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**Is the Demise in Reading for Pleasure
Terminal?**

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Is the Demise in Reading for Pleasure Terminal?

Clare Zinkin

Abstract

This paper was inspired partly by reading *The Anxious Generation* by Jonathan Haidt, but partly by working in literacy education and publishing for the last twenty years and witnessing the change in habits across both sectors. I have long been interested in research on children's reading - the how, the what, and the when. This paper highlights the often-unrecognised benefits of Reading for Pleasure as opposed to reading by instruction but seeks to show that Reading for Pleasure is not only in decline, but in danger of a death. This is for many sociological reasons, including the perceived value of the arts, the closure of public libraries, the overstuffed primary school curriculum, but also the dramatic rise in mobile phone and tablet use, leading to attention fragmentation. Furthermore, reading on screens is overtaking reading in print, the act of which rewires the human brain in a way that possibly we don't fully understand yet. The research is showing, however, that far from being beneficial, reading on screen, and the attention fragmentation as a result of mobile phone usage, may be having a detrimental effect on the human brain, particularly in childhood and adolescence before the brain is fully formed. It concludes that society needs to act before it is too late. Although it is damaging to the environment to print, it would be preferable for this paper and everything that one reads to be read on recycled printed paper for its content to be comprehensively absorbed.

In 2024, the National Literacy Trust survey reported that reading for pleasure¹ was not only on a downward trend, but was at its lowest level since records began. Just one in three children and young people said that they enjoyed reading, and only one in five of them was reading daily in their free time.² Moreover, according to Farshore, the number of 0-17 year olds who rarely or never read has risen from 13% in 2012 to 22% in 2024.³ Devastatingly, this is not limited to children but is a societal-wide issue. The Reading Agency's 2024 report into adult

¹ Reading for Pleasure is simply defined as the volition to read as opposed to having it as a mandate for school, work or by external forces. It is important that it is distinguished from other types of 'forced' reading, as reading for pleasure has distinctly different outcomes than simply measuring the skill of someone's reading. Reading for Pleasure implies motivation and enjoyment, without 'quizzing', and the freedom to choose what is read.

² National Literacy Trust, Children and Young People's Reading in 2024 Christina Clark, Irene Picton, Aimee Cole and Nick Oram, November 2024

³ The Farshore and HarperCollins Children's Books annual review of Children's Reading for Pleasure, 2024

reading reported similar findings. Only half of UK adults read regularly for pleasure, with those aged 16 to 34 the least likely to do so.¹ And about 16% of adults are functionally illiterate.

The importance of reading for pleasure has long been established. In 2002 and 2009, reading for pleasure was found to be a greater indicator of a child's future success than their parents' socio-economic status², and no research has refuted this thus far. In fact, recent research cites other benefits from reading for pleasure, establishing that it provides a wide range of advantages for the individual including enhanced empathy skills, greater success in maths, as well as the more obvious benefits such as critical thinking, vocabulary, general knowledge, and communication skills. Furthermore, reading for pleasure has been shown to improve a young person's cognitive development more than having a degree-educated parent.³ Indeed, disadvantaged children who read for pleasure can overcome socio-economic barriers to success.

It has even been shown to lower stress levels and increase general wellbeing⁴. Children cite many reasons for their willingness to read for pleasure (those who still do), not only the acquisition of vocabulary, general knowledge skills, understanding of others and other cultures, but also reasons that point to better mental health such as relaxation, happiness, confidence and the ability to resolve problems, as well as seeking answers on troubling issues.⁵ The research bears this out. National Health England suggests that as many as one in five 8 to 25 year olds have a mental health disorder⁶ but a correlation can be found between reading for pleasure and feeling happy - the proportion answering 'very happy' on a scale of mental wellbeing were found to be the same children who cited reading as a daily or near daily activity for anything over 15 minutes a day.⁷ One study showed that daily reading for pleasure at 7 years old is also associated with lower levels of emotional issues at age eleven, including hyperactivity and attention disorders.⁸

And of course, reading for pleasure has long been linked with reading achievement - the two are entwined as the more a child reads for pleasure the greater her skill, and the greater her skill, the more she enjoys reading.⁹ Reading for pleasure is associated with increased confidence in reading and enhanced proficiency at the skill of reading.¹⁰ In fact, the two are symbiotic, often described as the 'Matthew effect'¹¹ because motivated readers make more progress and reluctant readers lag behind. The more you read, the better you get at it, and the more pleasure you take from it. This is because reading requires prior knowledge - the

¹ The Reading Agency, 2024, The State of the Nation's Adults Reading Report

² OECD Reading for Change, 2002, 2009

³ Sullivan, A and Brown M (2013), Social inequalities in cognitive scores at age 16: The role of reading

⁴ Dr David Lewis, 2009 study, University of Sussex, 'reading reduces stress by 68%, slowing heart rate, reducing muscle tension.

⁵ National Literacy Trust, Children and Young People's Reading in 2024 Christina Clark, Irene Picton, Aimee Cole and Nick Oram, November 2024

⁶ Mental Health of Children and Young People, 2023, NHS England

⁷ The Farshore and HarperCollins Children's Books annual review of Children's Reading for Pleasure, 2024

⁸ Mak and Fancourt, 2020

⁹ With thanks to the inspiration of Teresa Cremin and her work on the benefits of Reading for Pleasure, see The Open University <https://ourfp.org/>

¹⁰ OECD 2011, 2019, Mullis et al 2017, 2023

¹¹ Stanovich 1986

more one reads the more knowledge one accumulates, and then the reader has more knowledge to apply to the next piece of reading, making it more pleasurable to comprehend.

