

INFOGRAPHIC: Dislé: Intervention program model for children with dyslexia

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INTRODUCTION

The early years of schooling are essential for the development of learning skills, representing a critical period for identifying difficulties that may compromise a child's academic progress. Difficulties in keeping pace with peers and changes in behaviors such as reading and writing can serve as warning signs for this population. These signs may indicate the presence of learning disorders, such as dyslexia. Dyslexia is characterized by difficulties in accurate and fluent word recognition, decoding, and spelling, requiring thorough evaluation and appropriate interventions to mitigate its impacts on the educational process ^{1,2}.

Although the primary difficulties experienced by children with dyslexia are associated with reading and writing, these children also exhibit poor performance in several motor skills and capacities ³. Barela and colleagues ⁴ suggested that all these differences could be due to differences in how children with dyslexia integrate sensory cues into motor action, a sensory-motor integration impairment. One of the theories explaining developmental dyslexia suggests that cerebellar dysfunction impairs sensorimotor integration, affecting coordination and the automatization of cognitive skills such as reading ^{3,5}. Recent evidence shows that proprioceptive interventions enhancing sensorimotor processing improve reading in children with dyslexia ⁶.

Considering the recent evidence that sensory-motor integration might be related to poor performance in children with dyslexia, could a sensory-motor intervention program benefit these children? In this context, an intervention program was designed to promote sensorimotor activities with cognitive enhancement in children with dyslexia. This program was affectionately named "Dislé" and was implemented by the Laboratory of Movement Studies (LEM), Institute of Biosciences, UNESP, Rio Claro, as an outreach program.

"Dislé" is structured with motor activities containing different sensory and motor experiences and cognitive challenges. All the activities required the participation of everyone, and each child was encouraged to perform them at their pace in an active learning environment. The activities consisted in the combination of locomotor and object control fundamental skills, aiming to challenge motor coordination and postural control, and to provide sensory enhancement activities meshed with cognitive challenges. Each session day was structured with a warm-up (10 minutes); main part with 3 activities, each lasting about 10 minutes; and a cool-down (10 minutes). The activities in the main part of the session focused on the specific skill being developed (e.g., balance, object manipulation) or the combination of multiple skills (e.g., object control with the hands combined with dynamic balance, or dynamic balance with the restriction of a sensory information, such as vision). In addition to these combinations, activities also included moments of engagement with physical fitness and cognitive tasks (e.g., decision-making and strategic adjustments during activities).

After two years of implementation, children in the "Dislé" program showed significant improvement in reading performance and exhibited high levels of engagement and involvement with the proposed activities. Taken all together, the "Dislé" program seems to constitute an important tool for mitigating learning and behavioral difficulties experienced by children with dyslexia.

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