

# NAVIGATING THE **DIGITAL AGE**

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## THE EFFECTS OF SOCIAL MEDIA ON STUDENT BEHAVIOR AND LEARNING

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## ■ Executive Summary

Smartphones and social media have revolutionized communication, learning, and entertainment, but their pervasive presence has resulted in harmful effects on children and young adults. The mental health of U.S. teenagers has declined significantly over the past 10 to 15 years, with increasing cases of mental illness and higher suicide rates, particularly among girls. At the same time, test scores across the globe have declined. Increased social media usage late at night and constant notifications have led to poor and lacking sleep, as well as heightened anxiety, leading to less focus on school work.

While proving a direct causal relationship between the rise in smartphone and social media use among adolescents and their decreased mental health and test scores is difficult, a growing body of research makes clear there is a strong correlation. As the Fordham Institute reported, "...what scholars can say is that the sudden rise in teenage anxiety and depression, suicidal ideation, and suicide all happened at the same time that teenagers' adoption of smartphones passed the 50 percent mark—around 2012 or 2013." (Petrilli, 2024)

Gallup survey data from 2023 reveal that teens spend an average of 4.8 hours per day on social media, primarily on YouTube and TikTok, far more than on other activities. While this figure is down from the peak of 7.7 hours during the COVID-19 pandemic, the overuse of social media is strongly linked to lower mental health, higher body discomfort, and increased suicidal thoughts and self-harm, particularly for those spending more than five hours daily on social media. The constant influx of notifications fosters urgency and a fear of missing out, heightening anxiety and stress. Additionally, excessive smartphone use can disrupt sleep, crucial for maintaining mental health.

While more research is needed, there is a strong enough link between social media and adverse outcomes to underscore the need for both parents and policymakers to set better guardrails around social media use. Experts increasingly encourage setting screen time boundaries and to be mindful of the content consumed. Adults can use tools and settings on most devices to limit usage and exposure to harmful content. Modeling healthy digital habits and educating children about the risks of excessive screen time and social media use is also important. Mental health professionals are increasingly addressing the impact of smartphones and social media, incorporating strategies to reduce screen time, promote healthier digital habits, and tackle negative thought patterns related to social media use. Additionally, state policymakers and education leaders across the country are considering various policies that limit smartphone use during the school day and protect youth outside the school day from harmful interactions on social media.

## ■ The Rise of Social Media

While there are various definitions, social media generally refers to Internet-based applications that allow users to create and share content (Kaplan, A. M., & Haenlein, M., 2009). Social media platforms' designs have proven to be intentionally addictive, using algorithms that keep users engaged by feeding them content based on their preferences and interactions (Columbia University Department of Psychiatry, 2024). The business model of social media, which involves harvesting and selling user data for targeted advertising, exacerbates these issues. The constant inundation of personalized ads can lead to overconsumption, stress, and heightened feelings of paranoia and mistrust due to privacy invasions.

A growing body of research on the impact of social media indicates a strong link between heavy social media use and increased rates of depression, anxiety, loneliness, suicide, and poor academic performance (Gordon, M. S., & Ohannessian, C. M., 2024).



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Indeed, as Facebook, YouTube, and Twitter came online in the mid-2000s, followed by Instagram, TikTok and Snapchat in the early 2010s, a large spike in mental health issues occurred. Around this time, research began to show a steady increase in reports of anxiety, depression, self-harm, and suicide across the world. Psychologist Jonathan Haidt has pointed out that the social media-driven mental health crisis was not confined to the borders of the United States.

The transition of younger generations from playing and spending time with friends to spending increasing amounts of time on their phones has, as Haidt lays out in the *Anxious Generation*, four primary harms:

### 1. Social Deprivation



Since 2012, the time adolescents spend with friends in face-to-face settings has dropped by 50%, and the COVID-19 pandemic only made it worse.

### 2. Sleep Deprivation



A lack of sleep leads to depression, anxiety, irritability, cognitive deficits, poor learning, and lower grades (Haidt, 2024, p.123-124) — and long-term studies have shown smartphones can be a cause of poor sleep.

### 3. Attention Fragmentation



Since our phones are constantly interrupting us, our ability to focus is severely impaired.

