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Developing Preschooler Motor Skills with iPLAY Exergaming System

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This study explored the effectiveness of the Interactive Physical Learning Activity for the Young (iPLAY) exergaming system in developing the gross motor skills (GMS) of preschoolers. Traditional GMS assessment and intervention often face challenges with engagement, objectivity, and data tracking, making comprehensive and effective programs difficult. iPLAY, an innovative digital platform, aims to address these limitations by leveraging interactive exergaming technology. In a quasi-experimental design, 93 preschoolers (Intervention: n = 44, 23 girls, 21 boys; mean age = 3.81 ± 1.02 years; Control: n = 49, 26 girls, 23 boys; mean age = 4.24 ± 1.00 years) participated with parental consent and child assent. The intervention group completed 20 sessions of iPLAY exergaming system over 7 weeks, while the control group received standard assessments only. Their GMS were measured using 10 task protocols from the Motor Assessment Test for Children (MATCH; Tan & Lim, 2020) at pre-, mid-, and post-intervention. Results showed significantly greater overall GMS improvement in the intervention group compared to the control group. Specifically, the intervention group demonstrated marked progress in stability and object manipulation, and notable gains in locomotion. These findings highlight iPLAY's potential as a novel, efficient, and engaging digital intervention to enhance GMS in early childhood, offering a contemporary approach to motor skill development and assessment.

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