B, and C. The children aged 30-50 months. Subjects were selected based on their use of gadgets for more than 1 hour a day and willingness to be investigated. The name of the subject is written symbolically, namely A for subject aged 30

months, B for subjects aged 34 months, and C for subjects aged 50 months.

Data collection technique used was observation and interview. Due to the Covid-19 breakout in March 2020 and to comply with the regulations of the Ministry of Education, all teaching and learning activities at school are carried out online. Therefore, the interviews with parents and observations to subject in this study were also conducted online. The observations on all three subjects were made while they were in an online class with other students.

Due to time constraints as well as online learning mode that is shorter than direct learning, in this research also added the results of their semester assessment as additional data and when they were in a classroom before the pandemic. Interviews with parents were conducted one by one separately through a zoom meeting.

Data analysis employed Miles and Huberman concept, namely first the researcher reduces the data namely (1) use of gadgets on early childhood (2) the development of children's language seen from the responses that appear after using gadgets for more than an hour, (3) as well as how parents anticipate on children's speech delays, so that relevant and important data are feasible to be presented in the research results and finally the researcher draws conclusions.

## RESULTS AND DISCUSSION

The results of the gadget as a stimulus for early childhood language development (30-50 months) obtain different responses. There were 3 researched children, namely subject A, B, dan C. The 3 subjects above, 2 experienced speech delays and 1 was normal speech.

First subject, namely subject A, by the age of 31 months, still not able to communicate well. Subject A's mother notices that subject A's language development was slower than other children in his age. Subject A still faces difficulty in saying what he wants. He only points his finger if he wants something.

Researchers observed earlier that since subject A entered preschool at the age of 2 years 3 months (27 months) and could not communicate at all, he is not able to respond when being called his name by the teacher, but if his mother called with certain tune, subject A sometimes responded, only sometimes, meaning not always. Subject A is still communicating using body language to express his wishes, often what comes out is crying or whining so that other people do not understand what he is saying. Subject A's mother explains:

*“Subject A is 31 months old now, but he still has trouble in speaking. He is different from friends of the same age. A, if he needs something, he often pulls on my clothes or says like "aaaiiew" or "auauaua”.*

The same thing was experienced by the mother of subject B. Subject B also experiences speech delays. It can be seen at the age of 24 months, subject B can not communicate at all even when someone calls her name, he does not respond. By the time subject B entered preschool when he was 2 years. He could not communicate at all even when the teachers called his name, subject B did not respond. Subject B's Mother reveals:

*“I give my child access to gadgets when he is 12 months old. I thought it will be good for him. When he grows up, I realize why he keeps quiet. He doesn't say anything. When I realize this, I try to analyze whether it is because of a gadget or not, then I reduce the time in using it, I also put him in the toddler”.*

Researchers used the stage of language development based on The Early Year Foundation Stage (EYFS) to analyze the stages of child development. The school where the three subjects attend school uses EYFS as a reference for assessing the development of their students. They are attending an international school which apply an international curriculum that uses EYFS as their cross reference for their developmental stage. Therefore, researchers also use EYFS as a reference for language development of the three subjects. The EYFS

classifies early childhood into 6 age groups, namely ages 0-11 months, 8-20 months, 16-26 months, 22 -36 months, 30-50 months, 40-60+ months. In this research EYFS was used which focuses on children aged 30-50 months because it can reach the ages of the three subjects.

Based on EYFS, children aged 30 – 50 months are (1) beginning to use more complex sentences to link thoughts (e.g., using and, because). (2) They can retell a simple past event in correct order (e.g., went down slide, hurt finger). (3) They also use talk to connect ideas, explain what is happening and anticipate what might happen next, recall, and relive past experiences. (4) Questions why things happen and gives explanations. Asks e.g., who, what, when, how are uses frequently.

Other characteristics of the children aged 30 – 50 months are (5) They use a range of tenses (e.g., play, playing, will play, played). (6) They also use intonation, rhythm and phrasing to make the meaning clear to others. (7) Uses vocabulary focused on objects and people that are of particular importance to them are frequently emerge. (8) They build up vocabulary that reflects the breadth of their experiences. (9) They also use talk in pretending that objects stand for something else in play, e.g., ‘This box is my castle.

In listening, the children aged 30 – 50 months are improved. (10) They quite listen to others one to one or in small groups, when conversation interests them. (11) They able to listen to stories with increasing attention and recall. (12) They happy to join in with repeated refrains and anticipates key events and phrases in rhymes and stories. (13) They can focus attention–still listen or do but can shift own attention is their habit. (14) They are able to follow directions (if not intently focused on own choice of activity). (15) They understand use of objects (e.g., “What do we use to cut things?”) (16) They also show understanding of prepositions such as ‘under’, ‘on top’, ‘behind’ by carrying out an action or selecting correct picture. (17) Responds to simple instructions, e.g., to get or put away an object is improved.

