Y4Y Québec

Digital Dilemma: The Impact of Excessive Screen Time on Young Individuals' Development

Policy Brief

Y4Y Québec

Author
Giovanni D. Casale

Date published
December 2023

TABLE OF CONTENTS

The prevalence of electronic screens in modern life has impacted young individuals, from toddlers to adolescents, leading to concerns about its effects on their development. This brief explores the consequences of excessive screen time, including its impact on concentration, language development, and social interaction. Additionally, we examine the growing concern of screen time addiction, fueled by addictive algorithms on social media platforms. This brief aims to provide a comprehensive understanding of screen overuse among youth, emphasising the need for informed interventions and further research in today's digital era.

WHAT CONSTITUTES OVERUSE?

The issue of defining screen overuse among young individuals across various age brackets remains a subject of ongoing discussion and lacks a universally accepted standard (Liu et al., 2022). Most studies assess screen overuse by examining the number of hours spent engaging with electronic screens. While one perspective suggests that adolescents' screen overuse is defined by exceeding ten hours per day (Parent et al., 2016). Some researchers look beyond screen time, examining factors such as the proliferation of electronic devices within households and the frequency of their use (Chaput et al., 2014) . Additionally, other researchers question whether it is the screen time itself that poses a challenge, or if it is the displacement of essential activities like sleep, effective social interactions, and physical exercise that cause the negative effects observed (Liu et al., 2022). These debates underscore the complexity of the issue and the need for further research to establish comprehensive guidelines for screen use among youth.

ADDICTION TO SCREEN TIME AND ADDICTIVE ALGORITHMS

Another pivotal dimension of this issue revolves around the role that technology companies, particularly social media platforms, play in creating addictive algorithms tailored to some of their largest user demographics (Vallejos et al., 2021). Notably, it is estimated that around one-third of internet users are under 18 years of age. Additionally, a significant segment of young children can easily access tablets, while the majority of 12 to 15-year-olds possess smartphones, and a portion of individuals in this age bracket own three or more digital devices.

When individuals sign up for these social media platforms, the terms and conditions are often not easily comprehensible to the general public, and young users may lack awareness about privacy concerns and the sensitivity of the data they entrust to these social media conglomerates (Vallejos et al., 2021). Companies use this data to tailor the user experience to provide personalised and more enjoyable interactions. The issue lies in the addictive nature of these algorithms, which create an endless scrolling cycle, rendering users unable to control their impulses, resulting in extended periods of time spent on social media. Research indicates that a subset of adults, numbering between 5-10%, become chronically addicted and lose control over their online time, akin to addiction patterns observed in substance abuse (Nasir, 2022). Questions have arisen regarding how these algorithms influence the decision-making and critical thinking of vulnerable youth, exposing them to radical ideologies or targeted advertising (Vallejos et al., 2021). Furthermore, an increasing number of young individuals are turning to social media as a source of solace rather than facing reality.

ADVERSE EFFECTS ON DEVELOPMENTAL ISSUES

In the academic community, there is a consensus supported by extensive research regarding the adverse effects of excessive screen time on various aspects of development (Muppalla et al., 2023). These adverse effects impact, but are not limited to, concentration in the classroom, language development and social interactions.

A) CONCENTRATION IN THE CLASSROOM

Excessive screen time has been consistently linked to challenges in concentration and shorter attention spans, particularly within educational settings (Liu et al., 2022). The constant influx of notifications and the habit of shifting attention between various screen activities present obstacles for students trying to maintain focus on their academic tasks. A comprehensive study investigating the impact of technology on attention spans, led by Microsoft Canada, has revealed a noteworthy trend (Chokhani, 2023). Between 2000 and the present day, the average attention span of individuals has dwindled from 12 seconds to a mere 8 seconds. This extensive research involved the participation of 2,000 young adults in Canada, with their brain activity monitored through the use of electroencephalogram (EEG) technology. Moreover, the increased prevalence of technology use among children has shown a concerning association with the rising diagnosis rates of attention deficit hyperactivity disorder (ADHD). Recent research conducted at the University of Alberta sheds light on this issue, uncovering a compelling connection: children who, by the age of 5, engage with screens for two or more hours daily are 7.7 times more likely to meet the criteria for an ADHD diagnosis compared to their peers who limit their daily screen exposure to 30 minutes or less (Rosenblatt, 2019). This, in turn, poses a significant challenge to their ability to effectively participate in classroom learning and achieve academic success.

