



Impact of Screen Implementation Parental Time on Cognitive Development in Early Childhood

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Abstract

This study aims to analyze the impact of parental implementation of screen time on the cognitive development of early childhood children at TKIT Al Ikhlas 86 Bekasi. The focus includes the daily duration of screen use, the role of parental supervision, and the application patterns of screen time rules, related to cognitive aspects such as thinking ability, concentration, language, and memory. A qualitative approach was used through observation, interviews, and documentation, involving parents and early childhood children at the school. Data were analyzed descriptively to gain an in-depth understanding of screen time practices and their effects on children's cognitive development. The results indicate that screen time has a dual impact; when used with limited duration, educational content, and active parental involvement, it can stimulate positive outcomes such as increased vocabulary, problem-solving skills, and creativity. Conversely, excessive use without supervision may reduce concentration, hinder language development, and decrease social interaction. Therefore, parental roles in managing screen time are crucial, with consistent rules enforcement, quality content selection, and active engagement as key strategies to maximize benefits and minimize negative effects. These findings are expected to serve as practical references for parents, educators, and policymakers in supporting early childhood cognitive development in the digital era.

Keywords: Screen Time, Orang Tua, Cognitive Development, Anak Usia Dini

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INTRODUCTION

The rapid advancement of digital technology has brought significant changes to the way children interact and engage in various daily activities. Screen-based electronic devices such as smartphones, tablets, and televisions have now become an integral part of children's lives, even at an early age. This phenomenon has raised particular concerns regarding the impact of gadget use and screen time on child development, especially on the cognitive aspects which are very important in the early years of their lives. Cognitive development in early childhood (0–8 years) is the golden period (golden period). Age is characterized by children's understanding of their environment through thinking, learning, and exploring. At this stage, children experience rapid growth in various aspects, particularly cognitive development, which includes the ability to think logically, solve

problems, maintain attention, remember information, develop language, and use imagination. Appropriate and controlled use of digital technology can provide positive stimulation for this development, for example through educational content that can enrich vocabulary, expand knowledge, and improve critical thinking and problem-solving skills (Humaida & Suyadi, 2021).

However, a number of studies have shown that excessive screen time can actually hinder a child's optimal development. Prolonged screen time without parental supervision can have negative impacts, such as decreased concentration, weakened working memory, reduced social skills, and impaired executive functions in the brain, which play a role in decision-making and self-regulation (Asmaradhani, 2023). Furthermore, limited direct interaction with the surrounding environment due to the dominance of screen-based activities can reduce children's opportunities to develop creativity and social skills. Previous research also confirms that screen time can affect children's creativity and social skills. Excessive time is closely related to an increased risk of behavioral problems, emotional disorders, and difficulty concentrating (Sangadi et al. al. , 2024). On the other hand, the application of screen Well-planned time includes limiting duration, selecting age-appropriate content, and active parental involvement in the process of using technology, which can help maximize the benefits of technology while minimizing its potential risks (Erliana & Suminar, 2020).

The World Health Organization (WHO) recommends that children aged 2–5 years should not spend more than one hour per day on screens. time , and that time should be filled with quality content and active parental guidance. American Academy of The Association of Pediatricians (AAP) also emphasized the importance of limiting screen time. time and active parental guidance so that children can benefit from the educational benefits of gadget use. Unfortunately, the reality on the ground shows that many children in Indonesia exceed these recommended limits (Mayam et al. al. , 2023). This condition is generally influenced by a lack of parental understanding of the impact of screen time. time , business factors, and unstructured habits of using digital devices at home.

Regarding the case of the Influence of Parental Supervision on Gadget Use in Early Childhood, RSMM Mental Hospital (Marzuki Mahdi Hospital) Bogor City treats dozens of children and adolescents with mental disorders. Some of them are patients with mental disorders due to gadget addiction. This is caused by the habit of using gadgets in early childhood, because the use of electronic devices in early childhood can affect the child's social and cognitive interactions. Kompasiana.com Cases of gadget addiction among children in West Java show a concerning condition. A number of children are reported to have nervous system disorders diagnosed as a result of excessive and unsupervised gadget use. Exposure to electronic radiation from digital devices, coupled with prolonged duration of use, is suspected to be a triggering factor that worsens their health conditions. In addition to affecting physical health, this gadget addiction also has an impact on psychological and behavioral aspects, such as decreased social skills, reduced concentration, and the emergence of symptoms of emotional instability. DetikNews

