Neuropsychopedagogical Intervention in Reading and Writing: Evidence from a Randomized Trial with Active Control in Children with Learning Difficulties

Poster

Educación y Diplomacia científica - Education and Scientific Diplomacy

Alfred Sholl-Franco [1, 2], João Vitor Galo Esteves [1, 2], Aliny Carvalho Dematté [1, 2], Taís Carenzi [2], Filipe Meneguelli Bonone [2], Ianna Ayanna Marques de Abreu Sales Rêgo [2], Fabrício Bruno Cardoso [1, 2].

(1) Universidade Federal do Rio de Janeiro (UFRJ), Ilha do Fundão, Av. Carlos Chagas Filho, 373, Instituto de Biofísica Carlos Chagas Filho (IBCCF), Depto. Neurobiologia., Núcleo de Divulgação Científica e Ensino de Neurociências (NuDCEN), Sala G0-015, Bloco G, Rio de Janeiro, Brasil.
(2) Faculdade CENSUPEG, Santa Catarina, Laboratório de Inovações Educacionais e Estudos Neuropsicopedagógicos (LIEENP),, Joinville, Brasil.

asholl@biof.ufrj.br

Reading and writing difficulties, intensified in the post-COVID-19 pandemic context, have highlighted the need for evidence-based school interventions. This study evaluated the effects of an institutional neuropsychopedagogical intervention (INPp) on reading and writing skills in children with learning difficulties. A total of 1,230 children, aged 7 to 9 years (mean = 8.03), were randomly assigned to three groups: Group A, without intervention; Group B, submitted to INPp; and Group C, submitted to a pseudo-neuropsychopedagogical intervention (PINPp), serving as an active control. The INPp consisted of 12 activities conducted across 30 school-based sessions, each lasting 15 minutes, focusing on coding, decoding, attention, and self-regulation. Four instruments were administered at two assessment points, approximately three months apart: the Reading and Writing Screening Scale (ERLE), the Head-Toes-Knees-Shoulders protocol (HTKS), a reading comprehension assessment, and academic performance measures. Group B showed significant improvement across all indicators, with an 18% increase in ERLE scores compared to Group A and 14% compared to Group C ($p<0.01$; Cohen's $d>0.80$). Gains were also observed in HTKS

performance, reading comprehension, and academic achievement. Group C did not demonstrate consistent superiority over Group A. The findings suggest that the INPp showed significant efficacy in promoting reading, writing, and cognitive self-regulation skills.

Financiamiento:

This work was supported by the Organização Ciências e Cognição. J. V. G. Esteves and A. C. Dematté received scholarships from the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), Brazil.