The input-output relationship: Understanding the link between phonological memory and speech motor control

M.I. Grigos, C. Reuterskiöld, N. Erwin

Phonological awareness and phonological working memory are both components of phonological processing. An association between phonological awareness and reading skills in children has been well documented. Phonological working memory skills increase with age and are commonly measured with non-word repetition. Previous research has shown a relationship between a child's chronological age, articulation skills and phonological working memory. Few studies, however, have examined the relationship between the motor skills required for speech production and the complexity of phonological tasks. The present study examined the link between articulator movement, phonological processing and reading skills in five and eight year old children. The following research questions were addressed: 1) Is there a correlation between articulator movement patterns and different levels of phonological processing skills (phonological awareness and phonological working memory)? 2) Is there a relationship between articulator movement changes and decoding skills during reading? 3) Is there a relationship between chronological age, articulator movement and phonological processing skills? Preliminary findings showed greater articulator movement variability in non-word productions that increased in syllable length. Changes in variability with increased syllable length were significant in the five year olds but not the eight year olds. These early findings support a relationship between speech motor control and phonological processing in children.