

The Effects of Gadget Exposure on Social Interaction Skills among Preschool Children (Ages 3–5) at KOBER and TK Miftahul Jannah

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Abstract: One form of information technology development that is now closely related to our lives is gadgets. Parental supervision when children use gadgets by giving them rules when they use gadgets. This study aims to gain a better understanding of how gadget use can affect children's social interactions, so that parents and educators can be guided on how to control gadget use more wisely. A quantitative method with data analysis using simple linear regression. The research population consisted of 34 respondents. The research was conducted through field observation by distributing questionnaires to the relevant parties regarding the issues being studied and conducting direct observations of the forms applied when children use gadgets. The problems that emerged in this study were in terms of children's social interaction in the classroom during learning. Some children were unable to interact well with their peers, experienced speech delays, and tantrums due to insufficient supervision by parents when children used gadgets. The research results showed that the T-value was 5.523 and the T-table value was 2.037, with a significance level of 5% and $N = 32$. Additionally, the variables used in the study have a significant level or probability of 0.00 < 0.05, indicating that they are significant. Therefore, the t-value is greater than the t-table value, i.e., 5.523 is greater than 2.037, indicating that the use of gadgets has a significant impact on children's social interaction at KOBER and TK Miftahul Jannah.

Keywords: Use of gadgets, social interaction, Early childhood.

Abstrak: Salah satu bentuk perkembangan teknologi informasi yang kini sudah dekat dengan kehidupan kita adalah gadget. Pengawasan orangtua ketika anak menggunakan gadget dengan diberikannya aturan-aturan ketika anak menggunakan gadget. Penelitian ini bertujuan untuk mengetahui pemahaman yang lebih baik tentang bagaimana penggunaan gadget dapat memengaruhi interaksi sosial anak, sehingga dapat memberikan arahan kepada orang tua dan pendidik tentang cara mengendalikan penggunaan gadget dengan lebih bijak. Metode kuantitatif dengan analisis data menggunakan regresi linear sederhana. Populasi penelitian sebanyak 34 responden. Melakukan penelitian dengan observasi lapangan melalui menyebarkan angket dengan pihak yang bersangkutan mengenai masalah yang sedang diteliti serta melakukan pengamatan langsung terhadap bentuk yang diterapkan ketika anak menggunakan gadget. Permasalahan yang muncul dalam penelitian ini adalah dari segi interaksi sosial anak ketika didalam kelas dalam suasana pembelajaran. Sebagian anak ada yang tidak bisa berinteraksi dengan baik dengan teman sebaya, anak mengalami speech delay dan tantrum karena kurang diberi pengawasan oleh orang tua ketika anak menggunakan gadget. Hasil penelitian menunjukkan bahwa thitung sebesar 5,523 dan ttabel sebesar 2,037, dengan taraf signifikansi 5% dan $N = 32$. Selain itu, variabel yang digunakan perangkat memiliki tingkat signifikansi atau probabilitas $0,00 < 0,05$, yang menunjukkan bahwa itu

signifikan. Dengan demikian, nilai thitung lebih besar daripada nilai ttabel, yaitu 5,523 lebih besar daripada 2,037, penggunaan gadget memiliki dampak yang signifikan terhadap interaksi sosial anak-anak di KOBAR dan TK Miftahul Jannah.

Kata Kunci: *Penggunaan gadget, Interaksi sosial, Anak usia dini.*

Introduction

Information technology has become an integral part of modern life, revolutionizing communication systems and impacting various sectors. The rapid development of technology has led to the creation of sophisticated devices like smartphones, which have transformed how people access information and communicate (Wiriany et al., 2022). These devices, connected to the internet, have become essential for daily activities, including socialization and education (Adriani & Asyifa, 2022). The widespread adoption of information technology has also influenced micro, small, and medium enterprises, necessitating research on its application in business processes (Kawadito & Setiawan, 2022). In the education sector, smartphones have emerged as powerful tools, offering both opportunities and challenges for teachers. While they can serve as learning facilities and information centers, their use requires careful management to mitigate potential negative impacts (Destiana, 2019). Overall, the advancement of information technology continues to shape various aspects of society, from personal communication to business and education.

Smartphone use among children has become a significant concern, with studies showing varying levels of addiction and dependence (Budiarti et al., 2022; Fatimah, 2022). Parenting styles play a crucial role in managing children's smartphone use, with democratic parenting associated with lower addiction rates (Budiarti et al., 2022). However, some parents use smartphones as a shortcut in childcare, potentially hindering children's social development and environmental exploration (Priyanti Lubis et al., 2023). Excessive smartphone use can disrupt sleep patterns, learning processes, and have financial impacts (Fatimah, 2022). Research indicates a strong relationship between parenting patterns and smartphone use in young children (Rachmawati Hasanah & Widhiyanto, 2023). To mitigate negative effects, parents should closely supervise and monitor children's smartphone use, limiting screen time and promoting positive utilization (Priyanti Lubis et al., 2023). Schools and healthcare professionals can also play a role in educating families about the impacts of excessive smartphone use (Budiarti et al., 2022).

