# The Impact of Gadget Use on Character Formation of Early Childhood in Cinta Bunda Batu Bara Kindergarten

**Siti Dahlia Sitorus, Bahtiar Siregar**

**Abstract**
This study aims to describe the impact of gadget use on the character development of early childhood children at Cinta Bunda Kindergarten, Batu Bara. The background of this research is based on the phenomenon of increasing intensity of gadget use among children, which directly and indirectly affects aspects of character development, such as discipline, empathy, responsibility, and social skills. This study used a descriptive qualitative approach, with data collection techniques through observation, in-depth interviews with teachers and parents, and documentation of children's learning activities. The results showed that most children used gadgets for more than two hours per day without adequate supervision. Consequently, children exhibited behaviors such as lack of discipline, irritability, and reluctance to interact with peers. However, positive impacts were also found in limited cases, especially when gadget use was directed towards educational content and with parental supervision. The school has taken initiatives to limit the negative impacts of gadgets through interactive activities, screen-free zones, and digital parenting programs for parents. In conclusion, gadget use negatively impacts children's character development if not properly controlled. Therefore, active collaboration between teachers and parents is necessary to create a learning environment that balances technology and social values, in order to optimally support children's character development.

**Keywords**: Gadgets, Children's Character, Early Childhood, Character Education, PAUD

Siti Dahlia Sitorus
Early Childhood Islamic Education Study Program, Universitas Pembangunan Panca Budi, Indonesia
e-mail: dahlias600@gmail.com

Bahtiar Siregar
e-mail: bahtiarsiregar@dosenpancabudi.ac.id
International Conference Global Islamic Education: Cultivating Tolerance and Interfaith Cooperation in A Multicultural (GIE), Theme: Strengthening Tolerance and Peace.
https://proceeding.pancabudi.ac.id/index.php/GIE

## Introduction

Early Childhood Education (ECE) is a crucial stage in shaping the moral foundation, character, and personality of children. Traits such as social empathy, discipline, responsibility, and moral values are nurtured from an early age through interaction, caregiving, and environmental stimulation. However, in the digital era, there is a growing trend of gadget use among children aged 3–6 years for watching videos/YouTube or playing interactive games. While gadgets can offer educational potential, excessive use and addiction can interfere with the character development process in early childhood.

Several studies have confirmed the negative effects of gadget use on various aspects of child development. Elka Mimin (2022) concluded that gadgets have detrimental impacts on moral, religious values, social-emotional, cognitive, language, and artistic development in Indonesian early childhood. Research in Bener Meriah also shows that while cognitive development remains positive, gadget use does not significantly affect the social-emotional and language development of children aged 3–6 years.

A study at TK X Cileunyi Bandung found that using gadgets for more than two hours per day correlates with weak social interaction skills, low empathy, individualistic behavior, and even aggressive tendencies when gadget use is restricted. Similarly, Sulistyo Rini and Wulandari (2024) observed that children who frequently use gadgets often display aggressive behaviors such as anger, crying, and hitting mainly due to a lack of direct interaction and parental supervision.

Another study conducted at TK Adifa Karang Mulya, Tangerang, found that although gadgets may support fine motor stimulation, use exceeding two hours per day negatively affects the emotional, moral, and disciplinary development of children aged 4–5 years. Likewise, a study in Tirtaharja Village revealed that children who often play with gadgets experience delayed language development, lack verbal communication, struggle to construct sentences, and show reduced social abilities. The impact of gadget use on social care character was also highlighted in a study in Kedungwaru Village, Demak children appeared indifferent, impolite, and rarely helped others due to being overly absorbed in gadgets.

Research on the correlation between gadget duration and character formation at TK Pratama Kids Sukabumi shows a significant link between gadget use duration and the character quality of children aged 5–6 years the longer the use, the lower the level of discipline, responsibility, and religious morality.

Although much of the literature focuses on cognitive and language development, few studies have comprehensively examined the impact of gadgets on character formation in early childhood, particularly in local settings such as Batu Bara Regency. TK Cinta Bunda is one of the private kindergartens in Batu Bara that envisions shaping children's character based on religious and social values. However, in this digital era, children’s gadget use both at school and at home is often unregulated. Therefore, it is important to examine how gadgets may hinder or shape children's character, particularly in aspects such as social empathy, responsibility, discipline, and religious morality.

This study is designed to:

1. Describe the gadget usage patterns among children aged 4–6 years at TK Cinta Bunda Batu Bara;

2. Analyze the impact of gadget use on children's character (social empathy, discipline, responsibility, religious morality);
3. Identify supporting and inhibiting factors in gadget management within family and school environments.