### 4. Addiction



Many kids are using their phones like dopamine slot machines, and social media and tech companies have designed their apps to encourage this behavior.

As smartphones and their Internet capabilities reached billions of people across the globe and eliminated barriers to contacting strangers thousands of miles away, Haidt contends that the cause of increased mental health issues directly correlates with the replacement of a “play-based childhood” with a “phone-based childhood.” As more adolescents traded in their flip phones for smartphones, their social media usage sharply increased, while their attention, sleep, social lives, and academics quickly deteriorated. Social media was perhaps intended to facilitate connections and shared experiences, but instead it often contributes to feelings of inadequacy and low self-esteem. The tendency to compare oneself to others and seek validation through likes and comments can distort self-image and lead to feelings of worthlessness, particularly among the youngest users.

## ■ Impact on Mental Health

In the last 10 to 15 years, mental illness symptoms among teenage social media users have skyrocketed, with suicide rates among adolescent girls doubling, and increasing by 50 percent for boys. A 2023 report from the Institute for Family Studies examined the link between social media use and mental health. The authors found that “...time spent on social media predicts significantly lower mental health and higher discomfort with one’s body in simple models adjusting only for child sex and age. Teens who spend more than 5 hours a day on social media were 2.5 times more likely to express suicidal thoughts or harm themselves, 2.4 times more likely to hold a negative view of their body, and 40% more likely to report a lot of sadness the day before” (Rothwell, 2023, p.3). Further, the study concluded that:

“...screen time has no association with an index of mental health problems for teens who demonstrate high levels of self-control

and enjoy a strong relationship with parents who supervise them—a minority of American teens. Yet even teens with these characteristics show greater risk of body image issues if they are heavy users of social media.” (Rothwell, 2023, p.3)

In sum, while adolescent boys and girls who exhibit self-control and have strong relationships with their parents tend to see lower issues associated with social media usage, they still face a risk, revealing the broad pervasiveness of the consequences from frequent social media use.

As recently as 2018, some psychiatrists and experts were unconvinced that there was “an epidemic of anxiety disorders in teenagers,” attributing concerns to changing norms in self-reporting of mental health issues. However, multiple indicators beyond self-reports, including hospital data on self-harm and suicide rates, confirm a real increase in mental health issues, particularly among girls.

As Jonathan Haidt’s *Anxious Generation* research uncovers, beginning around 2010 the percentage of 12 to 17-year-old girls who reported a depressive episode in the past year increased from 12% to 30% in 2020. The number of emergency department visits for self-harm (non-fatal self-injury) among girls aged 10 to 14 increased from 154 in 2010 to 634 in 2022 (per 100,000 people). Furthermore, the number of girls aged 10 to 14 that were hospitalized for self-harm were 14 in 2008, and increased to 113 in 2021 (per 100,000 people). Suicide has also been a growing and tragic trend within the current population of adolescents; both boys and girls have in the last several years reached higher rates of suicide in the U.S., UK, Canada, Australia, and New Zealand than at any time in recorded history.

## U.S. Emergency Department Visits for Self-Harm (Ages 10-14)

Rate per 100,000 population

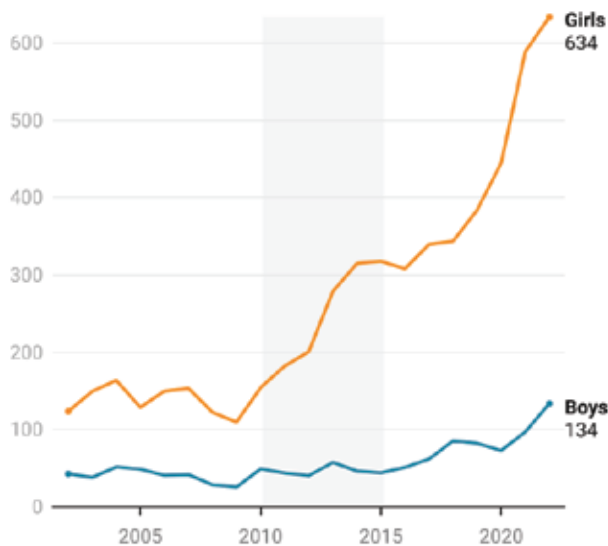


Chart: Zach Rausch  
Source: CDC Non-Fatal Injury Reports  
Created with Datawrapper

