

"SCREENS, STREAMS, AND DREAMS: EDUCATION IN A DIGITAL ERA"

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INTRODUCTION

We are living in 21st century, the technology is becoming all over the world. Digital technology is reshaping education like never before. From tablets in classrooms to online learning platforms and AI-powered tutoring systems, screens and streams are now central to how students learn. The COVID-19 pandemic made this shift especially visible, forcing schools worldwide to adopt remote and hybrid learning models almost overnight.

While many celebrate technology's ability to increase access and personalize learning, the reality is more complex. Research shows both benefits and challenges, and the true impact depends on how technology is used, who uses it, and under what circumstances.

This article explores the role of digital tools in education, examining their effects on learning, the underlying reasons behind these effects, and the opportunities and risks they bring for students and teachers.

Key words: Screen time, sleep time, technology, effects, learning, risks, mental health, cognitive, well-being, concentrate regulation, AI, children.

1. The Impact of Screen Time on Learning

Different Screens, Different Effects:

Not all screen time is equal. A large review of studies (Ho et al., 2023) found that total screen time doesn't always harm academic performance. Instead, the **type** of screen activity matters most. For instance, watching television and playing video games often showed negative links to test scores, while some screen use, like educational videos or apps, didn't have the same effects.



A major study in China examined over 17,000 middle schoolers and found that **more screen time was linked to lower grades**, especially for internet browsing and gaming (Li et al., 2023). But the study also showed that the link was mostly because high screen time affected kids' **attention, sleep, and mood**—which then led to poorer school performance.

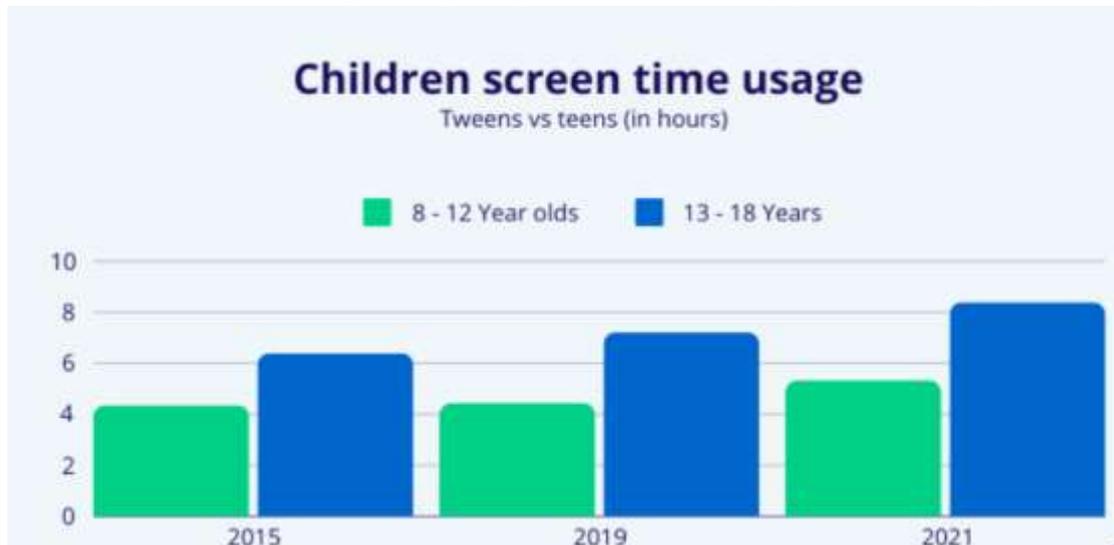
Screen time and mental health:

Other research connects heavy screen use with anxiety, behavioral problems, and even higher body mass index among schoolchildren (Al-Qaisy et al., 2024).



These health and emotional issues can make it harder for students to focus and do well academically.

Yet, some screen time can be beneficial. For example, a study of adolescents in rural China found that **moderate screen use (up to 1 or 2 hours daily) actually correlated with small improvements in math scores** (Wang et al., 2023). This suggests that when used thoughtfully, digital tools can support learning.



A study by Common Sense Media found that tweens (children aged 8-12) use screens for entertainment for a total of around 5 hours and 33 minutes per day. That's significantly less than teens, who use screens for entertainment for 8 hours and 39 minutes a day. However, it's increased by around an hour since the pandemic.

2. Why is the screen time affecting learning? The hidden mechanisms

Cognitive Effects:

One reason screen time matters is how it affects cognitive skills like attention and memory. Too much unstructured screen use may reduce the time kids spend practicing deep thinking or problem-solving. Li et al. (2023) found that decreased cognitive function was the main pathway linking screen time and lower academic scores.

Sleep and well-being:

Screen use, especially before bedtime, can interfere with sleep quality and duration. Poor sleep hurts memory, concentration, and emotional regulation—key ingredients for academic success (Zhang et al., 2025). This effect is why health experts often recommend limiting screen time in the evenings.

Social and family connections:

Heavy screen use can reduce the time students spend with family and friends, weakening important support systems that help with motivation and emotional well-being (Li et al., 2023). The quality of these relationships influences how well students manage schoolwork.

Opportunity cost:

Time on screens is time taken away from other valuable activities like reading, playing outside, or just resting. This “opportunity cost” matters a lot, especially if screen time is replacing activities that support learning and development.

3. The Promise and Challenges of AI and Advanced Technologies**How AI is changing learning?**

Artificial intelligence (AI) tools and chatbots are becoming common in education. They can:

- Personalize lessons to match a student’s level and pace.
- Provide instant feedback, helping students learn from mistakes quickly.
- Reduce teachers’ administrative workload, allowing more focus on teaching.

Studies show AI can improve learning outcomes and increase motivation when used well (Woolf et al., 2024).

But there are risks

AI also brings concerns:

- Students might misuse AI to cheat or avoid real learning (Bernstein et al., 2025).
- AI responses aren’t always accurate, and students need to know how to verify information.
- Teachers need training to integrate AI tools effectively rather than using them as quick fixes.
- Unequal access to devices and internet can worsen educational inequalities (Kasinathan et al., 2024).

Therefore, AI should be used thoughtfully, combined with human teaching and support.

CONCLUSION

Screens and streams are reshaping the future education, offering exciting opportunities alongside real challenges. Technology can empower students and teachers, but only if used wisely. The key is balance: using digital tools to support—not replace—teachers, protecting students’ health and social well-being, and making sure all students can benefit fairly. By following these principles, we can turn our digital dreams into educational realities.

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