



## The Influence of Gadget Use on the Social and Emotional Behavior of Elementary School Students

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### ABSTRACT

This study aims to analyze the influence of gadget use on the social and emotional behavior of students at SD Negeri 019 Sagulung Batam. The study employed a *mixed methods* approach with a *sequential explanatory* design, in which quantitative data collection was followed by qualitative data collection. Quantitative data were obtained through questionnaires distributed to students, while qualitative data were collected through interviews, observations, and documentation to strengthen the research findings. Data analysis was conducted using a significance test with a significance level of  $\alpha = 5\%$ . The results showed that gadget use did not have a significant influence on students' emotions, with a significance value of 0.431. However, gadget use had a significant influence on students' attitudes, with a significance value of 0.009. The findings indicate that gadget use has both positive and negative impacts on students' social and emotional behavior, particularly in the learning process and social interaction. Based on the findings, educational policies are needed to support the wise use of gadgets through character education strengthening and collaboration between schools and parents in supervising students' gadget use.

**Keywords:** gadget use, social behavior, emotional behavior, haracter education

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### INTRODUCTION

The rapid development of digital technology has significantly influenced various aspects of human life, including education. One of the most visible technological developments is the increasing use of gadgets among elementary school students. Gadgets are no longer merely communication tools but have become part of students' daily activities, including learning, entertainment, and social interaction [1], [2], [3]. The accessibility of smartphones, tablets, and internet-based applications has encouraged children to spend more time engaging with digital media. Although gadgets provide educational benefits and easier access to information, excessive and uncontrolled use may influence students' social and emotional behavior [4], [5].

Social and emotional behavior plays an important role in the development of elementary school students because this stage is considered a critical period for character formation, emotional regulation, communication skills, and social interaction [6], [7], [8], [9]. Students who excessively use gadgets tend to reduce direct interaction with peers and family members, potentially affecting empathy, discipline, emotional stability, and social attitudes. In several cases, gadget use has also been associated with reduced concentration, emotional sensitivity, and decreased participation in social activities [10], [11]. However, proper and supervised gadget use may support

creativity, digital literacy, and independent learning among students.

Several previous studies have examined the impact of gadget use on children and students. Rizqoh and Sriyanto [12] found that gadget use influences students' character development in elementary schools. Agung, Widiputera, and Widodo [13] explained that gadget use affects psychosocial aspects, socio-emotional development, independence, responsibility, and learning outcomes among elementary school students. Satheesan [14] highlighted that digital device use has both benefits and risks for student well-being, particularly in emotional balance, academic engagement, and social interaction. Meanwhile, Sihotang et al. [15] emphasized the negative impacts of gadget use through educational socialization activities conducted for elementary school students. Furthermore, Asmayawati, Masliati, and Hasnida [16] demonstrated that gadget use also affects early childhood development, especially in behavioral and emotional aspects.

Although previous studies have discussed gadget use from psychological, behavioral, and educational perspectives, most studies focused separately on psychosocial development, character formation, or learning outcomes. Research specifically analyzing the influence of gadget use on both social and emotional behavior simultaneously within the context of elementary school educational management remains

limited. In addition, previous studies generally emphasized either the positive or negative impacts of gadgets without integrating quantitative and qualitative findings comprehensively. Therefore, this study fills the research gap by examining the influence of gadget use on students' social and emotional behavior through a *mixed methods* approach at SD Negeri 019 Sagulung Batam. The novelty of this study lies in the integration of social and emotional behavioral analysis with educational management perspectives to formulate appropriate school policies regarding gadget use among elementary students. This study also contributes theoretically by enriching discussions on digital behavior in elementary education and practically by providing recommendations for schools and parents in supervising and managing students' gadget use wisely.

Based on the background above, this study aims to analyze the influence of gadget use on the social and emotional behavior of elementary school students and to formulate educational management recommendations related to the wise use of gadgets in the school environment.

**RESEARCH METHODS**

This study employed a *mixed methods* approach using a *sequential explanatory* design. The research combined quantitative and qualitative methods to obtain comprehensive findings regarding the influence of gadget use on the social and emotional behavior of elementary school students [17], [18], [19], [20]. The quantitative method was used to examine the statistical influence of gadget use on students' behavior, while the qualitative method was conducted to strengthen and explain the quantitative findings through interviews and observations [21], [22], [23], [24].

1. Research Design

The research was conducted at SD Negeri 019 Sagulung Batam. The study focused on analyzing the influence of gadget use as the independent variable on students' social and emotional behavior as the dependent variables. The sequential explanatory design was implemented in two stages. First, quantitative data were collected and analyzed through questionnaires. Second, qualitative data were collected through interviews, observations, and documentation to support the interpretation of quantitative results [25], [26].

2. Population and Sample

The population of this study consisted of all students at SD Negeri 019 Sagulung Batam. Due to the manageable number of participants, the research used a proportional sampling technique involving students from upper elementary grades who actively used gadgets in their daily activities [27], [28].