## U.S. Teen Suicide Rate (Ages 15-19)

Rate per 100,000

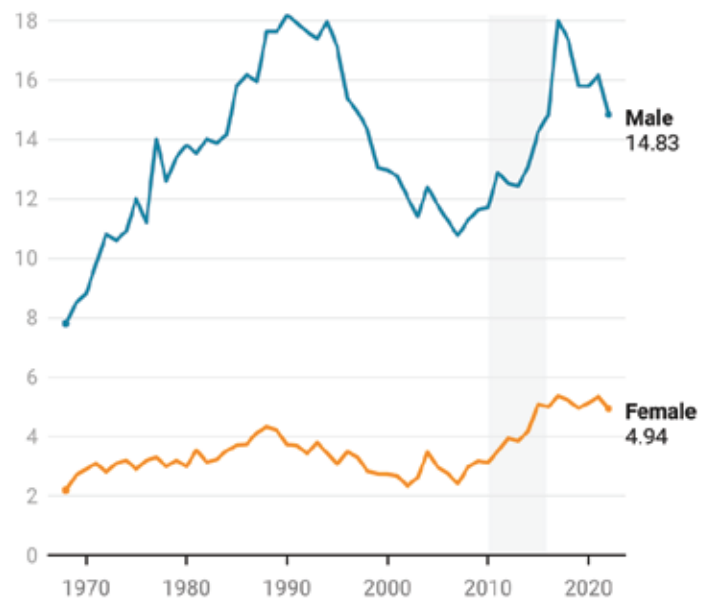


Chart: Zach Rausch  
Source: Source: CDC Fatal Injury Reports  
Created with Datawrapper



## Ontarian Teens Emergency Department Visits for Non-fatal Self-Harm (Ages 13-17)

Rate per 100,000 population

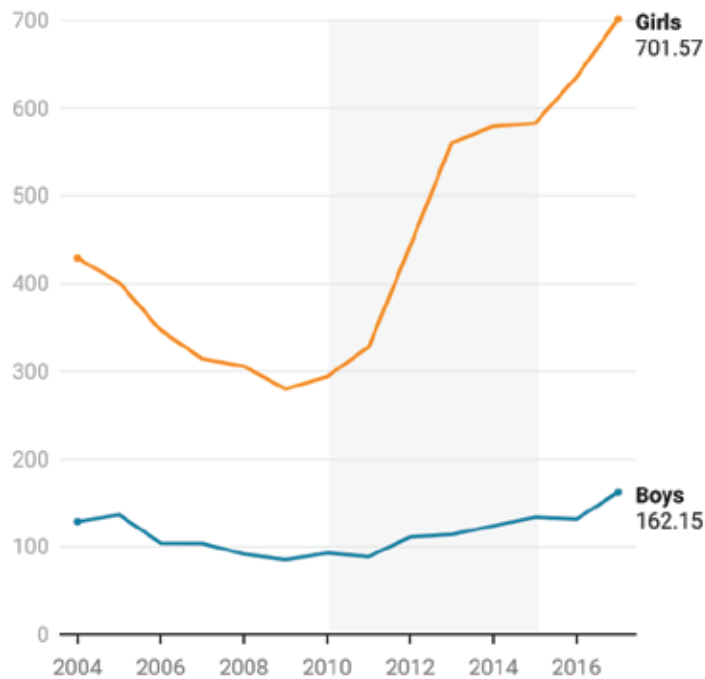


Chart: Zach Rausch

Source: Canadian National Ambulatory Care Reporting System Database  
Created with Datawrapper

