

EXAMINING THE RELATIONSHIP BETWEEN THE DEVELOPMENT OF STUDENTS' READING IN DIFFERENT TEXT FORMATS AND THE BASIC COGNITIVE COMPONENTS OF READING

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Keywords: reading development; cognitive components; text formats

There are three cognitive elements which play an important role in reading development: phonological awareness, letter-sound correspondence and rapid automatized naming (Blomert and Csépe, 2012). Previous research has already explored the relationship between these skills and reading development (Nation and Snowling, 2004). These studies measured students' reading skills by means of continuous texts. In the meanwhile, in order to provide a full coverage of the domain, frameworks of large-scale assessment programs are extended to understanding non-continuous texts as well. However, there is scant literature on the relationship between students' development in reading different text formats and the basic cognitive components of reading. Therefore, the aim of this pilot study is to explore the relationship between students' reading developmental trajectory along different text formats and phonological awareness, letter-speech sound processing and perception and identification of orthographic patterns from Grade 1 to 4. This paper, which aims at presenting the first findings, involves a new approach: reading skills as well as the basic cognitive components of reading are measured by means of a computer-based assessment platform, eDia.

Students (N=58) completed a reading literacy test comprising one continuous, one mixed and one non-continuous text (Cronbach's $\alpha=.71$) along with a test battery measuring the basic cognitive components of reading (Cronbach's $\alpha=.77$) in Grade 4. Data show that fourth graders performed well in all tests ($M_{\text{Reading}}=85.88\%$, $SD_{\text{Reading}}=7.66\%$; $M_{\text{Cognitive}}=90.54\%$, $SD_{\text{Cognitive}}=5.70\%$). Results show that there is a significant relationship between students' overall reading performance and syllable segmentation ($r=.47$, $p<.01$) and perception and identification of letter patterns ($r=.29$, $p<.05$). Other subtests of the cognitive test battery do not have a marked influence on students' reading comprehension. There are also significant correlations between test scores in the three reading subtests representing different text formats and syllable segmentation ($r_{\text{cont}}=.27$, $p<.05$; $r_{\text{mixed}}=.42$, $p<.05$; $r_{\text{non-con}}=.37$, $p<.05$). Phoneme identification only showed a relationship with reading a mixed text ($r=.37$, $p<.01$). Regression analysis revealed that altogether the cognitive components account for 30% in the variance of students' reading performance, out of which 19.54% is constituted by syllable segmentation. Data show a similar picture in case of the non-continuous text. However, performance on the continuous text was not significantly affected by the cognitive variables. In the case of the mixed text syllable segmentation and phoneme identification shared the explanatory strength of 13.15% and 12.90%, subsequently.

Data yielded evidence that the impact of phonological awareness varies depending on the text format. Further results will help to examine the shift in dynamics in the development of the above variables over time.

This research was supported by the European Union and the State of Hungary, co-financed by the European Social Fund in the framework of TÁMOP 3.1.9-11/1-2012-0001 'Developing Diagnostic Assessments' project.