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Screen time vs. green time: Balancing digital life and holistic well-being in young minds

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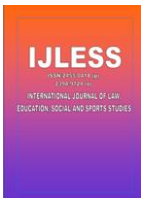

Abstract
In an increasingly digitized world, children and adolescents are immersed in screen-based environments, leveraging technology for learning, entertainment, and social interaction. While digital platforms can enhance cognitive engagement and global connectivity, excessive screen exposure has been linked to negative outcomes such as physical inactivity, emotional dysregulation, and diminished attention spans (Twenge & Campbell, 2018; WHO, 2019). This paper introduces the complementary concept of "*green time*"—intentional engagement with nature and outdoor activities—as a vital counterbalance to mitigate the overuse of screens and promote holistic well-being. Drawing on ecological systems theory (Bronfenbrenner, 1979), attention restoration theory (Kaplan & Kaplan, 1989), and emerging insights from environmental psychology, this study critically reviews existing literature on the developmental implications of both screen time and nature-based experiences. The objectives include (i) analyzing the impact of screen overuse on young minds, (ii) exploring the benefits of nature exposure on physical, cognitive, and emotional health, and (iii) proposing evidence-based strategies to achieve a healthier digital-nature balance. The findings underscore the need for intentional digital hygiene, curriculum reorientation, and policy interventions to foster well-rounded development in the digital age. Implications are discussed for educators, caregivers, and policymakers to create nature-integrated learning environments that nurture resilience, creativity, and socio-emotional intelligence in youth (Louv, 2008; Gill, 2014; Dadvand et al., 2015).

Keywords: Digitalization, Screen Time, Green Time, Children, Youth, Holistic Well-being, Mental Health, Outdoor Learning, Education.

Introduction

The post-pandemic world has dramatically reshaped the everyday lives of children and adolescents, with digital devices becoming central to their education, recreation, and communication. As schools

shifted to online platforms and social distancing measures curtailed physical interactions, screen time surged across all age groups. A UNICEF report (2021) observed that children's screen exposure doubled in several regions during the COVID-19 lockdowns, with many spending more than 6–8 hours daily on digital devices for classes, games, and social media. While technology served as a vital bridge during the crisis, enabling continuity of learning and connection, it inadvertently disrupted the balance of traditional play, outdoor exposure, and face-to-face social interaction.

This digital dependence has far-reaching consequences. Numerous studies indicate that excessive screen time is associated with poor sleep quality, reduced attention span, emotional dysregulation, sedentary lifestyles, and even increased anxiety and depression among young users (Twenge & Campbell, 2018; WHO, 2019; Rideout, 2020). The overstimulation from prolonged exposure to screens can overload a developing brain, affecting memory, emotional resilience, and social skills. For instance, a study by Przybylski and Weinstein (2019) found that even moderate screen use was linked to lower psychological well-being, including less curiosity, lower self-control, and increased distractibility in children aged 2–17.Against this backdrop, the concept of *"green time"*—unstructured time spent in nature—emerges as a necessary counterbalance to screen-induced stress. Green time includes activities like walking in parks, gardening, outdoor sports, or simply being in natural settings. Research in environmental psychology shows that nature exposure not only reduces cortisol levels (a biomarker for stress) but also improves attention span, creativity, and emotional stability (Kaplan & Kaplan, 1989; Dadvand et al., 2015). For example, the "Nearby Nature" study conducted in urban Chicago found that children with access to green outdoor spaces demonstrated better cognitive functioning and self-discipline compared to their peers in more built-up environments (Taylor & Kuo, 2009).

One compelling case is the example of Finland, which mandates outdoor time in its school schedule regardless of weather. Finnish schools include multiple outdoor recess periods, contributing to better academic outcomes, higher concentration levels, and lower rates of behavioral issues (Sahlberg, 2015). In contrast, many urban school systems in countries like India and the United States struggle to provide green spaces due to space constraints and pressure for academic rigor, often prioritizing screen-based instruction over experiential learning.

