

An Integrated Approach to Enhancing Executive Functions and School Readiness in Hong Kong Preschoolers: A Randomized Controlled Trial Study

The significance of fostering executive functions (EF) in early childhood lies in their crucial role in preparing children for school readiness (SR). EFs, incorporating attributes such as self-control, problem-solving, and goal-setting, are cornerstone elements to both scholastic achievements and socio-emotional development (Best et al., 2011; **Lau** et al., 2023; Li & **Lau**, 2019). The preschool years are a pivotal timeframe for EF maturity. Research has found that these skills promote expeditious development and malleability during this phase (Howard & Okely, 2015). However, current EF training programs often fall short in their efficacy because of their narrow focus and repetitive nature, leading to disengagement and reduced motivation in children (Scionti et al., 2020). To fill this research gap, the Principal Investigator (PI) has developed a video-based program involving parents and children that has demonstrated transient improvements in children's EF skills (**Lau** et al., under review; Wu, **Lau**, & Power., in press). This study elaborates on the PI's work, proposing an integrated parent-child program that features both EF training and SR activities to enhance the real-world applicability of EF skills and consolidate the lasting impact of the intervention.

The proposed program will deliver EF instruction and SR training over a span of 12 weeks. It has 3 major components: (1) *weekly video-based parent-child EF training* (The Camp - previously developed by the PI) at home, (2) *4 group-based parent training workshops* at the kindergarten, and (3) *weekly extension and applied activities* for parents and children to complete at home. A randomized controlled trial will be conducted with 220 children aged 5-6 years and their parents from 6 kindergartens in Hong Kong. Parent and teacher surveys, as well as child tasks, will be administered to evaluate EFs and SR. Data will be collected at 3 different times throughout the year: before, after, and 2 months following the intervention. A repeated measures Multivariate Analysis of Variance model (MANOVA) will be conducted on SPSS.

The study will generate empirical evidence on the effectiveness of this integrated program in escalating EFs and SR, which can be widely adopted by Hong Kong parents and teachers to enhance young children's SR and well-being. The findings will also pave the way for low-cost, tailored, optimized, and impactful programs regionally and internationally that prepare young children for formal school education, reducing parents' anxiety and alleviating the long-term societal burden.