

CHALLENGES OF EDUCATION IN THE AGE OF SOCIAL MEDIA

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Abstract: *Throughout history, education has faced constant challenges, such as access to educational opportunities, social inequalities, and maintaining a balance between freedom and discipline. However, over the past 20 years, entirely new challenges have emerged in our society, including within the educational environment. Rapid and, at times, unrestricted access to the internet, smartphones, and social media has had a profound impact on the environment in which children grow up, interact, and engage in dialogue within educational contexts. Consequently, schools must recognize these emerging dynamics and adapt to the challenges of the present day. This article, grounded in the specialized literature, is based on a theoretical analysis that focuses on three elements. The first element examines how digital platforms have been designed to capture and sustain attention. The second area brings together research on the intensive use of social media and students' mental well-being. The final aspect analyzes the pedagogical approaches needed to develop competencies in the digitalized world in which we live. In conclusion, this paper does not condemn modern technology, viewing it in most cases as a tool that can be beneficial but also harmful when misused. Its positive effects can be quantified based on how it is used and integrated into the educational process in a balanced and responsible manner. Thus, schools are not meant to ban technology per se, nor should they accommodate it indiscriminately. Aware of the effects of technological abuse, the educational process is called upon to develop skills such as attention management, critical use of information, and the development of social-emotional competencies. This article is not the result of extensive, experimentally validated empirical research, but is conceptual in nature, based on contemporary studies in the context of the challenges posed by the virtual world.*

Keywords: *digital education; social media; attention management; media literacy; social-emotional skills; digital pedagogy; adolescent mental well-being; self-regulation.*

Introduction

The world is undergoing profound and rapid change, and this is not merely a slogan but a reality experienced on a much broader scale in the contemporary world. With the emergence and widespread adoption of smartphones and social media on a global scale, the world of childhood and adolescence has been radically transformed. Two decades ago, internet access was limited both physically (there was usually only one shared computer) and in terms of time (internet access was restricted to certain times of the day). Today, the online environment is a constant and accessible part of every child's life. The smartphone has transformed the internet from a place we visited occasionally into a space that is almost constantly present in our daily lives (Haidt, 2024). The changes have been so sudden, and researchers show that no other communication technology has been adopted so rapidly; schools and families have had little time to understand the implications of this change and to adapt their educational practices (Fisher, 2022).

From an educational perspective, however, the change has affected the very foundations on which learning is based: the ability to concentrate, extensive and in-depth reading, relationships among students, and the way they seek out, evaluate, and use information. In such a context, beyond the ethical question regarding technological morality, education faces the dilemma of using technology not as a restrictive tool, but with the aim of facilitating learning.

Also noteworthy is the accelerated pace of technological change. Unlike other innovations, such as radio or television, which were gradually integrated into society, social media has become dominant in just a few years, and the development of artificial intelligence is further accelerating this process (Fisher, 2022). Although the rapid pace of change has not allowed us to fully understand the full range of risks and challenges associated with the virtual world, schools cannot afford the luxury of waiting for all risks to become clear before acting accordingly. Thus, teachers must make educational decisions in a context of constant change.

This paper integrates three areas of research that are rarely considered collectively or analyzed consistently. The first area examined concerns how digital platforms are designed to capture the user's attention (Zuboff, 2019; Alter, 2017; Fisher, 2022). The second area brings together studies on the intensive use of social media and its impact on

mental health, attention, and the development of children and adolescents (Twenge, 2017; Haidt, 2024; Hari, 2022; Carr, 2010). The third and final area analyzed offers pedagogical perspectives on education in the digital age and on the skills that schools must cultivate (Gardner & Davis, 2013; Bates, 2019).

The synthesis of these perspectives aims to provide all those involved in the educational process with a coherent framework for understanding the challenges posed by the digital environment. The analyses included in this article are not limited solely to the school setting but can also serve as resources for parents or even education policymakers.

Objectives and Motivation of the Paper

Although the virtual world has only recently become part of our lives, there has been considerable discussion about how technology has become a constant part of daily life. However, most of these discussions have focused almost exclusively on how the digital world has taken away children's time. The issue, however, is far more complex than a simple analysis of the time children spends in this new world. From an educational perspective, what matters is not only how much time students spend using technology, but also how it influences their attention, social relationships, thinking, and learning. Therefore, this paper aims to analyze these aspects within a coherent framework and to provide useful guidelines for teachers' work and for educational policies.