Green time is not merely leisure; it is a developmental necessity. According to Louv (2008), the growing alienation from nature—what he terms "nature-deficit disorder"—can be remedied only by reintegrating nature into the lives of children. This reintegration has both therapeutic and pedagogical value. Children who regularly engage with nature exhibit enhanced problem-solving skills, emotional balance, and a greater sense of connectedness and empathy toward others and the environment (Gill, 2014). Importantly, such exposure fosters resilience in the face of life stressors—an urgent need in today's post-pandemic mental health climate.

As we move into an era increasingly defined by digital ecosystems, there is an urgent call for balance. This paper seeks to analyze the consequences of disproportionate screen time and explore how green time can be deliberately integrated into children's routines to promote holistic development. It aims to provide actionable insights for educators, parents, and policymakers to bridge the growing divide between children and the natural world—restoring a healthier rhythm to young lives.

Review of Related Literature (RRL)

Radesky & Christakis (2016),Title: *Increased Screen Time: Implications for Attention and Self-Regulation in Early Childhood*,Methodology: Review of longitudinal and cross-sectional studies on screen exposure and behavioral outcomes in young children.

Findings: The researchers reported that excessive screen time, especially in early childhood, is correlated with attention difficulties, delayed language development, and problems with emotional

regulation.Relevance: This study supports the idea that digital overexposure negatively impacts cognitive and emotional well-being, reinforcing the need for green time as a regulatory balance.

World Health Organization (2019),Title: *Guidelines on Physical Activity, Sedentary Behaviour and Sleep for Children Under 5 Years of Age*

Methodology: Global meta-analysis of behavioral health studies in early childhood, leading to policy recommendations.Findings: The WHO recommended that children under five should not be exposed to screens for more than one hour a day and must engage in physical and outdoor activity to support healthy development.

Relevance: These recommendations highlight institutional recognition of the harm of screen overuse and support green time promotion at the policy level.

Rideout, V., Robb, M. B., & Walsh, D. (2020),Title: *The Common Sense Census: Media Use by Tweens and Teens*,Methodology: Nationwide survey of 1,600 tweens and teens in the U.S. using self-report questionnaires on daily media use.Findings: The study found that tweens spend an average of 4–6 hours per day on screens. High media consumption was associated with sedentary behavior, reduced time for physical play, and disrupted sleep patterns. Relevance: Demonstrates the scale of screen exposure in youth and strengthens the case for integrating nature-based time into daily routines.

Dadvand et al. (2015),Title: *Green spaces and cognitive development in primary schoolchildren*,Methodology: Longitudinal study of 2,593 schoolchildren in Barcelona, using cognitive testing and satellite data on urban green space exposure.

Findings: Children exposed to more green spaces showed significantly better working memory, attention capacity, and reduced inattentiveness.,Relevance: Empirical evidence of green time improving cognitive development offers a strong counter-narrative to excessive screen use.

Taylor & Kuo (2009),Title: *Children with Attention Deficits Concentrate Better After Walks in the Park*,Methodology: Experimental design involving children with ADHD who participated in guided walks in three different settings: park, urban, and residential.

Findings: Children demonstrated better concentration and task performance after exposure to green settings compared to urban settings.

Relevance: Validates green time as a therapeutic intervention for attention disorders, often worsened by screen overuse.

Twenge & Campbell (2018),Title: *Associations between Screen Time and Lower Psychological Well-being among Children and Adolescents*

Methodology: Analysis of data from a national survey (n = 40,000+) focusing on behavioral and emotional well-being indicators.

Findings: Increased screen time was linked to lower levels of curiosity, self-control, emotional stability, and overall psychological well-being.

Relevance: This large-scale study quantifies the psychological costs of high screen engagement and reinforces the argument for balancing it with outdoor activity.

Conclusion of the Review:

The reviewed studies clearly articulate the detrimental effects of excessive screen time on attention, emotional regulation, sleep, and physical activity. Equally, they highlight the cognitive and emotional benefits of green time through structured empirical research and theoretical models. Together, this literature supports the urgent need to foster a balanced approach—where digital tools are used constructively, but are countered by regular, intentional exposure to nature. This dual engagement is

critical for nurturing well-rounded, resilient, and healthy young minds in today's post-pandemic digital landscape.

Theoretical Framework

This study is grounded in two key theories:

- Ecological Systems Theory (Bronfenbrenner, 1979): Children's development is influenced by multiple environments. A lack of outdoor and social engagement in the microsystem (home, school) disrupts developmental processes.