The findings are expected to provide practical recommendations for teachers and parents to limit gadget use and to create alternative activities that support the strengthening of children's character.

**Literature Review**

Early Childhood Character Development and the Challenges of the Digital Age
At an early age (4–6 years), children enter the *golden age* phase, in which the formation of social, moral, and emotional character is highly critical. Traits such as discipline, responsibility, empathy, and social concern develop through direct interaction with the environment not merely through verbal instruction (Goleman, 1995). However, the presence of gadgets with easy access to games, videos, and applications poses serious challenges: limited face-to-face social interaction, sleep disturbances, and potential technology addiction. Although gadgets may stimulate children's cognitive and fine motor skills (as found by Syifa, 2018), they also carry the risk of decreased communication quality, empathy, and social engagement typically developed through conventional play.

Negative Impact on Socio-Emotional and Language Development
Several studies reveal the adverse effects of gadget use on children's socio-emotional development. Indriati et al. (at TK Fajar Belitang) found that unsupervised gadget use reduced children's communication and empathy abilities and made them reluctant to interact with peers. A study in Padang Tikar Dua Village also identified social isolation children preferred playing with gadgets and rejected direct interaction with family or friends. Furthermore, research conducted at PAUD PGRI 15A Iringmulyo indicated that children aged 4–6 who used gadgets for more than an hour per day were more prone to tantrums, aggression, and emotional instability. Moreover, Nadila & Kusayang (2022) reported that excessive screen time delayed language development and weakened social responses, as children preferred pointing rather than verbal communication.

**2.1 Impact on Social Concern and Discipline**

Agustina (2022) identified that children who frequently used gadgets tended to exhibit lower levels of social concern: often showing aggressive behavior, being unwilling to help others, and demonstrating poor manners, as they were overly focused on electronic devices. This also disrupted personal and family synchrony, making it harder for children to understand the importance of social interaction in daily life. Similarly, Rahayu (2023) found that intense gadget usage diminished discipline and emotional resilience in early childhood.

Potential Positive Effects of Guided Gadget Use

On the other hand, some literature presents the directed benefits of gadget use under adult supervision. An article by UGM (2023) mentions that gadgets can enhance creativity, adaptive skills, and children's knowledge when selectively guided by educators or parents. International studies also suggest that digital technology especially when used jointly with parents can support language development and multilingual communication among children in bilingual

households. However, such benefits are only optimized when gadget use is time-limited, content-filtered, and does not replace human interaction.

### 2.2 National and International Contexts on Screen Time Recommendations

The American Academy of Pediatrics (AAP) recommends a maximum of one hour of screen time for children aged 2–5 years, while the WHO advises zero screen time before age two. A study in France by Bernard (2023) emphasizes that the family context and the presence of gadgets during meals may influence language development more than screen time duration alone. In China, scientific reports highlight that more than one hour of screen exposure may cause sleep disturbances, hyperactivity, and mood instability in preschool-aged children.

Role of Parents, Teachers, and Adaptive Supervision

Research shows that dialogical parental involvement such as reading stories, engaging in discussions, or using interactive books can reduce the negative effects of screen exposure and enhance children's language and character development (Watini, 2019; Linebarger, 2013). These interventions include managing screen time, choosing educational content, and replacing gadget use with interactive play activities to support character learning and socio-emotional growth.

Theoretically, this study draws upon Bandura's social cognitive theory (emphasizing learning through models) and the social-emotional development framework (Goleman, 1995). Gadget exposure may become a "negative model" if children imitate passive or aggressive content. Meanwhile, the roles of teachers and parents as facilitators represent *scaffolding* (Vygotsky), essential for children to build character through real-life interaction. A literature study by Nurbani & Mashudi (2023) further reinforces the view that gadget dependency may hinder social competencies such as sharing, empathy, and self-regulation.

## Research Methodology

*Research Approach*

This study employed a descriptive qualitative approach. This approach was chosen to provide an in-depth and naturalistic description of how gadget use affects character development in early childhood. The researcher sought to understand the meaning behind children's behaviors, teachers' responses, and the influence of gadget use within the daily contexts of school and home. This approach is deemed appropriate for uncovering social realities directly from the perspective of the research subjects (Moleong, 2019).

*Research Site and Duration*

The research was conducted at TK Cinta Bunda, located in Batu Bara Regency, North Sumatra. The site was selected purposively, as the preschool accommodates students with diverse backgrounds and varying levels of gadget use in daily life. The research took place from May to July 2025 and involved field observations, in-depth interviews, and documentation.

### 3.1 Data Collection Techniques

The data collection techniques used in this study include:

1. Observation: Conducted directly on children's activities at school, particularly focusing on their social interactions, moral behaviors, and play habits.

