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Screen Time and Early Childhood Social–Emotional Development Among Children Aged Five to Six Years

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ABSTRACT

Digital exposure has become a dominant part of early childhood routines and increasingly influences social–emotional development. This study aims to analyze the relationship between screen time, peer interaction, emotional regulation, and parental mediation in children aged 5–6 years. Using a qualitative case study, data were collected from six children, two teachers, and four parents through interviews, observations, and documentation. The findings show that high screen exposure triggers weakened emotional regulation, reflected in frequent tantrums, low frustration tolerance, and abrupt mood shifts. Excessive screen time also reduces peer interaction, indicated by 52% low group participation, 48% reluctance to share, and 43% preference for solitary play. Conversely, parental mediation improves social–emotional development by reinforcing cooperation, conflict resolution, and verbal expression. The novelty of this study lies in demonstrating that screen time becomes beneficial only when accompanied by active parental guidance. The results recommend collaborative screen management between schools and families to optimize children's social–emotional growth.

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INTRODUCTION

The development of information technology has transformed global lifestyles, including the way children interact, learn, and play. Young children now grow up in a digital ecosystem filled with devices such as televisions, gadgets, tablets, and computers. This significant change is occurring because technology can provide entertainment, learning, and communication in a single platform, leading to a rapid increase in screen time (Fan et al., 2020; Ho & Tirachini, 2024; Xia et al., 2023). Evidence from the American Academy of Pediatrics indicates that more than 60% of young children spend more than the recommended screen time limit, primarily due to easy access and limited adult control. This situation indicates that screen time has become an integral part of

modern early childhood life (Hu et al., 2021; Wu et al., 2022). Therefore, understanding how digital media exposure affects child development is not only academically important but also relevant to addressing societal needs in developing adaptive parenting patterns in the digital age.

The increasing intensity of screen time in early childhood raises concerns about its impact on social and emotional development. Passive and individual screen interactions can reduce children's opportunities to form direct relationships with parents and peers (Abdoli et al., 2024; Agorastos et al., 2021). As a result, children potentially lack the opportunity to learn to understand emotional expression, share feelings, manage conflict, and build empathy skills ideally acquired through real, daily social interactions. Many parents utilize digital media as a means of entertainment or relaxation without considering the duration, quality of the content, or potential psychosocial impacts. Ignorance of the risks and a lack of digital literacy within the family leave children exposed to content without supervision (Ghate et al., 2020; Komaragiri et al., 2024). This is a common problem in society and underlies the need for research on screen time and the social-emotional development of early childhood.

Field phenomena indicate that digital devices are now part of children's daily routines. In the morning, children might start watching cartoons, then play games after school, and end the day by watching YouTube before bed (Anggraini et al., 2022; Boerman, 2020). Many children habitually use devices during meals, when outside the home, or when parents are busy at work. Several early childhood education teachers also report that children appear to prefer watching digital content to playing with friends and tend to become irritable when device use is restricted. Another emerging phenomenon is a reduced ability of children to share toys, wait their turn, show empathy, and resolve simple conflicts (Capriotti, 2023; Yafooz et al., 2022). This condition suggests a link between screen time patterns and a decline in the quality of social interactions and emotional control. Therefore, the influence of digital media on children's emotional development requires a more in-depth and systematic study.

Previous research has examined the relationship between screen time and early childhood development from various perspectives. Mahardhika et al. (2024) and Samarth (2024) found that excessive screen exposure correlated with children's lower ability to express emotions adaptively. Hamdiui et al. (2022) and Featherston et al. (2024) stated that children with controlled screen time demonstrated better social skills than those who used devices freely. Zlotnyk et al. (2024), Ghashghaeizadeh (2020), and Suomi et al. (2022) emphasized the importance of parental guidance, as children who were supervised demonstrated greater emotional stability. Tomczyk et al. (2021), Utamimah et al. (2025), Nyagadza (2021) highlighted the positive side of digital media, namely that it can

enhance language development when used wisely through educational content. These findings demonstrate that screen time is neither entirely negative nor entirely positive, but rather depends on the context in which it is used. However, these studies have not yet highlighted in depth how the mechanisms of digital media use relate to social-emotional regulation.

