

# New research finds working memory is the key to early academic achievement

July 8 2014

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Working memory in children is linked strongly to reading and academic achievement, a new study from the University of Luxembourg and partner Universities from Brazil has shown. Moreover, this finding holds true regardless of socio-economic status. This suggests that children with learning difficulties might benefit from teaching methods that prevent working memory overload. The study was published recently in the scientific journal *Frontiers in Psychology*.

The study was conducted in Brazil on 106 children between 6 and 8 from a range of social backgrounds, with half living under the official [poverty line](#). Similar studies have been conducted in the English-speaking world, so it was interesting to see that the results were similar in this highly-unequal, Portuguese-speaking society.

The study sought to identify the cognitive skills underpinning learning success. Children were tested for IQ and so-called "executive functions", a set of cognitive processes that we use to control our thoughts and actions, including how we remember information, control our emotions, pay attention and shift between thoughts. These results were compared to attainment in reading, spelling, mathematics, language and science. The results show that a child's [working memory](#) skills - their ability to hold and work with information in mind - predicted success in all aspects of learning, regardless of IQ. Moreover, most children identified by their teachers as "poor readers" struggle with their working memory.

"Our findings suggest the importance of early screening and

intervention, especially in the context of poverty. At present, poor working memory is rarely identified by teachers," said project leader Dr. Pascale Engel de Abreu, Associate Professor at the University of Luxembourg "Poor literacy, low [academic achievement](#) and living in poverty create a mutually reinforcing cycle. There is a chance to break this by early identification of [children](#) with working memory problems and by helping them to acquire the mental tools which will enable them to learn," she added.

**More information:** Executive functioning and reading achievement in school: a study of Brazilian children assessed by their teachers as poor readers, [orbilu.uni.lu/handle/10993/16964](https://orbilu.uni.lu/handle/10993/16964)

Provided by University of Luxembourg

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