2. Interviews: In-depth interviews were conducted with classroom teachers, the principal, and several parents to gain insights into gadget usage frequency, supervision methods, and their impact on children's character development.
3. Documentation: Involved the use of teacher's daily notes, photographs of learning activities, and relevant recordings to support field findings.

### 3.1 Data Analysis Techniques

Data analysis was carried out using the model proposed by Miles and Huberman (1994), which consists of three main steps:

1. Data Reduction: Selecting and summarizing essential information obtained from interviews, observations, and documentation.
2. Data Display: Organizing the data in a descriptive-narrative format to facilitate understanding and interpretation.
3. Conclusion Drawing: Formulating patterns and relationships between gadget use and children's character development, followed by drawing conclusions based on recurring trends and findings in the field.

To ensure data validity, source and technique triangulation were applied comparing data from various sources (teachers, parents, and children) and different techniques (observation, interview, and documentation).

## Results and Discussion

Based on observations and interviews, it was found that the majority of children at TK Cinta Bunda Batu Bara were familiar with and had been using gadgets since the age of three. They primarily used gadgets to watch animated videos, play interactive games, and listen to children's songs. On average, children spent between 2 to 4 hours per day using gadgets, especially in the afternoons and evenings at home. At school, their behaviors varied in terms of social interaction, emotional regulation, and discipline.

Several teachers reported that children who frequently used gadgets tended to be less verbally communicative, more easily angered, and reluctant to share with peers. However, some children also demonstrated enhanced cognitive skills, such as the ability to recognize letters and numbers from educational content.

### 4.1 Impact of Gadget Use on Character Development in Early Childhood at TK Cinta Bunda Batu Bara

Observations and interviews revealed that excessive gadget use had a significant impact on the character development of young children. Of the 20 students at TK Cinta Bunda, 75% were reported to regularly use gadgets (smartphones or tablets) at home. Most spent 2 to 5 hours daily on screens, with peak usage in the evenings. This pattern of use resulted in the emergence of less-than-ideal character traits, including decreased discipline, reduced empathy, and a tendency toward individualism in group activities.

Teachers at the school noted that children with prolonged gadget exposure were more difficult to engage in classroom activities. They were easily distracted, lacked patience in turn-taking, and rarely showed initiative in completing simple tasks like tidying up toys or following group play rules. When asked about responsibilities at home, many children seemed to lack an understanding of accountability, likely due to a habit of uninterrupted digital entertainment.

Furthermore, the children displayed limitations in social communication during group play, they were either passive or overly dominant, often mimicking digital characters they watched.

Nonetheless, not all effects were negative. A small number of children who accessed guided educational content showed improvements in areas such as recognition of Arabic letters (hijaiyah), short prayers, and fine motor skills like writing and drawing. Religious teachers at the school noted that some children were able to memorize meal prayers, greetings, and short Qur'anic surahs learned through Islamic children's videos. However, only about 25% of the students showed such positive outcomes.

In terms of social character, gadgets often became a barrier to direct peer interaction. Teachers observed that children who frequently played with gadgets at home were more reluctant to cooperate during group activities such as solving puzzles or role-playing games. These children often displayed egocentric behavior and lacked sensitivity toward others' emotions. One teacher noted that a child imitated cartoon characters by yelling or acting aggressively when feeling ignored.

Character Aspects Affected by Gadget Use

The observed character aspects influenced by gadget use include:

1. Discipline: Children who used gadgets for extended periods struggled to concentrate during learning activities. They became easily bored, ignored teachers' instructions, and resisted following classroom rules. Some appeared anxious when not allowed to bring or use gadgets.
2. Responsibility: These children exhibited low awareness of responsibility, such as cleaning up toys or completing assigned tasks. This behavior was linked to their habit of receiving instant entertainment and lack of patience for task completion.
3. Social Concern (Empathy): Interaction with peers was minimal, as children preferred solitary play. This affected their ability to share, collaborate, and empathize with others who were sad or struggling.
4. Honesty: Some children mimicked inappropriate words or expressions from videos. When asked about their home activities, they were hesitant or evasive, especially regarding restricted gadget use.
5. Religious Attitude: Unfiltered gadget access led to neglect of prayer times. Children preferred playing on devices over participating in religious activities at home or school.

Negative Impacts of Gadget Use on Character Development

Key negative impacts included:

1. Dependency and Addiction: Children became overly reliant on gadgets as their sole entertainment source and displayed negative emotions when access was restricted.
2. Reduced Social Interaction: Limited verbal communication and face-to-face interaction hindered the development of honesty, empathy, and concern for others.
3. Decline in Discipline and Concentration: Accustomed to instant gratification, children struggled to focus during structured learning that required physical and mental engagement.