General Objectives

- to explain, in accessible language, the main mechanisms through which social media influences young people's attention, well-being, and identity development;
- to highlight the difference between the use of technology that facilitates learning and that which may hinder it;
- To propose pedagogical approaches inspired by recent research on education in the digital age.

Specific Objectives

- to present the concept of attention and how digital platforms are designed to capture users' attention;
- summarizing research on the relationship between social media use and the mental health of children and adolescents;
- to discuss how technology influences the development of adolescents' thinking and relationships;

- presenting concrete guidelines for education, such as developing skills for self-regulation of attention, critical analysis of information in the virtual environment, responsible use of technology, and the development of social-emotional skills.

Theoretical Framework

This analysis highlights several contemporary challenges that the academic community cannot ignore. These transformations brought about by the digital environment should not be viewed with alarm, but neither should they be downplayed. They reflect real changes in the environment in which students learn and develop.

Understanding the Design of Digital Platforms

Before we can adapt to students' behavior in the online environment, we must first understand how digital platforms function. Unfortunately, the mechanism behind social media platforms is designed not only to facilitate communication but also to keep users engaged for as long as possible. This is their business model.

Zuboff (2019) shows that, in the digital economy, users' experiences and behaviors become a valuable resource. Platforms collect massive amounts of data, voluntarily provided by users. This data is then used to anticipate and even influence users' future behavior. The more time people spend on the platform, the more economic value it generates. The illusion of freedom and cost-free accessibility is as strong as it gets, especially in an era when the online world is encroaching on physical space. The generation born after 1995—"iGen" according to Twenge, "Gen Z" in common parlance—thus becomes, in Haidt's (2024) words, the first generation in history to go through puberty with a "portal in their pocket," and this captivating feature alienates them from the people around them.

In fact, a primary goal of social media is precisely to captivate young people within the digital world. Thus, Alter (2017) and Fisher (2022) show that notifications, likes, comments, and personalized recommendations are not random elements. All of these serve as stimuli designed to encourage frequent returns, with the goal of increasing the number of minutes spent online.

One mechanism designed for the purpose mentioned above is variable reinforcement. The child never knows when they will receive a message, a "like," or a comment. Thus, unpredictable rewards (sometimes many likes, other times none) create much more persistent compulsive behavior than constant rewards—exactly the same principle found in slot machines in casinos. Fisher (2022) observes that

the smartphone looks and behaves like a slot machine: colorful badges, sounds, vibrations—a "pocket casino." This unpredictability fuels the curiosity that drives the child to check their phone repeatedly and very frequently.

Attention-grabbing in digital environments is also engineered through the way social media content and design are structured. For example, the seemingly endless scroll of content and the automatic playback of videos eliminate the natural pauses where the user might otherwise stop. The varied and often highly concise nature of the images viewed in the random feed of social media further shortens attention spans in the real world. Furthermore, algorithms tend to promote content that elicits strong emotional reactions, as this holds attention more effectively (Fisher, 2022).

These realities severely impact the educational process, which must acknowledge at least two truths. First, a student's difficulty in putting their phone aside should not be interpreted solely as a lack of willpower or discipline. It is also the result of an environment intentionally designed to capture attention (Hari, 2022). Second, schools and digital platforms compete, in a sense, for the same limited resource: the student's attention. Therefore, education must also include training in the ability to actively manage one's own attention.

Using technology does not automatically mean understanding it. That is why students need to learn how the platforms they use daily work. It is important for them to understand that algorithms select the content they see, that notifications and recommendation systems are designed to capture their attention, and that information shared online is not always accurate or impartial.

At the same time, acclimating to the digital world must include the development of critical thinking. Students must learn to verify sources, compare information, recognize manipulation, and distinguish facts. In a world where producing information is becoming increasingly easy, discernment is becoming one of the most important skills.

The Challenge of Mental Well-Being—Social Media and the Well-Being of Children and Adolescents

As the virtual world becomes increasingly prevalent in contemporary society, research has begun to emerge that analyzes the correlation between intensive use of social media and the well-being of children and students. It is still too early to observe longitudinal studies that unequivocally confirm the findings of the aforementioned research, but it can be said that many studies indicate the existence of associations that deserve serious consideration.

In this regard, Twenge (2017) notes that around 2010–2012, with the spread of smartphones, significant changes began to appear in indicators of adolescents' mental health. Building on this, Haidt (2024) identifies similar trends in several Western countries, suggesting that these changes cannot be explained solely by local factors.

