

BBC Ideas Education, Development and Languages – What does reading on screens do to our brains?

Maryanne Wolf: There's nothing list natural than reading. Reading is in an acquired set of skills that literally changes the brain.

Natalie A Carter: Everyone should be reading books. Books are life experience. Books are knowledge books are community.

Ella Berthoud: Without books we wouldn't be human in the way that we are.

Maryanne Wolf: Literacy is one of the greatest inventions of the human species.

Ella Berthoud: First fire than reading, I'd say.

Maryanne Wolf: Reading is a blink of the eye in our evolutionary clock. It's only 6000 years old. And it began in such a simple way to mark how many wine vessels or sheep we have. And with the birth of alphabetic systems, we began to have an efficient means of remembering and storing knowledge. What reading does is exploit a principle of design in the human brain that allows it to make new connections between visual regions, language regions, regions from thought and emotion. It begins actually afresh in every new reader. It doesn't exist inside our heads. Each person who has to learn to read, has to create a brand new circuit in their brain.

Ella Berthoud: Reading a great story is so much more than entertainment. Reading actually has many therapeutic benefits. Bibliotherapy is the art of prescribing fiction to cure life's ailments. Claustrophobia, rage, exhaustion.. and the cure is Zorba the Greek.

Cressida Cowell: Reading brings three magical powers; creativity, intelligence, and empathy. Reading for the joy of it is one of the two key factors in the kids later economic success. You're more likely to not be in prison, to vote, to own your own home. All of these advantages and benefits happen as a result of literacy. Your brain goes into a meditative state, a physical process which slows your heartbeat and calms you down and reduces anxiety.

Maryanne Wolf: When we read at a surface level, just getting the information. When we read deeply, we use much more of our cerebral cortex. Deep reading means that we make analogies, we make inferences, which allows us to be truly critical, analytic, empathic human beings.

Chris Meade: We think of the book as the word, but the book is just a delivery mechanism.

Ella Berthoud: The novel is evolving. There's all sorts of amazing books which are being written deliberately to be read on phones

Natalie A Carter: These kind of new meetings they're given a voice to a new generation of voices who don't have to kind of get through a bottleneck. Stops us from having this kind of conditioning as to what is 'good writing'. And it actually allows people just to talk and share stories and to share experiences.

Melissa Cummings-Quarry: It doesn't matter the medium, it doesn't matter how you get it. It's a story.

Chris Meade: The book maybe provides this illusion that this is it. It's never been it. It's a way into the thought

Anne Mangen: We brought together scholars and scientists from over 30 countries to do research about the impact of digitization on reading, we found that there is what they call a screen inferiority. There is a lot that can be equally read on your smartphone, short news updates, but with something that is cognitively or emotionally challenging, reading on a screen leads to poorer reading comprehension than reading on paper.

Maryanne Wolf: The reality is it's not what or how much we read, but how we read that's really important. The very volume is having negative effects because to absorb that much there's a propensity towards skimming. The reading brain has a plastic circuitry. The circuit will reflect the characteristics of the medium with which it feeds. The characteristics of the digital are going to be reflected in the circuit.

Anne Mangen: If we don't train those capacities, we may eventually lose the ability to understand more complex content and also perhaps to engage and to imagine.

Chris Meade: The human imagination is a fantastic thing. We're very flexible. We find ways of doing what we want with the technology we've got.

Natalie A Carter: I think you'll see a lot more short story collections, and I think we'll see a lot more shorter books.

Cressida Cowell: I've changed the way that I write because children's attention span has got shorter. The chapters are short, it's incredibly visual, look shiny like a sweet.

Maryanne Wolf: Just as people could be bi and tri-lingual, my hope is that we will be developing a biliterate brain. We can discipline ourselves to choose the media that is best suited for what we're reading, so that we don't lose the extraordinary gift that reading has given our species.

Interviewer: So what would happen if we stopped reading books?

Melissa Cummings-Quarry: We'd die

Natalie A Carter: We'd die. We'd be so boring.