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Factors associated with parental mediation of children's gadget use among parents of elementary school students

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Abstract

Background: The rapid growth of digital technology has transformed children's learning and communication patterns while simultaneously increasing their exposure to digital risks, including excessive gadget use, cyberbullying, inappropriate online content, and internet addiction. Parents play a fundamental role in protecting children from these risks through effective parental mediation strategies. The implementation of such strategies may be influenced by several factors, including parental digital literacy, parenting style, educational level, age, and socioeconomic status. However, evidence regarding the determinants of parental mediation strategies among parents of elementary school children in Indonesia remains limited.

Purpose: To identify factors associated with parental mediation strategies for managing children's gadget use.

Method: A quantitative analytical study with a cross-sectional design was conducted among 60 parents of first- and second-grade students at SDIT Sehati Bina Insani, Karawang. Total sampling was employed to recruit all eligible participants. Data were collected using validated questionnaires assessing respondents' characteristics, parental digital literacy, parenting style, and parental mediation strategies. Descriptive statistics were used to summarize respondent characteristics, while Chi-square and Fisher's Exact tests were performed to examine associations between independent variables and parental mediation strategies. Odds ratios (ORs) with 95% confidence intervals (CIs) were calculated to estimate the strength of associations, with statistical significance set at $p < 0.05$.

Results: Parenting style and parental digital literacy were significantly associated with parental mediation strategies ($p = 0.001$ and $p < 0.001$, respectively). In contrast, parental age ($p = 0.962$), educational level ($p = 0.418$), and family income ($p = 0.238$) were not significantly associated with parental mediation strategies. Parental digital literacy was identified as the strongest predictor of effective parental mediation (OR = 18.21; 95% CI: 4.16–79.69), followed by democratic parenting style (OR = 6.31; 95% CI: 2.11–18.85).

Conclusion: Parental digital literacy and parenting style are significant determinants of effective parental mediation strategies for children's gadget use. Parents with higher digital literacy and democratic parenting practices are more likely to implement effective mediation strategies. Strengthening parents' digital literacy through school- and community-based educational programs may enhance children's safe and responsible use of digital technology.

Keywords: Digital Literacy; Elementary School Children; Gadget Use; Parental Mediation; Parenting Style.

INTRODUCTION

The role of parents as mediators in elementary education is crucial due to the complex interactions

between students, which often impact their academic well-being and the social climate of the school. In this

context, the success of mediation strategies is greatly influenced by the parenting style, education level, and digital literacy of parents when providing support (Alkan, Aslan, Turgut, & Kurşun, 2021; Rizkite, Khudhori, & Wijaya, 2025). Furthermore, a thorough understanding of various types of mediation, such as restrictive mediation, shared mediation, and active mediation, is crucial. Parental mediation is a key factor in determining the effectiveness of monitoring children's gadget use in the digital age (Mistiani, 2024).

Active parental involvement in monitoring technological interactions has been shown to be crucial in preventing negative impacts on students' cognitive and emotional development (Sarini, Lismayanti, Rosmiyanti, Sumitro, Asih, Ginting, & Fitriani, 2025). Good collaboration between families and teachers at SDIT Sehati Bina Insani plays a crucial role in helping students develop responsible and ethical digital behavior. Furthermore, optimizing the role of parents in providing appropriate supervision can encourage students to act more critically and wisely when using social media (Jannah, Djoehaeni, & Romadona, 2024). Furthermore, the effectiveness of this strategy depends heavily on parents' ability to use open communication to understand their children's needs and set appropriate time limits (Pitri, Amelia, & Yusuf, 2025; Palenti, Kusuma, & Rahmawati, 2025).

Low technological literacy among parents is often a major obstacle to implementing comprehensive supervision (Abdulraheem, Arafah, & Abdelrahim, 2025). Therefore, improving digital literacy among parents is a strategic step to strengthen collaboration between home and school in creating a safe digital environment for children (Nainggolan, Hutapea, & Simanjuntak, 2025; Abdulraheem et al., 2025). The use of different mediation strategies cannot be used as a single standard pattern; instead, they must be adapted in an integrated manner based on the specific needs and developmental characteristics of each child (Al-Atiyyabi, 2025).

Although previous studies have examined parental mediation and digital literacy, limited evidence is available regarding elementary school parents in Indonesia, particularly in Karawang. Furthermore, few studies have simultaneously

examined parenting style, digital literacy, socioeconomic status, and parental mediation strategy.