## Public Hospital Discharges for Intentional Self-Harm, New Zealand

Total discharges

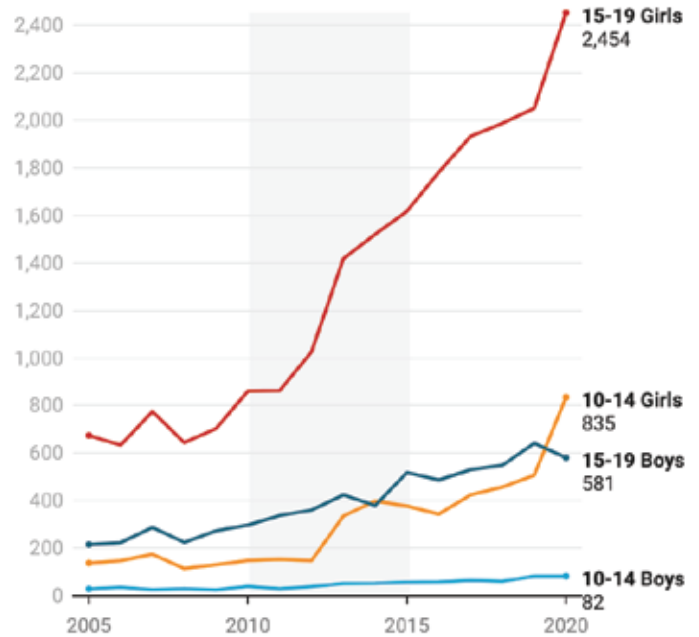
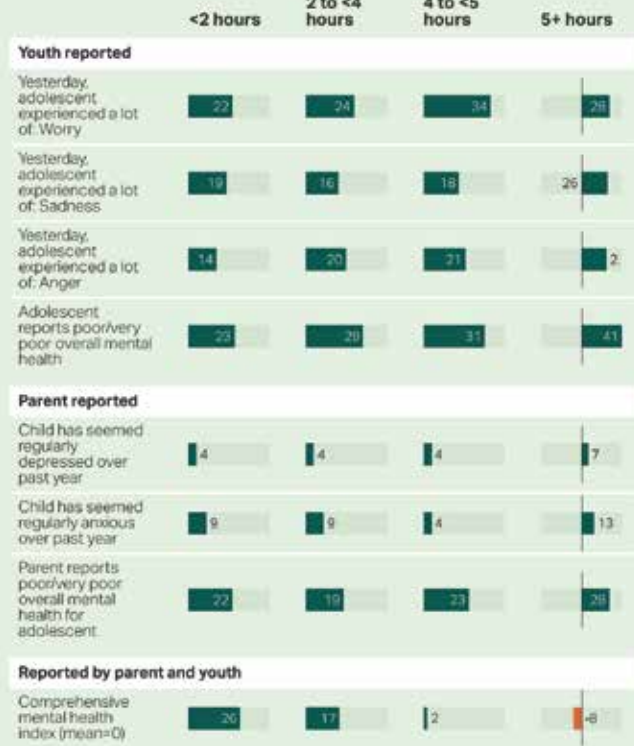


Chart: Zach Rausch

Source: National Minimum Dataset (NMDs)  
Created with Datawrapper

The charts above and on the previous page from the *Anxious Generation* display a gray vertical bar to indicate the time period when social media exploded. The data paint a grim picture beginning in the early 2010s, with the global COVID-19 pandemic in 2020 exacerbating the problem. A Journal of the American Medical Association study in May 2020 surveyed 12 to 13-year-olds and found that they reported an average per day of over seven hours of non-school related screen use, including social media, texting, video chatting, internet browsing, watching videos, movies, television shows, or gaming. The peak of seven hours of non-academic screen time appears to have occurred during 2020 and 2021 when many students were not physically in school settings and instead at home or out of the classroom, but the problem has undoubtedly persisted. According to the American Psychological Association, data from 2023 showed that teens spend an average of 4.8 hours daily on social media, with YouTube, TikTok, and Instagram being the most popular platforms. This high usage has been directly linked to poor mental health outcomes: 41 percent of teens with the highest social media use rate their mental health as poor or very poor, compared to 23 percent of those with lower use. Responses to a 2023 Gallup survey highlights the correlation of mental health of frequent social media users with quality or lacking parental relationships. While it is by no means a certainty that adolescents with good parental relationships are immune to the consequences of heavy social media usage, "these data also suggest that the strength of the parenting relationship shows a more fundamental connection to mental health and that teens who benefit from a strong, loving relationship with their caretaker are much less likely to be harmed by intensive social media use than those who do not." (Rothwell, 2024) As further evidence of the worldwide impact of social media on our youth, the Programme for International Student Assessment (PISA), an international student assessment, surveyed 15 and 16-year-olds from 37 countries over the past two decades to measure school loneliness. The results showed that in 36 out of 37 countries, loneliness at schools increased between 2012 and 2018, with double the number of students experiencing higher levels of loneliness in 2018. The issue was more frequently seen in girls than boys. The results led researchers to conclude that the "psychological well-being of adolescents around the world began to decline after 2012, in conjunction with the rise of smartphone access and increased internet use..." (Twenge, J. M., et.al, 2021, p.257)