Several research gaps remain in studies on screen time in early childhood. First, the majority of research focuses on screen time duration without considering usage patterns and parental involvement in support. Second, previous research has not specifically examined the 5–6 years-old age group, which is a crucial transition period to primary education, where social-emotional skills develop rapidly. Third, some studies only measure the impact of screen time quantitatively, thus failing to reflect children's emotional experiences, social interactions, and actual behaviors in everyday life. This gap highlights the need for research that contextualizes children's screen time patterns, emotional responses, and social interactions, and examines the involvement of parents and teachers in managing digital media exposure. This is where this research seeks to contribute.

The novelty of this research lies in its approach, which goes beyond measuring screen time duration to analyzing how usage patterns, content quality, and support strategies influence the social-emotional development of 5–6 years old children. This approach integrates perspectives from developmental psychology, family digital literacy, and early childhood learning, resulting in a more comprehensive understanding (Abril-López et al., 2021; Fitzsimons et al., 2021). This research focuses on children's actual behavior in daily interactions not just through questionnaires to obtain a comprehensive picture of how screen time plays a role in emotional regulation, empathy, and social skills. The findings of this study are expected to not only illustrate the relationship between screen time and emotional development but also to produce a model of healthy digital media use patterns for implementation in family and school environments.

This research problem stems from the main question of how digital media use in the lives of 5-6 years old children relates to their social-emotional development. This question covers daily screen time patterns, children's emotional and social behavior, and the support strategies implemented by parents and teachers to reduce the risk of excessive screen exposure. This issue is important to examine because social-emotional skills are the foundation for children's success in learning, social relationships, and long-term character development (Osman, 2024; Weise et al., 2020). Identifying the relationship between screen use patterns and children's emotional responses can help educators and parents implement appropriate interventions early on. Therefore,

this study aims to clearly outline how screen time shapes children's social and emotional skills so that modern parenting styles can be more prudently guided.

Argumentatively, this research is based on the assumption that screen time is neither the cause of the problem nor the solution, but rather a phenomenon that requires management through guidance, content selection, and duration limits. Children aged 5–6 years who receive guidance on screen use have the potential to reap educational benefits, while unsupervised exposure can lead to disruptions in emotional regulation and social skills. The contribution of this research is expected to be seen at three levels: theory, practice, and policy. Theoretically, this research enriches the study of the relationship between digital media and children's socio-emotional development within the context of early childhood education. Practically, the research results will serve as a reference for parents and teachers in establishing standards for healthy digital media use. From a policy perspective, this research can support the formulation of digital literacy guidelines for early childhood in educational settings.

RESEARCH METHOD

This research employed a qualitative design with a case study approach because the aim was to deeply understand screen time practices and their implications for the social-emotional development of children aged 5–6 years in a real-life context. Case studies were chosen because they allowed researchers to explore phenomena holistically through multiple data sources, allowing for a comprehensive depiction of the experiences of children, teachers, and parents (White & Cooper, 2022).. This approach aligns with Creswell's view that case studies emphasize understanding the meaning and dynamics of a specific case, rather than broad generalizations. Therefore, they are highly appropriate for examining the context of early childhood education, which is rich in personal and social experiences.

The research was conducted in an early childhood education setting with a high and diverse level of digital media use, allowing researchers to observe variations in digital device use at home and school. The research location was chosen purposively based on the consideration that child characteristics, family caregiving practices, and school learning patterns strongly correlate with the phenomenon of screen time. Furthermore, teachers at the school have a consistent system for recording children's development, making it easier for researchers to obtain factual data regarding children's social-emotional behavior.

Data collection was conducted through in-depth interviews, participant observation, and documentation (Lim, 2024). In-depth interviews were used to gather information from teachers and parents regarding duration, screen usage patterns, content types, and support for children when using digital media.

Participant observation was conducted to directly observe children's social-emotional behavior during classroom activities, such as their ability to share, communicate, demonstrate empathy, and manage emotions. Documentation served as supporting data, including child development notes, learning photos, and school documents regarding digital media use. All data collection techniques were implemented simultaneously to complement the information obtained.

