

THE RELATIONSHIP BETWEEN SPEECH PERCEPTION AND SPEECH COMPREHENSION IN FIRST AND SECOND GRADE

Renáta Kiss *, Ágnes Hódi **

* MTA-SZTE Research Group on the Development of Competencies

** University of Szeged, Juhász Gyula Faculty of Education

Keywords: components of speech perception; speech comprehension; elementary school children

Children may experience difficulties in achieving academic success for several reasons. However, in many cases the disfunctional nature of one or more cognitive processes of first language acquisition are the impediments to learning and progress (Gósy, 2009). Speech processing plays a key role in language development. The psycholinguistic theoretical model for speech processing consists of two interdependent components: speech perception and speech comprehension (Astheimer, Berkes & Bialystok, 2015). Speech processing consists of three levels operating hierarchically in childhood (acoustic, phonetic, phonological). These levels form the basic components of phonological awareness (PA) which refers to a sensitivity to the sound structure of oral language. The second component of speech processing, comprehension, represents a more complex stage in the model. The model implies a hierarchical structure between the levels; however, no empirical studies have been conducted yet to examine the extent these variables are related. Therefore, the aim of this study is to examine the relationship between PA achievement and speech comprehension. 1st and 2nd grade elementary school students took part in the study ($N_{\text{Grade1}}=99$; $N_{\text{Grade2}}=86$). A phonological awareness test aiming at measuring the syllable (9 items) and the phoneme level (18 items) was administered to measure the phonological component of speech perception and 15 items of the Hungarian Token Test (TT) (Pléh et al., 2002) was used to assess students' speech comprehension. Data collection took place in 2014 in the schools by means of the eDia platform with tablets and headphones. In 1st and 2nd grade correlations were found between the TT and the phoneme identification subtest ($r_{1\text{stGraders}}=.35$ $p<.01$, $r_{2\text{ndGraders}}=.35$ $p<.01$) and between the TT and the syllable identification subtests ($r_{1\text{stGraders}}=.29$ $p<.01$, $r_{2\text{ndGraders}}=.39$ $p<.01$). 1st graders' PA achievement explains 14.8% of the TT performance ($F=16.81$ $p<.01$), in 2nd grade this value is 16,4% ($F=16.53$ $p<.01$). To examine the extent of interdependency between the two study variables in the speech processing model, we also compared students' performance between the two subtests. We found that only 30.3% of the 1st Graders and 38.3% of the 2nd graders have better performance in PA test than in TT. Our work is based on a theoretical model of speech perception, which claims that an individual should have an optimal PA capacity in order to be able to make sense of speech. Findings provide evidence that there is a relationship between students' speech perception measured by a PA test and speech comprehension skills measured by TT. Nevertheless, the relationship is not as straightforward and hierarchical as the theoretical model suggests. Results imply that other skills also play a key role in speech processing and speech perception, and comprehension develop parallelly rather than sequentially.

The research was funded by the Hungarian Scientific Research Grant (project ID: OTKA K115497).