### Teen Mental Health by Time Spent on Social Media Per Day



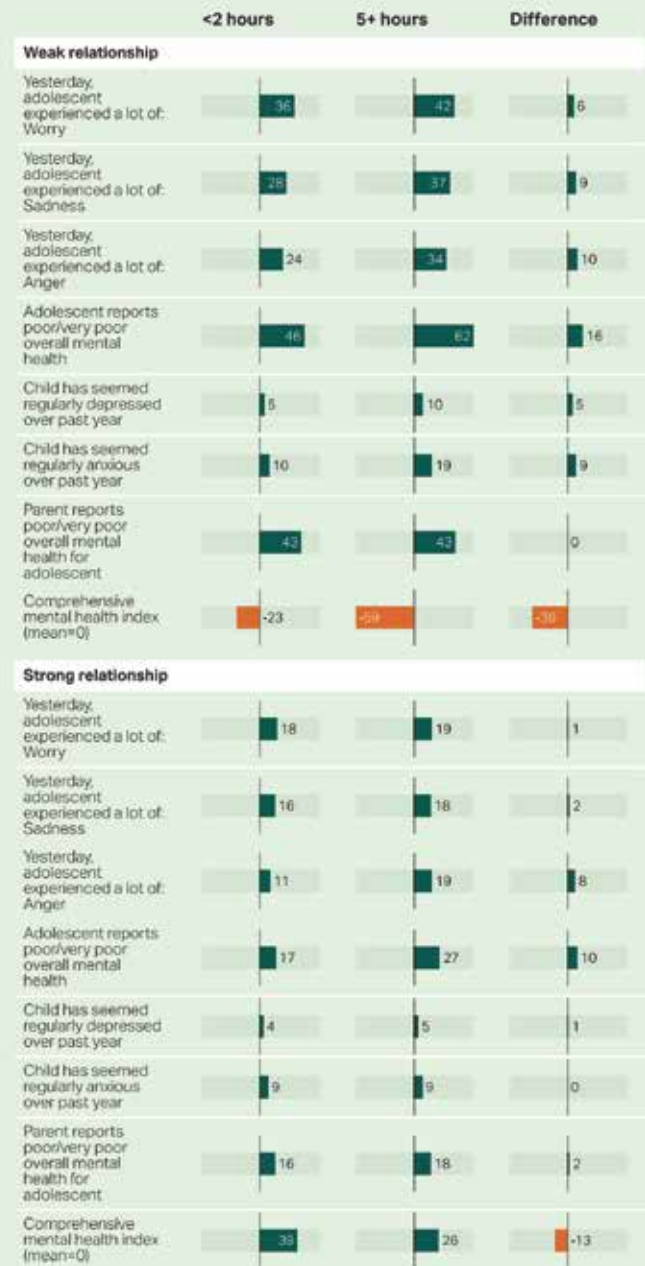
June 26-July 17, 2023

Based on responses from 1,567 U.S. adolescents. Positive values on the mental health index show greater health.

Gallup Familial and Adolescent Health Survey

GALLUP

### Teen Mental Health by Time Spent on Social Media Per Day and Strength of Parenting Relationship



June 26-July 17, 2023

Based on responses from 1,567 U.S. adolescents. Positive values on the mental health index show greater health.