At this point, it is worth pointing out that the advantages of being able to read and acquire this large skill base start early. Academics analysing teenagers' brains have found a correlation between larger total brain areas and positive differences in brain regions relating to mental health, behaviour and attention when the teenager had started reading for pleasure at a young age.¹ If a child comes to school with good language development and knowledge base from being read to as a baby and preschooler, it immediately gives them a boost over their peers and the effects are long-lasting and cumulative. Reading to a child improves the chances of them reading independently, shown time and again in research. Correlation between those who are read to at home, and those who choose to read for pleasure has been shown year in year out.² Being 'read to' is not a passive experience as some may imagine. Children experience pleasure when they are read to, in that they are experiencing the fullness of the comprehension of the text without having to work at the phonetic decoding of words - the learning to read part. Far from being passive, the brain is forging connections from the absorption of the text. Moreover, being 'read to' means that they are the focus of attention themselves, they are experiencing a dopamine hit from the bond that is created between the reader and the listener.

Why is 'reading for pleasure' so different from reading for school or work, from the skill of reading? It's because when humans have the volition to read, to immerse themselves in the text, they are experiencing what is called 'deep reading'. This is important. Maryanne Wolf explains that deep reading is the process that happens in the brain when immersed in a text so deeply that background knowledge is linked to new information, analogies are formed, inferences drawn, speculation made, truth evaluated, empathy and knowledge expanded, and all of this is integrated into critical analysis. In other words, 'deep reading is our species' bridge to insight and novel thought.'³ An expert reader's brain (motivated and experienced in reading) can perform the functions of deep reading in milliseconds - it can deduct reason, infer implied meanings, perform analogical skills, critically analyse what's before them, reflect on it, commit it to deep memory, and gain new insight by applying older knowledge. This older brain will be using all four lobes and both hemispheres of the brain. A young brain needs longer to process these tasks, but in the young brain, (under 25 years before the brain has settled), new neuron pathways are being formed so that the brain has learned the pattern of how to do this. I do want to point out that a reader in one language will form different pathways from another. In Chinese reading, the language is more visual so a different circuitry will be wired. So what we read, how we read, and the format in which we read changes our brains. Being 'read to' gives us some of that deep reading. Reading literary fiction absolutely gives deeper reading, creating neuron paths that mimic the characters' action as if the reader was really living it. Choosing

¹ Yun-Jun Sun & Barbara J. Sahakian et al. Early-initiated childhood reading for pleasure: Associations with Better Cognitive Performance, Mental Well-being and Brain Structure in Young Adolescence. *Psychological Medicine*; 28 June 2023; DOI: 10.1017/S0033291723001381

² The Farshore and HarperCollins Children's Books annual review of Children's Reading for Pleasure, 2024

³ 'Screen-based online learning will change kids' brains. Are we ready for that?', *The Guardian*, Maryanne Wolf, 24 August, 2020

what to read, and reading that material in print, can be the greatest way of accessing deep reading.

But let's return to reading for pleasure and its decline. In the UK, there are multiple reasons for the decline. Starting young, it would seem that caregivers are not giving their child the face-to-face attention that is needed. Singing to them, reciting nursery rhymes, talking to them is in decline. There is a connection here with phone use, in that babies learn from the 'serve-and-return' face to face interactions of looking into their parents' faces to gauge reaction to their last action. If a parent looks away for even a split second to a phone notification, that learning cue is lost. Timing is everything. If we recite a nursery rhyme, but the rhythm is broken by our phone pinging, another window to create the neuron pathway in the baby is lost. Moreover, there are signs that the parents and caregivers no longer know those nursery rhymes - from talking to children in early years education, vast gaps seem to be appearing in their knowledge of nursery rhymes, tales and stories that have long been part of the oral tradition in this country. Few primary school children know the stories of tales from the Bible such as Daniel in the Lions' Den, or folk stories such as the Pied Piper, or nursery rhymes such as Humpty Dumpty.¹ Are they simply out of fashion? Are we too busy to engage in that singing and storytelling? Are we losing memory of them as a collective? Reports indicate that modern parents actually spend more time with their children, (it just may not be spent performing such activities), but there is no doubt that the rhythm and rhyme of nursery rhymes, and the story arcs of traditional tales that were firing neurons in the brains of small children for years, and helped to grow their comprehension and love for language and story, are disappearing. It is true that Julia Donaldson² has replaced many of these traditional tales, (even if *A Squash and a Squeeze* is clearly a reworking of a Yiddish folk tale called 'It could always be worse'), but there is no doubt that the decline in reading for pleasure, and certainly in the habit and ability to 'deep read', is linked to the fact that fewer parents are reading to their children, with only 40% of preschoolers read to every or nearly every day, and only 21% by the age of 8-10 years.³ It is worth repeating here that frequently reading to a child is pretty much the foremost means of creating an independent reader.