In 2023, Québec's Education Minister, Bernard Drainville, announced a ban on cell phones in all public elementary and high school classes, aiming to enhance students' concentration (Tenneriello, 2023). Depending on the school board, teachers will be directed either to collect cell phones at the beginning of class, or require students to store them in their lockers beforehand.

Unfortunately, this policy change comes too late for adolescents aged 16 and older who are beginning their post-secondary education. It is imperative that this demographic is made aware of the detrimental impact of excessive screen time on their concentration. Institutions like CEGEPs, trade schools, and universities can serve as potential platforms for implementing regulatory measures and awareness campaigns to enhance classroom concentration.

B) LANGUAGE DEVELOPMENT AND SOCIAL INTERACTIONS

Research consistently emphasises the detrimental impact of extended screen time on the linguistic development of children (Muppalla et al., 2023). Excessive screen use restricts opportunities for meaningful social interactions with caregivers, parents, and peers, thereby impeding the crucial development of language skills, including phonology and vocabulary. Research conducted by Percila

Fung, a PhD student at the University of Toronto, demonstrates the contextual factors of language delays and acquisition (Martin, 2023). Children aged 19 to 29 months with lower socioeconomic status (SES) experience delays in language acquisition, while those with higher household incomes ($45,000 to $140,000) are able to access resources that improve language acquisition. Contextual factors play a significant role, as exposure to screen content with limited educational value or simple vocabulary, such as cartoons, may hinder a child's acquisition of essential language skills. Delays in learning, if not mitigated and addressed, can continue to impact a student's learning experiences into their young adulthood.

RECOMMENDATIONS

1. We recommend the Québec Government initiate funding for research into what constitutes the addictive use of technology. There is currently no clear consensus on the threshold distinguishing addictive use from healthy use. Establishing a provincially accepted standard would help mitigate confusion.
2. It is recommended that Y4Y Québec and other non-profit organisations direct their awareness campaigns towards post-secondary institutions, emphasising the detrimental effects of technology. It is crucial for young people to be aware of what constitutes addictive technology use and its impact on concentration and language acquisition. The OECD discovered that students who excessively use technology generally perform less effectively in school, even when considering factors such as social and cultural demographics (López, 2015). The objective is to empower youth with the knowledge and skills to maintain a healthy life balance in their use of technology.
3. It is suggested that post-secondary institutions in Québec explore the implementation of no-tech classes. In this scenario, educators would be required to conduct classes without the use of technology. Assessments and quizzes would be submitted in a paper format. To minimise the potential use of technology, students should be given sufficient time to complete all assessments within the classroom.
4. Consider exploring the feasibility of implementing a phone ban within CEGEPs. The Québec Education Minister recently instituted a ban in public elementary and high school, with the aim of enhancing concentration. If this measure proves effective, there is potential for extending this policy specifically to CEGEPs during class time.

CONCLUSION

Addressing the digital dilemma of excessive screen time among young individuals necessitates immediate action. This brief highlights the challenges of defining screen overuse, understanding addictive algorithms, and recognising adverse effects on concentration and language development. To tackle the issue, we recommend the Québec government fund research to establish a clear standard for healthy technology use. Simultaneously, nonprofits like Y4Y Québec can play a pivotal role by directing awareness campaigns towards post-secondary institutions, empowering young individuals

with skills for a balanced digital life. We believe that post-secondary institutions in Québec should explore no-tech classes to minimise technology's impact on learning. Building on recent positive changes, extending policies like the cell phone ban to post-secondary education may further benefit concentration. This brief emphasises collaborative efforts for responsible technology use, ensuring a healthier digital future for the young individuals shaping our society.

BIBLIOGRAPHY

Biswas, A., Oh, P. I., Faulkner, G. E., Bajaj, R. R., Silver, M. A., Mitchell, M. S., & Alter, D. A. (2015). Sedentary time and its association with risk for disease incidence, mortality, and hospitalization in adults: a systematic review and meta-analysis. *Annals of Internal Medicine*, 162(2), 123—132. https://doi.org/10.7326/M14-1651

Chaput, J. P., Leduc, G., Boyer, C. P., Bélanger, P., LeBlanc, A. G., Borghese, M. M., & Tremblay, M. S. (2014). Electronic screens in children's bedrooms and adiposity, physical activity and sleep: Do the number and type of electronic devices matter? *Canadian Journal of Public Health*, 105(4), e273-e279. https://doi.org/10.17269/cjph.105.4511

