Attentional blink examined to aid struggling readers

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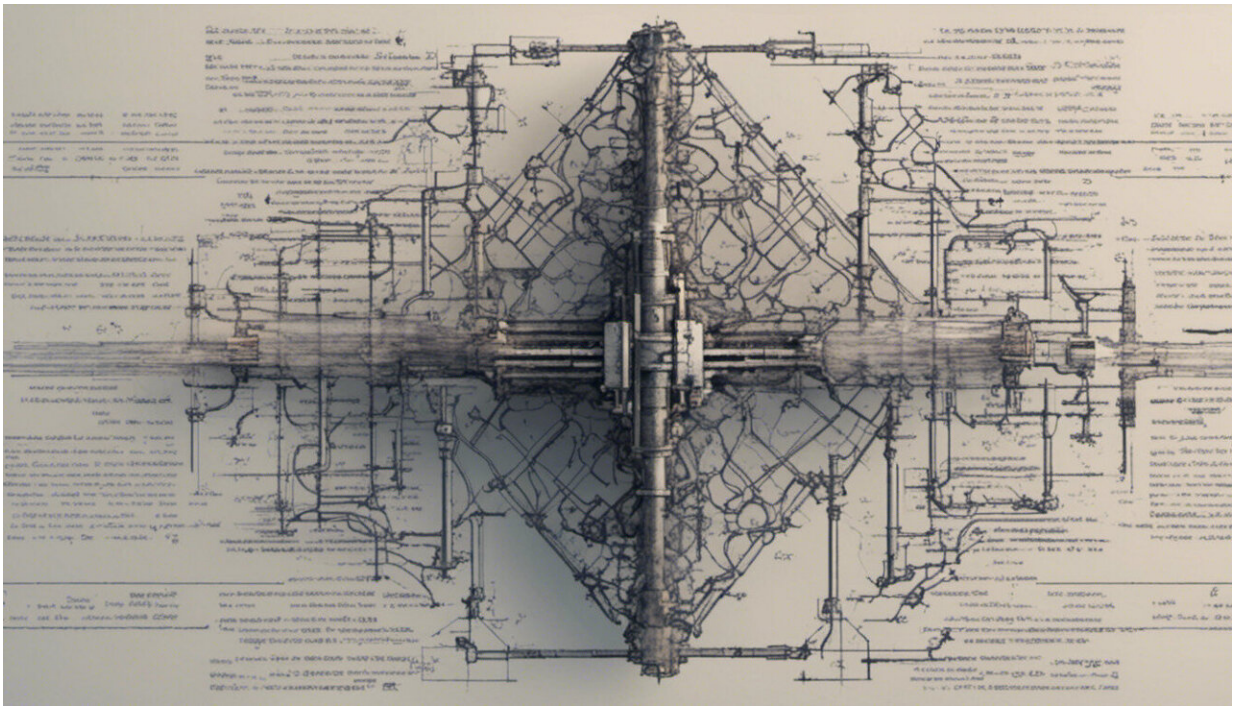

Credit: AI-generated image (disclaimer)

While you are reading this article, your brain is identifying letters, constructing sounds and recognising meaning, all within milliseconds… but what is going on behind the scenes?

Backstage, all of these processes are limited by the attentional blink, a

phenomenon whereby humans struggle to identify the second of two pieces of information when they are presented within 200–500ms of each other.

"It's not something you'd consciously recognise," Curtin University researcher Dr Mark Boyes says.

"We're talking very, very small windows of time."

The attentional blink is so short in fact, that when typically reading adults are presented with a second piece of information more than 700ms after the first, the effect disappears.

Previous research suggests the attentional blink is longer in adults diagnosed with a reading problem, and in developing readers and children, and that is what drives Dr Boyes' most recent research.

"We want to have more understanding in terms of the cognitive mechanisms behind the attentional blink, with the idea of having a better understanding of how these processes relate to reading," Dr Boyes says.

"Then, down the track, that may lead to targets for intervention, to help struggling readers, but it's a long way before we can do that."

Attentional blink related to phonemic decoding

To determine whether attentional blink was related to reading ability in typically reading adults, Dr Boyes and his team ran 65 typically reading university students through a series of tests to assess reading ability and non-verbal intelligence.

The tests measured students' reaction times when identifying randomly presented colours, letters, real words (sight reading) and nonsense words

(phonemic, or sound-based reading), as well as their ability to correctly select pictures to complete picture sets.

The final test measured the length of attentional blink each student experienced when identifying two target shapes presented in rapid succession.

"We found no association between attentional blink and sight word reading," Dr Boyes says.

"All the effects we found were on phonemic decoding; people with poorer phonemic decoding demonstrated longer attentional blinks."

This result suggests the cognitive processes devoted to constructing sounds after recognising letters may also be used to identify rapidly presented information.

Dr Boyes says they are beginning to understand how attention is important to these processes, but it is too early to make any claims about reading and reading difficulties, or to extrapolate to kids.

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