Among the conclusions of these studies analyzing students' and children's intensive use of social media, several have emerged, such as: strong feelings of loneliness and decreased life satisfaction, which can even lead to depression. Haidt (2024) has observed four trends over the past 20 years that have permanently transformed the experience of adolescence: (1) the spread of high-speed internet in the 2000s; (2) the iPhone in 2007; (3) the introduction of the "like" and "retweet/share" buttons in 2009, which transformed the social dynamics of the virtual world and sparked a quest for online validation; (4) the front-facing camera (2010) and Facebook's acquisition of Instagram (2012), which shifted the focus toward self-image. The images viewed on digital platforms induce feelings of insecurity and self-deprecation, especially among girls, who prioritize physical appearance. (Twenge, 2017; Haidt, 2024).

In a similar vein, regarding neural changes, Dunckley's (2015) studies also point to the effects of overstimulation caused by prolonged use of interactive screens. Even without falling prey to social media addiction, Dunckley observes that the overstimulation caused by screens and social media can directly affect children's sleep, emotional regulation, and behavior.

Building on these insights from Dunckley, Haidt (2024) explains this vulnerability through the specific characteristics of brain development. Thus, the neural systems involved in seeking rewards mature before those responsible for self-control.

Psychiatrist Victoria Dunckley, in her book **Reset Your Child's Brain**, expands on the clinical picture of child psychiatry as follows: sensory overstimulation and rapid rewards push a child's nervous system into "fight-or-flight" mode, producing what she calls Electronic Screen Syndrome: a chronic state of dysregulation—, hyperarousal, emotional reactivity, tantrums, disrupted sleep (including through the suppression of melatonin by screen light), and fragmented attention—which mimics or exacerbates

In contrast, education must promote a healthy balance in the use of social media platforms. Intentional breaks from the internet, during educational activities and beyond, can help strike a balance between the two worlds—the real and the virtual. Furthermore, schools, by fostering relationships of peer encouragement, can develop an antidote to the loneliness syndrome in the virtual world. The rewards provided

by the stimuli of phone notifications can be overshadowed by the joys of peer interaction and the discovery of academic richness.

The Challenge of Focus in Learning—Attention, Deep Reading, and the Learning Process

It goes without saying that attention is a vital component for the accumulation of knowledge and for learning in general. Without attention and concentration, educational activities are difficult to carry out

In this regard, Hari (2022) observes that frequent interruptions and sudden shifts in activity reduce the effectiveness of attention. To support his claim, in the book **Stolen Focus**, he presents a study using monitoring software that concludes that the average American student switches tasks every 65 seconds. Even more shocking is the finding that the average time spent concentrating on a single task is just 19 seconds. The reality is that after every interruption, the brain requires a certain amount of time to return to the level of concentration required for a specific educational activity. This fragmentation of attention is not merely the detrimental result of a student's lack of motivation, but also the consequence of an environment built around constant stimuli.

Thus, Carr (2010) argues that intensive use of the digital environment can encourage rapid, fragmented reading at the expense of in-depth reading. It is precisely this fragmentation that can generate the effect of tribalism, as it deprives society (and implicitly students) of the ability to analyze the whole when it comes to ethical, social, political, religious, and other situations. The ability to follow a complex argument, to reflect, and to critically analyze a text develops through practice and can diminish if not used.

Along the same lines, Newport (2016) describes "deep work" as the ability to think with focus, without interruptions. In a world marked by constant notifications and distractions, this ability is becoming increasingly necessary.

When it comes to education, the conclusion is predictable. Since students are immersed in the virtual environment, it is unrealistic to expect them to have the ability to sustain their attention and engage in deep reading. Therefore, these skills must be cultivated intentionally. Schools must devise strategies to raise students' awareness and motivate them to engage in activities that require patience and concentration. This article does not have the scope to methodologically explore all possible strategies through which schools are called upon to counter the digital assault on students' attention. However, there are examples of best practices, such as the daily

introduction of in-depth reading exercises. Students need to read lengthy texts, analyze them, ask questions, and follow an argument through to its conclusion. Such activities develop intellectual patience and critical thinking.

Challenging Patterns of Thought—The Digital Environment Shapes Not Only What We See, but Also How We Think

It should be noted that the influence of technology extends beyond the content consumed; it also extends to the medium in which the content is presented. In other words, platforms create a certain pattern of thinking, communication, and engagement with information.

