

## TECHNOLOGY-BASED ASSESSMENTS

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### DEVELOPING WORD RECOGNITION SKILLS WITH AN ASSESSMENT-BASED, PERSONALIZED ONLINE INSTRUCTIONAL SYSTEM

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*Keywords:* computer-based testing; online instructional system; word recognition skill

Technology offers new opportunities not only for assessment, but also for instructional and developmental processes in education (Bill and Melinda Gates Foundation, 2015; Fullan & Langworthy, 2014). Computer-based assessment has now become mainstream. The main challenge currently lies in shifting assessment paradigms and making the transition from efficient testing to personalized learning with the goal of supporting the personalisation of students' learning (Redecker & Johannessen, 2013). This theoretical model has been used in the development of a complex online system which merges learning and assessment environments by providing personalised feedback and continuously monitored tutoring with this goal in mind. The aim of this project was to test the efficacy of a complex assessment-based, personalised and differentiated online instructional system in the field of word recognition skills in primary education. The sample was drawn from third- to sixth-grade students (N=163). The eDia system provided the technological basis for this integrated assessment and learning platform. The schools' own computer facilities were used for data collection. Students had the opportunity to learn and practise identifying the most frequent 5000 colloquial Hungarian words from four different perspectives of word recognition (headwords, inflected words, synonyms and word meaning) with instant feedback messaging on their progress. The personalized complex system tailored the tasks for the students based on their previous answers and achievement. Results indicated adequate reliabilities both at the entire system level (Cronbach's  $\alpha=.91$ ) and at the individual dimension levels (.75, .84, .78, .85). The difficulty parameters for the items were distributed along a wide range on the ability scale (-19 to 14), so the system proved to be suitable for students with varied word recognition skills. There was a statistically significant difference between results with (M=90.8%, SD=5.4%) and without the learning system (M=81.5%, SD=6.3%;  $t=-33.89$ ,  $p<0.01$ ). Further, Cohen's effect size value ( $d=1.53$ ,  $r=.69$ ) also suggested a high practical significance for the integrated approach and system. The study confirms that this complex, assessment-based personalized online instructional system can be used effectively and reliably to measure and enhance third- to sixth-graders' word recognition skills. The integrated assessment allows learners to be constantly monitored and guided by the electronic environment, thus providing instant and valid feedback both to students and teachers about the learning process through tailored tasks.

*This study was funded by OTKA K115497.*