Recent studies highlight the widespread use of mobile devices among young children. A survey of low-income urban families found that 96.6% of children used mobile devices, often starting before age 1 (Kabali et al., 2015). This trend extends globally, with gadgets becoming increasingly popular among children aged 5-6 years (Kanda S & Nurhidayah, 2024). While gadgets can facilitate communication and increase knowledge (Hikmaturrahmah, 2020), concerns exist about their impact on child development. Excessive use may hinder language and social development, as children spend less time interacting with peers (Sari, 2020). However, educational applications can positively influence creativity and intelligence, making learning more engaging (Sari, 2020). The pervasiveness of gadgets in children's lives necessitates further research to update recommendations for families and healthcare providers on appropriate use of mobile media by young children (Kabali et al., 2015).

The English term "gadget" refers to a small electronic device with multiple functions (Subarkah, 2019). Development must occur in line with the changing times. However, giving children freedom solely for the sake of technological convenience can also be harmful to them (Winoto, 2013). Children who frequently use devices are often unaware of what is happening around them.

They prefer to play with electronic devices rather than with their friends who live next door. As a result, children's social interaction with their environment and the surrounding community decreases or even disappears (Manumpil, Ismanto, & Onibala, 2015).

Research indicates that gadget use significantly impacts children's social development and interactions. Excessive gadget use can lead to reduced face-to-face interactions, potentially causing children to become antisocial, introverted, and individualistic (Muttabiah et al., 2021; Pebriana, 2017). Studies show a correlation between gadget use and social interaction development in early childhood (Nofiyanti et al., 2023). While gadgets allow for remote communication, they often replace real-world play and interactions, affecting children's social skills and concentration (Muttabiah et al., 2021). Children using gadgets frequently may appear passive in peer interactions, preferring solitary gadget use over social engagement (Pangastuti, 2018). However, gadgets can have both positive and negative impacts on children's social interactions (Muttabiah et al., 2021). To mitigate negative effects, parental involvement is crucial in shaping children's personality development and optimizing their potential (Pangastuti, 2018; Nofiyanti et al., 2023).

Recent studies highlight the significant impact of gadget use on children's social interactions and behavior. Excessive gadget use can lead to decreased social interaction abilities, reduced sensitivity to surroundings, and a tendency towards indifference to the environment (Thariq Al Ayubi et al., 2023; Yuliana Ida Kbarek et al., 2025). Children may become more introverted, impatient, and experience interpersonal communication difficulties (M. Suhana, 2018). While gadgets can facilitate communication with distant friends, they often replace face-to-face interactions, potentially leading to anti-social behavior and difficulty concentrating on the real world (Ana Muttabiah et al., 2021). The impact extends to children's social-emotional development, potentially causing self-isolation and lack of emotional management skills (M. Suhana, 2018). To mitigate these effects, it is crucial for parents and schools to inform children about gadget impacts, limit usage, and encourage physical activities and direct peer interactions (Yuliana Ida Kbarek et al., 2025).

Recent studies highlight the significant impact of gadget usage on young children's development and behavior. Excessive screen time can lead to mobile dependency, affecting children's social interactions, cognition, and behavior (Joseph et al., 2022). Preschoolers exposed to prolonged gadget use often exhibit reduced physical activity and communication skills (Hon et al., 2016). In educational settings, gadget overuse can detract from children's focus and responsiveness in classroom activities, potentially resulting in uncontrolled emotions and temperamental behavior (Hayat, 2024). Parents, especially those with busy work schedules, may resort to using mobile phones as caregivers, which can hinder children's active learning and social development (Chawla, 2019). Teachers play a crucial role in addressing these issues, but many lack awareness of the detrimental effects of gadget usage on sedentary behavior and social skills in preschoolers (Hon et al., 2016). Balancing digital exposure with effective educational practices is essential for fostering better learning outcomes and social development in young children.

Recent studies highlight the significant impact of gadget use on early childhood social interaction. Excessive gadget use can lead to decreased social skills, reduced interaction with peers, and uncontrolled emotions in children aged 5-6 years (Wahyu Nofiyanti et al., 2023; Nur Mutmainnatul Itsna & Risatur Rofi'ah, 2021). While gadgets can enhance knowledge on specific

subjects, they often detract from children's focus and responsiveness in classroom activities (Khizer Hayat, 2024). In the era 5.0, gadgets have become a necessity, with many parents introducing them to children at an early age. This has resulted in children spending more time with gadgets than engaging in peer play, significantly affecting their social interaction abilities (Malikatus Sholihah et al., 2024). These findings emphasize the need for balanced digital exposure and parental supervision to foster better learning outcomes and social development in young children (Khizer Hayat, 2024; Nur Mutmainnatul Itsna & Risatur Rofi'ah, 2021).

Method

This type of research is quantitative using a simple linear regression model with questionnaires, because the researcher wants to examine the effect of gadget use on children's social interaction. This research was conducted at KOBER and Miftahul Jannah Kindergarten. Based on time, this research is *cross-sectional* because the data collected was not at the same time interval. For the unit of analysis, this researcher took individual units, namely the parents of KOBER and Miftahul Jannah Kindergarten.