(18) They begin to understand ‘why’ and ‘how’ questions.

The similar characteristics are described by Lieven et al. (2008), at the age of 1 year 8 months, the children begin to speak 2 words. For example, the phrase "daddy's chair" has various meaning, such as "daddy is sitting on the chair", "it's my dad's chair" or "daddy, can you put me on the chair?"

From the description of The Early Years Foundation Stage (EYFS) and the explanation from subject A and B’s mother, it shows that subject A and B have not achieved the language development stage for children aged 30 – 50 months.

After going through further observation and in-depth interviews with subject A and B’s mothers, it was found that subject A and B were quite intensively using their gadgets when their mothers were not able to accompany them, for example, when the mothers were driving or doing household chores. Both mothers are housewife and raised their child without nanny.

Based on previous research conducted by Nirwana et al. (2018) states that the use of gadgets will result children aged 3 - 4 years experiences in speech-delays. Birken (2017) also concluded that due to the growing number of smartphones, tablets, electronic games and other handheld screens, some children started using these devices before starting to speak, resulting in a higher risk of children experience in speech-delays. Birken (2017) found that children who spent more time with hand-held screens were more likely to exhibit signs of a delay in expressive speech how children use their sounds and words, and how they put their words together to communicate.

The results of using gadgets in each child found that subject A starts using gadgets at the age of 8 months. Currently, subject A is 31 months old. Subject A is accustomed to using a gadget screen in the form of an iPad for a maximum of 2 hours a day to watch videos from Youtube. The reason why subject A was exposed to gadgets since the age of 8 months was so that subject A was not fussy so that her mother could do other household chores. The

mother and child only live two of them at home because their father works abroad. So that the interaction obtained by subject A is only with his mother and the gadget. Subject A's mother does not impose any time limits or rules on the use of gadgets and whenever the gadget is taken from subject A, he will immediately cry and scream.

Subject B uses gadgets since the age of 12 months. Subject B was always given a smartphone for more than 2 hours a day by his mother. For example, when his mother drives and doing household chores, his mother gave him smartphone because they did not have a nanny. Subject B also only interact with his mother. He only interacts with his father a couple hours before his bedtime at night. Subject B's mother does not impose any time limits or rules on the use of gadgets, she only directs whatever videos subject B can watch. Subject B will also whine when his mother takes the gadget and puts it away.

Then subject C used the gadget since the age of 12 months for a maximum of 2 hours a day. Subject C uses gadget to accompany him during mealtime. His mother said that subject C will eat more when he watched gadget. Subject C also uses gadget to watch videos from youtube. Subject C's mother gave a time limit to subject C in using gadgets, and she also always told subject C to give his gadgets whenever his playing time was over. After entering the preschool and getting older, subject c already knew when he should stop using gadgets. If he has been using the gadget for too long, he will immediately return the gadget to his mother.

The difference in results in this study was found in subject C. Even though it is the same as using gadgets for more than 1 hour in one day, subject C has the opposite response with the two previous subjects, meaning that he does not experiences speech-delays and he reveals more expression, even more master foreign vocabulary like getting new vocabulary from videos he often watches such as "jump", "killed", "fire", "shoot", "micro shoot", "oh no its suck!".

This is according to research Kuhl et al. (2003), for instance, concluded that the positive impact of using gadgets conduct a research at

children age 9 months who speak English daily can master Mandarin Chinese through speakers in the video (Roseberry et al., 2014). Sundus (2018), said that the positive impacts of using gadgets for early childhood include: development of imagination, training intelligence, increasing self-confidence, developing reading, mathematics, and problem-solving skills

The positive response experienced by the subject which is different from the previous 2 subjects is due to the environmental interactions experienced by each child. The lack of direct environmental interaction on subject A and B, causes the child's vocabulary mastery based on the stage of his age to be delayed, because interactions that should be active in two directions to stimulate children's language development replaced by gadgets that tend to be non-interactive.

Subject C can be more expressive and have no experience in speech delays because subject C has more people in his house. He can interact with his parents, grandparents, nannies, and other people at home. This interaction provided good stimulation for his language development so that the response that appears is more positive. A communication between subject C and her mother regarding the rules and restrictions on time to use gadgets. This also makes subject C have regulations in the use of gadgets and he will not be fussy when the time to play gadgets is over.

McCreery's (2014) statement that technological sophistication cannot replace stimulation in the form of real communication because language stimulation from parents has a more positive effect on children's language development. Silawati (2012) also revealed that in developing language skills, children need adults who provide stimulation, both at home, school and in the surrounding environment.