Gallup Familial and Adolescent Health Survey

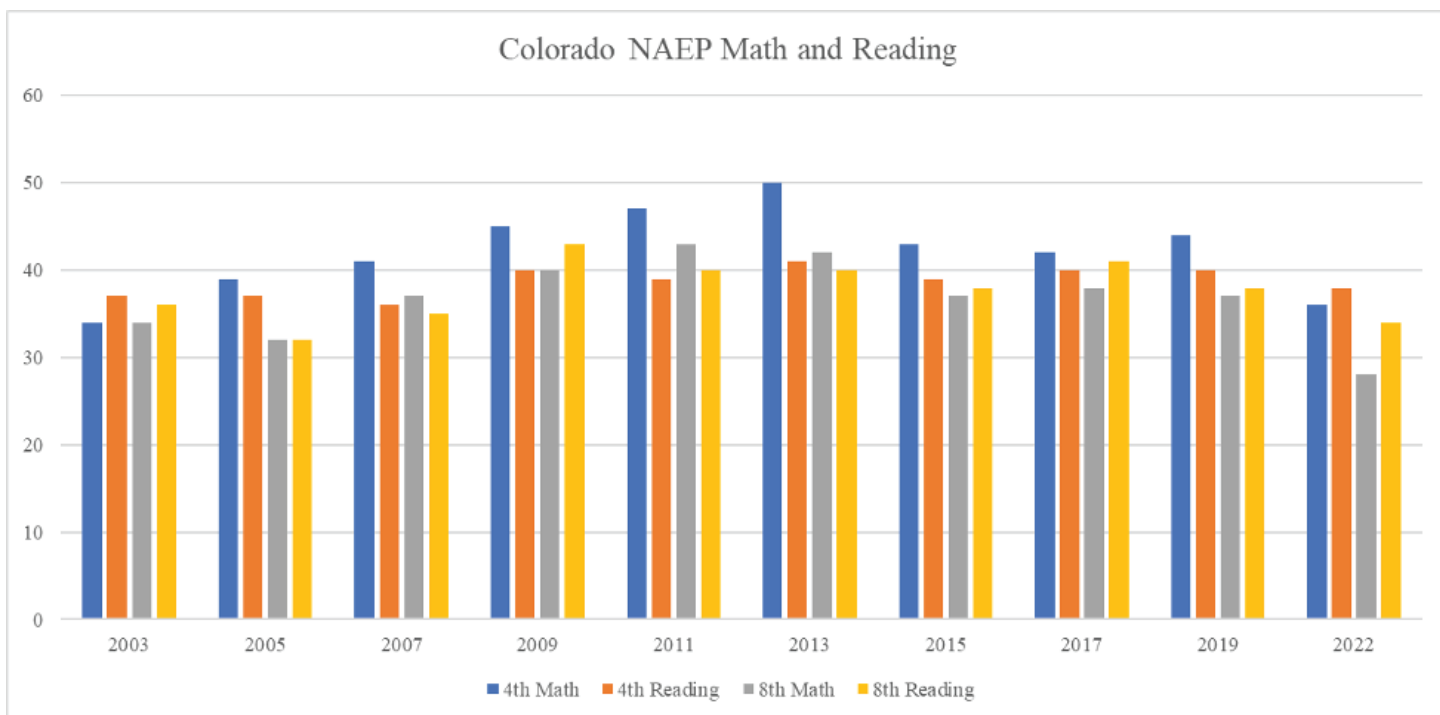
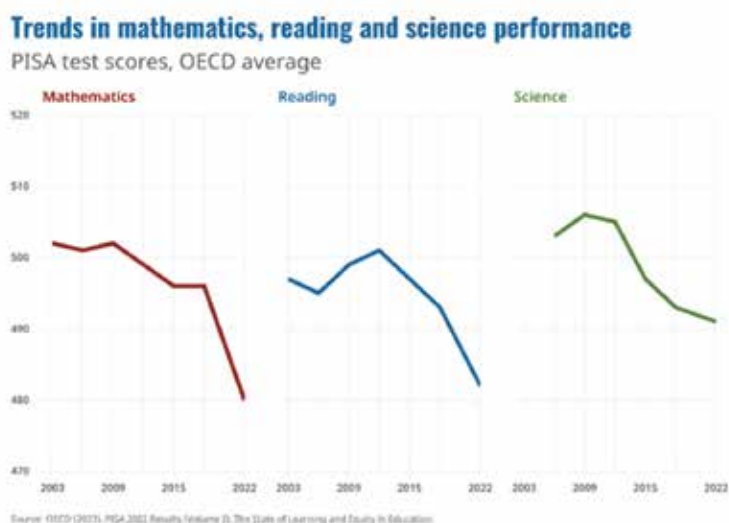
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## Impact on Academic Outcomes