From preschools to school-aged children; reading for pleasure is measured most at the peak age of 7-11 years, and sadly shows particular decline here. Why are schools not doing more to increase reading for pleasure? For most schools, it is the over-crammed primary school curriculum that leaves no room for storytime, protected independent silent reading, or a deeper study of English literature. Recent initiatives in individual schools have tried to address this - the 'DEAR, Drop Everything And Read' programme, being one example. But too often storytime is left until the end of the school day, a time easily swiped for other things that overran or more important last-minute additions. The National Curriculum 'aims' to encourage reading for enjoyment but until 2023 gave little guidance on how this was to be done. The Reading Framework of 2023 gave some encouragement and advice, but the fact that it is a

¹ Many indications of this, but National Bookstart Day in 2009 reported that almost 25% of parents admit they have never sung a nursery rhyme to their child, the Bible Society admitted in 2014 that a large number of children had never heard of most of the traditional Bible stories,

² Nielsen BookScan reports that Donaldson sold over 3.1 million copies of her books in 2024, bringing her lifetime sales to 48.6 million units.

³ The Farshore and HarperCollins Children's Books annual review of Children's Reading for Pleasure, 2024

statutory requirement for prisons to have libraries but still not schools, gives some indication of how far the government is prepared to invest in their new mandate that children should be taught to read for pleasure (a contradiction in terms). Ofsted state that they assess schools for age appropriateness and fluency of reading. But this doesn't get to the crux of the matter - do the children enjoy reading, and do they understand what they read? Fluency has a tendency to point to speed and pronunciation but doesn't always assess all areas of inference and comprehension, and certainly doesn't look at all elements of deep reading such as speculation and intertextuality...the deeper meaning behind the text, which is where the love for reading begins. There is often too much of an emphasis on the 'correct' answer in solving reading comprehensions, getting the right inference from the story (see SATs). There is far less perspective-taking on a piece of text, far less emphasis on interpretation and deeper thought.

However, reading for pleasure starts earlier than in primary school and tends to be habit forming. The act of letting public libraries close¹; those very institutions that are not only places of worship for bibliophiles but also arenas in which storytime, rhymetime and an introduction to free books for babies and preschoolers is critical, was a huge mistake. Our government spends about £12 annually per capita on libraries, as compared to Finland's £50. The axing of Surestart with its stay and play centres usually with a plethora of books for babies and toddlers to browse, was another misstep. (Thankfully the charity BookTrust has a scheme in the UK to give all babies a free book, but they can only fund beyond babyhood for those most at need financially.) It is also worth pointing out that libraries, public or school, run by those who are not specialist librarians, particularly children's librarians with a fount of knowledge on literature and literacy, mean that rooms full of books are deemed to be an equal substitute for working libraries. This is not the case. Children need guidance from an expert human being - not many other professions are deemed replaceable by well-meaning volunteers. There would surely be an outcry if midwives, teachers or social workers were also replaced by well-meaning volunteers.

This all points to a perception that books and those who work with them are valueless in today's high-tech STEM-led society. One could even go so far as to say the arts themselves are viewed as less valuable than science and technology in the UK. Look to the cutting of arts degrees at universities (cuts of 50% in funding for arts and creative courses in higher ed), arts funding slashing by the government, (Arts Council budget cut by 30% 2024), the complete decimation of artists' earnings because of music streaming services, and then their touring abilities due to Brexit, the slump in GCSE and A-Level arts subjects, (down 47% and 29% respectively since 2010), and although in 2013 English was the sixth most popular A-level, today it is the 11th. Around 20 percent of students failed the English language GCSE in 2024. Ask students what they think. Surveys suggest that students think that medicine, maths and engineering are the most difficult subjects, but also the most valuable, with art and creative writing at the bottom of the pile. In fact, creative industries generated £126bn in gross value

¹ Freedom of information requests sent by the BBC show that around 950 libraries reduced their hours since 2016, and between 2010 and 2020, almost 800 libraries were closed or handed over to volunteers.

added to the economy and employed 2.4 million people in 2022. Newer governments are still pursuing the tech agenda. When prime minister, Sunak wanted maths to be compulsory until 18 years old; the 2024 Labour government wants maths and science teachers to be paid more than their peers. We are a society obsessed with technology and STEM subjects without understanding that the key skills gained from reading, such as critical thinking, creativity, imagination, deductive reasoning and analysis, are going to be the tools humans need to control and understand intelligent machines when AI takes over administrative tasks: coding, assessing medical scans, market research.

And the lowest form of art is surely perceived to be the children's book. Martin Amis famously said that he would write a children's book if he had a serious brain injury, and sadly this disregard and disrespect for children's literature permeates. Booksellers and gatekeepers don't help themselves when the main reads parents can buy in the most accessible places to purchase books (supermarkets and WHSmiths) sell mainly David Walliams or other children's celebrity fiction. Again, it is mainly in this sphere that society views it credible for any celebrity to dabble in children's writing. Celebrities don't often try their hand at fiction aimed at adults, painting or other such artistic pursuits. What celebrity fiction does do is that it diminishes the perceived value of a children's writer and writing for children. If it is seen as lesser, then it will be treated as such. There are very few reviews of children's literature in newspapers. It is not seen as worthy of an adult's time, and yet until recently, most adults could recall very clearly their favourite children's book. Some of the culture for which Britain is best known is its children's literature. If economics rules, look to the Disney franchise for Winnie the Pooh or Alice in Wonderland; culturally, the Olympics opening ceremony's paeon to Mary Poppins, the absolute obsession with Lord of the Rings, and the recent furore over Paddington Bear. From children's literature's obsession with classic English architecture, to its embrace of immigration, to its acute understanding of what anthropomorphism can do for literature, it is a shining light in the world of arts. Some children's fiction is so much greater (more complex in theme, more challenging in its choice of vocabulary) than its dreary trend-following adult literature that it's actually a complete astonishment that more readers don't flock to the children's shelves. Once bitten with the bug, like Katherine Rundell, you'll be hard pressed to turn away from it just because you're a grown up.¹