From the case above, it can be concluded that gadget use in early childhood and even adolescence requires limits on gadget use . Because the impact of excessive gadget use without time limits can cause children to become addicted to gadgets, which has a bad impact on nerve damage and even mental disorders due to dependence on gadget use . Gadget use in a day can be more than seven to ten hours or more, changing character to individualism or preferring to play with gadgets rather than socializing. The negative impact on teenagers, among others , is that teenagers become addicted to entertainment technology such as various games or other internet, which makes them forget the time to do useful things such as studying or worship. With the example of the case above , parents need to implement screen time. Screen time in early childhood serves as a foundation for reducing gadget addiction as they enter adolescence. Seeing these real and ongoing negative

impacts, it becomes clear that the role of parents is crucial. Implementing screen time is necessary. Structured and thoughtful screen time from an early age. Consistent limitations and supervision of screen time Time is not just a rule, but an important foundation that will shape children's healthy habits in the future.

Various studies show that screen Excessive time spent on screen can impact the cognitive development of early childhood. Gadget use has negative impacts, such as the ease of accessing various kinds of information, making children reluctant to move to do various activities. Prolonged screen exposure has the potential to reduce concentration, working memory, and executive functions of the brain that play a role in decision-making and problem-solving. Manfaat and Aulia (2024). Children's cognitive and social development can also be affected by reduced interaction with the surrounding environment. An imbalance between time spent using gadgets and social interactions and physical activities can negatively impact children's emotional development. Widyadhana and Mashudi (2024). Gadget use in early childhood not only has a negative impact on children's cognitive aspects. The positive impacts of gadget use include increasing children's understanding of technology, children can seek information as a source of learning activities while playing, developing new vocabulary, and increasing children's creativity. Jaya and Amrizal. (2024)

From the several case examples above , it can be concluded that gadget use in children can have both negative and positive impacts, depending on policies and supervision. In this context, the role of parents and caregivers is crucial in managing gadget use in early childhood. Therefore, it is necessary to implement a policy on screen time for early childhood so that parents are more aware of the impacts of gadget use. Therefore, research is needed on the implementation of screen time policies. screen time implemented by parents and its impact on the cognitive development of early childhood. The implementation of screen time Time management includes regulating the duration of gadget use, selecting age-appropriate and educational content, and actively supporting children while they use digital devices. Research shows that many parents struggle to consistently implement this policy due to a lack of understanding, busy schedules, or pressure from their children to use gadgets for longer.

The researcher conducted the research at TKIT AL IKHLAS 86 located at Jalan Nakula 6 C, Jakasetia Subdistrict, South Bekasi District, Bekasi City. TK IT AL IKHLAS is a private kindergarten. It was established on June 25, 1988, with the Establishment Decree Number 524/TK/IB/VI/1988, under the auspices of the Ministry of Education and Culture. The current principal of TK IT AL IKHLAS is Herly Yuliana Azhar. The operator in charge is Fauzan Nur Hakim. The number of students currently enrolled is 50 students consisting of TK A and TK B. This school often uses digital media as a learning support tool, with this in mind, the researcher is interested in conducting research at the school. According to the researcher, with an environment that applies digital media in learning, the application of screen screen time so that students do not become dependent on digital media. Therefore, this study uses a qualitative approach to examine the relationship between the implementation of screen The time parents apply to the cognitive development of early childhood is objective and measurable. With this approach, it is hoped that a clear picture can be obtained regarding the extent of the influence of screen time implementation. time on children's cognitive abilities, so that the research results can be the basis for practical recommendations for parents and educators in optimizing the use of gadgets in the digital era.

Based on this description, this research is focused on early childhood at TKIT Al Ikhlas 86 to find out how screen time is implemented. parent time with children's cognitive development in a specific and contextual manner. The application of screen time The screen time implemented by parents has a major impact on the brain development of young children , both positively and negatively, depending on how long they spend looking at screens and how well they are supervised . Excessive screen time without parental guidance

tends to have negative effects on children's cognitive abilities, such as delayed language development, difficulty concentrating, and decreased analytical thinking skills. Active parental involvement in managing and supervising children's screen time can mitigate these negative effects and promote better cognitive development.

