



The Impact of Smartphone Use on Children Aged 5-6 Years



Eke Sumartin^{1*}, Siti Misra Susanti¹, Rachman Saleh¹ 

¹ Universitas Muhammadiyah Buton, Indonesia

*corresponding author: ekesumartinn@gmail.com

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ABSTRACT

This study aims to identify the negative impacts of smartphone use on children aged 5–6 years and to examine parents' role in supervising smartphone use among children at TK Negeri 24 Buton, Waangu-Angu Village, Indonesia. The rapid advancement of digital technology has led to increased smartphone access among young children, raising concerns about developmental consequences, particularly during the critical golden age (0–6 years) when foundational social, emotional, and language skills are formed. This research employed a descriptive, qualitative approach to explore smartphone use in depth. Data were collected through observation, semi-structured interviews, and documentation. The research subjects consisted of 17 children aged 5–6 years, 1 classroom teacher, and parents as primary informants. Data analysis followed the interactive model of Miles and Huberman, including data reduction, data display, and conclusion drawing, with validity ensured through source and technique triangulation. The findings revealed that excessive smartphone use negatively affects children's development, particularly in social, language, emotional, and behavioral domains. Children exhibited decreased social interaction, limited two-way communication skills, difficulty regulating emotions (e.g., tantrums when smartphone access was restricted), passive behavior, and dependency on devices. Additionally, children became more easily distracted and less focused during learning activities. The study also identified that parents play a crucial role in supervising smartphone use, including setting time limits, providing accompaniment during use, establishing clear rules (e.g., no smartphones before bedtime), and redirecting children to more positive and educational activities (e.g., outdoor play, drawing). The study concludes that uncontrolled smartphone use can significantly hinder child development; therefore, optimal parental supervision is essential to ensure that smartphone use remains directed, balanced, and does not compromise children's developmental outcomes. These findings contribute to early childhood education by providing empirical evidence from a rural Indonesian context and offering practical recommendations for parents and educators.

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1. Introduction

The development of information and communication technology in the modern era has brought major changes in various aspects of human life, including the world of early childhood. One manifestation of this development is the increased use of smartphones as a digital medium easily accessible to all age groups. Empirical data show that smartphone use is no longer limited to adults but has extended to young children (Mitsalia, 2019). Mitsalia (2019) stated that smartphones have become part of people's daily activities due to ease of access, interactive features, and the wide variety of available applications. This condition is reinforced by Lestari (2023), who explained that the attractiveness of smartphones for children lies in their visual and audio elements and their high interactivity, which can capture children's attention for relatively long periods. This phenomenon is particularly concerning given that early childhood is a period of rapid brain development and vulnerability to environmental influences.

At the developmental stage, children aged 5–6 years are in the golden age, a critical period for the formation of all aspects of development, including cognitive, social-emotional, language, moral, and physical-motor skills. Hurlock (2019) emphasized that during this period, children need appropriate stimulation for optimal development. However, uncontrolled exposure to digital technology can affect these developmental processes. Aisyah (2021) noted that young children tend to imitate behaviors they observe in their surroundings, including those from digital media such as smartphones. This makes smartphone use a factor with significant potential to impact child development. Furthermore, the COVID-19 pandemic accelerated digital adoption, and many children were introduced to smartphones earlier than intended, often as a coping mechanism for parents managing work and childcare simultaneously.

In general, smartphone use in early childhood has both positive and negative impacts. On the positive side, smartphones can serve as effective learning media for introducing technology from an early age, improving fine motor skills, and supporting cognitive development through educational applications (Handayani, 2022; Wulandari, 2022). For example, interactive apps that teach letter recognition or basic counting can supplement formal instruction. However, recent studies indicate that excessive smartphone use tends to have greater negative impacts, particularly on children's social-emotional development. Hidayah (2020) found that high-intensity smartphone use can lead to decreased social interaction skills and to aggressive behavior and a dependence on digital media. This finding is reinforced by Rosyidah (2021), who stated that children with low control over smartphone use tend to experience difficulty in establishing direct social relationships. Additionally, Rahmawati (2020) and Setiawan (2020) reported that excessive smartphone use can reduce concentration, cause sleep disturbances, and lead to health problems such as eye strain and reduced physical activity.

