

A Computerized Tool for Predicting Future Reading Abilities in Pre-Readers Children

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Abstract : Learning to read is a key topic of debate today, both in terms of its implications on school failure and illiteracy and regarding what are the best teaching methods to develop. It is estimated today that four to six percent of school-age children suffer from specific developmental disorders that impair learning. The findings from people with dyslexia and typically developing readers suggest that the problems children experience in learning to read are related to the preliterate skills that they bring with them from kindergarten. Most tools available to professionals are designed for the evaluation of child language problems. In comparison, there are very few tools for assessing the relations between visual skills and the process of learning to read. Recent literature reports that visual-motor skills and visual-spatial attention in preschoolers are important predictors of reading development — the main goal of this study aimed at improving screening for future reading difficulties in preschool children. We used a prospective, longitudinal approach where oculomotor processes (assessed with the DiagLECT test) were measured in pre-readers, and the impact of these skills on future reading development was explored. The dialect test specifically measures the online time taken to name numbers arranged irregularly in horizontal rows (horizontal time, HT), and the time taken to name numbers arranged in vertical columns (vertical time, VT). A total of 131 preschoolers took part in this study. At Time 0 (kindergarten), the mean VT, HT, errors were recorded. One year later, at Time 1, the reading level of the same children was evaluated. Firstly, this study allowed us to provide normative data for a standardized evaluation of the oculomotor skills in 5- and 6-year-old children. The data also revealed that 25% of our sample of preschoolers showed oculomotor impairments (without any clinical complaints). Finally, the results of this study assessed the validity of the DiagLECT test for predicting reading outcomes; the better a child's oculomotor skills are, the better his/her reading abilities will be.

Keywords : vision, attention, oculomotor processes, reading, preschoolers

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