RESEARCH METHOD

This study employed a quantitative analytical observational design using a cross-sectional approach to determine the factors associated with parental mediation strategies for managing children's gadget use at SDIT Sehati Bina Insani, Karawang, Indonesia. A cross-sectional design was selected because it enables the simultaneous assessment of independent and dependent variables within a defined study population at a single point in time.

The study was conducted among parents of first- and second-grade students enrolled at SDIT Sehati Bina Insani, Karawang. The target population consisted of 60 parents. Considering the relatively small population size, a total sampling technique was employed, and all eligible parents who met the inclusion criteria were recruited, resulting in a final sample of 60 respondents.

The inclusion criteria were parents or primary caregivers of first- and second-grade students who were willing to participate in the study and completed the informed consent process. Parents who returned incomplete questionnaires or declined participation were excluded from the study.

The dependent variable in this study was parental mediation strategy, defined as parents' efforts to supervise, regulate, and guide their children's gadget use through communication, monitoring, rule setting, and active involvement in children's digital activities. The independent variables included parental age, educational level, family income, parenting style, and parental digital literacy.

Data were collected using a structured self-administered questionnaire consisting of four sections. The first section obtained respondents' demographic characteristics, including age, educational level, and family income. The second section assessed parental digital literacy, which measured parents' ability to access, understand, evaluate, and appropriately use digital technology in supporting their children's digital activities. The third section evaluated parenting style and categorized respondents into democratic, authoritarian, or

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permissive parenting styles based on the dominant parenting approach. The fourth section measured parental mediation strategies related to supervising children's gadget use. All research instruments were tested for validity and reliability before being administered to ensure their suitability for data collection.

Prior to data collection, permission was obtained from the school administration. Eligible respondents received an explanation regarding the objectives, procedures, benefits, and voluntary nature of the study. Written informed consent was obtained from all participants before questionnaire administration. Respondents completed the questionnaires independently, and all completed forms were checked for completeness before data entry and statistical analysis. Confidentiality and anonymity of all respondents were maintained throughout the study.

Data were analyzed using descriptive and inferential statistical methods. Univariate analysis was performed to describe respondents' characteristics and the distribution of each study variable. Continuous variables were presented as means and standard deviations, whereas categorical variables were expressed as frequencies and percentages. Bivariate analysis was conducted using the Chi-square test to determine the association between independent variables and parental mediation strategies. Fisher's Exact test was applied when the assumptions of the Chi-square test were not met due to small, expected cell frequencies. The strength of significant associations was expressed as odds ratios (ORs) with 95% confidence intervals (95% CIs). Statistical significance was determined at a p-value of less than 0.05. All statistical analyses were performed using IBM SPSS Statistics software.

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RESEARCH RESULTS

Table Characteristics of Respondents (N=60)

Variable	Results	p-value	Interpretation	OR (95 % CI)
Age (Mean±SD) (Years)	(32.68±7,23) (20-55)	0.962	Abnormal	
20-35	36/60.0			
36-45	20/33.0			
>46	4/7.0			
Education (n/%)		0.418	Abnormal	3.75-4.00
Junior High School	2/3.0			
Senior High School	38/63.0			
Bachelor Degree	20/33.0			
Family Income		0.238	Normal	2.36 (0.56-9.86)
< Minimum Wage	10/17.0			
≥ Minimum Wage	50/83.0			
Parenting patterns (n/%)		0,001	Normal	6.31 (2.11-18.85)
Democratic	43/72.0			
Authoritarian	9/15.0			
Permissive	7/12			
Parents' Digital Literacy (n/%)		0,000	Normal	18.21 (4.16-79.69)
Good	38/63.0			
Poor	22/37.0			
Parental Mediation		0.074	Normal	
Good	42/62.0			
Poor	18/38.0			

Based on the results of the univariate analysis, it was found that most respondents were between the ages of 30 and 40. The majority of respondents were mothers with secondary to higher education. The most common educational level was high school/vocational high school (38 respondents) (63%). The socioeconomic status of the majority of parents was ≥ the minimum wage, with 50 respondents (83%). The most common parenting style at SDIT Sehati Bina Insani was democratic, with 43 respondents (72%), and the parents' digital literacy

level was in the good category, with 38 respondents (63%).