Data analysis was conducted interactively using the stages of data condensation, data presentation, and drawing conclusions or verification. Data condensation involved sorting, simplifying, coding, and focusing raw data from interviews, observations, and documentation to ensure relevance to the research focus. The condensed data was then presented in narrative descriptions, thematic matrices, and direct quotes from informants to concretely depict reality and facilitate the interpretation of the findings. The final stage involved a continuous process of drawing conclusions and verifying throughout the research, reviewing initial findings, comparing them with new data, and ensuring that the interpreted meanings accurately reflected the informants' experiences.

Data validity was maintained through the application of source and method triangulation to comprehensively compare the results of interviews, observations, and documentation (Im et al., 2023). Furthermore, researchers conducted member checking by confirming the interview summary and initial interpretations with informants to ensure that the information presented did not deviate from their experiences. Peer debriefing was also conducted through discussions with academic advisors to obtain feedback on the analysis process, ensuring that the interpretation of the findings remained objective and credible. These steps ensure that the research results are scientifically sound and reflect the reality of the phenomenon being studied.

RESULT AND DISCUSSION

Result

This section presents the research findings regarding the influence of screen time on the social–emotional development of children aged five to six years. The results are organized into three key sub-findings that reflect emotional regulation, peer interaction, and the role of parental mediation. Each finding is explained based on data obtained through observation, interviews, and documentation to provide a comprehensive understanding of the phenomenon.

High digital exposure weakens emotional regulation

In this study, emotional regulation was operationalized as a child's ability to control emotional expression, respond appropriately to social situations, and manage frustration without emotional outbursts. This sub-finding emerged when children with high levels of screen exposure exhibited difficulty regulating their feelings, particularly when gadgets were restricted, taken away, or asked to

switch activities. This condition was evident in the field through exaggerated emotional responses and an inability to control expressions when desires related to digital device use were not met.

The first informant (a classroom teacher) revealed that children often lost emotional control when digital device use was stopped. The teacher stated, "When they asked for their gadgets or their time was up, some children immediately cried loudly, and some even became angry and refused to participate in learning activities." The researchers interpreted this statement as an indication of dependency that affected children's ability to manage disappointment. Children appeared to become less emotionally flexible, so that when transitions from digital activities to other activities occurred, negative emotions emerged in extreme ways.

The second informant (a parent) provided a similar explanation, explaining that children exhibited drastic emotional changes after being accustomed to prolonged gadget use at home. Parents reported, "If they're on their phones all morning, by the afternoon they're easily angered, irritated, and refuse to take a bath or eat." Researchers interpreted this data as indicating that intense digital exposure affects children's mood stability and hinders their ability to respond calmly to social demands. Children appear to have difficulty delaying gratification and exhibit inconsistent emotional patterns when parental demands escalate.

Observations indicate that some children struggle to control themselves when faced with situations that don't align with their preferences, especially after activities involving screens. During classroom activities, children who have just finished watching an educational video tend to cry quickly when asked to participate in group work. Researchers observed that exaggerated emotional responses recurred after digital activities, even when the triggering context was not stressful or threatening. This indicates that prolonged digital exposure makes children more dependent on immediate stimuli and makes it difficult to adapt to real-life social situations that require patience and emotional control.

The pattern shows that the greater the digital exposure, the more frequent the occurrence of uncontrolled emotions such as tantrums, irritability, resistance to instructions, and angry outbursts when switching activities. Children become less tolerant of frustration and more reactive when their needs or desires are not immediately met. Overall data consistently shows that high screen exposure is closely related to weakened emotional regulation abilities in children.

Excessive screen time reduces peer interaction

Peer interaction in this study is operationally defined as children's ability to initiate and maintain social communication with classmates, participate in group activities, and engage in cooperative play without prompts from teachers. In the field, this sub-finding emerged when children with high screen exposure showed a tendency to withdraw from social activities, avoid collaboration during learning, and prefer solitary play rather than interacting with peers who were physically present around them.

