THE IMPACT OF ICT USE ON HUNGARIAN LOWER ELEMENTARY SCHOOL STUDENTS' ONLINE READING ACHIEVEMENT

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Educational assessment has been characterized by an increasing interest towards computerized assessment and its potentials. This tendency is mirrored by large-scale student assessment programs in reading run under the auspices of different international organizations. The shift from paper-and-pencil to computers has given rise to many new studies concerning the impact of the new testing medium and related skills. We have several data in this domain, but findings on lower elementary grade populations are scarce. Therefore, we addressed the following research questions. (1) How do students perform in reading in an electronic environment in the first four years of elementary education? (2) How can students' out of school ICT resources and ICT engagement be characterized? (3) To what extent does students' out of school ICT engagement influence students' reading achievement? The online reading comprehension test (64 items; Cronbach's alpha=.89) was administered to 205 students from grades 1 to 4 in 2014. Students also filled out a background questionnaire (78 items) aiming at gathering data on students' ICT access at home, frequency and types of ICT engagement. Data show that the first graders achieved significantly (F=76.75 p<.01) lower score in reading (M=54.14% SD=13.98%) than their peers in upper grades (M_{Grade2}=72.88%, SD=9.66%; M_{Grade3}=80.23%, SD=9.47; M_{Grade4}=83.58%, SD=8.59%). Regarding ICT as economic capital, findings yield evidence that in our sample every student has a computer with an internet access at home. Regarding length of computer use, most students (48.3%) have used the computer for 1-3 years or longer (23.4%). Data on the specific activities carried out on computer out of school and their frequency show that most of the first graders do not use the computer to solve their homework (80.9%), visit social media sites (95.7%), write (93.6%) and read emails (93.6%). However, by the end of fourth grade these proportions change notably. 30.8% visit social sites once or twice a week, 32.7% read and 34.7% write emails with similar frequency. The frequency of the computer/internet use shows a similar pattern. 40% of first graders use the computer once or twice a week, while 36.5% of fourth graders use it almost every day. There was a significant correlation between students' length of computer use measured in years and reading achievement (ρ=.19 p<.01). The length of computer use has an impact on reading performance (2.9%). Students who have been using computers for 4-5 years outperformed students who have been using computers for less than a year (F=3.08 p<.01). Nevertheless, we did not find significant associations between any other ICT variable and reading. In sum, our findings lend support to the fact that computer use may influence online reading performance. Students' computer engagement increases and gets more frequent as they get more mature, which in turn may contribute to reading more efficiently in a computerized environment.