Reflection Article

Digital devices and socio-emotional development in early childhood: A reflection on their implications

Dispositivos digitales y desarrollo socioemocional en la primera infancia: Una reflexión sobre sus implicaciones

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Abstract

Digital technologies have become a normal part of children's lives from an early age, which raises a lot of concerns about how they can affect the overall development of this age group. Therefore, the aim of this work is to analyze the consequences of intensive and improper use of these tools on the development of emotional, communicative, linguistic, relational, and behavioral abilities in young children. Some outcomes of frequent, prolonged, and uncontrolled use of technology in early childhood could be lack of attention, delayed language development, or even behavioral and personality disorders if this type of activity isn't monitored. However, it should be noted that these results only occur in cases of excessive exposure to negative content through these media, without adult interaction or supervision. The main people responsible for making sure kids keep up a decent level of social interaction, emotional, and intellectual independence should be schools and families. So, to wrap up everything said before, digital technologies can be risky if not properly controlled, but they aren't harmful to kids' emotional, social, communication, or psychological development as long as they're limited in both time and quality and balanced with other activities that are less depressing and more enriching.

Keywords: Mobile devices; emotional regulation; interpersonal interaction; early childhood education and care; technology mediation. (Source: DECS)

Resumen

Las tecnologías digitales se han convertido en algo habitual desde temprana edad en la vida de los niños, lo que provoca numerosas preocupaciones sobre cómo pueden afectar al desarrollo integral de esta población. Por tanto, el objetivo de este trabajo es analizar las consecuencias del uso intensivo e indebido de estas herramientas para el desarrollo de las capacidades emocionales, comunicativas, lingüísticas, relacionales y del comportamiento de los niños pequeños. Algunos resultados del uso frecuente, prolongado y descontrolado de la tecnología en la infancia temprana podrían ser la falta de atención, el retraso en el desarrollo del lenguaje o incluso trastornos conductuales y de personalidad si no se controla este tipo de actividad, sin embargo, hay que señalar que dichos resultados solo pueden producirse en caso de exposición excesiva a contenidos negativos a través de estos medios, sin interacción ni supervisión adulta. Los principales responsables de garantizar que los niños mantengan un nivel aceptable de interacción social, autonomía emocional e intelectual deberían ser las instituciones educativas y las familias. Así pues, para resumir todo lo dicho anteriormente, cabe afirmar que las tecnologías digitales son peligrosas cuando no se controlan adecuadamente, no suponen ningún peligro para el desarrollo de las capacidades emocionales, sociales, comunicativas ni psicológicas de los niños si están limitadas tanto en cantidad como en calidad, y se alternan con otros tipos de actividades menos deprimentes y más formativas.

Palabras clave: Dispositivos móviles; regulación emocional; interacción interpersonal; educación y cuidado a la primera infancia; mediación tecnológica. (Fuente: DECS)

1. Introduction

With the advent of new technologies and the digital era, the ways in which people communicate, learn, interact, and carry out everyday activities are changing dramatically. Whether for studying, socializing, or entertainment, children are being exposed to computers and other electronic devices at increasingly younger ages, a trend that has raised concerns among many researchers. Among them is Huttenlocher (1990), who argues that children's brain development must be considered in order to understand how new technologies can influence their growth, both positively and negatively. The author emphasizes the importance of early childhood because the brain is highly plastic during this stage. Likewise, Swider et al. (2023) identified several ways in which social media can be either beneficial or harmful to children before they enter primary school.

In this context, it is important to note that the growing presence of screens in children's lives has attracted the attention of numerous scholars. According to Hinkley (2014), exposure to a wide range of programs from an early age is associated with lower levels of overall well-being. Similarly, Bohnert and Gracia (2020) found that high levels of media consumption, combined with limited parental supervision, were associated "with deficits in self-regulation, social isolation, and reduced happiness." Radesky and Christakis (2016) also proposed several recommendations for

parents, including monitoring children's behavior when exposed to different forms of media and reviewing the content they consume. Despite these concerns, recent research has demonstrated that not only the amount of media exposure but also the quality of media consumption, as well as parent–child discussions about media use, significantly influence various aspects of child development. In line with these findings, other researchers (specifically Choy, Yun Nga et al., Schwarzer et al., and Liu et al., in studies published in 2024, 2021, and 2024, respectively) agreed that the presence of an adult is essential to guide children's behavior and help them understand certain concepts.