Results and Discussion

Research results show that gadgets not only influence the mindset of adults, but they can also affect developmental behavior in social interactions among peers. There are several negative effects that can result from gadget use among children aged five to six years, including the development of a selfish personality, difficulty forming positive relationships, becoming withdrawn due to spending most of their time playing, and struggling to distinguish between different emotions. This affects children's relationships with their parents, environment, and peers.

When children enjoy gadgets, they feel that the games they play on these devices are about them. Children do not care about other people. When children gather with their friends at school, it is difficult for them to form healthy relationships because their focus on electronic devices provides them with better ideas than socialising with other people. Gadgets have a negative impact on children who are already able to play together.

Gadgets not only have a positive effect on children's motor and cognitive skills, but they can also help them have fun and build a competitive spirit. The content they watch should be beneficial, as it contains information that can provide new knowledge; content that is appropriate for children can teach them to count, read, and tell stories, among other things. Additionally, if devices are used wisely and not excessively, their benefits can be felt. For example, they can be beneficial for children's motor skills, which include small muscles such as those in the lips, fingers, and wrists.

Tabel 3.1

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		34
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	4.95018092
Most Extreme Differences	Absolute	.139
	Positive	.084
	Negative	-.139
Test Statistic		.139
Asymp. Sig. (2-tailed) ^c		.093

Monte Carlo Sig. (2-tailed) ^d	Sig.		.094
	99% Confidence Interval	Lower Bound	.086
		Upper Bound	.101

Table 3.1 shows that the Gadget Use variable has a value of 0.93 above 0.05. The Children's Social Interaction variable has a value of 0.93 above 0.05. This indicates that both variables are normally distributed, according to the normality test calculations.

Tabel 3.2

Tests of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
Variabel	Based on Mean	1.624	8	20	.180
	Based on Median	.825	8	20	.590
	Based on Median and with adjusted df	.825	8	11.518	.597
	Based on trimmed mean	1.589	8	20	.190

Table 3.2 above shows that the significance value of the variable of device usage based on the variable of children's social interaction = 0.180 > 0.05, indicating that the data of the variable of device usage based on the variable of children's social interaction has the same variation.

Variables of Gadget Usage

Table 3.3

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.790	7.834		1.122	.270
	Penggunaan Gadget	.820	.148	.699	5.523	.000

Table 3.3 above shows the regression equation model for the social interaction variable of children influenced by device use. This model shows that $Y = 8.790 + 0.820 X$, which means that if the influence of the device use variable increases by one unit, the influence of the social interaction variable of children at KOBBER and TK Miftahul Jannah will increase by 0.820.

Tabel 3.4

Results of Pearson Product Moment Correlation Test

Correlations			
		Penggunaan Gadget	Interaksi Sosial Anak
Penggunaan Gadget	Pearson Correlation	1	.699**
	Sig. (2-tailed)		.000
	N	34	34
Interaksi Sosial Anak	Pearson Correlation	.699**	1
	Sig. (2-tailed)	.000	
	N	34	34

Based on the results in Table 3.4 above, count = 0.699. The coefficient influence of device use on children's social interaction is 0.699. This value was obtained from a correlation test using the Pearson product moment method. This shows a high categorical relationship between the variables of children's social interaction at KOBBER and TK Miftahul Jannah and the variable of device use.

In addition, the significance value results from the table above indicate that there is a significant correlation between the variable of device usage and the variable of children's social

interaction, with a significance value of $0.000 < 0.05$. Thus, it can be concluded that device usage has an impact on the social interaction of children at KOBER and Miftahul Jannah Kindergarten.

Dependent Variable: Children's Social Interaction

Tabel 4.8
Hypothesis Test Results (T-test)

Model	Coefficients ^a				t	Sig.
	Unstandardized Coefficients		Standardized Coefficients	Beta		
	B	Std. Error				
(Constant)	8.790	7.834			1.122	.270
Penggunaan Gadget	.820	.148	.699		5.523	.000

The coefficient of device usage is 5.523, as shown in Table 4.9. However, the t-test table can be calculated with $\alpha = 0.05$ and $df = 32$ (obtained from the formula $n-2$, where n is the number of respondents, $34-2 = 32$), so that table is 2.037.

With a significance level of 0.00–0.05, the variable of tool use showed a significant effect on children's social interaction at KOBER and Miftahul Jannah Kindergarten. Thus, it can be concluded that tool use has a significant effect on children's social interaction.

Conclusion

This study was conducted to determine the effect of gadget use on social intelligence in children aged 3-5 years at KOBER and Miftahul Jannah Kindergarten. Based on the above study, 64.7% of parents supervise their children when they use gadgets. Most parents supervise their children when they play with gadgets at KOBER-Miftahul Jannah Kindergarten.

Social interaction among children aged 3-5 years at KOBER-TK Miftahul Jannah was 58.8%. This indicates that children are able to play with their friends and interact socially well. It can be concluded that the use of gadgets has a significant impact on the social interaction of children at KOBER and TK Miftahul Jannah.

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