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Motor Intervention with Constraints-Led Approach for Children with Developmental Delay

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This study investigated the effectiveness of an intensive motor intervention for children with Developmental Delay (DD), employing a Constraints-Led Approach (CLA). This methodology emphasizes manipulating individual, task, and environmental constraints to encourage learners to discover optimal movement solutions, rather than prescribing rigid movements. Nineteen children with DD (M age = 6.44 years) participated in a quasi-experimental design, allocated to intervention (n = 11) or control (n = 8) groups. The intervention involved 8 intensive 30-minute sessions, referencing the task protocols from the Motor Assessment Test for Children (MATCH; Tan & Lim, 2020). Accommodations and varied equipment were introduced as manipulating constraints. Gross Motor Skills (GMS) were assessed using MATCH protocols at pre- and post-intervention. While overall GMS showed no statistically significant improvement ($p > 0.05$) after 8 sessions, component-specific analyses revealed substantial gains within the intervention groups. Specifically, stability improved by 68% in the intervention groups versus a 28% regression in the control group. Object manipulation saw a remarkable 137% gain for intervention participants compared to 78% for controls. These findings suggest that even brief, targeted interventions, when guided by a CLA that fosters problem-solving, can effectively facilitate specific motor skill improvements in children with DD. This underscores the potential of CLA in optimizing intervention efficiency, warranting further investigation with larger samples.

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