International research has shown similar results. Liu et al. (2021) found that early screen exposure can predict future emotional and behavioral problems, such as difficulties with self-control and increased hyperactivity. In a birth cohort study of 4-year-old children, Liu et al. (2021) reported that each additional hour of daily screen time at age 2 was associated with higher odds of emotional problems at age 4. Meanwhile, Tamana et al. (2019) discovered that preschool children with high screen time duration had a greater risk of attention problems (inattention), which impacts school readiness. Using data from the CHILD birth cohort study, Tamana et al. (2019) found that children with more than 2 hours of screen time per day were 5 times more likely to exhibit clinically significant inattention problems than those with less than 30 minutes. The relationship between screen

time and developmental delays is also supported by [Madigan et al. \(2019\)](#), who reported that higher screen time at age 2 was associated with poorer performance on developmental screening tests at age 3.

Despite these findings, most existing studies focus on elementary school children or only examine one specific aspect of development. Research specifically addressing the impact of smartphone use on children aged 5–6 in kindergarten education, particularly in rural or remote areas, remains relatively limited. In addition, studies examining the relationship between the intensity of smartphone use at home and children's behavior at school are still scarce ([Puspitasari, 2024](#)). This gap is significant because rural contexts often present unique challenges: parents may have lower digital literacy, fewer alternative recreational resources, and less access to professional advice on screen time management. Furthermore, many existing studies rely on parent-reported outcomes without direct observation of child behavior in naturalistic settings, which may introduce reporting bias. This indicates a research gap that needs further investigation.

Based on a preliminary study conducted at TK Negeri 24 Buton, Waangu-Angu Village, it was found that most children regularly use smartphones at home, both to watch videos and play games. Observation results indicated smartphone dependency, including children consistently asking for smartphones and emotional reactions, such as tantrums, when denied access to the device. Additionally, in the school environment, several problems emerged, including children becoming easily bored, lacking participation in learning activities, tending to be passive, and lacking interaction with peers. Children also showed emotional symptoms such as irritability, crying easily, and having low emotional control. These phenomena indicate that uncontrolled smartphone use can negatively impact children's social and emotional development. This condition is an important problem that needs in-depth study, given that early childhood is a crucial phase for character formation and the development of basic abilities.

As a problem-solving effort, this study was designed to analyze the relationship between smartphone use and the social-emotional development of children aged 5–6 years. The approach used not only focuses on the intensity of use but also considers aspects of children's behavior in the school environment as indicators of emerging impacts. Thus, this research is expected to provide a more realistic picture of smartphone use conditions and their implications for early childhood development. Unlike previous quantitative studies that primarily used surveys, this qualitative approach allows for rich, contextual data collection through direct observation and in-depth interviews, capturing the nuances of how smartphone use manifests in daily parent-child and teacher-child interactions. Moreover, the study uniquely integrates home and school contexts by triangulating reports from parents, teachers, and direct child observation.

Based on the description above, the main objective of this study is to analyze the impact of smartphone use on children aged 5–6 years at TK Negeri 24 Buton, Waangu-Angu Village. Specifically, this study aims to: (1) identify the negative impacts of smartphone use on children; and (2) understand the role of parents in supervising smartphone use in children. The novelty of this research lies in its approach, which integrates the context of smartphone use at home with observations of child behavior in the school environment, specifically targeting the 5–6-year-old age group at a kindergarten in a rural area of Buton, Southeast Sulawesi. This study does not merely describe smartphone use but also examines its impacts in real field conditions, including direct behavioral observation during learning activities. The research also provides concrete examples of parental supervision strategies

that are feasible in low-resource settings, which is a contribution often missing from high-income-country studies.