Should we blame adults then for the demise of reading for pleasure? It is not children, after all, who can be blamed for not picking up a book. The Kindred 2025 Readiness for School survey² cites 44% of parents who believe it is not up to them to teach children how to 'use' books. Note the term 'use,' rather than 'read', in that children are reportedly swiping at the objects. It does feel to some as if there is a lack of parental agency across all socio-economic levels, pointed to first and foremost by the fact that yes, they don't read to their own children anymore, but also the amount of stuff that educational establishments are supposed to take care of in lieu of parenting - the raft of PSHE statutory requirements being one such element. See also, toilet training, crossing a road, riding a bike, culinary skills and food hygiene, nutrition and exercise, not to mention emotional regulation, sex ed, British values etc. No wonder there

¹ Katherine Rundell, *Why You Should Read Children's Books, Even Though You Are so Old and Wise*, published 2019, sums up all of this very wisely. You should, indeed, read her book.

² Kindred School Readiness Survey January 2025

is no room left on a primary school curriculum for reading. Of course, parenting in the upper classes has always been outsourced - from wet nurses to governesses, and children of all classes have often been parented by a community - 'it takes a village to raise a child' - and that is no bad thing. But one thing researchers point to over and over is that the more quality attention paid to a small child by their primary carer, the better their outcomes, and reading and talking to that child is a primary factor. Once again, the Kindred survey suggests that almost half of all parents and teachers surveyed think that parents are not reading enough nor talking enough to their preschoolers, and that 54% of teachers and 49% of parents said parents spending more time on electronic devices than with children was a contributing factor to their lack of preparedness for school.

It's not only reading to one's child. It is also leading by example. A role model needs to be seen to read. One of the key tenets of my reading consultancy over the years has been that the skill of reading is taught but reading for pleasure is caught. The love for reading is contagious. When adults are only seen reading on screens (which could be perceived to be something else, such as watching videos), or not seen reading at all, then children will not see reading as a viable leisure activity. When Beano Brain consulted children in 2024 about what their parents did in their leisure time, although 25% said they had seen their parents reading, 56% said that their parents scroll on their phone. 'Adults tell you to read, but then they go on their phones,' one 11-year-old told the researchers. Why would you read if no one around you is showing you that it is a pleasurable thing to do?

Is the absence of reading for pleasure about lack of time? Or is it lack of access to reading material? Certainly, the closure of public libraries hasn't helped adult reading either, and the cost of living crisis has pushed books further into the luxury basket. For those who do go to the high street to buy books, the imminent sale of W.H. Smith (for many the only shop that sells books on the high street as independent bookshops struggle to survive), is yet another threat to accessing reading material. It used to feature the books in the Richard and Judy Bookclub, as well as promoting the £1 books that are part of the yearly World Book Day venture. If it goes, it will be another blow for the publishing sector. But perhaps one of the most compelling reasons as to why we are seeing a widespread low in reading for pleasure, particularly in those under 35 years, is smartphones.

There are two main reasons that smartphones are having a detrimental effect on potential readers. The first is that it is a time-sapper, in that it takes leisure time away from other pursuits. In other words, this is the 'opportunity cost' of using a phone as Jonathan Haidt puts it in his book *The Anxious Generation*. The problem with statistics on child and teen use of phones and screens is that most of the studies don't separate 'screens' from 'phones' or what 'screen use' is for. For younger children, it may not be a smartphone, so much as an iPad, which for some reason is deemed as a more acceptable device. And some time on screens will be homework based; some will be spent watching television. But looking harder, Pew research tends to show that most teens say that they are on one of the major social media sites 'almost constantly', and the average teen reports spending more than seven hours a day on screen-based leisure activities, not including school and homework. (In the 1990s, an average American teen watched about three hours a day of television). Even if some of the modern teen's seven hours of leisure screen time are spent reading on screen, this is not

necessarily a good thing as we'll see. But mainly it isn't reading. Mainly it is on a social media site or short form video site. Just think, if children over the age of 11 (which is typically when they get smartphones) are spending more than seven hours a day on screen-based leisure activities, and in school for seven hours, and asleep for seven hours, with just three left for transportation, homework, eating, spending time with friends etc, it doesn't leave much time for reading.

As mentioned, there is not enough data yet on how much time children under the age of eleven are spending on iPads, for example, most data is compiled on smartphone use. However, it is clear that using some kind of screen has become a default leisure activity, and the time spent on screen is time away from reading.

The second reason that smartphones are having a detrimental effect on potential readers is the effect phone use (and general screen use, which includes I pads), is having on children's brains. This is extremely complex and needs to be examined in two parts. To start with, the effect that social media/certain types of screen time is having on children's and teenagers' brains in terms of 'attention fragmentation' and how that has unintended consequences for deep reading.

