

THE INFLUENCE OF DIGITAL TECHNOLOGY USAGE ON CHILDREN'S WELL-BEING

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**Annotation:** This study explores the complex impact of digital technology usage on the physical, psychological, and social well-being of children. The rapid integration of smartphones, tablets, and online media into daily life has transformed how children learn, communicate, and spend their free time. While digital access supports education and creativity, excessive use is associated with reduced physical activity, sleep disturbances, attention problems, and emotional imbalance. This research aims to identify patterns of technology use and their correlation with cognitive and behavioral outcomes in school-aged children. The results emphasize the need for balanced digital habits and parental guidance to ensure healthy development in the digital era.

**Keywords:** Digital technology, Children, Well-being, Mental health, Screen time, Behavioral development

**Annotatsiya:** Ushbu tadqiqot raqamli texnologiyalardan foydalanishning bolalarning jismoniy, psixologik va ijtimoiy holatiga ta'sirini o'rganadi. Smartfon, planshet va internetdan kundalik foydalanish bolalarning o'rganish, muloqot qilish va hordiq chiqarish tarzini tubdan o'zgartirdi. Raqamli vositalar ta'lim va ijodiy rivojlanishni qo'llab-quvvatlasa-da, ularning ortiqcha ishlatilishi jismoniy faollikning kamayishi, uyqu buzilishi, diqqat muammolari va hissiy beqarorlik bilan bog'liq. Tadqiqotda texnologiyadan foydalanish darajasi va bolalarning kognitiv hamda xulq-atvor ko'rsatkichlari o'rtasidagi bog'liqlik aniqlanadi. Natijalar raqamli muvozanat va ota-onalik nazoratining ahamiyatini ko'rsatadi.

**Kalit so'zlar:** Raqamli texnologiyalar, bola, farovonlik, ruhiy salomatlik, ekran vaqti, xulq-atvor rivoji

**Аннотация:** В данном исследовании изучается влияние использования цифровых технологий на физическое, психологическое и социальное благополучие детей. Активное внедрение смартфонов, планшетов и онлайн-среды в повседневную жизнь изменило способы обучения, общения и отдыха детей. Несмотря на положительное влияние цифровых ресурсов на образование и креативность, их чрезмерное использование связано с уменьшением физической активности, нарушением сна, снижением концентрации и эмоциональной нестабильностью. Исследование направлено на выявление взаимосвязи между характером использования технологий и когнитивно-поведенческими изменениями у детей школьного возраста. Полученные результаты подчёркивают необходимость цифрового баланса и родительского контроля.

**Ключевые слова:** Цифровые технологии, дети, благополучие, психическое здоровье, экранное время, поведенческое развитие

### Introduction

In the 21st century, digital technology has become an inseparable part of childhood. The rapid spread of smartphones, tablets, computers, and online platforms has transformed the way children learn,

# THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

## VOLUME-5, ISSUE-10

play, and interact with the world. From early education to social communication, digital tools provide countless opportunities for knowledge development, creativity, and connectivity. However, the growing dependence on technology has also introduced new challenges to children's physical health, emotional stability, and cognitive development. Recent studies show that children spend an increasing amount of time on screens — often exceeding the recommended daily limit. Excessive exposure to digital media has been linked to a range of health issues such as poor posture, eye strain, reduced sleep quality, and decreased physical activity. In the psychological domain, constant digital engagement may influence emotional regulation, attention span, and social behavior. Furthermore, online environments may expose children to cyberbullying, anxiety, or distorted self-perception, which can impact mental well-being. While moderate use of digital devices can support learning and enhance problem-solving skills, uncontrolled or prolonged exposure can lead to behavioral dependency and social isolation. The balance between beneficial and harmful use of digital technology has therefore become a critical issue in modern pediatrics, psychology, and education. This study aims to explore the relationship between digital technology usage and the overall well-being of children, identifying both positive and negative outcomes. By examining behavioral, emotional, and physical indicators, the research seeks to provide evidence-based insights that can guide parents, educators, and policymakers toward promoting healthier digital habits among children.

