

Helping children with autism and hyperlexia learn to understand what they read

10 September 2021



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Hyperlexia is a condition where preschool children display an intense early interest in letters in a way that is very advanced for their age. They can decode words accurately, but without understanding their meaning. It is most common among children with autism spectrum disorder (ASD)—with approximately 6–20% of children with autism demonstrating hyperlexia.

There is a lot of debate in the literature as to whether these [children](#) learn to read like their older, typically developing peers. Findings from an earlier McGill study indicated that children with autism and hyperlexia appear to be following their own, unique pathway towards literacy rather than developing [literacy skills](#) in the same way that typically developing children do when reading. This has implications for [reading instruction](#) in the early years.

The same researchers from the Department of Educational & Counselling Psychology at McGill University have now developed a tablet-based application designed to build on the children's strengths to help them improve their reading

[comprehension](#). It relies on parental support and involvement to help foster their children's reading skills. Though still in its early stages, the cohort of eight children with ASD and hyperlexia that took part in the 6-week intervention demonstrated significant gains in reading comprehension and listening comprehension.

What is the main purpose of your research?

Children with ASD and hyperlexia present with poor reading comprehension, despite a remarkable strength in early word-level reading and an intense interest in written material. However, without the understanding of words, early decoding of single-word level reading remains largely ineffective, and it is daunting for parents and teachers to know how to support their learning.

There are very few studies of this young population and there really was a need to understand and support their unique learning profile given reading comprehension and listening comprehension are so critical for children with ASD and hyperlexia who struggle with communication, social and academic skills. With the tablet application, we aimed to harness their special skills in early word reading to improve their reading comprehension, via word-picture matching. The study evaluated the efficacy of our reading intervention program that targets word-picture matching to improve oral language comprehension and reading comprehension. In this way, we can successfully design interventions that incorporate strengths and special interests to support learning.

How could this application help children with ASD and hyperlexia and their parents and/or teachers?

There are no existing programs that target reading comprehension for preschoolers with ASD and hyperlexia; this is the first program to successfully do so. Building on a child's strengths to help them

improve in areas that they find challenging, as in this type of intervention, can be both beneficial and empowering for them.

Early improvement in reading and listening comprehension stands to significantly affect other domains critical to academic and social success for children with ASD. This makes it much easier and more fun for both the child and the educator to work on areas that are difficult when they are focused on something they love doing and are good at.

Furthermore, reading comprehension has been typically addressed in later primary school for all children. Our studies suggests that both parents and educators should consider the unique learning needs of this group as different from typically developing children and could start working on [reading comprehension](#) with children with hyperlexia at a much earlier age, potentially when they are as young as three years old.

We want to make these findings and the intervention available to parents, clinicians and educators who work with young children with autism and hyperlexia. We are hoping to make the application [open source](#) to encourage users to contribute to the application.

More information: Dianne Macdonald et al, Early Reading Comprehension Intervention for Preschoolers with Autism Spectrum Disorder and Hyperlexia, *Journal of Autism and Developmental Disorders* (2021). [DOI: 10.1007/s10803-021-05057-x](#)

Provided by McGill University

APA citation: Helping children with autism and hyperlexia learn to understand what they read (2021, September 10) retrieved 1 October 2022 from <https://medicalxpress.com/news/2021-09-children-autism-hyperlexia.html>

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