Building on the ideas of McLuhan (1964) and Postman (1985), it has been observed that every communication medium ultimately shapes certain patterns of thought. For example, a medium based on speed and repetitive stimuli will encourage short, rapid responses, with fragmented attention focused on seeking immediate gratification. Constant exposure to such a medium will generate a certain type of behavior.

Furthermore, Gardner and Davis (2013) describe the current generation as the "app generation," since many daily activities are managed through digital apps. Without blaming technology, these researchers note a distinction between technology that supports education and technology that is addictive. They use the term "app-enabled" to describe situations where apps help young people learn, grow, or even collaborate. In contrast, they refer to "app-dependent" when children come to rely on apps for nearly every decision and avoid situations that require effort, patience, or creativity. Thus, in the educational process, apps that foster development and academic collaboration should be encouraged.

Returning to the digital learning environment, Gardner and Davis (2013) note the trap into which many young people have fallen, evaluating their identity based on the reactions they receive online. Their identity and thinking are shaped by the number of likes or followers they have. In such situations, there is a risk that one's public image will become more important than the authentic development of one's personality.

Consequently, relationships are also influenced by the digital environment. Communication lies at the foundation of any interpersonal relationship, but it takes on a different dynamic in the online environment. Online communication is fast-paced, sometimes fragmented, and peppered with emojis; this creates a discrepancy between virtual communication and communication in the real world.

With regard to education, this conclusion becomes particularly relevant. Recognizing that the online environment shapes patterns of thought, relationships, and communication, teachers are called upon to provide anchors of stability and truth. For example, online communication, despite its benefits, cannot replace the closeness that develops through physical interactions in the school setting. Thus, the school plays an important role in fostering authentic relationships among students. At the same time, exposing students to a context of unfragmented information will counterbalance the influenced behavioral patterns offered by online environments. Furthermore, as Bates (2019) pointed out, modern education must prepare students to use technology responsibly, by providing the necessary digital skills and the ability to select, evaluate, and use information in a responsible manner.

Pedagogical Perspectives on the Response

The mention of contemporary challenges—such as managing attention, the threat to students' mental well-being posed by the unwise use of social media, and the redefinition of thinking and social interaction—should not represent insurmountable obstacles within the educational framework. Although I have briefly outlined a few steps that schools could take regarding each of these points, in conclusion, they can be summarized into several conclusions focusing on three competencies necessary for students' development

Digital Competencies

The main challenge is not technology itself, but the way it influences attention, relationships, and learning. Therefore, neither banning the use of the virtual world nor using it indiscriminately is the solution.

The role of education remains essential in society, and in the current context, it is to help students use technology consciously, so that it becomes a support for development rather than an obstacle. From this perspective, the school's goal is to educate students who control technology, rather than being controlled by it.

Students need to know not only how to use a digital tool, but also when and for what purpose. This means understanding how the platforms they use daily work—that algorithms determine what they see, that notifications are designed to capture their attention, that information found online is not always accurate—and being able to choose the right tool for the right task, by verifying, comparing, and evaluating sources before trusting them.

Self-regulation Skills

Students must be helped to use the virtual world rather than be used by it. Therefore, they must understand the limits that need to be set for this

world, so that their sleep, their relationships with the physical environment, and their school life are not disrupted. In practical terms, the teacher will model the use of the phone for the student only when it is genuinely useful in the learning process. Conversely, when the digital tool does not stimulate thinking but provides answers without any intellectual effort, the educational benefits remain limited. Ultimately, the teacher determines when technology adds value to the classroom lesson.

With regard to self-regulation of attention, school fosters models of best practice, such as following an argument through to its conclusion and the intellectual patience required for any thorough learning. Attention thus becomes, in itself, an object of education. Constant exposure to deep reading also shapes the ability to regulate attention.

Social-Emotional Skills

The virtual environment can be dominated by comparison, quick reactions, and online validation. Therefore, social-emotional skills are more important than ever. Schools must help students understand their emotions, manage their frustrations, show empathy, and build healthy relationships. These skills help them cope with social pressure and avoid defining their self-worth solely based on the reactions they receive online.

In addition, activities based on cooperation, dialogue, and conflict resolution contribute to the development of authentic relationships, which technology cannot replace.

All of these skills are best taught through the example set by adults. Students observe how teachers and parents use technology. If adults are constantly checking their phones, interrupting conversations for notifications, or paying little attention to the person they're talking to, messages about responsible technology use lose their credibility.

In contrast, teachers who demonstrate focus, attentive listening, and balanced use of technology provide students with an authentic role model. Digital education ultimately begins with adult behavior.