4. Exposure to Inappropriate Content: Without proper content filtering, children could be exposed to inappropriate language, violence, or impolite behavior unsuitable for their age.

### 4.2 Efforts to Mitigate Gadget-Related Impacts on Character Development

To address these issues, TK Cinta Bunda implemented several structured and consistent programs. According to interviews with the principal and three classroom teachers, the school introduced an Early Childhood Digital Literacy Program aimed at guiding children toward healthy and educational gadget use. The program included "gadget-free" school hours, balanced daily schedules for children, and strong collaboration with parents to monitor gadget use at home.

One routine initiative is the "No Gadget Zone", where children engage in role play, picture book reading, and motor skill activities such as folding paper, sticking, and drawing for 60 minutes daily. These sessions are supervised by teachers to instill values like cooperation, patience, and empathy through peer interaction. Over two months of observation, 70% of previously passive children began to show behavioral improvements, such as storytelling, helping peers, and waiting their turn.

The school also holds monthly "Digital Parenting Classes", attended by parents. These sessions involve teachers and external speakers educating parents on content selection, screen time limits (maximum 1 hour/day for children aged 4–6), and introducing alternative physical and spiritual activities at home such as Islamic role-play, moral storytelling, and praying together. Among the 25 participating parents, 84% reported reduced gadget use at home and increased child interest in creative and religious family activities.

In the classroom, character-building methods include positive reinforcement and storytelling. Children who showed positive behavior such as not crying over gadget restrictions, sharing toys, or helping friends received verbal praise or star stickers. Every Friday, teachers read Islamic stories emphasizing honesty, responsibility, and manners, which helped children imitate these values in daily life. For example, children like N (5 years old) and A (6 years old), who were once aggressive and unwilling to share, gradually became more open and caring toward peers.

Overall, the strategies employed by TK Cinta Bunda Batu Bara proved effective in promoting positive character development in early childhood despite prior gadget exposure. Through collaborative efforts between school and parents, and through engaging, consistent activities, the negative impacts of gadget use can be minimized. The school has become a vital space not only to limit gadget use but also to guide children toward developing noble character traits through real-life activities, social interaction, and directly instilled values.

### Discussion

The results of this study indicate that the use of gadgets has a significant impact on the character development of early childhood students at TK Cinta Bunda Batu Bara. Uncontrolled gadget usage directly affects various character aspects such as discipline, responsibility, social awareness, and empathy. Children who are accustomed to using gadgets for more than two hours per day tend to experience difficulties in socializing, reduced focus during the learning process, and a lack of responsibility in completing simple tasks. This aligns with child

development theories which state that early childhood is a critical period for personality formation through social interaction and direct environmental stimulation (Papalia, 2011).

These findings are supported by teacher observations and parent reports, which reveal that children often prefer playing with gadgets over interacting with peers and tend to imitate behaviors from digital content that may not align with moral and cultural values. Children who are excessively exposed to gadgets are more likely to exhibit selfishness, irritability, and an inability to resolve social conflicts in a healthy manner. Although a small number of children showed improvement in recognizing letters, numbers, or prayers from educational content, these benefits are outweighed by the risk of negative character traits emerging due to the lack of guidance and boundaries in gadget usage.

From the school's perspective, preventive measures have been implemented, such as digital literacy programs, restrictions on gadget use within the school environment, and interactive activities including storytelling, role-playing, and motor skill exercises. These efforts aim to balance technological development with the social-emotional needs of the children. Furthermore, parental involvement through parenting classes plays a crucial role in strengthening control over gadget use at home. Collaboration between teachers and parents is key to shaping a child's character that is well-balanced between technological skills and social values.

## Conclusion

Excessive use of gadgets among early childhood students at TK Cinta Bunda Batu Bara has a negative impact on character development, particularly in areas such as discipline, responsibility, empathy, and social skills. Although educational digital content offers certain benefits, without proper guidance and supervision, children are vulnerable to delays in developing positive character traits. Therefore, a comprehensive approach from both the school and parents is essential to monitor the duration and type of gadget content accessed by children, and to replace screen time with activities that directly support their social, emotional, and moral growth. By strengthening social interaction, instilling character values in the school environment, and involving families, the negative effects of gadget use can be minimized and character development can be optimized.

