POSSIBILITIES OF TECHNOLOGY-BASED ASSESSMENT IN KINDERGARTEN AND EARLY SCHOOL AGE

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Many studies highlighted the importance of the preschool period and the smooth preschool-to-school transition in later school achievements (Tymms et al., 2009). For example, phonological awareness is one of the most significant predictors of later reading performance (*Blomert* & *Csépe*, 2012). There are many instruments available in order to monitor children's progress in different domains. However, the everyday use of these tools can be problematic due to the time and human resources required to administer and score the tests. Technology may represent a major step towards making assessments more affordable in this early period of child development (*Csapó*, *Molnár*, & *Nagy*, 2014). In the current research we (1) explore the possibilities of technology-based assessment from lower kindergarten groups to second year in school (age 4-8) with our newly constructed online instrument and (2) analyse the development of phoneme and syllable identification skills in preschool-to-school transition. 578 children participated in our study in four groups: kindergarten children from lower (LKG, 3-4 years, N=192) and upper kindergarten groups (UKG, 5-6 years, N=201) and primary school students from the first (N=99) and the second grade (N=86). The phoneme and syllable identification assessment tool consisted of 27 items. The test was delivered by the eDia online assessment system (*Molnár* & *Csapó*, 2013) using touchscreen tablets. Children could listen to the instructions via headphones. To give their answers, participants had to choose between two or three options within the items and pick the chosen solution by tapping the touchscreen. The test proved to be reliable (Cronbach's alpha=.87). The one-way ANOVA test showed significant effects on students' achievements between different age groups [$F_{(3, 510)}$=192.88 p<.01]. The Dunnett T3 test showed significant differences between the three groups of lower and upper kindergarten and first grade students (p<.01; M_{LKG}=44.85%, SD_{LKG}=13.23%, M_{UKG}=50.65%, SD_{UKG}=12.78%, $M_{1stgrade}$=74.71%, $SD_{1stgrade}$=15.79%, $M_{2ndgrade}$=79.97%, $SD_{2ndgrade}$=15.85%). The largest difference can be noticed between the UKG and the first grade students, indicating the effect of schooling on phoneme and syllable identification skills. The study has demonstrated the applicability of technology-based assessment in kindergarten and early years of schooling. Our instrument can be used effectively for monitoring children's progress and diagnosing children's deficiency in phoneme and syllable identification skills. The advantages of technology-based assessment, such as automated data administration and scoring, make the tool suitable for everyday use and large-scale assessments. However, to be able to exploit these advantages an appropriate level of infrastructure (such as large number of ICT tools, high speed internet connection, etc.) is essential. This condition may not be met in every institution, especially not in kindergartens.

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