In contrast to subjects A and B, verbal communication by subjects A and B was not well stimulated because subject A only interacted with his mother at home and subject A is able to access the smartphone freely. While subject B also only have interaction with his

mother and he only had a chance to communicate with her father in the evening.

The parents of subject A have realized that their child's language development is different from other children on his age. Even parent A also met with a child psychologist to ask for professional advice. Therefore, in the end, subject A's parents entered subject A into preschool so that subject A could meet peers and interact with more people. On the other hand, the parents of subject B just realized that the development of the language of subject B was not in accordance with children of his age when subject B started preschool. Parent B saw that other children in their child's class were able to communicate well.

After experiencing this, the parents of subject A and subject B sought information on how to deal with speech delays in their children and what they should do to stimulate language development. They not only consult to the classroom teacher but also seek professional help in this case is a child psychologist. The attitudes of the parents of subject A and B, were change more disciplined towards the use of gadget on their children. They limit the duration of using gadgets to children and provide extra stimulus to children's language development by interacting more frequently. They also doing speech therapy for their children and entering children into preschool so that they can meet peers and teachers, so they can interact directly with many people. The conclusion from Rahmah (2018) also explains that the effect of social interaction in the home and school environment on early childhood language development is quite significant, namely 83.8%.

The fact is that after entering preschool and disciplining the duration of using gadgets from parents, there is progress in the development of the language of subjects A and B. Currently they are able to respond when the teacher calls his name, either responding by smiling or turning directly when called his name. They also beginning to focus when the teacher provides online learning videos, even though they have not been able to provide verbal responses to the teacher. They are only able to

speak in short sentences with close questions. Subjects A and B also beginning to be able to listen to and carry out simple instructions that were carried out directly by their mothers, but it was still difficult to receive instructions from the teacher during online classes. Being able to stay focused throughout online classes is also a worthy advance from Subjects A and B.

Discipline on the use of gadgets in early childhood needs to be considered. Several previous types of research state that excessive use of gadgets causes children to experience speech delays (Nirwana et al., 2018; Sundus, 2018; Keumala et al., 2019; Alfin & Pangastuti, 2020), limited vocabulary, unclear articulation, emotional problems, points to the things they want, and does not respond when called upon. It is recommended that children over 2 years watch videos for less than 2 hours in one day (Nugraha et al., 2019).

The latest guidelines from the American Academy of Pediatrics explains that the children under 3 years is better watching proclivity programs on a gadget screen for less than one hour a day (Radesky et al., 2016). Birken (2015) suggests that the use of gadgets for 28-30 minutes, even in children aged 6 years, the result is that 49% of them experience a speech delay.

Language development disorders are the inability or limitations in using linguistic symbols to communicate verbally or it can be said that delaying speaking ability (Marisa, 2015). Problems in speech and language delays (speech delay), do not affect a person's intelligence, but rather affect academic achievement, behavior and socio-emotional (Sumantri, & Supena, 2018: 60). Therefore, if speech and language disorders are not appropriately addressed so that therapy is needed for the occurrence of impaired reading skills, verbal abilities, behavior, psychosocial adjustment, and low academic abilities

Based on the admission from subject A and B's mothers, it proves that disciplining the use of gadgets and direct interaction with the environment is the right stimulation to develop children's language development. Behaviorists believe that a child can learn language well from

their environment (Abidin, 2009). This is following the conclusions of Tan et al. (2019), that social interaction is significantly related to increasing language development in children.

Gadgets as a stimulant for early childhood generate two responses at once, namely negative and positive responses. If they are used properly, they will provide benefits for both adults and children. However, if the gadgets is used negatively, the dangers will be greater than the benefits (Laini et al., 2018).

In previous research, many results states that behavioristic theory views early childhood language development through direct interaction between early childhood and those around them as effective stimulation. In this research, it was found new findings that behavioristic theory proves that gadgets as a medium for stimulating language development in early childhood not only cause negative impacts such as speech delay but also provide positive responses for children, so it is not appropriate to address the use of gadgets for early childhood (30-50 months) addressed defensively.

The use of gadgets in early childhood still has to be addressed wisely by paying attention to the discipline of usage time, content watched, and the type of assistance, because negative impact is higher than positive impact, especially in children's language development.

## CONCLUSION

Early childhood (30-50 months) who have been given access to use gadgets as a stimulant for early childhood language development in terms of behavioristic theory, can experience delays in language development (speech delay) if they are not given proper treatment. Efforts that can be made are limiting the duration of gadget use and providing a stimulus in the form of frequently inviting communication or direct interaction.

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