Chokhani, T. (2023, February 22). *A deep dive into the shrinking attention span*. eLearning Industry. https://elearningindustry.com/a-deep-dive-into-the-shrinking-attention-span

Hickey, P. (2020, October 25). English public high schools in Quebec fare poorly in Fraser Institute report. *Montreal Gazette*. *https://montrealgazette.com/news/local-news/english-public-high-schools-in-quebec-fare-poorly-in-fraser-institute-report*

Liu, J., Riesch, S. K., Tien, J., Lipman, T. H., Pinto-Martin, J., & O'Sullivan, A. (2022). Screen Media Overuse and Associated Physical, Cognitive, and Emotional/Behavioral Outcomes in Children and Adolescents: An Integrative Review. *Journal of Pediatric Health Care*, 36(2), 99—109. https://doi.org/10.1016/j.pedhc.2021.06.003

Martin, K. (2023, October 6). *Socioeconomic status played role in preschoolers' language development during pandemic: Study*. University of Toronto. https://www.utoronto.ca/news/socioeconomic-status-played-role-preschoolers-language-development-during-pandemic-study

Muppalla, S. K., Vuppalapati, S., Reddy Pulliahgaru, A. R., & Sreenivasulu, H. (2023). Effects of Excessive Screen Time on Child Development: An Updated Review and Strategies for Management. *Cureus*, 15(6), e40608. https://doi.org/10.7759/cureus.40608

Nasir, S. (2022, July 15). *The urgent need to protect youth against Facebook's algorithms*. Human Rights Pulse. https://www.humanrightspulse.com/mastercontentblog/the-urgent-need-to-protect-youth-against-facebooks-algorithms#:~:text=Overall%2C%20there%20is%20a%20dire,imperative%20and%20urgent%20than%20ever

Pandya, A., & Lodha, P. (2021). Social connectedness, excessive screen time during COVID-19 and mental health: a review of current evidence. *Frontiers in Human Dynamics*, 3(45). https://doi.org/10.3389/fhumd.2021.684137

Parent, J., Sanders, W., & Forehand, R. (2016). Youth screen time and behavioral health problems: The role of sleep duration and disturbances. *Journal of Developmental and Behavioral Pediatrics*, 37(4), 277-284. https://doi.org/10.1097/dbp.0000000000000272

Vallejos, E. P., Dowthwaite, L., Creswich, H., Portillo, V., Koene, A., Jirotka, M., McCarthy, A., & McAuley, D. (2021). The impact of algorithmic decision-making processes on young people's well-being. *Health Informatics Journal*, 27(1), 146045822097275. https://doi.org/10.1177/1460458220972750

Peña-López, I. (2015). *Students, Computers and Learning. Making the connection*. https://ictlogy.net/bibliography/reports/projects.php?idp=2885

Ringwald, W. R., & Wright, A. G. (2020). The Affiliative Role of Empathy in Everyday Interpersonal Interactions. *European Journal of Personality*, 35(2), 197—211. https://doi.org/10.1002/per.2286

Rosenblatt, J. (2019, April 18). More screen time linked to higher risk of ADHD in preschool-aged children: Study. *ABC News*. https://abcnews.go.com/Health/screen-time-linked-higher-risk-adhd-preschool-aged/story?id=62429157#:~:text=A%20new%20study%20out%20of,30%20minutes%20or%20less%20each

Tenneriello, T. (2023, August 24). *Quebec to send directive banning cell phones in class: 'We want to help the concentration of kids.'* CityNews Montreal. https://montreal.citynews.ca/2023/08/23/quebec-to-send-directive-banning-cell-phones-in-class/

Wagaman, M. A., Geiger, J. M., Shockley, C., & Segal, E. A. (2015). The role of empathy in burnout, compassion satisfaction, and secondary traumatic stress among social workers. *Social Work*, 60(3), 201-209. https://doi.org/10.1093/sw/swv014

Ybarra, O., Winkielman, P., Yeh, I., Burnstein, E., & Kavanagh, L. (2010). Friends (and sometimes enemies) with cognitive benefits: What types of social interactions boost executive functioning? *Social Psychological and Personality Science*, 2(3), 253-261. https://doi.org/10.1177/1948550610386808

5165 Sherbrooke Street West,
Suite 107
Montréal, QC H4A 1T6

info@y4yquebec.org

514-612-2895

www.y4yquebec.org