The Threat of Technology to Students' Reading Brains

By Esther Quintero and Trish Brennan-Gac

As **Maryland's state leaders join their peers** across the country to push forward with **policy reforms grounded in the science of reading**, we asked ourselves: by focusing primarily on instruction, are we addressing the full scope of challenges that impact reading proficiency? While improving the teaching of reading with evidence-based practices is critical, a significant issue remains underexplored: **the impact of our digital culture** on children's ability to develop and maintain the capacity for sustained, focused, and reflective reading.

Some might question whether this type of reading is feasible in today's fast-paced, distraction-filled digital world. However, as Maryanne Wolf persuasively argues, this level of deep engagement is both attainable and essential for developing critical thinking, empathy, and insight. Wolf describes **deep reading** as a journey into the "innermost sanctuary" of our hearts and minds. In that space, we don't just comprehend or absorb the author's words; we actively reflect on their ideas, going beyond them to develop our own. Deep reading nurtures the intellectual and emotional capacities that make us human. So, why is this form of reading most at risk today?

Reading science has shown that **learning to read is not a natural process**; it requires explicit, systematic instruction and practice (also **here** and **here**). Unlike spoken language, which humans instinctively acquire through exposure and interaction, **reading is a skill that our brains are not biologically wired for**. In other words, humans do not learn to read simply by being exposed to books or observing others reading. Therefore, the reading brain must be intentionally built repurposing and connecting areas of the brain; science of reading policy aims to ensure that all children receive the best instruction to achieve this goal. Yet, we are learning that structured literacy instruction in elementary school is not a one and done. To sustain and grow our reading capacity, we must actively nurture, use, and protect this **magnificent infrastructure that is the reading brain**. Because, as Wolf argues, the brain's plasticity is its greatest strength but also its Achilles' heel; what is built can be unbuilt. And that's what our digital culture might be doing.

Research suggests that the habits we develop when reading on screens can diminish our brain's capacity for deep reading. Digital devices rush us with features like endless scrolling, bombard us with distractions such as notifications and algorithm-generated suggestions. They overload us with so much content that it lingers only briefly in our minds, rather than being transformed into consolidated knowledge or original thought. When a lot of our reading occurs this way, **our ability to engage in slower, more reflective reading diminishes**. Habits developed for digital reading – such as skimming and scanning, which are necessary to handle

the volume of information we receive on screens—carry over when we read print. Yet, these defense mechanisms are unnecessary when facing the simplicity of a printed page and **can impair our attention and patience to engage deeply with the text** and **ultimately our reading comprehension** (and **here**).

This reality highlights a dilemma not fully acknowledged within the science of reading community: as the nation embraces evidence-based reading instruction in K-12 schools to improve literacy outcomes, our rapid – and perhaps uncritical – adoption of digital technology may inadvertently undermine these efforts.

Meanwhile, concerns with digital technology have predominantly **centered on mental health**. However, learning and academic issues are increasingly emerging as significant standalone concerns that warrant equal attention. For example, **a recent Pew survey** found that 72 percent of high school teachers view student phone distraction as a "major problem." Yet less than a quarter of countries globally have policies in place to curb smartphone use in schools. In the United States, at least eight states have recently passed regulations to limit student phone use during the school day.

While smartphones are obvious distractions, the conversation about technology in education extends beyond them. In the wake of the COVID-19 pandemic, devices like Chromebooks have become essential tools in American classrooms, exposing students to many of the same distractions as smartphones while also displacing books and print materials. Perhaps reflecting this shift, the National Council of Teachers of English recently stated, it is time "**decenter book reading and essay writing as the pinnacles of English language arts education**."

Given these realities, we need a new framework for leveraging technology in learning and navigating the challenges of the digital age. In *Reader, Come Home*, Maryanne Wolf proposes an approach akin to learning two languages. In Chapter 8, she describes a roadmap for building a new kind of biliteracy—one that enables students to shift between different modes of reading depending on the medium (digital vs. print) and the purpose of reading. For children ages 0 to 10, learning to read and developing deep reading skills should happen only in print. During this time, appropriate digital uses would include the development of new literacies such as programming and coding, the use of high-quality developmental games to build automaticity, and materials that complement print resources. Around the age of 10, students can carefully transition to reading in digital formats and receive instruction on how to read deeply in different media. To effectively prepare students for the digital age, we must guide them in navigating both digital and print environments, enabling them to switch cognitive gears as naturally as bilingual speakers switch languages.

Slowing down is our challenge too. Can we push the pause button on the rapid adoption and integration of technology into teaching and learning? Can we examine the research to better understand where technology has proven to be an effective teaching tool and where it offers diminishing returns? Are we brave enough to admit that technology may not be delivering on its promises when it comes to creating thriving readers and thinkers?

Currently, the communities focused on reading and those centered on technology often operate independently, each absorbed in specific concerns—like debates over the role of phonics or how to enforce phone bans in schools. While these issues are important, they can cause us to miss the forest for the trees. Perhaps a shared focus on preserving deep reading can help both communities take a step back and see the broader picture. Events like the upcoming **conversation between Emily Hanford and Maryanne Wolf at Planet Word** offer an opportunity for the science of reading community to learn about other major factors that can impact literacy. By uniting around this goal, we can perhaps move past small internal differences and disagreements and focus on this moonshot objective of preserving our best forms of reading, thinking, and writing.

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ABOUT MARYLAND READS

Maryland READS is a non-profit organization that was founded to end the literacy crisis in Maryland. Based on the most current rigorous research and evidence of impact, Maryland READS focuses on three proven paths to closing the literacy gap: improving reading instruction in the classroom through the Science of Reading; creating thriving community-based reading ecosystems outside the classroom; and addressing barriers that prevent students from becoming proficient readers like addictive technology. Through collaboration and strategic partnerships, Maryland READS is building a powerful statewide network to provide community leaders with a place to engage, share best practices, advocate and shape their action plans to ensure all children have the literacy skills necessary for success in school and beyond. Learn more about our growing reading network at **marylandreads.org**

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