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The effects of co-speech gestures in foreign language learning - an intervention study

Co-speech gestures (e.g., rocking a doll) have been employed in interventions with clinical populations to aid children with developmental disorders in acquiring and improving their communication skills, with studies generally reporting positive results despite considerable individual variation (cf. Wilken, 20211; Rudolph, 20182). This raises the question of whether gestures might also aid foreign language learning in typically developing kindergarten-age children. The present study conducted two small-scale week-long interventions in a morning circle format in two local kindergartens to investigate whether 4-6-year-olds ($M = 5.38$; $n = 25$; 20 female) show enhanced English vocabulary learning when target words are accompanied by co-speech gestures. To test vocabulary learning, we conducted two individual posttest sessions on the last intervention day and 7-10 days later. Children completed a two-alternative forced-choice task by pointing to one of two pictures presented in a ring binder. Preliminary analyses indicate that children in both conditions learned significantly more English words than expected by chance, suggesting successful vocabulary acquisition following the intervention ($t_{\text{gesture}} = 12.3$, 95% CI [0.77, Inf], $p < .001$; $t_{\text{control}} = 5.6$, 95% CI [0.67, Inf], $p < .001$). Contrary to expectations, no evidence for an immediate advantage of gesture-supported learning emerged in the first posttest ($t = -1.3$, 95% CI [-0.17, 0.04], $p = .20$). Interpretation of the current findings might, however, be biased by substantial individual differences in parental SES and baseline German proficiency. Data collection for a delayed posttest is currently ongoing and will help determine whether gesture-supported learning benefits emerge in long-term memory. Future research should investigate which characteristics of gestures (e.g., gesture iconicity) facilitate vocabulary acquisition. Such findings could enable practitioners to design effective, low-resource intervention programs that enhance vocabulary learning.