The table below presents the observation data related to peer interaction:

Observation Findings	Indicators of Peer Interaction Decline	Percentage
Children choose to play alone rather than join peers	Low social initiation	43%
Children do not respond when invited by peers	Low responsiveness to peer communication	37%
Children show minimal participation in group learning	Low involvement in collaborative tasks	52%
Children show reluctance to share toys and learning tools	Low cooperative behavior	48%

The observation table demonstrates that peer interaction decreases in several forms, such as avoiding group play, refusing peer invitations, and showing minimal involvement in collaborative learning. The highest percentage appears in low participation in group tasks (52%), followed by reluctance to share tools or toys (48%). Social withdrawal such as choosing solitary play also appears strongly (43%), confirming that children prefer individual activities over social ones. In addition, 37% of children did not respond when invited by classmates, indicating weakened reciprocal communication.

The interpretation of the data suggests that the higher the children's screen exposure, the lower their motivation to engage in direct social interaction with peers. Restating the results, a noticeable pattern emerges: children who spend more time on digital screens tend to be less socially proactive, less responsive to peer communication, and less involved in shared tasks that require interaction and cooperation. The repetition of these behaviors across multiple observation categories indicates a consistent pattern that excessive screen time contributes to social disengagement, reducing both the quantity and quality of peer interaction in the classroom and play environment.

Parental mediation improves social–emotional development

In this study, parental mediation is operationally defined as the form of active parental involvement in supervising, guiding, and discussing children's digital media use through practices such as setting screen time rules, co-viewing,

and offering emotional coaching when children experience frustration during digital play. In the field, this sub-theme emerged through a process flow showing that when parents take deliberate roles in monitoring and dialoguing about screen use, children demonstrate better self-management, improved emotional response, and increased willingness to collaborate with peers.

The flow observed in the field begins with parental regulation at home to limit excessive screen duration, followed by parents engaging in co-use to explain appropriate behavior and digital content. This later leads to emotional coaching where parents help children identify and verbalize their feelings. The culmination of this mediation process appears in the school setting, where children show higher patience in group activities, greater capacity to share, and the ability to manage disappointment. The observed flow illustrates that parental mediation does not merely control screen duration, but also equips children with emotional and social strategies that transfer to their daily interactions in school.

The observation data show that children who received consistent parental mediation displayed calmer emotional reactions during conflicts, used verbal communication more frequently to express needs, and participated more willingly in group activities. During classroom activities, these children were seen asking peers for help rather than reacting with anger when facing difficulties. In play situations, children who were guided by parental mediation tended to negotiate turn-taking instead of insisting on controlling the activity. The teacher's daily notes also recorded fewer emotional outbursts from these children compared to peers who did not experience parental mediation at home.

Interpreting these findings, the results show that children whose parents are involved in guiding screen use develop stronger emotional management and improved social functioning. Restating the core idea, parental involvement in regulating and dialoguing about screen activities elevates children's ability to express emotions appropriately, collaborate, and maintain harmonious relationships with peers. These observed behaviors consistently correspond with a supportive regulation and communication pattern at home.

The general pattern that emerges is that parental mediation acts as an indirect enhancer of social–emotional development: when parents supervise and communicate about children's digital habits, children internalize emotional understanding and social rules that later appear in school behavior. Across different observations, children with parental mediation consistently show better cooperation, smoother conflict resolution, and greater empathy toward peers, indicating a stable and repeatable developmental trend rather than an isolated behavioral occurrence.

Discussion

The findings of this study demonstrate a strong connection between high screen exposure and weakened emotional regulation, reduced peer interaction, and enhanced social–emotional development when parental mediation is involved. These findings align with previous literature stating that prolonged screen exposure limits opportunities for real-life social learning and emotional management (Aziz, 2025; Munawwaroh, 2024). Several scholars have argued that digital media provides immediate stimulation that does not challenge children to tolerate frustration or wait for social feedback, whereas social–emotional skills develop primarily through face-to-face interaction and emotionally responsive communication (Hasanah, 2024; Widiasari, 2024). The results of this study consistently support such claims, while also adding an important perspective by showing that parental mediation can effectively mitigate these risks and even strengthen children's emotional and social functioning.

