

Does screen use really impact thinking skills? Recent analysis suggests it could

November 16 2023, by Michael Moshel, Jennifer Batchelor, Joanne Bennett and Wayne Warburton



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Screens have become seamlessly integrated into our daily lives, serving as indispensable tools for work, education and leisure. But while they

enrich our lives in countless ways, we often fail to consider the potential impact of screen time on our cognitive abilities.

In a [new meta-analysis](#) of dozens of earlier studies, we've found a clear link between disordered [screen use](#) and lower cognitive functioning.

The findings suggest we should exercise caution before advocating for more [screen time](#), and before introducing screens into even more aspects of daily life.

Young people's screen time is increasing

In 2020, a UNSW Gonski Institute for Education report [noted a concerning statistic](#): about 84% of Australian educators believe digital technologies are distracting in a learning environment.

And according to the ABC, a recent Beyond Blue [survey](#) of Australian teachers identified excessive screen time as the second-most significant challenge for [young people](#), just behind mental health issues.

Despite mounting concerns, more than half of Australian schools have embraced a "[bring your own device](#)" policy. Students are spending more time online than [ever before](#) and starting at increasingly younger ages. A 2021 report by [Common Sense Media](#) estimated tweens spend an average of 5 hours and 33 minutes using screen-based entertainment each day, while teenagers devote a whopping 8 hours and 39 minutes.

A surge in screen use has led to some individuals, including children, adolescents and adults, developing screen-related addictions. One example is gaming disorder, for which [2–3% of people](#) meet the criteria.

What is 'disordered screen use'?

The impact of screens on our [cognitive abilities](#)—that is, our thinking skills such as [attention](#), memory, language and problem-solving—has sparked much debate.

On one hand, some researchers and reporters claim screen use can have negative effects, such as [health problems](#), shortened attention [spans](#) and hindered [development](#).

On the other, schools are [increasingly adopting](#) technology to boost student engagement. Tech companies are also marketing their products as tools to help you enhance your problem-solving and memory skills.

Our [recent study](#) sought to understand the potential cognitive consequences of "disordered screen-related behaviors". This is a broad category of problematic behaviors that may include screen dependency, and persisting with screen use even when it's harmful.

We conducted a [meta-analysis](#) of 34 studies that explored various forms of screen use (including gaming, internet browsing, smartphone use and social media use) and compared the cognitive performance of individuals with disordered screen use to those without it.

Our findings paint a concerning picture.

Differences in cognitive function

Across these rigorously peer-reviewed studies, individuals with disordered screen use consistently demonstrated significantly poorer cognitive performance compared to others.

The most affected cognitive domain was attention, and specifically sustained attention, which is the ability to maintain focus on an unchanging stimulus for an extended period.

The second-most notable difference was in their "executive functioning"—particularly in impulse control, which is the ability to control one's automatic responses.

Interestingly, the type of screen activity didn't make a difference in the results. The trend also wasn't confined to children, but was observed across all age groups.

Two ways to interpret the results

Why do people with disordered screen-related behaviors have poorer cognitive functioning?

The first explanation is that disordered screen use actually leads to poorer cognitive function, including poorer attention skills (but we'll need more experimental and longitudinal studies to establish causality).

If this is the case, it may be the result of being constantly bombarded by algorithms and features designed to capture our attention. By diverting our focus outward, screen use may weaken one's intrinsic ability to concentrate over time.

Crucially, impaired attention also [makes it harder to disengage](#) from addictive behaviors, and would therefore make it harder to recognize when screen use has become a problem.

The second explanation is that people who already have poorer cognitive functioning (such as less inhibitory control) are more likely to engage in disordered screen use.

This could be a result of the plethora of addictive cues designed to keep us glued to our screens. Being bombarded by these could make it harder to [pull the brakes](#) on screen use.

Although the literature doesn't seem to favor this explanation—and does seem to suggest that cognitive functioning is impaired as a result of disordered screen use—it's still a possibility we can't rule out.

Attention is the bedrock of everyday tasks. People with weakened attention may struggle to keep up in less stimulating environments, such as a static workplace or classroom. They may find themselves turning to a screen as a result.

Similarly, people with less inhibitory control would also find it more challenging to moderate their screen use. This could be what drives them towards problematic screen-related behaviors in the first place.

Who should shoulder the responsibility?

Research indicates people with impaired cognitive functioning usually aren't as well equipped to moderate their own screen time.

Many users with disordered screen use are [young](#), with mainly males engaging in internet gaming and mainly females engaging in social media use. Neurodiverse people are [also at greater risk](#).

Tech companies are driven by the goal of [capturing our attention](#). For instance, Netflix chief executive Reed Hastings acknowledged the company's [most formidable competitor was sleep](#).

At the same time, researchers find themselves struggling to keep up with the pace of technological innovation. A potential path forward is to encourage open-access data policies from [tech companies](#), so researchers can delve deeper into the study of screen use and its effect on individuals.

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Citation: Does screen use really impact thinking skills? Recent analysis suggests it could (2023, November 16) retrieved 27 April 2024 from <https://medicalxpress.com/news/2023-11-screen-impact-skills-analysis.html>

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