It may be the case that the constant interruption of notifications from phones (even on vibrate-only mode) is having an effect on the developing brains of children and teenagers - affecting the frontal cortex - the executive function part of the brain, which is the ability to administer self-control, focus and resist the temptation to be distracted. In fact, some studies are finding that even when phones are in a bag or pocketed, there is an ongoing impact to the ability to think or focus.¹

Are children under the age of 11 really on phones and also on social media apps - the culprits of the fragmented attention spans? This is important because reading is formed as a habit in the early years, before the age of 11, and a particular focus for reading researchers is between the ages of eight and ten when typically, the reading habit is either formed or falls by the wayside. Actually, in the UK one in five children between three and four years old have a smartphone according to Ofcom, and by age eight one in four have their own phone, by age 11 more than 90%. In 2019, ownership of I pads for 5–15-year-olds was about 49%. In 2015 a third of preschoolers were reported as having a tablet computer, in 2021 57% of seven year olds owned a tablet device.² In 2023, 45% of 0-4 year olds spent more than two hours a day using a smartphone or tablet, which is about 25 minutes more than in 2019.³ Most social media apps are 13+, yet the data glosses over the fact that without proper age verification, most children lie to access the apps.

It is also of note that the drop in reading enjoyment is more pronounced in the age groups who typically own a smartphone, with a drop in 9.7% points in those aged 11 to 14 years and 11.1% points in those aged 14 to 16 years, compared with the drop in reading for pleasure in those

¹ See *The Anxious Generation* by Jonathan Haidt, particularly Chapter 5, Attention Fragmentation

² Various, including Parliament, Education committee, Ofcom data, Statista

³ The Farshore and HarperCollins Children's Books annual review of Children's Reading for Pleasure, 2024

aged just 8 to 11 years (4.3% points).¹ In fact, these higher age groups showed the lowest level in reading enjoyment over the past 19 years. Smartphones were introduced in about 2012. Not much research pits a child's reading enjoyment with their phone usage but comparing the two leads to some correlation if not provable causation. The data trends towards more screen time and less reading time.

More worrying, is the study that found that children between 8 and 11 years who were exposed to longer than two hours a day of recreational screen time (including playing video games) had worse working memory, processing speed, language skills, executive function and attention levels than those who didn't.²

It is this lack of ability to focus that rears its ugly head time and again. In all studies bar one, it was found that screentime led to attention fragmentation.³ Cal Newport, associate professor of computer science at Georgetown University insists that 'spending the majority of your day with fragmented attention can permanently affect your ability to sustain concentration.' The trendy idea of multi-tasking doesn't actually exist. The cognitive brain can only produce one or two thoughts at any one time. So, when you think you're doing two tasks at once, you aren't. You're toggling between the two. Or three or four. Your consciousness may do it seamlessly, so it feels as if you are multitasking, but your brain is performing different operations. Memory drops, performance drops. This is called the switch-cost effect.

And phone apps are literally designed to fragment your attention. The minute we put phones down, the social media businesses aren't making money. Their business model depends on your attention and depends on your need to not only scroll through your feed, but click onto different parts of it, disappearing down threads and rabbit holes and adverts. As Johann Hari, author of *Stolen Focus: Why You Can't Pay Attention* puts it 'The products are designed to distract us, they are designed to disrupt our attention.' Not because the makers are evil, but just to follow the business model. Professor Joel Nigg, the clinical psychologist known for his work on ADHD puts it even more starkly. When Hari asked him what he would do if he was in charge of our culture and trying to destroy attention spans, he replied 'probably what our society *is* doing.'

Moreover, our brains now want more of that disruption. By looking at our phones and skipping from one thing to another, we are training our brains to want that dopamine hit that results from the quick-pull new-information gain every time we click a link or refresh a feed.

The current children's laureate, Frank Cottrell-Boyce agrees that attention is at the forefront of the battle, 'that kind of sustained, slow, long-form attention is really important. And I think that's under threat.'⁴ The chorus of voices of concern is growing. On the *Today* programme

¹ National Literacy Trust, Children and Young People's Reading in 2024 Christina Clark, Irene Picton, Aimee Cole and Nick Oram, November 2024

² Through Dooyeweerd's Lens: Evaluating Screen Time's Impact on Children's Wellbeing and Mental Health, Sina Joneidy, October 2023 (It must be said here that some other studies focussing on just video games found that they were not necessarily detrimental and could provide useful skills in a different way)

³ The Association Between Screen Time and Attention in Children: A Systematic Review, Renata Maria Silva Santos, Camila Guimares Mendes, Debora Marques Miranda, Marco Aurelio Romano-Silva, 2022

⁴ Help, My Children Won't Read, Melissa Denes, *The Times*, October 8th 2024.

on BBC Radio 4, Professor Jonathan Bate said that his students struggled to read one novel in three weeks where once they had read three novels in a week. There is certainly the tendency for students to describe something as tldr, rather than being enthused about set reading.

Schoolteachers and the school librarians that remain are seeing children struggle to read to the end of a novel, observing the way that more of them are turning to graphic novels and comics for their reading material. The best-selling children's books in the UK for the last few years are those by Jamie Smart (*Bunny vs Monkey* series), Jeff Kinney (*Diary of a Wimpy Kid*), and Dav Piley (*Dogman*). In libraries, Julia Donaldson dominates, showing that the users of libraries tend towards preschoolers, but also featured are Daisy Meadows and Adam Blade (both nom de plumes for a team of writers who churn out the *Rainbow Fairy* and *Beast Quest* series), as well as the aforementioned Dav Pilkey and Jeff Kinney. Of course, if a child gets hooked reading Jeff Kinney and then moves onto more challenging reads, this is an absolute triumph. But what we are seeing doesn't point towards that. Sales of books for 8–12-year-olds were down 10% in 2023 in the UK, following a fall of 16% in 2022. And in 2023, graphic novels made up 25% of all middle grade (aged 8-11 yrs) book sales.

