UNLOCKING COGNITIVE POTENTIAL: THE IMPACT OF SHORT-TERM SECOND LANGUAGE TRAINING ON EXECUTIVE FUNCTION IN LOW-INCOME PRIMARY STUDENTS IN CHINA

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Differences in executive functions significantly impact on a wide range of outcomes. It is generally accepted that the developmental trajectory of executive functions can be modulated through experience. One such experience that has garnered significant attention is bilingualism. Growing evidence supports that the experience of managing multiple languages trains a domain-general ability that manifests as improved performance on tasks that assess separable executive functions. More recent work supports that higher levels of experience with a second language are associated with graded improvements in executive functions. However, little is known regarding how much additional language experience is needed to result in measurable improvement in executive function. To address this question, the present study investigated whether higher amounts of second language experience were associated with greater improvements in executive functions in Chinese primary school students with second language (i.e., English) proficiency. Participants completed a two-week summer teaching support program in which they received either 10 (Low Experience condition; n = 46) or 20 sessions (High Experience condition; n = 47) of English training. Groups did not differ across background variables nor measures of executive function at the pre-test. Participants in the High Experience condition exhibited faster overall reaction times on both the Attention Network Task and Number Stroop Task compared to the Low Experience condition. Results support that even short periods of language training can modulate executive functions in primary school students who are at the initial stage of English language learning.
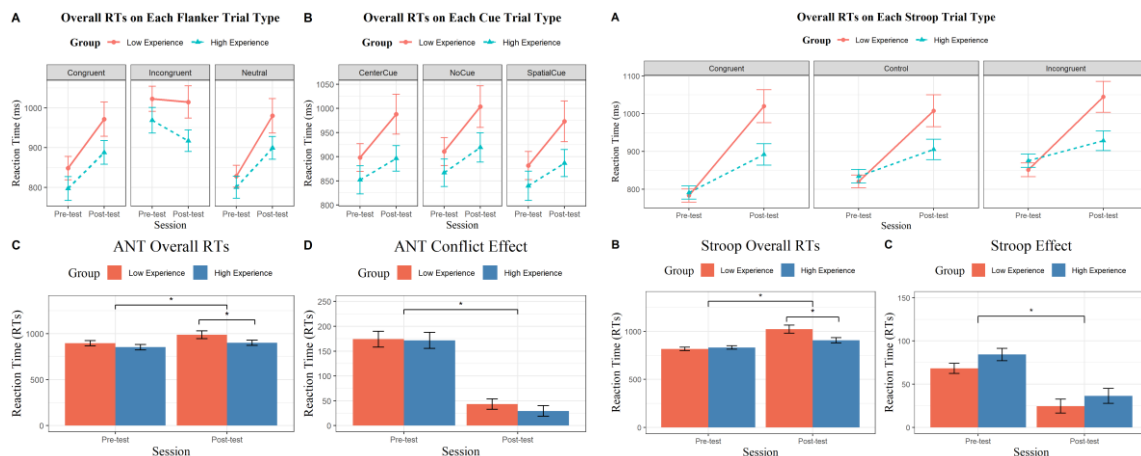
Figure 1. Left: Performance on the Attention Network Task (ANT) at pre and post-test sessions; Right: Performance on the Number Stroop Task at pre and post-test sessions. Error bars represent ±1SE.