**Table 1.** Population of the Study

Grade Level	Number of Students
Grade IV	30
Grade V	32
Grade VI	28
Total	90

Table 1 shows that the total population of this study consisted of 90 students from Grades IV, V, and VI at SD Negeri 019 Sagulung Batam. Grade V had the highest number of students with 32 students, followed by Grade IV with 30 students, and Grade VI with 28 students. The sample was selected proportionally from each grade level using purposive sampling criteria, namely students who actively used gadgets for learning or entertainment purposes.

**Table 2.** Sample of the Study

Grade Level	Number of Samples
Grade IV	15
Grade V	16
Grade VI	14
Total	45

Table 2 indicates that the total sample consisted of 45 students selected proportionally from each grade level. The sampling aimed to represent students who actively used gadgets in their daily activities so that the data obtained could accurately describe the influence of gadget use on students' social and emotional behavior.

3. Data Collection Techniques

Data were collected through questionnaires, interviews, observations, and documentation. The questionnaire was distributed to students to measure the intensity of gadget use and its influence on social and emotional behavior. The instrument used a Likert scale consisting of strongly agree, agree, neutral, disagree, and strongly disagree statements [29], [30].

Interviews were conducted with teachers and several students to obtain deeper information regarding behavioral changes related to gadget use. Observations were carried out during classroom learning activities and students' social interactions to identify behavioral tendencies associated with gadget use. Documentation techniques were also used to collect school data, student records, and supporting documents relevant to the study [31].

4. Research Instruments

The research instruments consisted of questionnaire sheets, interview guidelines, observation sheets, and documentation forms. Before distribution, the questionnaire instrument was tested for validity and reliability to ensure data accuracy and consistency [32], [33], [34].

5. Data Analysis Technique

Quantitative data were analyzed using descriptive and inferential statistical analysis. The statistical test used a significance level of  $\alpha = 5\%$  to determine the influence of gadget use on students' social and emotional behavior. Meanwhile, qualitative data were analyzed through data reduction, data presentation, and conclusion drawing to strengthen the interpretation of quantitative findings [35], [36], [37], [38], [39].

6. Research Procedure

The research procedure began with identifying the research problem and determining

the research objectives. Afterward, the researcher prepared the research instruments and conducted quantitative data collection through questionnaires. The quantitative data were then analyzed statistically to determine the influence of gadget use on students' behavior [19], [20].

Following the quantitative stage, qualitative data were collected through interviews, observations, and documentation to strengthen and explain the quantitative findings. The final stage involved integrating both quantitative and qualitative results, drawing conclusions, and formulating recommendations for educational management related to the wise use of gadgets among elementary school students.

**RESULT AND DISCUSSION**

This section presents the findings and discussion of the study regarding the influence of gadget use on the social and emotional behavior of elementary school students at SD Negeri 019 Sagulung Batam. The data analysis was conducted using quantitative and qualitative approaches to obtain comprehensive findings related to students' behavioral changes caused by gadget use.

**Table 3.** The Influence of Gadget Use on Students' Emotional Behavior

Variable	Significance Value	$\alpha$	Result
Gadget Use on Emotional Behavior	0.431	0.05	Not Significant

Table 3 shows that the significance value of gadget use on students' emotional behavior was 0.431, which is higher than the significance level of 0.05. This result indicates that gadget use did not significantly influence students' emotional behavior. Although some students experienced emotional changes such as irritability, reduced concentration, and mood instability, these conditions were not statistically dominant among respondents.

The findings indicate that emotional behavior among elementary school students is influenced not only by gadget use but also by parental supervision, school environment, and peer interaction. Based on interviews with teachers, most students were still able to control their emotions appropriately during classroom learning and social activities. This result is relevant to the study conducted by Satheesan [14], which explained that digital technology may provide both positive and negative effects depending on the intensity and supervision of its use. Students who use gadgets under parental guidance tend to show better emotional balance compared to students who use gadgets excessively without supervision.

However, the findings of this study differ from Agung, Widiptera, and Widodo [13], who found that gadget use significantly affected socio-emotional development among elementary school students. In the present study, emotional behavior was not

**Table 4.** The Influence of Gadget Use on Students' Social Behavior

Variable	Significance Value	$\alpha$	Result
Gadget Use on Social Behavior	0.009	0.05	Significant

Table 4 indicates that the significance value of gadget use on students' social behavior was 0.009,

The quantitative analysis focused on examining the significance of gadget use on students' emotional and social behavior through statistical testing. Meanwhile, the qualitative findings from interviews, observations, and documentation were used to strengthen and explain the quantitative results. The discussion also compares the findings of this study with several relevant previous studies to identify similarities, differences, research gaps, and the contribution of the present study in the context of educational management.

The presentation of the results and discussion is divided into several sub-themes, including the influence of gadget use on students' emotional behavior, the influence of gadget use on students' social behavior, and the positive and negative impacts of gadget use among elementary school students.

**1. The Influence of Gadget Use on Students' Emotional Behavior**

The analysis was conducted to determine the influence of gadget use on students' emotional behavior at SD Negeri 019 Sagulung Batam. The statistical test used a significance level of  $\alpha = 5\%$ . The results are presented in Table 3.

significantly affected because most students still received parental control and teacher supervision during gadget use. This difference may also be influenced by variations in research setting, respondent characteristics, and intensity of gadget use [40].