It is true that there is an enduring popularity of some of the older children's fiction titles that tend to be longer length texts, such as the *Harry Potter* and *Hunger Games* series, with some of the teen romantasy, such as those by Rebecca Yaros often heading to beyond 500 pages. Whether these have quality, challenging text as well as quantity is of course subjective debate. Book sales seem to suggest healthy reading, with a staggering 105 million childrens and YA books bought in 2022 just in the UK, but actually between 2005 and 2021, print publishing industries saw a decline of over \$68 billion in revenue in the US, mirroring the aforementioned decline in UK book sales.

And although we can track how much is read of a digital copy of a book, we cannot know what is being read of the books bought. Hilarious tracking information from Kobo reveals that only 62% of readers finish any mystery genre book, and we may buy harder 'worthier' non-fiction, but we don't necessarily read it. Only seven per cent of readers on a Kobo finished Daniel Kahneman's *Thinking Fast and Slow*.

There are advocates of digital technology who will cite that children and young people in particular are accessing reams of text like never before, even if it isn't in books. Communication has become text based, symbol-based in some parts (emojis), and there has been a growth like never before in written forms of communication (snap, emails, tweets etc). Even leisure time watching TV involves text as more young people have subtitles on during their viewing. The huge data pools in modern society mean that attention is often caught by text-based algorithms or work data - presentations, social media feeds, Onenotes in class. But, shallow, skim reading as most of this is, is not deep reading for pleasure. It is not the sort of reading that leads to enhanced critical thinking, better wellbeing, empathy, increased knowledge of empirical truths (assessing prior knowledge and comparing subconsciously with what has just been read, applying a critical eye). Deep reading is losing in the attention economy.

According to World Book Day 2023, one in five Britons read books on a screen. And only 35% of these readers use a dedicated e-reader. But this is just readers who are purchasing ebooks on trackable websites such as Amazon. When you include all the reading we are doing on screen for work and school, a massive amount of everyone's reading is on a screen.

So let's take a closer look at all this reading that's happening on screens, because this is the second way, after opportunity cost and attention fragmentation, in which we, and particularly children, are being affected by screens and phone use. Although book sales skew to printed material for children's books rather than ebooks, which trend at under 10% in the children's market, children do a great deal of reading on screen away from traditionally published books (in school, on phones, on ipads, on laptops etc). And this, in fact, is proving to be more detrimental than we might have initially thought.

Could the push towards reading on screens of itself be harming our ability to read more deeply, thus suppressing our enjoyment of reading, which comes mainly at the deep reading level. Studies continue to show that there is a difference in our brain when we read on screen as opposed to reading in print. The data is hard to break down, but essentially the lead researchers, Cristina Vargas and Ladislao Salmerón, professors for evolutionary and educational psychology, explain that 'if a student spends 10 hours reading books on paper, their comprehension will probably be 6 to 8 times greater than if they read on digital devices for the same amount of time.' Seeing as the greatest competition at the moment is for our time, it would seem that books should win the efficiency race.¹ This is because our brains don't 'deep read' on screens, only on paper.

If we go closer and look inside the brain at what's happening, researchers are beginning to find distinct processing differences in the brain depending on whether a person is reading on screen or in print. One study found that children aged 3 and 4 years had more activation in the language part of the brain when they read a book as compared to listening to an audiobook - but the lowest activation was when they were reading from an ipad. In another study, the MRI scans of 8- to twelve-year-olds showed stronger reading circuits in those who reported reading more on paper. The Reboot Foundation discovered that fourth graders (Year 5) who used tablets in nearly all their classes scored 14 points lower on reading tests than students who never used tablets.

Mainly, the research tracks older students. Meta studies show students comprehend more from paper. Most recently, Korean and Japanese studies found that there was less blood flow in the prefrontal cortex when reading on paper than on screens, possibly suggesting that the brain has to work harder in its working memory when reading on screen. An Israeli study showed more power in high-frequency brain waves when reading on paper, and an American study² described that cognitive tests performed after reading a text showed more significant brain activity in terms of memory recall and language associations for those who had read on

¹ Altamura, L., Vargas, C., & Salmerón, L. (2023). 'Do New Forms of Reading Pay Off? A Meta-Analysis on the Relationship Between Leisure Digital Reading Habits and Text Comprehension'. *Review of Educational Research*, 0(0)

² Middle-schoolers' reading and processing depth in response to digital and print media: An N400 study, Karen Froud, Lisa Levinson, Chaille Maddox, Paul Smith, Sept 2023

paper. However, none of these concluded that the brain differences were a definitive sign of a difference in comprehension. What they do show though is that there is a difference in brain processing between reading on screen and reading on paper. We just don't have the insight yet to say what the difference is showing us.