Studies over the past 15 years have shown that social media and smartphone usage can also have detrimental effects on students' academic performance and that limiting such usage can boost achievement. One such study revealed that students without their phones present in the classroom recorded 62 percent more information in their note taking and performed over a grade-and-a-half on tests better than their phone-using peers (Kuznekoff et al., 2013). A study in England observed schools throughout the country that had implemented phone bans and found that students' test scores increased significantly following the phone bans during the school day, results most acutely observed among low-performing students (Beland, L. & Murphy, R., 2015). Academic performance declines due to frequent social media use have been seen in early adolescents ages 11 to 15 who increasingly use smartphones and the various social media platforms (Facebook, Instagram, Snapchat, and Twitter) daily. In a 2023 study, researchers found that students' grades deteriorated as their social media use increased. The researchers concluded that a probable explanation for a majority of the decreased performance is the distraction posed by social media. The distraction is not just during app usage, but

the cognitive space that takes up a student's attention such as thinking about their post's likes, what others think of them, and what they will post in the future; essentially, their brains are frequently focused on social media-related issues, and thus focusing on school work and other tasks at hand loses priority. A decline in reading, math and science scores occurred worldwide, beginning in the early 2000s, around the same time that social media usage skyrocketed among our youth. In the 2022 administration of the PISA, an international assessment, 65 percent of students reported being distracted by digital devices during math lessons. Not coincidentally, the most recent math scores were particularly devastating, with American students losing two-thirds of a year of learning in the subject since 2018. This is not solely due to the COVID-19 pandemic, given that scores had peaked between 2009 and 2012 but had begun declining in each assessment since that time, meaning that "deeper reasons" were influencing the deteriorated results (OECD, 2023, p.182). The PISA report found that students who spent one hour or less on their cell phones for leisure tended to score better on the test, whereas students who spent over one hour on their cell phones for leisure scored lower on their math scores. This is in contrast to students who used digital devices for learning-specific activities for up to one hour per school day and scored up to 24 points higher on mathematics (OECD, 2023, p.231). The difference in scores indicates that technology can be a positive enhancement to a student's education, when time-limited and used specifically as an instructional tool.

Academic declines during the rise of social media are also evident in Colorado by looking at the results of the National Assessment of Educational Progress (NAEP), which measures American students' proficiency in multiple subjects including mathematics and reading every two years. Following the trend seen globally in PISA scores, Colorado's math and reading NAEP scores were steadily improving in the 2000's but peaked in 2013 and then began declining, just as social media usage became pervasive among youth (NAEP 2022 Math and Reading Assessment). By 2022, the most recent test year, student scores for reading and math fell to their lowest level in nearly 20 years as the aftermath of the pandemic collided with the already declining academic achievement of students.



## ■ Solutions & Recommendations

Families, school leaders, and state leaders have begun making strides toward addressing the mental illness epidemic that can largely be traced back to increased usage of social media. Many of these solutions follow from recommendations made by Jonathan Haidt during his Anxious Generation research and include several reforms that can counteract the harms of the last 10 to 15 years.



### **Recommendation #1: No smartphones before high school.**

Kids should have basic, text-and-call only phones until they are 14 years old.



### **Recommendation #2: No social media until 16.**

When pre-teens are subjected to endless content exacerbated by an algorithm, leading them to compare themselves with peers and influencers, it can damage their self-worth permanently.



### **Recommendation #3: Phone-free schools.**

More than just disallowing phones during class, schools should enforce a no-phone-zone and have students lock them away altogether. (Haidt, 2024, p.290)