METHOD

This research was conducted at TKIT Al Ikhlas 86 which is located at the Masnaga Raya RE Housing Complex (Jl. Nakula VI - E block C Jakasetia), Bekasi, West Java, Indonesia, South Bekasi District, Bekasi City. This research process was carried out within 2 months starting from June 2025 - July 2025. This research uses a qualitative method with a case study research type. According to Citriadin (2020) qualitative research methods are often referred to as naturalistic research methods , because the research is carried out in natural conditions with the intention of interpreting the phenomena that occur by involving various existing methods and aiming to find answers to a phenomenon or question through systematic scientific procedures (Citriadin , 2020). Qualitative research methods are divided into several types, such as descriptive, case studies, ethnography, grounded theory , narrative or historical, and content analysis. This study used a qualitative case study research type. According to Sugiyono (2017), a case study research method is where researchers conduct in-depth exploration of programs, events, processes, activities, and one or more people. By conducting in-depth exploration, researchers not only collect surface data but also seek to dig up detailed, rich, and nuanced information about the case being studied. The goal is to understand "why" and "how" a phenomenon occurs in its context. Therefore, researchers using a qualitative method with a case study research type are expected to obtain detailed information regarding the impact of screen time implementation by parents on cognitive development in early childhood.

The subjects or informants in this study included the principal, educators or teachers, and parents of students at TKIT Al Ikhlas 86. The selection of these three parties as data sources was based on their crucial roles and understanding of the issues being studied. The principal, as the leader of the institution, has extensive insight into the policies and implementation of learning in schools, including how to implement screen-based learning. Time is regulated within the school environment. Educators or teachers interact directly with students daily and have detailed observations of children's cognitive development during the learning process, as well as how digital device use affects their learning activities. Meanwhile, parents are the closest people to their children in the home environment and can provide information about their children's screen usage habits. time outside of school and the supervision and regulations they implement. By involving various sources of information, the research is expected to obtain comprehensive and accurate data, reflecting real conditions and current experiences regarding the impact of screen use. time on early childhood cognitive development. This approach also helps ensure that research findings are relevant and applicable to developing screen time management strategies. effective time both at home and in the school environment.

RESULT AND DISCUSSION

Sub Focus Findings 1 Screen Time Duration

The first finding, shows that the duration of screen *use time* in children aged early varies, However in general exceeding the limit the ideal recommended by *World Health Organization* (WHO), namely a maximum of one hour per day for children aged 2–5 years. Part big person old report that children they use up Children spend between one and two hours per day looking at screens, whether television, smartphones , tablets, or other electronic devices. This screen time tends to increase on weekends or when parents are busy working, either at home or outside the home. In these situations, *gadgets* are often used as a calming aid. child or divert his attention so that they Can play with Quiet without

disturbing parents' activities. Some parents admit to not understanding the importance of limiting screen time, so they allow their children to use *gadgets* without limitation throughout day. There is Also Which state that child Already accustomed to using device digital since age very early, even before Can speak smoothly, because used to see member family other Which using *gadgets* every day. Matter this makes device digital become part routine in life daily child Which It is difficult to eliminate. On the other hand, only a small number of parents consciously regulate and limit their children's screen time, for example, only allowing *gadgets* to be used. after finish task school or as entertainment before Sleep. However, even though it has there are restrictions, children still show a strong desire to use *gadgets* for longer, and some of them feel uncomfortable when screen time has to be stopped. The conclusion of this finding is that the pattern of *screen time* High levels of stress in early childhood have become a common condition in the family environment of students at TKIT Al Ikhlas 86, and this has the potential to have a negative impact on children's cognitive development, especially if it is not balanced with other activities that encourage social interaction, exploration, and active thinking.

