American Journal of Applied Science and Technology

VOLUME Vol.05 Issue09 2025
PAGE NO. 47-51
DOI 10.37547/ajast/Volume05Issue09-10

Academic Performance Among School-Age Children in the Era of Digital Technology

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Received: 18 August 2025; **Accepted:** 05 September 2025; **Published:** 29 September 2025

Abstract

Digital technology has become an integral part of daily life, especially for children. Although these advancements offer significant benefits, their excessive use has increased concerns about digital addiction and its potential influence on academic performance. This review focuses on digital addiction, the overuse of digital technology, and its relation to the academic performance of school-age children. Drawing is based on global and regional studies and statistics. This study highlights the prevalence of digital technology use, its potential health implications, and its influence on learning. These findings underscore the urgent need for parental monitoring and educational strategies to diminish the adverse effects of digital addiction on children.

Keywords: digital technology, digital addiction, digital media, academic performance, and academic achievement.

Introduction

Today, several types of digital media are widespread worldwide and are present in children's daily lives with different forms of media, such as television, video and computer games, iPods, internet, movies, magazines, books, and newspapers (1) (2).

Addiction to digital technology is characterized by the excessive use of digital technology, which affects the daily activities of the user. Digital addiction could have risk consequences for children and teens in many aspects of their lives, for instance, the negative influence on their mental, physical, social interaction, and relationships, in addition to the effect on school

performance (3).

Furthermore, a high level of Internet use causes teenagers to exhibit Internet addiction disorder (IAD). In addition to the worse adaptation for developmental tasks, such as academic achievement and peer relations, more psychological symptoms have been linked to IAD (4).

Important of study

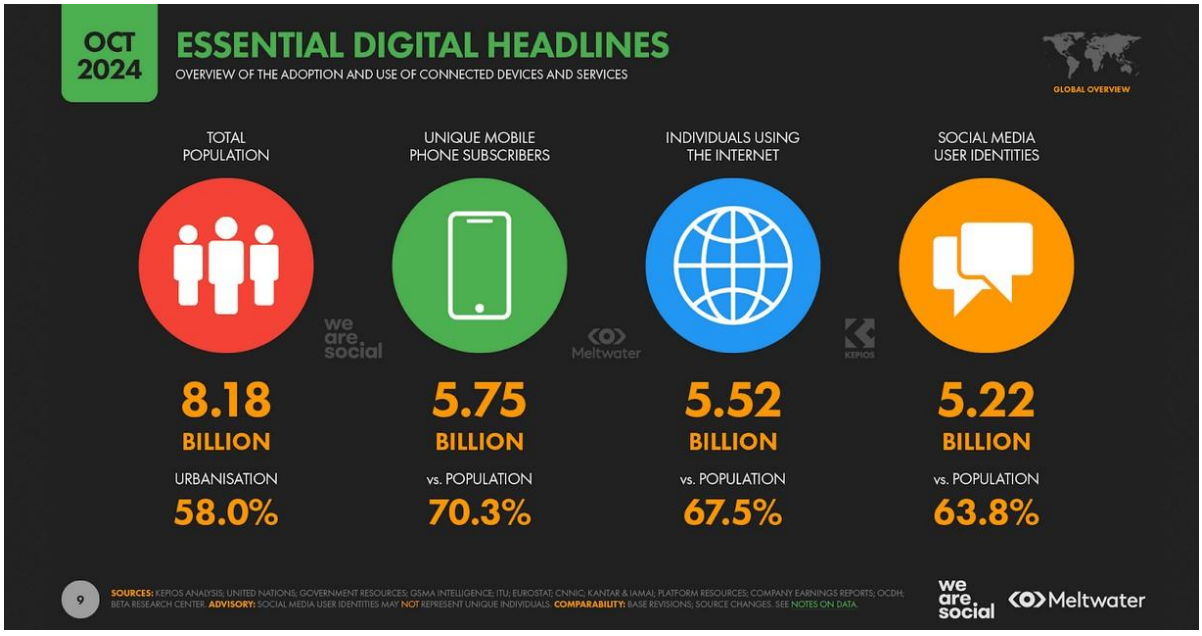
The current study reviews the consequences of digital technology use and Internet addiction on the academic performance of school-age children. This study aligns with researchers' interest in improving educational outcomes. The findings of this study would help parents, teachers, and even students to understand the significant role of digital media use in their lives and education process. It will also help them to understand the strategies and guidelines they should follow to regulate the usage of digital technology and reduce its negative effects.

In his book about digital addiction, Ziebro (2016) mentioned that the total media usage for children's breakdown – 52.5 hours/week, 210 hours/month, 2520 hours/year–negatively affects children's daily activities and decreases social interaction between the child and the real world. Furthermore, children who engage in virtual reality games for a long period face terrible consequences in the real world, especially when playing games with violent features.

Aim of review to pinpoint the influence of digital technological use on the academic performance of school-age children

Statistic of Digital Technology Use

The Digital technology use has increased worldwide, and The image below shows the statistics of Internet, phone, and social media users worldwide in October 2024.



https://images.app.goo.gl/8fF8mckFQBj5ZNv96

The latest Iraqi statistic of digital technology use in January 2021 presented there were 30.52 million internet users (75% of the total population) and 25.00 million social media users (61.4% of the total population) and 40.01 million mobile connections equivalent to 98.3% of the total population, and these numbers increase annually (6).