The findings also differ from Asmayawati, Masliati, and Hasnida [16], who reported that gadget use strongly affected emotional and behavioral development in early childhood. The present study focused on elementary school students who generally possess better emotional regulation compared to younger children. Therefore, emotional impacts in this study were less dominant statistically.

The findings are also consistent with social learning theory proposed by Albert Bandura, which states that children's emotional development is shaped through interaction with family, school, and social environments. Therefore, gadget use alone cannot fully determine students' emotional behavior because emotional control is also formed through direct social experiences and parenting patterns.

**2. The Influence of Gadget Use on Students' Social Behavior**

The second analysis examined the influence of gadget use on students' social behavior. The results are shown in Table 4.

which is lower than the significance level of 0.05. This result demonstrates that gadget use

significantly influenced students' social behavior. Students who intensively used gadgets tended to reduce direct interaction with peers, participate less in classroom discussions, and show lower involvement in collaborative activities.

Observational findings revealed that several students preferred using gadgets during break times rather than communicating directly with classmates. Teachers also explained that excessive gadget use affected students' discipline, communication skills, and cooperation during group learning activities. These findings support the research conducted by Agung, Widiputera, and Widodo [41], which found that gadget use influences socio-emotional and psychosocial development among elementary school students.

Similarly, Rizqoh and Sriyanto [12] stated that gadget use affects students' character development, especially social attitudes and interaction patterns. In this study, students with higher gadget use intensity showed reduced face-to-face interaction and lower social participation. This demonstrates that excessive dependence on digital devices may gradually weaken students' social engagement in the school environment.

The findings are also relevant to Sihotang et al. [15], who emphasized the negative social impacts of gadget use among elementary school students. However, the present study differs because it not

only identified negative impacts but also found several positive contributions of gadget use, particularly in supporting digital literacy and independent learning. This indicates that gadget use should not be viewed solely as a harmful activity but rather as a technological tool that requires proper supervision and educational management [42], [43].

Compared to Satheesan [14], who broadly discussed student well-being related to digital device use, the present study specifically focused on social and emotional behavior within the elementary school context. This study provides more specific findings that gadget use significantly affects social interaction patterns rather than emotional stability among students [44].

From the perspective of educational management, these findings suggest that schools should establish balanced policies regarding gadget use among students [45], [46]. Gadgets can support learning activities and digital literacy development, but schools also need to strengthen character education and encourage direct social interaction among students. Collaboration between teachers and parents is important to supervise students' gadget use and prevent negative social impacts.

**3. Positive and Negative Impacts of Gadget Use**

The study also identified several positive and negative impacts of gadget use on elementary school students. The findings are presented in Table 5.

**Table 5.** Positive and Negative Impacts of Gadget Use

Positive Impacts	Negative Impacts
Access to educational information	Reduced direct social interaction
Increased digital literacy	Decreased learning concentration
Support for independent learning	Dependence on gadgets
Improved technological skills	Reduced participation in social activities

Table 5 shows that gadget use provides both advantages and disadvantages for students. Positive impacts include easier access to educational resources, improved digital literacy, and support for independent learning. These findings align with Satheesan [14], who emphasized that digital devices can contribute positively to students' academic engagement and technological adaptation.

However, excessive gadget use also creates negative consequences, particularly in social interaction and learning concentration. Students who spend too much time using gadgets tend to become less active in classroom participation and social communication. These findings partially differ from Sihotang et al. [15], who mainly highlighted the negative impacts of gadget use. The current study found that the effects of gadget use are more complex because gadgets also provide educational benefits when properly supervised.

Therefore, schools and parents need to cooperate in guiding students toward responsible gadget use. Educational management policies should focus not only on restricting gadget use but also on integrating digital technology into learning activities while maintaining students' social and emotional development.

**CONCLUSION**

This study concludes that gadget use has different influences on the social and emotional behavior of elementary school students at SD Negeri 019 Sagulung Batam. The quantitative findings showed that gadget use did not significantly influence students' emotional behavior, as indicated by the significance value of 0.431, which was higher than the significance level of 0.05. This finding suggests that students' emotional behavior is influenced not only by gadget use but also by parental supervision, school environment, and social interaction.

In contrast, gadget use significantly influenced students' social behavior, with a significance value of 0.009, which was lower than the significance level of 0.05. Students with higher intensity of gadget use tended to show reduced direct social interaction, lower participation in collaborative learning, and decreased communication with peers. However, gadget use also provided positive contributions, including easier access to educational information, improved digital literacy, and support for independent learning.

The findings indicate that gadget use among elementary school students should be managed wisely through balanced educational policies. Schools and

parents play an important role in supervising gadget use to minimize negative impacts while maximizing its educational benefits. This study contributes to educational management by providing empirical evidence regarding the influence of gadget use on students' social and emotional behavior and offering recommendations for strengthening character education and responsible digital learning practices.

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