The second finding shows that the level of parental involvement in accompanying children moment use screen very diverse. Role person old in supervise *gadget* usage is an important factor that determines whether *the screen time* have a positive or negative impact on children's development. Some parents are actively involved by limiting screen time, choosing educational content, and explaining content show to child. They Also often invite child discuss after watching or playing. In families with this kind of guidance pattern, children are more controlled in using *gadgets* , have better language skills, and demonstrate interest on material educative. In side other, There is also person old Which less or even No accompany child The same very moment use device digital. Children are left to watch television or play with their cell phones without supervision, either because their parents are busy working, feel tired, or consider *gadgets* as a practical tool . calm child. Condition This make child choose content in a way free And Often watching entertainment videos repeatedly without educational content. This situation risks hindering children's critical thinking skills, verbal communication, and concentration. Some teachers have also observed that children who frequently use *gadgets* without mentoring tend more passive in learning, difficult directed, And minimal interaction with peers. In contrast, children who are accompanied by parents when using screens demonstrate the ability to ask questions, retell shows, and communicate two direction with more fluent. Findings This confirm that active involvement person old in accompany And monitor usage screen very important to reduce the negative effects of *screen time* and turn it into a useful educational activity. Without parental supervision, *screen time* tends to become passive activities that do not support the cognitive development of early childhood.

The third finding shows that only a small proportion of parents implement these settings. time *screen time* in a way consistent, like limit use *gadget* between 30 to 60 minutes per day, usually given after the child has completed schoolwork, eaten, or operate worship prayer. A number of person old Also make agreement, good in terms of oral and written, as well as give understanding to child about the importance of screen-free time. Children from families with rules like this appear to be more disciplined, less easy depends on *gadgets* , And more capable switch to activity physique or Playing with friends without much resistance. However, most parents don't have structured *screen time rules*. *Gadget use* is often spontaneous and without clear time limits, depending on the situation at home. When parents are busy, tired, or struggling to care for their children, *gadgets* are used as a tool without regard for duration or content. As a result, children become accustomed to spending long periods of time in front of screens and struggle to accept rules when restrictions are imposed. enforced in a way sudden. Teachers in TKIT Al Sincere 86 Also observed that children who were not accustomed to screen time rules at home tended to exhibit behaviors such as dependence on *gadgets* , irritability when asked to stop playing,

and a lack of interest in participating in learning activities that did not involve digital media. In contrast, children who had a clear *screen time schedule* showed concentration. Which more Good And more capable follow process learning with calm. From findings This can concluded that existence rule Which consistent and structured about *screen time* in House very influential to pattern children's screen use and its direct impact on their behavior and cognitive abilities. Without rules Which clear, child having difficulty managing time, control yourself, and maintain focus on learning.

Findings Sub Focus 2 Development Cognitive **Stage Sensori-motor (age 0-2 year)**

The earliest stage of cognitive development occurs when a baby is born until around the age of 2 year. Stage this is called stage sensorimotor by Piaget. On stage This, children's intelligence more based on on action senses child to the environment, like seeing, feeling, touching, hearing, smelling, etc. According to Piaget, the mechanism of development sensorimotor This use process assimilation And accommodation. The stages of children's cognitive development are developed slowly through the process Assimilation and accommodation of children's schemes due to input, stimulation, or contact with new experiences and situations. Piaget divided this sensorimotor stage into 6 stages, namely:

1. Stage 1: Reflex (age 0-1 month): Stage beginning in development sensorimotor started since baby born until around One month. On time This, behavior baby especially characterized by spontaneous and involuntary reflex reactions, such as sucking, touching, crying, and moving the head and hands unconsciously.
2. Stage 2: Habit (age 1-4 month): On period This, baby start form simple habits through process try try And repetition action. Reflexes Which owned by the baby is developed and adapted to existing patterns, so that it becomes habit, especially If reflex the give results Which enjoyable or useful.
3. Stage 3: Reproduction incident interesting (age 4-8 month): During stage This, baby No just repeating simple habits, but starting to connect experiences that obtained with learning more deep. This create A bridge between action reflex And beginning start intelligence Which grow through experience interesting and repetitive.
4. Stage 4: Schema Coordination (8-12 months): At this stage, babies begin to demonstrate more complex intelligence by recognizing relationships between actions as means to an end. They begin to combine known behavior patterns to achieve desired outcomes more effectively .
5. Stage 5: Experiment (age 12-18 month): On phase This, child start look for And trying new ways to achieve its goals by experiment. They differentiate and modify existing patterns to find new solutions to problems.
6. Stage 6: Representation (ages 18-24 months): The final stage This sensorimotor period marks transition to the next stage of development. Children begin to be able to solve problems and understand something not only through direct physical experience, but also through the process of internalization , thinking symbolic , and mental representations that allow for deep and sudden understanding .