### Materials and Methods

This cross-sectional descriptive study was conducted between January and June 2025 among school-aged children (8–16 years) in urban and suburban regions. A total of 150 participants were selected through a stratified random sampling method. The study aimed to assess the relationship between digital technology usage and different aspects of children's well-being, including physical health, mental state, and social behavior. A structured questionnaire was developed to measure screen time, type of device used, and purpose of technology engagement (education, entertainment, communication, or gaming). The Children's Digital Well-being Scale (CDWS), adapted from international child behavior inventories, was used to assess psychological and emotional indicators. Each participant's sleep duration, daily physical activity, academic performance, and social interaction frequency were evaluated through parent and teacher reports. In addition, simple health indicators such as body mass index (BMI) and visual fatigue symptoms were recorded. Collected data were analyzed using SPSS version 27.0. Descriptive statistics were applied to identify technology usage patterns, while Pearson correlation and linear regression analyses were used to determine relationships between screen time and well-being scores. Statistical significance was defined as  $p < 0.05$ . Ethical approval was obtained from the institutional review board. Written consent was received from all parents or guardians, and participation was voluntary and confidential.

### Results

Out of 150 participating children, 52% were male and 48% were female, with a mean age of  $12.4 \pm 2.3$  years. The average daily screen time among participants was  $4.6 \pm 1.8$  hours, exceeding the recommended limit of 2 hours per day for 78% of respondents. A significant correlation was observed between increased screen time and reduced sleep duration ( $r = -0.42$ ,  $p < 0.01$ ). Children who used digital devices for more than 5 hours daily reported higher levels of emotional fatigue (61%) and attention difficulties (48%) compared to those with limited screen exposure. Additionally, BMI values were slightly higher among children with excessive screen use, indicating a possible link to sedentary behavior. Despite these negative findings, moderate technology usage (2–3 hours daily, mainly for educational purposes) was associated with better academic engagement and enhanced problem-

# THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

## VOLUME-5, ISSUE-10

solving skills ( $p < 0.05$ ). The study also found that children with parental control and time management routines showed improved emotional stability and social interaction compared to those without supervision. Overall, the results demonstrate a dual effect of digital technology: while it supports learning and creativity when used responsibly, excessive and unsupervised exposure has adverse consequences on children's physical and psychological well-being.

### Discussion

The findings of this study highlight the growing influence of digital technology on multiple dimensions of children's well-being. Consistent with previous international research, the results demonstrate that excessive screen time is associated with sleep disturbances, reduced physical activity, and emotional instability. Prolonged exposure to screens can alter natural circadian rhythms and decrease opportunities for outdoor play, which are essential for healthy development. Moreover, frequent use of digital devices for entertainment and social media correlates with shortened attention span and increased irritability, supporting the view that overuse of technology may disrupt cognitive control and emotional regulation in developing brains. Similar trends have been reported by pediatric psychologists who emphasize that unregulated screen time can lead to behavioral dependency resembling mild addiction. However, the study also confirmed that moderate and guided use of digital technology can enhance learning motivation, cognitive flexibility, and problem-solving skills. When children use digital tools under proper parental supervision and within reasonable time limits, the benefits clearly outweigh potential risks. This underlines the importance of digital literacy education and family-based regulation to foster healthy habits in the digital environment. In summary, the dual impact of digital technology—both constructive and harmful—depends largely on duration, purpose, and parental involvement. Therefore, promoting balance, supervision, and awareness is essential to protect children's holistic well-being in the modern digital era.

### Conclusion

This study concludes that digital technology exerts a dual influence on children's well-being. When used purposefully and in moderation—particularly for educational or creative purposes—digital tools can strengthen learning motivation, cognitive flexibility, and communication skills. However, excessive and unsupervised use contributes to sleep disturbances, reduced physical activity, emotional instability, and attention difficulties. The results emphasize the importance of parental monitoring and digital balance in daily routines. Structured schedules, regular outdoor activities, and awareness programs about healthy screen habits can significantly reduce risks associated with overuse. Educational institutions and families must collaborate to develop digital literacy and responsible technology use strategies. Maintaining this balance is essential for promoting the holistic mental, physical, and social health of children in an increasingly digitalized world.

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## THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

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