It is expected that the results of this study will contribute to the development of early childhood education science, particularly by advancing understanding of the impact of digital technology on child development. Furthermore, this research is expected to serve as a consideration for parents and educators in managing smartphone use wisely, so that the benefits of technology can be optimized without hindering the child's development process. The findings may also inform local education policy regarding screen time guidelines in kindergartens and support the design of parent education programs on digital parenting in rural Indonesia.

2. Method

This research employed a descriptive qualitative research design, selected because it can describe the phenomenon of smartphone use among children aged 5–6 years in depth and in context, grounded in real field conditions. This approach was used to understand children's behavior, experiences, and social-emotional interactions without manipulating research variables. The selection of this method was based on the research objective, which was not only to determine the level of smartphone use but also to examine its direct impact on children's behavior in both family and school environments. According to [Sugiyono \(2019\)](#), descriptive qualitative research is used to examine the natural condition of the object, in which the researcher serves as the key instrument, data collection techniques are triangulated, and data analysis is inductive. This design is particularly appropriate for exploring how and why smartphone use affects child development in authentic settings, rather than simply measuring correlation coefficients.

The research was conducted at TK Negeri 24 Buton, Waangu-Angu Village, Pasarwajo District, Buton Regency, during February 2026. The research subjects were children aged 5–6 years (class B2) who had used smartphones, along with their parents and teachers as supporting informants. A total of 18 participants were involved: 17 children and 1 classroom teacher, with parents serving as primary informants because they had direct access to children's behavior at home. The characteristics of the selected children were that they actively used smartphones in daily activities, both for watching videos and playing games. Purposive sampling was employed to ensure that participants met the inclusion criteria: (a) child aged 5–6 years enrolled in TK Negeri 24 Buton, (b) child has used a smartphone for at least 3 months, (c) child uses smartphone at least 1 hour daily, and (d) parent provides consent for participation. The data collected included smartphone use, duration of use, types of applications used, and emerging impacts on children's social and emotional well-being.

Data collection techniques included observation, interviews, and documentation, which complemented one another. Observations were conducted during learning activities over four weeks (February 5 to March 5, 2026), with each observation session lasting 60–90 minutes. The observation focused on children's social interactions, emotional responses, attention span, participation in group activities, and reactions during transitions (e.g., when asked to put away smartphones). Semi-structured interviews were conducted with parents (n=17) and the classroom teacher (n=1) using interview guides developed from the literature. Interviews explored themes such as daily smartphone usage patterns, types of content accessed, reasons for providing smartphones, observed behavioral changes, and supervision strategies employed. Document analysis included children's developmental

records, attendance sheets, and notes from parent-teacher meetings. Data analysis was conducted qualitatively using interactive analysis techniques, including data reduction, data display, and conclusion drawing (Miles, Huberman, & Saldaña, 2014). The analysis process began with transcribing interview recordings and observation notes, followed by coding (open coding, axial coding, selective coding) to identify themes related to impacts and parental roles.

The validity of the data in this study was tested through source triangulation and technique triangulation. Source triangulation was done by comparing information from children, parents, and teachers, while technique triangulation was done by comparing observation, interview, and documentation results. Additionally, the researcher conducted member checks by reconfirming interview results with informants to ensure that the data obtained matched the actual conditions. Specifically, preliminary findings were presented to three parent informants and the teacher, who confirmed the accuracy of interpretations. To ensure reliability, an audit trail was maintained, documenting all research decisions and data-collection procedures. Data saturation was achieved when no new themes emerged after the twelfth parent interview, but all 17 interviews were completed for comprehensiveness.