Stage Pre-operational (age 2-7 year)

On stage thinking preoperational , child start demonstrate important skills that become base development pattern behavior furthermore. Ability This in the form of the use of symbols or markers that represent something , be it an object , event , concept, or other form of thought . The symbol functions only as a representative or representation , such as language , mental imagery , or movement symbolic . Piaget divides cognitive development into the preoperational stage into two sub-stages:

1. Thinking Symbolic or Semiotics (age 2-4 year): On phase This, child start understand and use symbols or signs to represent objects or things that are not directly visible

to him . An example is the ability to use words or pictures to represent something objects or events.

2. Thinking Intuitive (age 4-7 year): In between age 4 until 7 year, ability Children's thinking develops rapidly towards the conceptual stage . Children's thinking begins to move from merely symbolic and preconceptual to the early operational stage , where children begin to understand more complex relationships and the basics of logic simple (Fatimah, 2021).

In understanding level of cognitive development of children, we must categorize them based on their developmental stage , as explained by Jean Piaget through the age stage approach. This approach shows that children's cognitive development takes place in a very different way from human beings . According to Piaget, two stage main development cognitive child is sensorimotor (0-2 years) and preoperational (2-7 years). Children begin to understand the world through motor and sensory activities in the sensorimotor stage, which develops from reflection simple become ability representation mental. However, on stage practical , children start using symbols and language to create decision , but they have not been able to make it decisions logically . With understand stages This, We can understand ability child For think according to their needs and provide stimulus that will maximize cognitive development .

This research is designed as a reference for identifying and evaluating development achievements cognitive child age early in TKIT Al Sincere 86. Compilation indicator referring to Jean Piaget's theory of cognitive development as well as referring to the Achievement Level Standards Development Child Age Early as listed in Minister of Education and Culture Regulation Republic of Indonesia No. 137 of 2014 concerning National Standards for Early Childhood Education.

Indicator This expected can help educator in monitor process think children, starting from the sensorimotor stage to pre-operational , according to age characteristics and stages development each child. With thus, stimulation And the learning provided can be more targeted and optimal.

Table 1. Indicator Achievement Development Cognitive Child Age Early

No.	Age Child	Indicator Development Cognitive Child Age Early
1.	2-3 year	a. Know objects in around with mention name and function. b. Show flavor want to know with Lots ask (what, who, where). c. Recognize order simple like big-small or a lot or a little
2.	3-4 year	a. Grouping object based on form, color, or size. b. Follow instructions two step in a way sequentially. c. Finish puzzle simple 3-5 pieces.
3.	4-5 year	a. Tell return experience or story short what is heard and watched. b. Know draft room simple like up-down, front-back. c. Know number 1-10 And count object in accordance amount.

4.	5–6 year	a. Compile pattern or order logical (for example pattern color or form). b. Solve problem simple through discussion or try it yourself. c. Comparing two objects based on bigger–smaller or longer–shorter.
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Cognitive development of children at TKIT Al Ikhlas 86 in the age range of 3 to 6 years show variation achievement appropriate with developmental stages each age. In a way general, ability they in think, remember, understand, and complete problem simple develop in a way gradually And show progress that Enough Good. However, a number of child Still need stimulation addition so that can achieve a level of cognitive development appropriate to his age. In process monitoring or observation, for Teacher And power educator take notes all forms of children's responses, both verbal and non-verbal, during the learning process. Observation This done in a way systematic And sustainable in order to obtain a comprehensive picture of children's cognitive abilities in daily activities.

The teachers at TKIT Al Ikhlas 86 are also active in providing stimulation, guidance and motivation to each student through various activities such as educational games, discussions, And solution problem simple. Approach This customized with characteristics and need individual child, aim so that development cognitive they can running optimally. Through a structured and consistent approach, a comprehensive understanding is created about dynamics achievement indicator development cognitive child age early in the TKIT Al Ikhlas 86 environment. Thus, it is hoped that every child can grow and develop optimally, especially in the ability to think, reason, and understand basic concepts according to their cognitive development stage.