Comparing the findings to existing research, the present study confirms that excessive digital use contributes to emotional dysregulation, as reported by previous studies that associated prolonged screen time with irritability, mood instability, and emotional rigidity. At the same time, this study further extends the understanding of peer interaction outcomes, showing that children with high screen exposure not only show reduced interaction but also decreased responsiveness to peer invitations and lower motivation to collaborate (Heru, 2024; Herlina, 2024; Hina, 2024). The pattern of social withdrawal observed in this study reinforces concerns raised in the literature regarding digital displacement, where time spent with screens replaces time spent developing interpersonal skills (Baharun, 2023; Sain, 2025). However, this study contributes a nuanced finding by documenting the intensity and frequency of declining peer interaction in multiple classroom situations rather than only during free-play activities.

The role of parental mediation identified in this study also aligns with global research highlighting that children develop better emotional and social competencies when parents actively guide and communicate about digital use (Abdullah, 2024; Khaer, 2024). However, this research advances the literature by clarifying the mechanism through which mediation works: not solely by limiting screen duration, but by integrating co-viewing and emotional coaching that enable children to internalize emotional vocabulary and behavioral strategies. In this sense, parental mediation is not merely a form of restriction but a developmental scaffolding that helps children translate digital media experiences into socially constructive behavior in real life (Fawaid et al., 2025; Zawawi, 2025).

Theoretically, these results reinforce the principle that learning and socio-emotional growth require responsive human interaction. The observed pattern indicates that emotional regulation, empathy, and cooperation do not arise automatically through exposure to educational digital content; rather, they emerge through adult guidance that provides meaning and emotional modelling (Jali, 2025; Nisa', 2024; Zamroni et al., 2025). This implies that digital tools are not inherently harmful nor inherently beneficial, but their developmental impact depends on the social context in which they are used. From a developmental standpoint, this affirms the critical role of adult mediation in early childhood environments where digital media is increasingly becoming part of children's daily experiences.

Practically, the implications are clear for early childhood education, parenting, and policy. For schools, findings emphasize the need to reinforce face-to-face cooperative learning and emotional coaching, particularly for children with high digital exposure. For parents, the study suggests that screen time reduction alone is insufficient; active engagement, communication, and shared digital experiences are essential to build children's emotional resilience and social maturity. As for broader educational policy, guidelines should shift from simply limiting screen duration to encouraging meaningful parental involvement. Together, these implications highlight that the key to protecting and strengthening children's social–emotional development is not eliminating digital technology, but integrating it within responsive and supportive relationships.

CONCLUSION

The findings of this study highlight that screen time has a significant influence on the social–emotional development of children aged five to six years. Excessive digital exposure weakens children's emotional regulation, causes withdrawal from peer interaction, and reduces their motivation to collaborate and communicate in group settings. However, the research also reveals the most important insight: digital media itself is not the primary problem rather, children's developmental outcomes are shaped by how screen time is managed. Parental mediation emerges as the most impactful protective factor, leading children to develop stronger emotional control, demonstrate greater empathy, and show more cooperative behavior in social situations. This illustrates that the key lesson from this research is the need for families and schools to transform screen time from passive entertainment into guided learning and emotionally meaningful interactions that support healthy development rather than hinder it.

This research contributes scientifically by presenting a holistic lens that goes beyond measuring screen duration to explaining the mechanisms through which usage patterns and parental mediation shape socio-emotional competence. This offers a conceptual enrichment for the academic field of early childhood digital literacy and provides empirical support for developmental models that position adult guidance as a catalyst for emotional and social learning in the digital era. Still, the study has limitations; the sample size is narrow and limited to one educational institution, so children's digital behaviors may not reflect those in other sociocultural contexts. Additionally, the study does not capture longitudinal effects across developmental stages. Therefore, future research should involve broader and more diverse samples, examine long-term effects of digital exposure across age groups, and explore intervention models that can be implemented collaboratively by schools and families to optimize children's social–emotional development in the digital age.

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