



University  
of Victoria

Graduate Studies

Notice of the Final Oral Examination  
for the Degree of Master of Science

of

**BUSE BEDIR**

BA (University of Victoria, 2017)

**“Investigating the Efficacy of Attention and Working Memory Training  
for Preschoolers”**

Department of Psychology

Wednesday, September 25, 2019

12:30 P.M.

Clearihue Building

Room C118

Supervisory Committee:

Dr. Sarah Macoun, Department of Psychology, University of Victoria (Supervisor)

Dr. Catherine Costigan, Department of Psychology, UVic (Member)

Dr. Todd Milford, Department of Curriculum and Instruction, UVic (Outside Member)

External Examiner:

Dr. John Walsh, Department of Educational Psychology and Leadership Studies, UVic

Chair of Oral Examination:

Dr. Sylvia Pantaleo, Department of Curriculum and Instruction, UVic

## **Abstract**

The effectiveness of attention and working memory (A/WM) training programs in improving executive functions (EFs) is heavily debated. The objective of the current study was to evaluate the efficacy of a game-based process-specific cognitive intervention program (Dino Island; DI), on improving attention, working memory (WM), and pre-literacy skills in preschoolers. A secondary objective was to evaluate the feasibility of delivering DI intervention in community settings. Dino Island is an intervention program that consists of five hierarchically structured tasks that target attention and WM. The intervention also involves the teaching of metacognitive strategies to facilitate transfer effects to daily activities. The DI intervention was delivered to preschoolers (ages four to six years) during regular school days. Ten preschoolers were randomly assigned to either an active DI intervention group, or an educational games control group, with five participants in each group. All participants completed 12 hours of intervention over an eight to ten-week period. Children's attention, EF and school readiness was assessed pre and post intervention using cognitive measures, rating scales and interviews. Non-parametric test results found significant changes in working memory for the DI intervention group ( $p = .03$ ), however, results did not show significant gains in other abilities. A case study approach was then utilized to further explore outcomes for children in the DI intervention condition. The results suggest that DI training can potentially lead to gains in WM among preschool children, providing preliminary evidence of its efficacy within this age groups. DI is also feasible to be delivered within school settings during regular school hours.