On June 9, 2025, researchers observed a learning activity at TKIT Al Ikhlas 86 that stimulated the cognitive development of children aged 3–4 years through the creation of bee collages with origami paper pieces. This activity aimed to improve the ability to group shapes and colors, follow two-step instructions, and arrange visual elements in a structured manner. The observation results showed that 10 children were able to follow instructions and participate well, while 5 other children still needed more intensive guidance because they had difficulty understanding instructions and grouping paper pieces. The teacher provided direction and assistance so that all children remained engaged and received stimulation as needed. 16 June 2025, researchers observe development cognitive child age 4–5 year at TKIT Al Ikhlas 86 through interactive storytelling activities, introduction of spatial concepts (up-down, front-back), and introduction of numbers 1-10 using concrete media such as sticks ice cream And beam number. Part big child enthusiastic And capable tell back content story as well as understand content educative in accordance theme And count amount object correctly, although some still require additional guidance. In general, children's cognitive development is in accordance with age indicators, and teachers continue to provide visual stimulation. And motor Which support the process Study by pleasant and directed.

On date 23 June 2025, researchers do observation advanced to cognitive development of children aged 5–6 years at TKIT Al Ikhlas 86. The focus of this observation was on children's ability to construct logical patterns, solve simple problems, and compare the size or length of objects, according to the indicators of cognitive development of children aged 5–6 years. Children were given the task of constructing patterns using blocks of various colors and shapes. Most children appeared able to recognize patterns and arrange them sequentially based on the specified color or shape. They demonstrated logical thinking skills and an understanding of repeating patterns, although some children still needed guidance in distinguishing similar shapes. The next activity involves solution simple problems through educational games and small group discussions. The teacher presented

challenges such as moving objects using simple tools. Children were observed actively engaging in discussions and attempting to find solutions, both independently and collaboratively with their peers. This indicates that children are beginning to think critically and formulate basic strategies for solving problems. In the final session, children were asked to compare two different objects based on size (big-small) and length (short-long). Children show interest Which tall And capable identify objects where Which more big or more long. A number of child even succeed give reasons simple For choice they, Which reflect development think analytical and skills comparative they. In a way overall, results observation shows that children aged 5-6 years at TKIT Al Ikhlas 86 have shown good cognitive development achievements according to their age indicators. able to show understanding logical to concepts base And adapt with good at completing cognitive tasks, especially through a play-based learning approach that is consistently applied by teachers.

Based on a series of observations Which done gradually to child age 3 to 6 year in Kindergarten Al Sincere 86, can concluded that development cognitive Children generally show development that is in line with their age stages. Each age group shows different, but interrelated, milestones, reflecting a natural and gradual developmental process. age 3 until 4 year start show ability recognize form And colors, and following simple instructions. Activities such as making collages stimulate these skills. grouping And understanding they about series. Child age 4 until 5-year-olds begin to understand spatial concepts such as up-down and front-back, and recognize numbers through concrete media. They also begin to remember and retell stories they hear, demonstrating the development of memory and verbal skills. Meanwhile, children aged 5 to 6 are able to think logically and analytically through activities such as arranging patterns, comparing the size of objects, and solving simple problems both independently and in groups. Their ability to articulate simple reasons and choose basic strategies to complete tasks reflects their beginnings in the developmental stage. stage think Which more structured. As stated by Berk (2013), on stage age This, children start organize information And apply cognitive strategies in completing tasks.

The success of this cognitive development is closely related to the role of the teacher in providing an environment learn that pleasant And concrete in harmony with the child's developmental stage. Teachers offer appropriate guidance, support, and challenges, ensuring that every child accept stimulation Which optimal. Matter This in line with Vygotsky's theory (1978), which emphasizes that children will develop optimally when they receive assistance in the development zone their proximal—that is, distance between What Which can done child in a way independent And What Which can they achieve with guidance.