Meta-analysis of the data eventually sums up that people skim more when reading on screens. We read faster and shallower - we don't stop and think about what we are reading. This limits later memory retention.¹ Doug Lemov, who now trains teachers in how to teach reading encourages them to adopt 'low-tech, high-text environments' so that students can slowly build up their attention spans by just reading an old-fashioned book. Daniel T Willingham, in his book *The Reading Mind: A Cognitive Approach to How the Mind Reads* argues that it's not so much the sustained attention, as the cognitive patience to read. Understanding comes more slowly in deep reading, because it is a deeper, more meaningful comprehension. And the phone culture doesn't teach patience - it's an instant gratification world in which children don't want to experience boredom, so they reach for their phones to be immediately entertained. There are no gaps in the information deluge.

When we read digitally, we lose the sense of the physicality of the book, which is bad for our memory. Think back to reading in both print and on screen. Navigating on screen is difficult - there's a memory pull with understanding that something was 'top right' or 'bottom left' of a page. Scrolling doesn't allow for that awareness. Scrolling has been shown to be more memory disruptive than turning a page. Making connections with other texts is diminished.² This is something I practise in every live session I run: ask people what they're reading on their kindle. They are far more likely to have forgotten the title and author than if they're reading a print book. The physicality matters. It matters to babies - look at how they touch a book, put it in their mouth, turn the pages. There's a reason the publishing business created board books, lift the flap books and so forth. Young children learn through physicality with the book.

Crucially, one global study from the OECD showed that there might be an association between reading paper books and enjoyment of reading. If we only read by skimming or scanning, the processing of our memory centre is diminished, we are less able to recall what we have read, and the deeper meaning and enjoyment from that immersion in a text disappears; the desire to read for reading's sake falls by the wayside. We can't read more deeply anymore, therefore we don't, and we don't have the desire to do so. We are unable to tap into the deeper meaning and enjoyment of a text. Reading becomes like background music - we are aware it is playing, but we are not taking in the rhythms and musicality of it - and therefore our enjoyment is diminished. We are unable to distinguish the instruments, the lyrics, and thus we fail to appreciate what is playing. It is noise, no longer music.

There is also the finding that students approach reading digitally with more confidence - but an overconfidence, leading them to misunderstand what they are reading as they go at a faster pace and absorb the information in a shallower way, overestimating what they have

¹ Timothy Shanahan, Distinguished Professor Emeritus at the University of Illinois, Founding Director of the UIC Center for Literacy.

² Mangan, Walgermo, & Bronnack, 2013

understood from the online text. As Nicholas Carr wrote in *The Shallows: What the Internet is Doing to Our Brains*, 'once I was a scuba diver in the sea of words. Now I zip along the surface like a guy on a Jet Ski.'

There are also small differences going on in the brain depending on the type of text, the use of scrolling or not, the type of device, and other variables. For example, reading on paper as opposed to on a screen shows a significant difference in comprehension under timed conditions. (Educators be aware: reading on a screen showed weaker comprehension). Interestingly, there was a larger difference in comprehension for informational text as opposed to narrative text (again this has huge implications for schools, who may have thought the opposite - but in fact it is harder to comprehend an informational text on screen than on paper).

When we read deeply, we have purposeful focussed attention, with tiny pauses that allow the information to burrow into our deep memory. This burrowing allows the new information we are processing to connect to our deeply held background knowledge, analysing the new information for empirical truths, drawing inferences, creating understanding of different perspectives. Human beings aren't born to read. We don't do it if we aren't taught it - it isn't like walking. That means we have to build the brain circuit for it to function - we have to create those new neuron pathways otherwise we can't read.

Let's take this a step further. Wolf states that if today's children read only from screens, they may never learn deep reading in the first place - the brain's reading circuit may never be built.¹ If children don't make the neuron connections for deep reading - if their reading as preschoolers and in primary school doesn't allow for deep reading, then they won't build that capacity of neuron connectors to be able to do it. They won't be wired to be able to read deeply. And if they don't learn that skill by the age of 25 then they never will. Are we already seeing that beginning to happen - are our children and young adults not reading for pleasure because...they can't!

Is it already too late for a generation of children brought up with digital text all around them - on television, on their ipads, on their laptops, their phones and at school?

Whether the studies show conclusively that reading in print is inherently comprehended better than on-screen reading remains to be seen, but one thing is certain, as John Gabrieli, an MIT neuroscientist and expert on reading and the brain, points out. No studies show any benefits to screen reading on the brain so far. Let's read that again. No studies on screen reading have shown any benefits from it. So educational facilities have bought into the idea of laptops, Ipads and educational technology without really being shown benefits to literacy education other than convenience.

That's without even having addressed the massive amount of asynchronous interaction that children are growing up with. Leaving voice notes for each other, replying to snaps, texting and messaging are all asynchronous interactions. Haidt² points this out on more than one

¹ MIT Technology Review, April 2023

² Haidt, *The Anxious Generation*.

occasion, explaining that in order to develop empathic engagement, we need to be able to see each other's faces, we need to be able to converse synchronously and see each other in real time, preferably in real spaces, growing our community and finding common understanding. If we aren't developing our empathic skills, if we aren't interested in the other person's body language and expression, we are less likely to seek to read about other people and other cultures in narrative text either.