Given the significant impact of new technologies on children's lives and the range of problems associated with excessive media use—such as reduced communication and social skills, as well as potential psychological difficulties—it is relevant to examine why excessive media exposure may affect the development of otherwise healthy children from a socio-emotional education perspective. This analysis is based on findings from contemporary research on child development, emotional intelligence, language acquisition, and social communication.

2. Method

According to the research, special attention must be paid to early childhood, as it is a crucial and sensitive stage in child development. Huttenlocher (1990) states that this period is "marked by a massive brain reorganization that effectively predisposes the development of new abilities," while Swider et al. (2023) point out that "limiting or moderating access to digital media before the age of eight may have implications for contextual cognitive and socio-emotional development." These researchers suggest that it is important to assess the extent to which screen use may replace critical developmental activities such as play and social interaction.

Excessive screen exposure has been shown to significantly affect cognitive development and emotional regulation, leading to a variety of developmental difficulties. Panjeti and Ranganathan (2023) concluded that prolonged screen time before the age of eight may be strongly associated with attentional, memory, verbal, emotional, and social deficits, although it can be beneficial when used as an educational tool. Similarly, Barreto (2025) found that excessive media exposure is associated with temporary deficits in brain structures related to language and executive functioning, as well as disruptions in attention, stress regulation, and emotional management.

Furthermore, numerous studies agree that excessive screen use has a significant negative impact on emotional regulation. Canaslan and Sungur (2022) reported that high screen time predicted self-regulation deficits among children who were primarily exposed to violent content. Likewise, Uzundag et al. (2022) identified a negative correlation between screen use and self-regulation within the age group studied, manifested through device dependency, irritability, constant demand for accessibility, a tendency to cry, and low frustration tolerance. Collectively, these findings suggest that young children are at risk of developing poor emotional regulation skills and maladaptive behavioral patterns as a consequence of intensive device use.

It is also worth discussing the concept of overstimulation, recently introduced by

Clemente et al. (2024). They define it as "a condition in which individuals experience an excess of everyday stimuli from a digital environment, generating a negative cognitive load that impairs attention and participation in physically engaging activities." More specifically, the authors explain that "intensive use of portable devices may potentially interfere with physical play and replace critical social stimuli during key developmental periods, resulting in adverse consequences for social development, self-regulation, and attention."

Research has identified several negative consequences associated with regular device use from an early age, particularly regarding language and communication development. Although there are differing views concerning the precise effects of screens on language acquisition before the age of two, most authors agree that digital devices may contribute to speech delays. For example, Malinchela et al. (2025) reported that children whose social and interactive experiences were partially or fully replaced by media consumption faced a greater risk of delayed speech development. Similarly, Ferjan et al. (2021) found that early and prolonged media exposure reduced the amount of conversation between mothers and children and decreased rates of bidirectional communication, thereby increasing the likelihood of language development delays. Paulus et al. (2021) further added that "high levels of media interaction before the age of two increase the risk of difficulties in language development and social cognition."

Finally, several authors argue that extensive technology use combined with limited social interaction may contribute to poor behavioral outcomes and weakened moral development. Bohnert and Gracia (2020) indicated that "high levels of screen use were associated with lower levels of social satisfaction and child well-being," while Hinkley (2014) stated that "reduced socio-emotional well-being during childhood is associated with increased aggression and/or disruptive behavior, as well as a higher likelihood of developing depression." Likewise, Soyoof et al. (2023) reported that "excessive or obsessive media use is associated with various signs of emotional disorders, as well as sleep problems, reduced physical activity, and other indicators of poorer child health."

Meanwhile, many researchers have examined the role of informed adult involvement in mitigating some of the adverse effects of screen exposure on children. Choy, Yun Nga et al. (2024) explain that appropriate mediation strategies and expert supervision can positively support socio-emotional development, language acquisition, and early media literacy. However, they caution that "not all forms of adult involvement contribute positively to child development." Similarly, Schwarzer et al. (2021) found that daily interaction between parents and children is associated with better cognitive and linguistic outcomes, as well as greater prosocial development. In contrast, Liu et al. (2024) reported that parental phubbing is linked to higher levels of children's screen use, poorer emotional control, and increased family conflict.