Limitations of the Study

This paper is conceptual in nature and aims to synthesize existing research. It does not present results obtained through empirical research and does not evaluate the effectiveness of the proposed pedagogical strategies.

Furthermore, many of the studies analyzed originate from Western cultural contexts. Although their conclusions are relevant, their application in the Romanian context requires caution and further research. Furthermore, the debate regarding the effects of social media is still ongoing. The literature does not provide definitive answers to all

questions, and this article does not aim to settle this debate but rather to offer a framework for reflection based on the most significant contributions in the field.

Directions for Future Research

Studies are needed to directly evaluate the effectiveness of the educational strategies proposed in this article. It would be useful to investigate the effects of programs focused on digital skills, self-regulation skills, or social-emotional skills on academic outcomes and student well-being.

Furthermore, research conducted in Romania could provide important insights into the specific characteristics of technology use in Romanian schools and how collaboration between families and schools influences the development of digital habits.

Conclusions

The virtual world of social media has profoundly changed the environment in which children and adolescents grow up and learn. These changes affect not only how they communicate but also how they develop their attention, identity, relationships, and engagement with information.

The literature suggests that many of the difficulties observed in school cannot be explained solely by a lack of motivation or discipline on the part of students. They are also influenced by a digital environment designed to capture attention and keep users connected for as long as possible.

In this context, the school's mission is not to fight against technology, but to teach students to use it responsibly. The important question is not how much time children spend online, but what kind of people technology helps them become.

An education tailored to the digital age must foster attention, critical thinking, discernment, social-emotional skills, and the ability to use technology thoughtfully. Used in this way, technology can become a valuable tool for learning and development, without replacing the human processes that education is tasked with cultivating: reflection, dialogue, authentic relationships, and character building.

Acknowledgement

In the preparation of this article, the author have used artificial intelligence - Deepl.com for the purpose of good English translation. The scientific content, argumentative structure and interpretations presented, belong entirely to the author. The author assumes full responsibility for the accuracy, originality and integrity of the work.

References

- Alter, A. (2017). *Irresistible: The Rise of Addictive Technology and the Business of Keeping Us Hooked*. Penguin Press.
- Bates, A. W. (2019). *Teaching in a Digital Age: Guidelines for Designing Teaching and Learning* (ed. a 2-a). Tony Bates Associates Ltd. (manual cu acces liber).
- Carr, N. (2010). *The Shallows: What the Internet Is Doing to Our Brains*. W. W. Norton.
- Collaborative for Academic, Social, and Emotional Learning (CASEL). (f.a.). What is the CASEL framework? <https://casel.org/fundamentals-of-sel/what-is-the-casel-framework/>
- Dunckley, V. L. (2015). *Reset Your Child's Brain*. New World Library.
- Fisher, M. (2022). *The Chaos Machine: The Inside Story of How Social Media Rewired Our Minds and Our World*. Little, Brown and Company.
- Gardner, H., & Davis, K. (2013). *The App Generation: How Today's Youth Navigate Identity, Intimacy, and Imagination in a Digital World*. Yale University Press.
- Haidt, J. (2024). *The Anxious Generation: How the Great Rewiring of Childhood Is Causing an Epidemic of Mental Illness*. Penguin Press.
- Hari, J. (2022). *Stolen Focus: Why You Can't Pay Attention — and How to Think Deeply Again*. Crown.
- Jones, C., & Shao, B. (2011). *The Net Generation and Digital Natives: Implications for Higher Education*. Open University / Higher Education Academy.
- McLuhan, M. (1964). *Understanding Media: The Extensions of Man*. McGraw-Hill.
- McCracken, B., & Mesa, I. (eds.). (2025). *Scrolling Ourselves to Death: Reclaiming Life in a Digital Age*. Crossway.
- Newport, C. (2016). *Deep Work: Rules for Focused Success in a Distracted World*. Grand Central Publishing.
- Postman, N. (1985). *Amusing Ourselves to Death: Public Discourse in the Age of Show Business*. Viking.
- Turkle, S. (2011). *Alone Together: Why We Expect More from Technology and Less from Each Other*. Basic Books.
- Twenge, J. M. (2017). *iGen: Why Today's Super-Connected Kids Are Growing Up Less Rebellious, More Tolerant, Less Happy — and Completely Unprepared for Adulthood*. Atria Books.
- Zuboff, S. (2019). *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*. PublicAffairs.