3. Result

3.1 Description of Smartphone Use Patterns Among Children

The results of this study were obtained through observation, interviews, and documentation conducted with children aged 5–6 years at TK Negeri 24 Buton, Waangu-Angu Village. The data presented are the results of analyses that have been reduced and focused on the research objectives, namely to describe the forms of smartphone use, its impact on children's social-emotional development, and its relationship with children's behavior in the school environment. Based on interviews with 17 parents, the following usage patterns were identified: all 17 children (100%) used smartphones daily, with durations ranging from 1 to 5 hours per day. The average daily screen time was 2.8 hours, exceeding the World Health Organization's recommendation of no more than 1 hour per day for children aged 5 years. The most common activities were watching YouTube videos (94%, primarily cartoons and gaming content), playing mobile games (82%, including free-fire and puzzle games), and accessing social media via parents' accounts (29%, inadvertently). Parents reported that the primary reasons for giving smartphones included: to keep children quiet (76%), lack of alternative entertainment (65%), and to help with schoolwork (12%). Notably, only 4 parents (24%) reported setting daily time limits consistently.

3.2 Impact on Social Aspects

Based on research conducted at TK Negeri 24 Buton, it was found that smartphone use among children aged 5–6 years had an impact on social, language, emotional, and behavioral aspects. These findings were obtained through observation during learning activities and interviews with teachers and parents, providing a comprehensive picture of children's conditions both at school and at home. In general, the impact of smartphone use was more pronounced at home because children had greater access, whereas at school, it could be mitigated through teacher supervision and guidance.

In the social aspect, children with high smartphone use intensity tended to show decreased quality of social interaction. Children became more passive, lacked initiative in

initiating communication, and preferred playing alone rather than interacting with peers. During observation at school, it was noted that out of the 17 children, 11 (65%) rarely initiated conversations with friends; when asked to work in groups, they often sat quietly without contributing. One parent stated, "At home, my son just sits and watches his phone. When his friends invite him to play outside, he refuses. He prefers to stay indoors with the gadget" (Parent interview, February 12, 2026). Another parent added, "My daughter used to play with neighbors, but now she only wants to play games on the phone. She gets angry if I take it away" (Parent interview, February 15, 2026). The teacher also reported, "Some children find it difficult to adapt to group play. They seem awkward when asked to talk or play with friends. I think they spend too much time alone with their phones" (Teacher interview, February 18, 2026). However, it should be noted that at school, this impact was less prominent because the teacher's direction and stimulation encouraged children to remain involved in group activities.

3.3 Impact on Language Aspects

In the language aspect, it was found that children tended to receive language more passively through digital viewing rather than engaging in two-way communication. Children could imitate vocabulary from videos, but were less active in developing expressive speaking skills. This was evident from children's tendency to answer briefly, lack confidence in storytelling, and inability to develop ideas spontaneously. During observation, when asked to describe a picture or retell a short story, 12 children (71%) responded with one or two words ("cat," "happy") rather than full sentences. One teacher noted, "When we have storytelling time, some children can answer questions but cannot retell the story. Their vocabulary is actually quite extensive because they learn from YouTube, but they have trouble stringing sentences together" (Teacher interview, February 18, 2026). A parent confirmed, "My child knows many English words from watching cartoons, but when asked, 'How was school today?' he just says 'fine' or nothing at all" (Parent interview, February 14, 2026). This condition indicates that receptive language develops well, but expressive language is suboptimal.

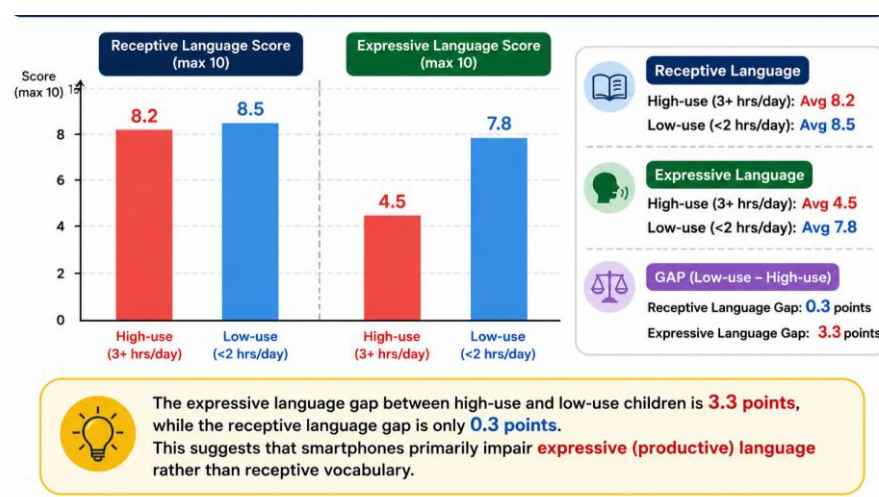


Figure 1. Comparison of Receptive vs. Expressive Language Abilities in High-Use vs. Low-Use Children