Based on these observations, many researchers advocate for the responsible use of electronic devices by children and emphasize the importance of adult supervision (Swider et al., 2023; Barreto, 2025; Radesky & Christakis, 2016; Paulus et al., 2021; Soyoof et al., 2023). Additionally, Clemente et al. (2024)

recommend organizing physically engaging activities for children, such as school sports and traditional games, to broaden their developmental experiences. Nevertheless, it is essential to avoid excessive exposure to digital devices, as it may have serious consequences for children's overall development.

Considering the above, the information is synthesized and presented through key concepts and fundamental elements that explain the implications and impacts of excessive digital device use during early childhood, as illustrated in Figure 1.

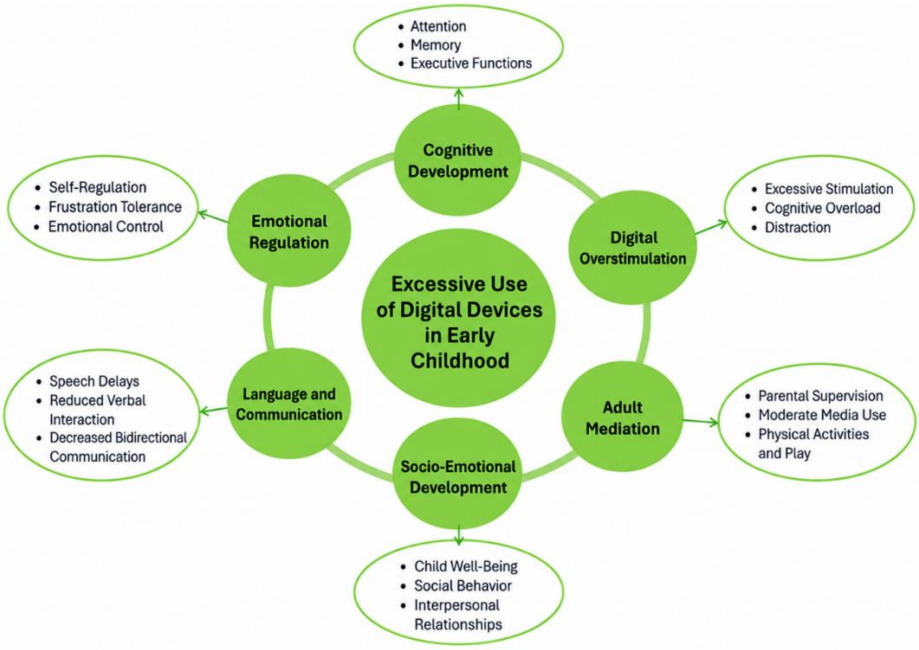

Figure 1. Impact of Excessive Digital Device Use in Early Childhood (Source: Authors' Own Work).

3. Conclusions and Practical Application

Based on the data collected from studies conducted in this field, it can be argued that excessive use of digital devices from early childhood may have a range of negative consequences for children's social and emotional development if not properly measured, controlled, and managed. These consequences include, among others, the deterioration of the ability to regulate one's own emotions and those of others from an early age; the development of significant attention deficits; delays or impairments in language development; the loss of social interests; and difficulties in adapting in terms of academic performance and overall emotional well-being, all of which may result in adverse effects on children's daily lives and future development. Although introducing digital technologies into children's lives from an early age, when carefully moderated and planned, can provide certain benefits, such advantages may be outweighed by the potential negative effects arising from uncontrolled use in terms of both duration and context, due to children's incomplete neurological development during these early stages of life.

From this perspective, it can also be argued that technology itself is not inherently harmful to children's social and emotional development and may even be beneficial when used appropriately. Therefore, it is of utmost importance to address issues such as parental guidance, socio-interactive activities, and media education, both within educational institutions and families, in order to prevent screens from undermining positive habits developed over many years, threatening traditional values, or contributing to psychological and developmental disorders. It is essential to introduce changes to current curricula and establish new standards in parenting and teaching strategies to balance virtual environments with children's needs and interests related to play, communication, and relationships. Thus, given that technology can be highly valuable in early education, it should be carefully integrated into the sociocultural environment so that its benefits can be enjoyed without depriving children of the life experiences that contribute to their social and emotional development.

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This article was not written using texts generated by a Large Language Model (LLM), such as ChatGPT or others.

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