Table 2. Timetable Development Cognitive

Day	Activity	Indicator Achievement Cognitive
Monday	Art, Reciting the Koran, Playing together	- Know symbols simple - Compile pattern And form - Show imagination in draw
Tuesday	Gymnastics, Science, Play together	- Grouping object based on color/shape - Recognize draft science simple (ice melt, boiling water)
Wednesday	Dexterity, Recitation, Play together	- Remember order activity simple - Focus in follow instructions - Recognize sound/letter beginning
Thursday	Sensory Play, Gymnastics, Playing together	- Use five senses For exploration - Differentiate texture And aroma - Compile object sequentially

Friday	Listen stories, Watching Content	-Listening And answer question story - Repeat return story in a way simple
	educative, Studying, Playing together	
Monthly	Field trip , Cooking Class , Swimming,	-Know connection cause and effect -Predict results from activity -Think logical through experience real

Based on results study Which done to child age early in Kindergarten Al Sincere 86, it was found that *screen time* usage *time* has a very significant influence on children's cognitive development, especially in aspects of concentration and understanding. instructions, ability think logical, as well as strategy in solve Problems. Cognitive abilities, often defined as thinking intelligence, encompass a broad understanding of thinking and observation. These abilities encompass behaviors that help a person acquire knowledge for application. Cognitive abilities involve thought processes, such as connecting, evaluating, and considering events. Cognitive processes relate to the level of intelligence and ideas expressed by an individual. Cognitive development in children involves understanding concepts through observation, categorization, association, and analysis. This reflects capacity child For think And understand its development Alone and the development of other children. (Jaya & Amrizal, 2024)

Understanding to concepts that is not just growing through direct interaction with the surrounding environment, but can also be influenced by the digital media used by children. Thus, the use of digital devices or *screen time* becomes Wrong One factor external Which capable give stimulation cognitive, depending on how it is used, the duration, and the quality of support provided by parents.

Study This confirm that duration use, quality content Which accessible, and assistance person old during usage device digital is factor main which differentiates whether the impact of *screen time* on children is positive or negative. observation show that children Which get mentoring active from parents when using *gadgets* , especially with educational content, has a tendency For show ability Language, logic, And concentration Which better than children who use gadgets without supervision. These children are better able to remember information, arrange patterns, distinguish object sizes, and understand basic concepts logically. Conversely, unsupervised *gadget use* often leads to decreased focus, delays in understanding instructions, and limitations in exploring new concepts essential for cognitive development.

This phenomenon is in line with Jean Piaget's theory of cognitive development, which emphasizes that growth ability cognitive child ongoing in a way gradually and very depends on stimulation from environment around. On range age 3 until 4 years, children start capable grouping color And form as well as follow instructions simple, where activities such as making collages or play building blocks to become method effective in stimulating their symbolic thinking. The ages of 4 to 5 years mark the period when child start understand draft room like up and down And front back, recognize numbers more systematically, and are able to retell a story, especially if they are assisted by concrete learning media such as ice cream sticks and number blocks. connect draft abstract with experience real. On age 5 until 6 years, abilities logical And analytical child the more develop rapidly; they can compile patterns, compare sizes, and solve simple problems independently and more confidently.

However thus, results study This Also reveal that majority child in Kindergarten Al Ikhlas 86 own duration *screen time* Which exceed One O'clock per day, Which Actually have passed limit time Which recommended by WHO For child age 2-5 year. Many parents still use *gadgets* as a distraction when they are Busy or feel tired, without give mentoring Which adequate. Situation this has the potential limit chance child For Study through interaction social in a way directly or indirectly experience real, Which is aspect important in stage

beginning their cognitive development. Therefore, the role of teachers at TKIT Al Ikhlas 86 is crucial as facilitators who are able to guide children in their zone of proximal development according to their abilities. draft Vygotsky (1978). With various activity daily, like game role-playing, simple experiments, reading stories, and creative arts, teachers not only create an atmosphere Study Which pleasant, but Also stimulate Power think child in a way optimal. Activities additional activities such as field trips or classes cooking done regularly every month give experience real Which help child connect learning materials with their daily lives.