3.4 Impact on Emotional Aspects

On an emotional level, children accustomed to long smartphone use tended to have difficulty controlling their emotions, especially when smartphone use was restricted. Children became more irritable, cried more easily, and were difficult to calm down, indicating an emotional dependence on digital devices. Based on parent interviews, 13 out of 17 parents (76%) reported that their child would throw a tantrum (crying, screaming, or even throwing objects) when the smartphone was taken away. One parent explained, "If I take his phone before he is ready, he will roll on the floor and scream. It can last for 20 minutes. I used to give it back just to stop the noise, but then he learned that tantrums work" (Parent interview, February 10, 2026). Another parent stated, "My daughter's mood changes completely without her phone. She becomes very irritable and refuses to eat" (Parent interview, February 17, 2026). However, at school, this condition was less visible because children could be redirected and engaged in learning activities, suggesting that structured environments support emotional regulation. The teacher observed, "At school, when I say it is time to put away gadgets (during the rare instances phones are allowed), the children comply without much fuss because they know the rules and are distracted by other interesting activities" (Teacher interview, February 20, 2026).

Table 1. Summary of Negative Impacts of Smartphone Use on Children (N=17)

Developmental Aspect	Specific Impact Observed	Number of Children Affected	Percentage
Social	Decreased peer interaction, prefers playing alone	11	64.7%
Social	Difficulty initiating communication with peers	9	52.9%
Language	Limited expressive language (short answers, difficulty retelling)	12	70.6%
Language	Passive communication style (responds but does not initiate)	10	58.8%
Emotional	Tantrums when the smartphone is taken away	13	76.5%
Emotional	Difficulty calming down after emotional arousal	11	64.7%
Behavioral	Easily distracted during learning activities	14	82.4%
Behavioral	Passive behavior (low participation in class)	10	58.8%

3.5 Impact on Behavioral Aspects

In the behavioral aspect, smartphone use also affected children's daily habits. Children tended to be more passive, less interested in physical activity, and more easily distracted during learning activities. During the classroom observation, 14 of 17 children (82%) showed signs of distraction, such as looking around, fidgeting, or asking for their phone during lessons. The teacher noted, "When I explain a lesson, some children are not focused. They look sleepy or restless. I suspect they stay up late watching videos at night" (Teacher interview, February 18, 2026). Additionally, children showed a tendency to imitate behaviors from the digital content they watched. Several parents reported that their children had started using impolite words or aggressive gestures learned from gaming videos. One parent stated, "My son yelled 'You are a loser!' at his playmate. He learned it from a gaming video. I was shocked because we never speak like that at home" (Parent

interview, February 16, 2026). This finding is consistent with the developmental stage of early childhood, a period of imitation that makes children highly susceptible to copying what they see.

3.6 Description of Children's Behavior in the School Environment

Observations at school revealed specific behaviors associated with high smartphone use. On three separate days of observation (February 10, 17, and 24, 2026), the researcher noted that during free play time (30 minutes), children with high screen time (≥ 3 hours/day, $n=9$) spent an average of 22 minutes alone or only interacting with the same one child, whereas children with low screen time (< 2 hours/day, $n=5$) spent only 8 minutes alone and actively sought group play. During circle time (morning greeting and sharing), high-use children often looked at the floor or walls, avoided eye contact, and gave one-word responses when asked about their weekend. For example, when asked "What did you do yesterday?" a high-use child replied "Phone" without elaboration, while a low-use child said, "I went to the beach with my mom and we built a sandcastle." The teacher confirmed these observations, stating, "There is a clear difference in social engagement between children who use smartphones a lot and those who do not. The heavy users are like empty shells—they are present but not really participating."