## Reference

Agustina, N. I. M., Ismaya, E. A., & Pratiwi, I. A. (2022). Dampak penggunaan gadget terhadap karakter peduli sosial anak. *Jurnal Basicedu*, 6(2). https://doi.org/10.31004/basicedu.v6i2.2465 Jurnal Piaud+10JBasic+10Kuras Institute+10

Bernard, J. (2023). While screen time matters, the context of exposure matters a great deal if not more. *Le Monde / Epidemiology Study*. Le Monde.fr

Creswell, J. W. (2013). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. Thousand Oaks, CA: Sage Publications.

Devindah, T. O., & Zulkarnaen, Z. (2024). Pengaruh gadget pada perkembangan sosial anak usia dini. *Murhum: Jurnal Pendidikan Anak Usia Dini*, 5(1), 357–365. https://doi.org/10.37985/murhum.v5i1.544 Murhum

Elka Mimin. (2022). *Analisis dampak penggunaan gadget terhadap aspek-aspek perkembangan anak usia dini*. *Jurnal Golden Age*. e-Journal of Hamzanwadi University

Elviansyah, Elvianna. (2021). *Pengaruh durasi penggunaan gadget terhadap pembentukan karakter anak usia dini di TK Pratama Kids Sukabumi Bandar Lampung*. Skripsi, UIN Raden Intan Lampung. Raden Intan Repository

Indriati, S., Sutrisno, S., & Yuniarti, Y. (2023). Penggunaan gadget dalam perkembangan sosial emosional anak usia dini. *Jurnal Caksana: Pendidikan Anak Usia Dini*. Rumah Jurnal IAIN Metro+8Universitas Trilogi+8Bale Riset Rinjani+8

Linebarger, D. (2013). Parents, calm down about infant screen time. *Time Magazine*. time.com

Mancanagara, A. A. K., Tuti Istianti, & Arif Hidayat. (2025). *Dampak penggunaan gadget terhadap kemampuan interaksi sosial anak usia dini*. *Skripsi*, Universitas Pendidikan Indonesia. UPI Repository

Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook* (2nd ed.). Thousand Oaks: Sage Publications.

MMU Research Team. (2024). Toddlers, Tech and Talk: digital tech can offer rich opportunities for child development. *The Guardian* The Guardian+1axios.com+1

Moleong, L. J. (2019). *Metodologi Penelitian Kualitatif* (Edisi Revisi). Bandung: PT Remaja Rosdakarya.

Muawanah, R. A., Nihwan, N., & Umam, A. K. (2021). Dampak penggunaan gadget terhadap perkembangan emosional anak usia 4–6 tahun di PAUD PGRI 15A Iringmulyo Kota Metro. *Indonesian Journal of Islamic Golden Age Education* Rumah Jurnal IAIN Metro

Nadila, R. A. A., & Kusayang, T. (2022). Dampak gadget terhadap perkembangan kemampuan berbicara pada anak usia awal 2–3 tahun. *Kumara Cendekia*. Jurnal UNS

Nurbani, R. R., & Mashudi, E. A. (2023). Ketergantungan gadget terhadap perkembangan sosial emosional anak usia 5–6 tahun. *Indonesian Journal of Islamic Early Childhood Education*, 8(2), Article 503. https://doi.org/10.51529/ijiece.v8i2.503 Jurnal Piaud

Pardede, R., & Watini, S. (2021). *Dampak penggunaan gadget pada perkembangan emosional anak usia dini di TK Adifa Karang Mulya Tangerang*. *Jurnal Pendidikan Tambusai*, 5(2), 4728–4735. JPTAM

Rahayu, R., Pardodi, A., & Ika, A. (2023). Pengaruh gadget terhadap perkembangan sosial pada anak usia dini. *Berkala Ilmiah Pendidikan*, 3(3), 1015. https://doi.org/10.51214/bip.v3i3.1015 Kuras Institute

Sugiyono. (2021). *Metode Penelitian Kualitatif, Kuantitatif, dan R&D*. Bandung: Alfabeta.

Sulistyo Rini, K. P., & Wulandari, H. (2024). *Pengaruh gadget terhadap perilaku agresif anak usia dini*. *Innovative: Journal of Social Science Research*, 4(2), 3908–3915. J Innovative+1J Innovative+1

Syifa, L., Setianingsih, E. S., & Sulianto, J. (2019). Dampak penggunaan gadget terhadap perkembangan psikologi pada anak sekolah dasar. *Jurnal Ilmiah Sekolah Dasar*, 3(4). JPTAM

Yunita, E., Handayani, T., Fahmi, F., Oviyanti, F., & Murtopo, A. (2021). *Dampak penggunaan gadget terhadap perkembangan bahasa anak usia dini di Desa Tirtaharja*. *Innovative: Journal of Social Science Research*. Obsesi+11J Innovative+11J Innovative+11