- Biophilia Hypothesis (Wilson, 1984): Human beings possess an innate affinity for nature. Connection with nature promotes emotional and psychological stability, especially in growing children.

Objectives of the Study

Analyzing the impact of screen overuse on young minds,

Exploring the benefits of nature exposure on physical, cognitive, and emotional health, and

Proposing evidence-based strategies to achieve a healthier digital-nature balance

Justification for the Objectives:

The outlined objectives address a contemporary challenge. Post-pandemic educational systems have normalized screen-based interactions, often ignoring their unintended consequences. To mitigate these, understanding the role of green time is essential. By grounding the study in real-world issues and emerging data, the objectives guide stakeholders toward evidence-based solutions.

Key Issues and Discussion Points (with Indian Context)

Impact of Screen Time

In India, the COVID-19 pandemic significantly increased digital screen exposure among children due to online schooling and lockdowns. According to a 2021 study by the National Commission for Protection of Child Rights (NCPCR), children's screen time surged from less than 2 hours a day to over 5–6 hours on average during the pandemic.

Vision Strain, Obesity, and Sleep Disturbances

A study conducted by AIIMS (All India Institute of Medical Sciences), Delhi, found that 38% of children aged 6–16 years developed vision problems like myopia due to prolonged screen exposure during the pandemic. Pediatricians also reported an increase in childhood obesity and irregular sleep cycles due to sedentary indoor lifestyles and excessive device use (Kumar et al., 2021).

Reduced Physical Activity and Motor Skills

In Bengaluru, teachers reported that post-pandemic reopening revealed a decline in fine motor skills in pre-primary children, who struggled with activities like holding pencils or climbing stairs—skills that typically develop through unstructured outdoor play.

Emotional Fatigue and Social Isolation

An increase in anxiety, withdrawal behavior, and dependence on digital validation was noted by school counselors in urban areas like Mumbai and Hyderabad. Adolescents reported increased loneliness despite being constantly connected online, echoing findings from NIMHANS on digital dependency and its emotional toll.

Case Illustration – Urban India: In Delhi-NCR, Fortis Mental Health Department observed a 40% rise in consultations related to screen-induced behavioral issues during 2020–2022. The hospital started

"Tech-Free Thursdays" as a therapeutic intervention where children engaged in gardening, yoga, and nature walks. Parents reported better mood stability and sleep in participating children.

Benefits of Green Time

India's rich natural diversity offers abundant opportunities for nature-based experiences, yet they are underutilized in formal education and urban planning.

Enhances Mood and Reduces Anxiety

Studies in rural Karnataka and Himachal Pradesh observed that children involved in farming or natural play exhibited lower stress and higher resilience. Nature-based engagement such as climbing trees, working in fields, or playing in rivers fostered mindfulness and calm (Verma & Gupta, 2020).

Boosts Physical Health and Immunity

Programs like Nature Connect in schools in Kerala integrate morning outdoor yoga and gardening into the timetable. Teachers have reported improved attendance and reduced seasonal illnesses due to enhanced immunity and physical activity.

Improves Creativity and Attention Span

The Aaranyak Nature Club in Assam allows tribal and urban children to participate in trekking, wildlife sketching, and eco-literacy. Participants have shown improved creative writing and concentration in classrooms, as observed by local educators.

Case Illustration – Odisha Tribal Schools: The Kalinga Institute of Social Sciences (KISS) in Bhubaneswar, which educates thousands of tribal children, integrates outdoor learning with formal curriculum. Activities such as forest walks, tribal games, and agricultural tasks are part of their weekly schedule. A study conducted at KISS revealed increased levels of student engagement, happiness, and fewer behavioral issues compared to urban schools with digital-heavy routines.

Disparity in Access

India's demographic diversity creates sharp contrasts in access to both digital tools and green spaces.

Urban-Rural Divide in Green Spaces

In cities like Mumbai, Bengaluru, and Chennai, public parks are often overcrowded, poorly maintained, or unsafe. A 2018 survey by Centre for Science and Environment (CSE) found that over 60% of children in Delhi's lower-income colonies had no access to open play spaces within walking distance.