3.7 Parental Supervision Strategies

In addition to the four aspects above, this study also confirmed that parents' role in supervising smartphone use among young children is critically important. Based on research findings, some parents have implemented time limits on children's smartphone use. This limitation aims to prevent children from being exposed to screens for too long and to ensure they still have time for play and social interaction. Of the 17 parents, 9 (53%) reported setting a time limit, but only 4 (24%) reported enforcing it consistently. One parent stated, "I only allow my child to use the phone for 1 hour after finishing homework. After that, I take it away. At first she was upset, but now she understands" (Parent interview, February 11, 2026). However, some parents also admitted that the limitations were not yet optimal due to their busy work schedules. A parent working as a farmer said, "I leave for the fields at 6 AM and come back at 4 PM. My child is with the grandmother, and I cannot control what he does all day" (Parent interview, February 14, 2026).

According to [Rawanita & Mardhiah \(2024\)](#), time-limited strategies are among the most common. Parents can implement clear rules regarding the duration and frequency of gadget use, for example, allowing children to use gadgets for only 1 hour per day after physical activities or homework are completed. These rules help reduce the risk of addiction and maintain a balance between digital and physical/social activities. In this study, parents also mentioned supervising children by accompanying them and monitoring their smartphone use. One parent explained, "When my child uses the phone, I sit beside him and make sure he only watches educational videos. I also explain what he sees so he understands" (Parent interview, February 13, 2026). This indicates that parental involvement can help guide children in selecting appropriate content.

3.8 Rule Setting and Alternative Activities

Additionally, setting rules, such as prohibiting smartphone use before bedtime, was also an effective form of supervision in building children's discipline. One parent stated, "No phones after 7 PM. This rule is non-negotiable. We read a story together before sleep instead" (Parent interview, February 15, 2026). The teacher validated that children from families with clear rules appeared more regulated at school. Not only that, but parents also

played a role in providing alternative activities, such as inviting children to play outside or engage in creative activities. A parent said, "I take him out to play in the yard or draw so he does not keep holding the smartphone" (Parent interview, February 12, 2026). This redirection strategy proved effective based on parent reports: 12 of 17 parents (71%) reported that their child forgot about the phone during a fun outdoor activity. This aligns with research by [Henny et al. \(2024\)](#), which emphasized that the active involvement of parents and teachers greatly influences the formation of positive child behavior.

Table 2. Parental Supervision Strategies and Their Reported Effectiveness (N=17)

Supervision Strategy	Number of Parents Implementing	Reported Effectiveness (Child complies often/always)
Setting daily time limits	9 (53%)	4 (24% of all parents)
Accompanying during use	12 (71%)	9 (53%)
Prohibiting before bedtime	10 (59%)	7 (41%)
Providing alternative activities	14 (82%)	10 (59%)
Explaining content/co-viewing	8 (47%)	6 (35%)

3.9 Teacher's Role and School Environment

The teacher at TK Negeri 24 Buton also played an important role in mitigating the negative impacts of smartphone use. Although children might have high screen time at home, the school environment provided structured activities that encouraged social interaction, physical movement, and face-to-face communication. The teacher reported implementing various strategies, including: (a) morning circle time for sharing experiences (encouraging expressive language), (b) group games that required cooperation (e.g., traditional games like "congklak" and "lompat tali"), (c) art activities (drawing, coloring, cutting) to develop fine motor skills as an alternative to screen-based activities, and (d) storytelling sessions without digital media (using puppets and picture books). The teacher stated, "I can see which children use phones too much at home because they struggle during group activities. My job is not just to teach but to pull them back into the real world" (Teacher interview, February 20, 2026).

