

Research shows boys and girls learn language differently

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Experts believe language uses both a mental dictionary and a mental grammar. The mental 'dictionary' stores sounds, words and common phrases, while mental 'grammar' involves the real-time composition of longer words and sentences. For example, making a longer word 'walked' from a smaller one 'walk'.

However, most research into understanding how these processes work has been carried out with adults.

"Most researchers agree that the way we use language in our minds involves both storing and real-time composition," said lead researcher Dr Cristina Dye, a specialist in child language development at Newcastle University. "But a lot of the specifics about how this happens are unclear, such as identifying exactly which parts of language are stored and which are composed.

"Most research on this topic has concentrated on adults and we wanted to see if studying children could help us learn more about these processes."

A test based around 29 irregular verbs and 29 regular verbs was presented to the young participants. Only verbs which would be known by eight-year-olds were used.

They were presented with two sentences. One featured the verb in the context of the sentence, with the second sentence containing a blank to allow the children to produce the past-tense form. For example: Every day I walk to school. Just like every day, yesterday I _____ to school.

The children were asked to produce the missing word as quickly and as accurately as possible and their response times were recorded. The results were then analysed to discover which words were stored or created in real-time.

Results showed girls were more likely to memorise words and phrases – use their mental dictionary - while boys used mental grammar - i.e assembled these from smaller parts - more often.

The findings could have implications in the way youngsters are taught in the classroom, believes Dr Dye, who is based in the Centre for Research

in Linguistics and Language Sciences.

She said: "What we found as we carried out the study was that girls were far more likely to remember forms like 'walked' while boys relied much more on their mental grammar to compose 'walked' from 'walk' and 'ed'. This fits in with previous research which has identified differences between the sexes when it comes to memorising facts and events, where girls also seem to have an advantage compared to boys.

"One interesting aside to this is that as girls often outperform boys at school, it could be that the curriculum is put together in a way which benefits the way girls learn. It may be worth further investigation to see if this is the case and if so, is there a way lessons could be changed so boys can get the most out of them too."

Dr Dye will be discussing aspects of the research at a conference, Grammar: Universals and Acquisitions, at Cambridge University on Monday 30 June.

More information: Dye CD, Walenski M, Prado EL, Mostofsky S, Ullman MT (2013) "Children's Computation of Complex Linguistic Forms: A Study of Frequency and Imageability Effects." *PLoS ONE* 8(9): e74683. [DOI: 10.1371/journal.pone.0074683](https://doi.org/10.1371/journal.pone.0074683)

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