Socioeconomic Disparities

While upper-income families provide gadget access and enroll children in structured green activities (like nature camps or eco-clubs), children from marginalized backgrounds may lack access to both. In slums and resettlement colonies, even terrace or courtyard play is limited.

Need for Equitable Access

Government initiatives like "Green School Programme" by CSE and "School Nursery Yojana" by MoEFCC promote environmental education and green infrastructure in schools. However, their implementation is uneven. Equal emphasis on providing both digital literacy and ecological access is essential.

Case Illustration – Rural Maharashtra: The Pune-based NGO 'Gram Mangal' runs child-centered education programs that integrate farming, animal care, and nature observation in tribal and rural schools.

Students spend 2–3 hours daily outdoors, and their curriculum uses nature as a metaphor for learning. Evaluations show stronger emotional intelligence and problem-solving skills among these learners.

The Indian context reveals that while screen time has surged, nature-based opportunities remain underexplored in both rural and urban education systems. The evidence shows that restoring balance through green time fosters physical vitality, emotional stability, and cognitive growth. However, this balance is unevenly distributed due to geographical, economic, and infrastructural disparities. Strategic educational policies, inclusive urban planning, and grassroots initiatives are needed to ensure that every child in India—irrespective of background—receives the developmental benefits of both digital tools and nature's nurturing presence.

Educational Implications

Curriculum Integration: Incorporate nature-based learning, outdoor science projects, and eco-literacy.
2. Digital Wellness Programs: Schools can educate children on healthy digital habits.
3. Green School Policies: Allocate daily outdoor hours, create green corridors and play spaces.
4. Parental Guidance: Parents must model balanced screen usage and encourage outdoor play.

Conclusion

Digitalization is inevitable, but it must not come at the cost of children's holistic well-being. While screens have become indispensable for education, communication, and entertainment, their unregulated use has serious repercussions for the physical, emotional, and cognitive health of children and adolescents. The reviewed evidence—from national surveys, longitudinal studies, and real-world case examples—strongly indicates that screen overuse is linked to rising cases of emotional fatigue, attention deficits, sedentary behavior, and declining social skills among youth.

In contrast, intentional engagement with nature—termed "green time"—emerges as a powerful, evidence-backed antidote. Nature exposure enhances mood, concentration, resilience, creativity, and social-emotional learning, thereby fulfilling developmental needs that digital environments often neglect. Drawing from ecological systems theory and the biophilia hypothesis, this study reinforces the role of nature as both a therapeutic space and a pedagogical tool.

In the Indian context, the disparity in access to green spaces and unstructured play underscores the urgent need for inclusive strategies that bridge the digital-nature divide. Schools must be redesigned as green learning ecosystems. Policies should ensure that outdoor time is embedded into timetables, particularly in densely populated and economically disadvantaged areas. Parents, too, must serve as facilitators of nature-based routines, setting boundaries for screen use and nurturing curiosity through outdoor exploration.

Moving forward, an integrative framework combining digital literacy with ecological literacy is essential. Curriculum planners, educationists, urban developers, and mental health professionals must collaborate to foster environments where digital fluency coexists with nature-connectedness. The path to raising resilient, empathetic, and well-rounded future citizens lies not in rejecting technology, but in harmonizing it with the restorative power of nature.

References

[1]. American Academy of Pediatrics. (2016). Media and young minds. Pediatrics, 138(5), e20162591. https://doi.org/10.1542/peds.2016-2591
[2]. Bronfenbrenner, U. (1979). The ecology of human development. Harvard University Press.
[3]. Louv, R. (2008). Last child in the woods: Saving our children from nature-deficit disorder. Algonquin Books.
[4]. Radesky, J., & Christakis, D. (2016). Increased screen time: Implications for early childhood development. JAMA Pediatrics, 170(5), 397–398.

[5]. Rideout, V., Robb, M., & The Common Sense Media Team. (2020). The Common Sense Census: Media use by tweens and teens, 2020. Common Sense Media.
[6]. Wilson, E. O. (1984). Biophilia. Harvard University Press.
[7]. World Health Organization. (2019). Guidelines on physical activity, sedentary behaviour and sleep for children under 5 years of age. Geneva: WHO.