In summary, the key findings from this study are: (1) Smartphone use among children aged 5-6 years at TK Negeri 24 Buton is prevalent (100%), with daily use ranging from 1-5 hours (average 2.8 hours); (2) Negative impacts are observed across social, language, emotional, and behavioral domains, with the most pronounced effects on emotional regulation (76% report tantrums) and behavioral focus (82% show distractibility); (3) The impact on expressive language (70.6% affected) is greater than on receptive language; (4) Parental supervision is inconsistent, with only 24% enforcing consistent time limits despite 82% providing alternative activities; (5) The school environment and teacher intervention play a mitigating role, but cannot fully compensate for uncontrolled home use; (6) Effective parental strategies include accompaniment, time limits, bedtime rules, and activity redirection, but barriers such as parental work schedules and low digital literacy remain.

4. Discussion

The findings of this study demonstrate that excessive smartphone use has significant negative implications for children's social interaction and communication skills. Consistent with [Hidayah \(2020\)](#) and [Rosyidah \(2021\)](#), children who frequently used smartphones tended to exhibit passive social behavior, preferring solitary activities over direct peer

interaction. The present study extends these findings into a rural context, where children traditionally have more opportunities for outdoor and social play. Despite living in an environment that should naturally support social development, many children still exhibited withdrawal and awkwardness during group activities. According to [Hurlock \(2019\)](#), early childhood is a critical period for developing empathy, turn-taking, and negotiation skills through direct interaction. Therefore, the observed preference for isolated digital engagement may reduce opportunities to practice essential social competencies, potentially resulting in long-term difficulties in communication and peer relationships ([Liu et al., 2021](#)).

Another important finding concerns expressive language deficits among children with high smartphone exposure. Although many children demonstrated adequate receptive vocabulary, they struggled to produce detailed sentences or spontaneous narratives. This pattern aligns with [Linebarger & Vaala \(2019\)](#), who argued that passive digital media consumption does not provide opportunities for conversational turn-taking that are necessary for expressive language development. Similarly, [Madigan et al. \(2019\)](#) found that children with greater screen exposure showed lower expressive language performance over time. In the present study, children were often able to provide brief responses, such as naming objects, but failed to elaborate using descriptive or narrative language. This suggests that prolonged exposure to passive digital content may encourage a telegraphic communication style with limited complexity. Such deficits are particularly concerning because expressive language skills are fundamental for school readiness, especially in activities requiring explanation, storytelling, and prediction.

The study also identified emotional dysregulation and dependency as major consequences of excessive smartphone use. Approximately 76% of children showed tantrums or emotional distress when smartphones were removed, indicating a strong dependency on digital devices. These findings support the findings of [Hasanah \(2022\)](#) and [Liu et al. \(2021\)](#), who identified excessive screen time as a predictor of emotional and behavioral difficulties. Smartphones may function as “digital pacifiers,” calming children temporarily but preventing the development of independent self-regulation skills. In addition, fast-paced games and instant reward systems may condition children to expect immediate gratification, making them more easily frustrated in real-world situations that require patience and delayed rewards. Interestingly, teachers reported that children were more emotionally regulated within structured classroom settings, supporting the findings of [Tamana et al. \(2019\)](#) that organized environments can reduce attention and behavioral problems associated with excessive screen exposure.

Behavioral distractibility emerged as another critical issue with important implications for learning. The high rate of inattention observed among children in this study supports previous findings by [Tamana et al. \(2019\)](#), [Setiawan \(2020\)](#), and [Rahmawati \(2020\)](#), who documented links between screen exposure and concentration problems. Smartphones and digital games provide highly stimulating and unpredictable rewards, which may condition children’s brains to seek constant high-intensity stimulation. As a result, normal classroom activities can appear less interesting, leading children to become restless, disengaged, or inattentive during lessons. Furthermore, several children imitated aggressive language or behavior observed in digital content, supporting Bandura’s social learning theory ([Bandura, 1986](#), cited in [Aisyah, 2021](#)), which emphasizes that children learn behaviors through observation and imitation. This finding suggests that children are not passive consumers of digital media but active imitators of what they repeatedly watch.

