Can Reading Make You Smarter?

When I was eight years old, I still couldn't read. I remember my teacher Mrs Browning walking over to my desk and asking me to read a few sentences from a Dick and Jane book. She pointed to a word. "Tuh-hee," I said, trying to pronounce it. "The," she said, correcting me, and that's when it clicked – the moment when I learned to read the word "the".

Growing up in Teaneck, New Jersey, in the 1960s, I was what Mrs Browning called "slow". During a parent-teacher meeting, she told my mother: "Daniel is a slow learner." I sat during lunch in the gymnasium with the – forgive the term – dumb kids. I was grouped with them during reading and maths: the "slow group".

And then, a year later, I was rescued by *Spider-Man*. My best friend Dan, who was reading chapter books by kindergarten, had started reading *Spider-Man* and other comics with some other kid, and together they began drawing and writing their own comics. In response to this loathsome intruder's kidnapping of my best friend, I began reading comics, too, and then began scrawling and scribbling my own. Soon, Dan and I were happily spending every afternoon on our masterworks, while the interloper was never heard from again.

By age 11, I was getting straight As. Later in my teens, I took a college admissions course in the US, and scored the equivalent of 136 on an IQ test. So what happened there? Was Mrs Browning right – was I actually "slow" when I was eight – and did I somehow become smarter because I immersed myself in reading and writing comic books?

In part to answer that question, I spent three years interviewing psychologists and neuroscientists around the world, reviewing their studies and testing new methods they claim can increase intelligence. And while nobody would ever call reading a "new" method for improving the mind, recent scientific studies have confirmed that reading and intelligence have a relationship so close as to be symbiotic.

That goes for all three meanings of the word "intelligence" widely recognised by psychologist. First, there is "crystallised intelligence" – the potpourri of knowledge that fills your brain. When you learn how to ride a bicycle, or the name of a new friend, you are gaining not just information but potentially useful knowledge that, in aggregate, forms the backbone of your ability to navigate and thrive in the world. By adding to that storehouse, reading increases your crystallised intelligence. That explains why some IQ tests include vocabulary words, which generally serve as a reliable proxy of how clever you are.

But all of us know people with little "book knowledge" who are nonetheless sharp and insightful. "Fluid intelligence" is that ability to solve problems, understand things and detect meaningful patterns. Of course, you can read little or nothing at all and still be brilliant at "reading between the lines" of a conversation. But in today's world, fluid intelligence and reading generally go hand in hand. In fact, the increased emphasis on critical reading and writing skills in schools may partly explain why students perform, on average, about 20 points higher on IQ tests than in the early 20th century. The so-called [Flynn effect](http://en.wikipedia.org/wiki/Flynn_effect) is named after [James Flynn](https://www.theguardian.com/education/2007/jan/02/highereducationprofile.highereducation), a New Zealand professor who has devoted much of his career to studying the worldwide phenomena of increasing IQ scores. But if reading can increase fluid intelligence, the converse is also true: increased fluid intelligence also improves reading comprehension, according to studies by [Jason Chein](http://www.temple.edu/tunl/people.html)of Temple University in Philadelphia. He used "working memory" tasks that train people's ability to juggle and continually update multiple items of attention – to keep track of a moving dot, for instance, and recognise when it lands on a spot it occupied two, three or more moves ago. In papers published in scientific journals in 2010 and 2011, he showed that as both younger and older adults improved their performance on working-memory tasks, they were better able to comprehend reading material.

A third type of intelligence has gained widespread interest of late: "emotional intelligence", the ability to accurately read and respond to your own and others' feelings. It may seem odd to imagine that reading can improve your emotional intelligence. But in October, the journal Science published [an extraordinary study showing that reading literary fiction can improve people's theory of mind](https://www.theguardian.com/books/booksblog/2013/oct/08/literary-fiction-improves-empathy-study) (ToM) – their ability to understand others' mental states. [David Comer Kidd](http://www.newschool.edu/nssr/subpage.aspx?id=98620) and[Emanuele Castano](http://www.newschool.edu/nssr/faculty.aspx?id=16180), both of the New School for Social Research in New York, enlisted hundreds of participants online to read examples of either non-fiction, popular fiction or literary fiction, and then to take tests measuring the accuracy of their ToM. In five experiments, they showed that reading literary fiction led to better performance on tests of both emotional and cognitive ToM compared with reading non-fiction, popular fiction or nothing at all.

The literary fiction found to increase people's ToM included A*Chameleon*by [Anton Chekhov](https://www.theguardian.com/culture/chekhov), *The Runner* by [Don DeLillo](https://www.theguardian.com/books/dondelillo), and [*The Tiger's Wife*by Téa Obreht](https://www.theguardian.com/books/2011/mar/12/tigers-wife-tea-obreht-review). The study did, however, contain a glaring omission: it failed to measure the extraordinary impact of *Spider-Man* by that great literary genius, Stan Lee.