The study of Obaid and Kassim (2019) showed that almost all families (≥ 90%) in al Hilla city/Iraq have at least one or two digital devices such as TV, mobile devices, or tablets in their homes, and they use them on an average of more than 2 hours per day with their children.

Negative Effect of Digital Technology

Digital technology (DT) is a device that can connect to the Internet, such as smartphones, computers, laptops, and other devices, which are used for entertainment services and have altered the landscape of household media use. Hence, it is essential to reconsider the role of media in everyday family life (8).

Excessive exposure to digital technology, especially by children, makes them more vulnerable to the negative influence of these screens; for instance, watching

television, playing with videogames, or computers for a long period can displace daily activities, such as physical activity and social interaction. In addition, these technologies have a significant effect on children's behavior, perceptions, beliefs, and affect (9).

Many scholars argue that smartphones, video games, and social media apps may act as cigarettes, drugs, or gambling as harmful and addictive action (10). The WHO listed "gaming disorder" as a new mental health illness in 2018 in the 11th edition of the International Classification of Diseases (ICD) (11).

The Healthy Children's Organization, which is affiliated with the AAP, published in 2016, reported why your child's media use was limited. The organization illustrated that the excessive use of DT and screens can place children or teens at risk of obesity, sleep difficulties, problematic Internet, sexual risk behaviors, privacy problems, and undesirable outcomes on school performance. In addition to cyberbullying, they are exposed to cyberbullying while browsing the Internet (12).

Technological addictions and Child Health

Technological addictions are defined as "nonchemical (behavioral) addictions that involve human-machine interactions. They can either be passive (e.g., television) or active (e.g., computer games) or usually encompass reinforcing features that may contribute to increasing the tendencies of addiction' (13) (14).

Internet addiction has increased the concern of researchers globally owing to the rapid development of the World Wide Web and its increased popularity. "all of as practice the phenomenon of living with the novel Digital Generation (also known as Gen-D or digital natives) involved the young person's born from 1990 to 2000 who raised with constant exposure to virtual webs" (15).

Ivan K. Goldberg is an American psychiatrist who created PsyCom. Net in 1986, which is considered a kind of cyber-club in which psychotherapists reported evidence and exchanged skills about Internet abuse. In 1995 Dr. Ivan facetiously warned of "Internet Addiction Disorder, indicators that encompassed abandonment or decrease of significance of professional or societal events result from internet use", and "presenting with voluntary or involuntary typing movements of fingers", between the users (16).

Some doctors, such as the psychologist Tao Ran, consider the symptoms that result from excessive digital technology use, particularly Internet use, similar to the symptoms of addictive disorder, because this extra media consumption has an effect on the brain, such as heroin consumption, and can lead to a decrease in the capacity of the brain (8%). Moreover, many countries agree with the term Internet same stimulator ".

Academic Performance and Digital Technology Use

Addiction and China were the foremost to recognize Internet dependence as a medical disorder and opened a center of rehabilitation for people struggling with this disorder, such as (Daxing Internet Addiction Treatment Center) (5).

Kardaras (2018) mentioned in his book Screen Addiction that there are many pieces of evidence concerning the negative effects of screen light on children's neurological health. Brain scanning in certain studies shows that the glowing of screens, such as touchscreens and smartphone screens, stimulates the brain pleasure center and releases dopamine (neurotransmitter) that acts as arousing. Thus, the brains of adults are addicted to this activity and more so for children because children's brains are still under development and affected more than the adult brain.

According to Sun and Metros (2011), to create an equitable learning environment, educators should utilize a range of knowledge and strategies to foster diversity in the classroom and provide equal access to resources by providing fair opportunities to access and use effective DT tools. For example, using technology inside the classroom while training students can motivate young individuals, particularly minorities, to acquire a new understanding (19).

Alyoussef and Omer (2023) showed that various educational institutions have argued for the adoption of technology-enhanced learning methods, citing the difficulty in discovering an association between the use of technology and pupils' educational performance. Newest technology use, such as (ChatGPT for teaching) can meaningfully reduce the training time. It mimics one-on-one exercises to improve pupils' knowledge of problematic subjects (21).

The influence of newer digital platforms, such as social media apps, virtual reality (VR), gaming technologies, and artificial intelligence, on academic performance

depends on how they are used (22) (23) (24) (25).

The positive effects of the different digital technologies involve improved communication and collaboration, providing easy access to educational resources, enhancing learning by making it interactive and pleasurable, and advancing critical thinking and problem-solving skills (23) (25) (26)

On the other hand, the negative impact of these newest technologies on academic performance includes addiction disorders after excessive use of these technologies and a reduced attention span to academic tasks. In addition to increasing distractions and procrastination of academic performance. Finally, there are many mental health issues such as anxiety, depression, and stress due to the overuse of these technologies (24) (25) (27) (28). All these effects require parents to attempt to regulate their children's use of technology to reduce the negative impact on academic performance (29)(30).

Conclusion

This review underscores the increasing prevalence of digital technology usage among children and highlights the detrimental impacts of excessive use, particularly digital addiction, on their academic performance. Drawing from a global and regional perspective, it emphasizes the multifaceted consequences on the mental, physical, and social aspects of young individuals. This finding calls for urgent attention to parental involvement, educational strategies, and systematic monitoring in order to mitigate these effects. By promoting balanced technology usage and fostering awareness, stakeholders can safeguard children's developmental and educational outcomes, ensuring that technology serves as a tool for enhancement rather than a hindrance.

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