The Effect of Phonological Short-Term Memory on L2 Vocabulary Development in L1 Persian Learners with Down Syndrome

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In this study, the influence of phonological short-term memory on English language vocabulary development in Persian learners with Down syndrome was investigated. Eight female subjects with Down syndrome between the ages of 17 and 22 with the IQ of 50-70, participated in this study. This study was carried out based on Baddeleys' model of working memory (2000). Participants' phonological short-term memory and their ability in learning L2 vocabularies were examined. Two measures were used in testing the participants' phonological short-term memory: a word and a digit span test. The participants revealed particularly poor performance on phonological short-term memory tests. Seven concrete one-syllable and five concrete two-syllable English words were taught via presenting relevant photos during five sessions. An immediate and a delayed recognition and production post-test were used to measure the participants' ability in L2 vocabulary development. Finally, the data were analyzed using statistical package for social sciences (SPSS) software. The results of this study indicated that the individuals with Down syndrome were able to learn L2 vocabularies. However, there were not any significant correlations between measures of phonological short-term memory and those of L2 vocabulary development. This suggests that the participants may not have employed the same kind of cognitive resources in the measures of phonological short-term memory and L2 vocabulary development. The lack of correlations between these two variables could be due to the participants' use of other cognitive resources. This provides further support for the idea that with multiple abilities in working...
memory, individuals make up for weaknesses in some areas by using other strengths. Key words: Phonological short-term memory, Down syndrome, L2 vocabulary development, Word span test, Digit span test