We're kidding ourselves if we say that technology was always a threat to reading. If we equate television with smartphones. Television did take children's attention away from books and was another source of pleasure during leisure time. But television wasn't generally used in schools, television executives didn't warn against their children watching television. The makers of television didn't need to whistleblow on their companies to explain how they were purposefully developing an addictive technology that was harmful to children in both the way it created a dopamine hit, but also in that it was rewiring the brain. App creators of Instagram have done just that.¹ Tim Cook, CEO of Apple warned in *The Guardian*, that there were some things he wouldn't allow if he had children: 'I don't want them on a social network.' Former Facebook exec, Chamath Palihapitiya revealed that his children 'aren't allowed to use that shit.' The Information publication surveyed its subscribers and found that Silicon Valley's children spend far less time on screens than the average American child.

One counterargument is that our children, those digital natives, will adapt to reading on screen, as the more tech savvy they are, the better adjusted their brains will be to reading online, but in fact the very opposite appears to be true. Digital reading not only diminishes comprehension ability², but research shows that the screen inferiority effect has increased over the past eighteen years, and that there are no discernible differences between age groups. In fact, the negative effects of screen reading become more severe as the presence of technology increases.

But digital text isn't going away. If anything, we are looking at something like the industrial revolution. This is a grand shift in our way of life that needs to be accommodated wisely. It is as worrying for us as when the Ancient Greeks worried that the transition to writing from an oral culture would destroy their society. That didn't happen, but we do need to think hard about what consequences this technological advance has for us in ways we hadn't realised.

We have to be savvier in how and when we use digital text. Short texts that demand a generalised comprehension are fine on screen, but if text is more intensive and the demands increase, then paper is better (across all surveys). We must also recognise that there are some advantages in e-text. We can take more novels when we travel, we can alter font sizes, read in the dark. Young children in America are using the app Lexia to learn to read; it clicks straight through to address a child's particular reading needs.

¹ Facebook whistleblower Frances Haugen released internal documents showing that Meta knew that Instagram was toxic for many teenagers.

² Salmerón, Vargas, Delgado & Baron, 2023

Not only does the digital landscape have to be navigated, it has to be taught to be navigated. We need to be able to search and navigate, read online critically, research and skip from one text to another. But these are different cognitive skills to those needed for deep reading and should be taught as such. As Maryanne Wolf explains, we need to be biliteral. We need to understand that both reading on paper and reading on screens are skills, but each are separate skills.

And perhaps the next generation of tech gurus can investigate the science and enhance digital reading to the extent that the text does enter deep memory and become deep reading. There has been a little success with this, in that Lauterman and Ackerman (2014) and Sidi et al (2017) studies both found that by using certain tools when reading online, such as writing keywords that summarize, or framing the task as central, they could eliminate some screen inferiority. But the majority of screen reading does have to change for this to happen, and the results are limited and inconclusive.

In the meantime, what can we do as a society to address the decline in reading for pleasure? To reverse it. What do we need to do to make it an essential skill that is absorbed from a young age and perpetuates throughout life - how can we make Gen Z and future generations deep readers for life?

Convince school leaders and parents that the best thing they can do for their children is to make 'reading to' them and reading independently in print protected parts of the primary school timetable every day. Enforced habit makes it more likely the children will increase fluency and comprehension and then are more likely to choose to read independently out of school, and to become deep readers. We need to go even further and see 'reading for pleasure' not just an optional extra for some fluent readers, but as a goal for all, as an embedded part of an academic curriculum. The benefits are boundless in ways that schools haven't yet grasped. For example, free reading is more efficient in teaching vocabulary than explicit instruction.

Convince all schools to ban smartphones until the age of 16, with huge attention paid to how other technologies are used (ipads and laptops), and what reading is done online. The reading neuron connections need to be treated like a muscle in the body. Once we've established them in a young child, we need to keep exercising them to keep them healthy and strong - we need to repeat the habit and pattern of deep reading, perhaps for twenty minutes a day, until the age of 25 when the brain is fully formed. By that stage, hopefully, we'll have enjoyed the muscle training so much that we're going to continue exercising it of our own free will - even maybe sometimes going for a marathon (reading Proust or Tolstoy!)

We could campaign for the government to make school libraries and librarians statutory with Ofsted inspectors including this as part of their criteria inspection.

Parents need educating on the benefits of reading for pleasure. We need to rethink our public spaces - can libraries make a comeback? Can we change the perception of the arts in society, pressing its importance not only economically but in terms of our mental states. Could books be seen as an essential resource, could academic institutions think hard about the texts they use - could full texts rather than extracts be the norm?

Above all, we need to show that reading fiction is essential for those seeking to work in the future technologies of AI and suchlike. It promotes the development of an open mind, which is critical for effective decision-making. University of Toronto researchers showed that those people who read fiction as opposed to essays were less inclined to need cognitive closure, i.e. the need to stick to their original decision despite new information coming to light. That's because stories don't always contain one answer, especially not all the way through. Stories give perspective, sometimes a shifting perspective, requiring the reader to take in the information slowly, change their mind, change course, and redirect sympathies. And defending a character is different to being defensive ourselves, we are more likely to explore their actions thoroughly. This is even borne out in children's literature - children like to read about *Horrid Henry* acting out in lieu of themselves. They can see the consequences, understand his motivations, learn the lessons without having to go through the process of bad behaviour and punishment themselves.

As things stand, I worry for the future. I'm not alone - more and more writers are looking at the lack of readership, the devaluing of their art. Are our younger generations in danger right now? Are their brains being rewired by their screen use as you read this paper? Will they ever forge the neuron pathways they need to understand text? Or is their attention so fragmented already, that an essay this size becomes obsolete as soon as it is written? TLDR.