Based on the results of the bivariate analysis in Table 4.3 using the Chi-Square and Fisher's Exact Tests, it was found that parental age ($p=0.962$), education level ($p=0.418$), and family income ($p=0.238$) did not have a significant relationship with parental mediation strategies in controlling children's gadget use ($p>0.05$). In contrast, parenting styles ($p=0.001$) and digital literacy ($p=0.001$) had a significant relationship with parental mediation

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strategies ($p < 0.05$). Digital literacy was the most dominant variable with an OR value of 18.21 (95% CI: 4.16–79.69), indicating that parents with good digital literacy were 18.21 times more likely to implement good mediation strategies compared to parents with poor digital literacy.

DISCUSSION

The results showed that parental age had no significant relationship with parental mediation strategies in controlling children's gadget use at SDIT Sehati Bina Insani ($p = 0.962$). Across all age groups, the majority of respondents demonstrated good mediation strategies, with the highest proportions in the 36-45 age group and those aged 75 years and older, respectively.

This finding indicates that biological age is not the primary factor determining parents' ability to mediate digitally with their children. Although younger parents are often assumed to be more familiar with technology, familiarity with technology does not always correlate with the quality of supervision of children's gadget use. Effective supervision is more influenced by emotional involvement, communication patterns, and awareness of the importance of digital guidance. This finding aligns with research on the relationship between family sociodemographic factors and parental mediation, which shows that parental age is not always a strong predictor of family digital literacy or the effectiveness of digital mediation (Lou et al., 2024).

Bivariate analysis showed that education level was not significantly associated with parental mediation strategies ($p = 0.418$). Although parents with a college education had a higher proportion of good mediation strategies than those with a junior high school education, this difference was not statistically significant.

The results of this study indicate that formal education does not automatically improve parents' ability to supervise children's gadget use. In the digital era, knowledge about the internet, social media, digital security, and device control can be gained from various informal sources such as parenting webinars, educational social media, school community discussions, and everyday experiences. Parents' education level supports the view that digital

competence is dynamic and determined not only by formal educational background but also by the willingness to learn and adapt to technological developments (Van Dijk, 2020).

Parenting style showed a significant association with mediation strategies ($p = 0.001$), with an OR of 6.31 (95% CI: 2.11–18.85). These results indicate that parenting style is an important factor in supervising children's gadget use. Parents with a democratic parenting style tend to be more effective in implementing mediation strategies due to the two-way communication between parents and children. In this parenting style, parents not only provide rules but also explain the reasons, risks, and benefits of gadget use. This approach helps children understand the limits of rational gadget use.

Conversely, authoritarian parenting emphasizes unilateral control, while permissive parenting tends to provide excessive freedom. Both of these styles can reduce the effectiveness of mediation because children lack a balanced understanding of technology use. This finding is supported by research on digital parenting, which shows that an active mediation approach and open communication yield better results than overly strict control (DCG et al., 2026).

Digital literacy was the most dominant factor in this study. The analysis revealed a highly significant relationship between digital literacy and parental mediation strategies, with a p -value of 0.000 ($p < 0.05$) and an OR of 18.21. The results indicate that parents with good digital literacy are 18.21 times more likely to implement good mediation strategies compared to parents with poor digital literacy.

These findings demonstrate that the ability to understand digital technology is crucial in the process of supervising children. Parents with good digital literacy are better able to recognize risks such as gadget addiction, cyberbullying, exposure to negative content, and unhealthy social media use. Furthermore, parents with good digital literacy are also better able to utilize digital safety features such as parental controls, screen time management, and monitoring their children's online activities. Therefore, improving parental digital literacy is a strategic step in building a safe and healthy digital environment for school-age children. These findings align with previous research that suggests parental digital

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literacy plays a crucial role in increasing the effectiveness of parental mediation and reducing the risks of children's digital exposure (Lou et al., 2024; Soyoo, Reynolds, Neumann, Scull, Tour, & McLay, 2024).

CONCLUSION

Based on the results of research on factors influencing parental mediation strategies at SDIT Sehati Bina Insani, it can be concluded that parental age, education level, and family income do not significantly correlate with parental mediation strategies in controlling children's gadget use. Conversely, parenting styles and digital literacy significantly correlate with parental mediation strategies. Democratic parenting styles have been shown to be more supportive of the implementation of effective mediation strategies than other parenting styles.

Digital literacy was the most dominant factor in this study. Parents with good digital literacy were 18.21 times more likely to implement effective mediation strategies compared to parents with low digital literacy. This study confirms that improving digital literacy and strengthening adaptive parenting styles are important strategies in building a healthy and safe digital environment for school-age children. Schools are advised to develop sustainable digital literacy education programs for parents.

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