Parental supervision was identified as a crucial protective factor, although implementation remained inconsistent. Only a small proportion of parents consistently enforced screen time limits, while many admitted using smartphones as a practical tool to occupy children during work or household tasks. This finding aligns with [Istiqomah & Simanjuntak \(2021\)](#), who noted that parents often rely on digital devices as coping mechanisms, particularly after the pandemic period. The present study further demonstrates that co-viewing strategies, in which parents accompany children during smartphone use, were perceived as more effective than strict restriction alone. [Masykuroh et al. \(2023\)](#) and [Rawanita & Mardhiah \(2024\)](#) similarly emphasized the importance of parental involvement in digital media use. Through accompaniment, parents can explain content, reinforce language development, and establish boundaries in real time. Moreover, parents who provided alternative activities such as drawing, outdoor play, or simple household participation reported greater success in reducing children's dependence on smartphones.

The findings also highlight the importance of contextual and ecological perspectives in understanding smartphone use among rural children. Conducted in Buton, Southeast Sulawesi, this study revealed that limited access to structured recreational facilities and extracurricular activities contributed to smartphones becoming the primary form of entertainment. From Bronfenbrenner's ecological systems perspective, children's development is shaped by interactions across family, school, and broader community systems. In this study, the family microsystem exerted the strongest direct influence, while the school served as a protective mesosystem, providing structured social interaction and learning opportunities. However, inconsistencies between home and school practices weakened these protective effects. The exosystem, including parents' work demands and limited community resources, also constrained parents' ability to provide healthy alternatives. Consequently, interventions should not focus solely on parents but also involve schools and community support systems.

Teachers were found to play an important protective role in mitigating some of the negative impacts of smartphone use. Classroom activities such as group games, storytelling, art projects, and circle time provided opportunities for face-to-face interaction, emotional expression, and fine motor development that are often displaced by excessive screen exposure. This finding aligns with [Henny et al. \(2024\)](#), who emphasized the importance of collaboration between teachers and parents in supporting child development. Nevertheless, teachers acknowledged limitations in fully addressing these issues, particularly due to large class sizes and the developmental delays already present when children enter kindergarten. Therefore, early intervention before the age of three and stronger communication between home and school environments are necessary to reduce the long-term developmental risks associated with excessive smartphone use.

Overall, this study contributes important theoretical and practical insights into the effects of smartphone use on early childhood development within a rural Indonesian context. Consistent with previous studies by [Yuliana \(2021\)](#), [Rahmadani \(2021\)](#), [Liu et al. \(2021\)](#), and [Tamana et al. \(2019\)](#), the findings demonstrate significant impacts on social interaction, expressive language, emotional regulation, and attention. However, this study extends prior research by providing rich qualitative descriptions of children's daily classroom behaviors and by highlighting the distinction between receptive and expressive language deficits. Practically, the findings suggest several recommendations, including consistent screen time limits, co-viewing practices, screen-free routines, and the provision of alternative play activities. At the policy level, stronger digital parenting education,

teacher training, and investment in child-friendly community spaces are needed to support healthier childhood development in the digital era.

5. Conclusion

Based on the research conducted at TK Negeri 24 Buton, Waangu-Angu Village, it can be concluded that smartphone use in children aged 5–6 years has significant negative impacts across multiple developmental domains. Socially, children show decreased peer interaction, passivity, and difficulty initiating communication. Linguistically, expressive language is more severely affected than receptive language; children can understand words but cannot produce complex sentences or narratives spontaneously. Emotionally, the majority of children (76%) exhibit tantrums and emotional dependency when smartphone access is restricted, indicating poor self-regulation. Behaviorally, children are easily distracted (82%), participate less in learning activities, and imitate aggressive or inappropriate behaviors from digital content. The average daily screen time of 2.8 hours far exceeds the World Health Organization recommendation of 1 hour, and supervision is inconsistent, with only 24% of parents enforcing consistent time limits. The school environment and teacher intervention partially mitigate these impacts but cannot fully compensate for uncontrolled home use.

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