In general, the cognitive development of children aged 3 to 6 years at TKIT Al Ikhlas 86 shows. progress Which in accordance with indicator development Which has established. Children aged 3-4 years begin to recognize shapes and colors and are able to follow simple instructions; children aged 4-5 years already understand the concepts of space and numbers and are able to repeat a story; while children aged 5-6 years show development in logical abilities, such as arranging patterns, comparing sizes, and solving problems. in a way independent. Findings This confirm that use *screen time* No always has a negative impact as long as it is managed in a targeted manner, with an appropriate duration, And accompanied in a way active by person old. Collaboration between environment school and family in manage use *gadget* become factor important for the sake of help children develop ability cognitive they in a way optimal. With support full from teachers, constant guidance from parents, and a variety of varied and enjoyable learning activities, children can grow become an individual who more focused, thinking logical, and able to solve problems well even in the digital era which is full of disturbances and distractions.

Thus, this study provides a clear picture that appropriate screen time management is an integral part of early childhood education strategies. Consistent parental supervision, active teacher involvement in the learning process, as well as environment Study the rich will experience directly and interactive to be key main For ensure development cognitive child walk in a way optimally amidst the inevitable rapid advances in digital technology. This underscores the importance of synergy between home and school in creating a balanced learning approach that combines digital technology with real-life social interactions, resulting in holistic and sustainable child development.



Picture 1. Framework Research

Research framework This explains how screen time affects the cognitive development of early childhood at TKIT Al-Ikhlas. 86. From the diagram that there is , it is seen that screen time bring impact Good positive and negative , Which influenced by role person parents , teachers, and how children use gadgets.

Impact Negative from Screen Time Excessive

Children tend to experience decline ability to focus. The process of understanding instructions become more slow, desire to explore new concepts decline , and verbal communication skills do not develop optimally. This shows that if *gadget use time* is not properly limited , children's cognitive development can be affected . disturbed .

Factor Reason Problem

of parental knowledge in managing *gadget* time , *gadgets* become center attention child, as well as No existence rule use Which consistent become reason the main issue. These factors confirm that the influence of *screen time* is closely related to patterns care and support implemented .

Impact Positive (Change Behavior)

With management Which appropriate , screen time can increase ability Language and logic child, practice focus And discipline in Study, help child solve problems independently , as well as increase children's social participation . *Screen time* , if properly managed , can functions as a tool stimulation effective cognitive .

Role Person Old And Teacher

Person old And Teacher play a role important in accompany child moment use gadget, choose content educative Which in accordance, set rule And timetable use Which clear, and give stimulation through experience real in outside screen . With role active this, *screen time* can be a positive stimulus for child development, not an obstacle.

This research framework confirms that *screen time* has two distinct effects on development cognitive child age early . If used in a way excessive And without supervision , *screen time* can cause decline concentration as well as hinder ability exploration child. However, if its utilization directed with Good by parents and teachers, *screen time* actually provides positive benefits such as improved language skills, logic, learning focus, and social skills. Therefore , management and mentoring from parents and teachers to the main key in determining whether the impact of screen time on children is positive or negative .

CONCLUSION

Screen implementation The use of screen time by parents towards early childhood children at TKIT Al Ikhlas 86 has been proven to have a significant influence on children's cognitive development, where the use of digital devices is limited to no more than one hour per day and is always accompanied by active guidance, making children show more optimal development in thinking skills, concentration, language, as well as mastery of instructions and visual-motor coordination; on the other hand, screen time Excessive screen time without supervision leads to decreased focus, language delays, and poor memory and ability to follow directions. These findings support Piaget's theory of the importance of direct interaction with the environment in the formation of cognitive schemas, and are reinforced by Vygotsky's view of the role of caregivers as facilitators in children's transition through their zone of proximal development. In children aged 4–5 years, screen time Structured screen time integrated with activities such as storytelling, role-playing, and concept recognition can improve logical thinking, language, and cause-and-effect understanding, while passive screen use actually hinders the process of connecting new information with previous experiences. Children aged 5–6 years who are accustomed to screen time Healthy screen time also showed significant improvements in analytical thinking skills, problem solving, and the ability to compare and explain the reasons for their choices. Overall, this study confirms that screen time Time can provide optimal benefits if managed appropriately through duration limits, active guidance, and reinforcement with concrete activities and real-life experiences; this success is highly dependent on the synergy between parents and teachers in guiding the use of digital devices, so that children develop into individuals with good concentration, developed language skills, adequate logical and problem-solving skills, and readiness to face the ever-evolving digital era.

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