To curb the negative impact smartphones and social media have wrought on younger generations, experts and parents are increasingly calling for phone-free school policies. A growing number of leaders in Florida, Indiana, California, and other states have begun implementing these policies in a variety of ways. Some schools have implemented a no-phones-in-classrooms policy with students leaving their phones in their lockers. Others have begun utilizing “Yondr” pouches, where a student’s phone will remain for the duration of the entire school day. One report out of a school in Akron, Ohio found that “fights in the schools have decreased since the bags were introduced to all middle and high schools in 2022, and kids report engaging with their friends more.” (North, 2024) School and state leaders have worked to reduce the distractions and problems that come with phones in schools. A survey sampling public schools across the country during the 2021-22 school year, found that over 75% of schools claim to have policies that prohibit “non-academic cell phone use.” In reality, very few schools consistently enforce such policies. As a result, in 2023 states began to take action through legislation. Florida passed a bill that prohibits students from using their phones during instructional time, and restricts social media usage on district-provided devices, like computers. Other states, including Indiana and Ohio, have passed similar legislation to Florida. Kansas and Vermont also have worked in the last year to propose solutions and reduce the harms and distractions being wrought by cell phones in schools, although the introduced legislation did not pass. Governors are taking to the pulpit on the topic. Utah’s Governor Cox sent letters to school and district leaders asking them to eliminate cell phone use during instructional time. Virginia’s Governor Glenn Youngkin recently signed Executive Order 33 to direct state agencies to issue guidance to schools on establishing cell-phone free policies. Some states, such as Colorado, are finding ways to incentivize behavior change outside of policy mandates. Colorado recently announced a grant program that will award school districts with grants of up to \$50,000 to implement different strategies to limit smartphone use and educate youth on responsible phone use. At the district level, New York City is considering employing Yondr phone pouches to eliminate cell phones for the duration of the school day, and the Los Angeles Unified School District – the second largest school district in the U.S. – recently voted to ban cell phones and social media during school hours. In school districts and states that have begun restricting phone usage in schools, some school leaders report that the results have been remarkable. At a middle school in Maple Grove, Minnesota, for example, which prohibits phone usage for the entire school day, the principal had this comment about student behavior:

“They’re smiling. They’re happy. They’re engaging with each other in the hallways. . . We do see a huge, huge difference in the way students are connecting with each other. . . Just a short two years ago, they spent more time just looking down at their phones every moment that they could, and so it has become the culture of our building, and again, the kids seem happy.” (Shelton, 2023)



Whether states mandate cell phone restrictions during instructional time, or provide resources or incentives for districts to implement such policies, it is clear that this is a topic that will continue to be a priority for educators and policymakers in the years to come.

## Conclusion

Smartphones and social media have transformed communication, learning, and entertainment. However, their widespread use can lead to compulsive behaviors, dependency, and deteriorated academic outcomes. Continuous notifications can cause anxiety, stress, and sleep disturbances, while social media often promotes feelings of inadequacy and low self-esteem through comparison and the pursuit of validation. Studies have found that heavy social media use is associated with higher rates of depression, anxiety, loneliness, and poor academic performance, largely due to the addictive nature of the platforms. Additionally, the business model of social media, which involves harvesting and selling user data for targeted advertising, can lead to overconsumption and stress from privacy concerns. Parents play a crucial role in mitigating the adverse effects of social media. Research has shown that it is essential for parents and other authority figures to cultivate positive traits like self-discipline and enforce screen time and social media limits effectively. However, these measures are insufficient on their own; without a strong and supportive relationship, teenagers might ignore or resist these restrictions. Building a robust parent-child relationship is critical for youth mental health and serves as the most effective foundation for addressing external challenges. Moreover, society can take a great leap of progress by shifting the focus from the screens before kids' faces to the reality surrounding them. As Jonathan Haidt urges, more unsupervised play and childhood independence lets kids learn to develop social skills, overcome anxiety, and become self-governing young adults. Kids need room to try, fail, and learn lessons from their mistakes:

"Childhood evolved for physical playfulness and exploration. Children thrive when they are rooted in real-world communities, not in disembodied virtual networks. Growing up in the virtual world promotes anxiety, anomie, and loneliness. The Great Rewiring of Childhood, from play-based to phone-based, has been a catastrophic failure." (Haidt, 2024, p.293)

To mitigate the effects of social media, experts suggest setting limits on screen time, modeling healthy digital habits, and enforcing phone-free policies in schools to reduce distractions and encourage healthier behaviors. Many states and schools are already taking steps to limit the negative impact of phones and social media in educational settings. In places where phone usage has been restricted, students have shown significant improvements in their academics and behavior, and they have increased their happiness and engagement. As more proactive steps are taken to curb the impact of social media use, students will continue to see improvement in academic outcomes and in their general well-being.

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