INTRODUCING COMPUTER-BASED ASSESSMENT AMONG 2ND TO 4TH GRADE STUDENTS IN PALESTINE

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Mousa, Mojahed *; Molnár Gyöngyvér **

** Doctoral School of Education, University of Szeged,*

*** Institute of Education, University of Szeged, MTA-SZTE Research Group on Learning and Instruction*

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Computer-based assessment (CBA) is spreading worldwide; educational systems are in favor of applying it (Thurlow et al., 2010). Its applicability still raises several questions if it is to assess pupils at the beginning of schooling (Csapó et al., 2014). This study presents and tests the applicability of computer-based testing in Palestine by assessing second (N=61), third (N=78) and fourth (N=54) graders' (age 7–9) inductive reasoning skills. It aims to discover background factors influencing the applicability of CBA with Palestinian pupils and test gender differences regarding inductive reasoning. The test consisted of 33 multiple-choice and figural items, which have been adapted from Hungarian (Molnár et al., 2013; Pásztor et al., 2017) to standard simplified Arabic. The test comprised two subtests: figural series and figural analogies. Instructions were given online, using headsets. Automatic scoring was used and instant feedback was provided at the end of the test. The online data collection was carried out via the eDia platform (Molnár, 2015) using the schools' infrastructure. Test completion lasted approximately 45 minutes. The reliability coefficient of the test was high both on test (α=.90) and subtest level (α_{an}=.85, α_{ser}=.83) and in all grades (α=.86, .93, and .86, respectively). All students could complete the test within the time allocated. Time on task analyses indicated that students spent most of the time with solving the first three items (M=42.3 sec) and solving the last item (114.7 sec), while on average they spent only 6 seconds each solving all the other items. There was a small, but negative and significant correlation (r=-.221) detectable between achievement and time spent on test. Post hoc comparisons using the Tukey's b test indicated that the mean achievement of second graders was significantly lower than that of the third and fourth graders (M_{Gr2}=41.48%, SD_{Gr2}=19.79; M_{Gr3}=57.65, SD_{Gr3}=26.04; M_{Gr4}=63.07, SD_{Gr4}=18.93; $F_{(2, 190)}$=15.09, p<.001). There were no significant achievement differences noticed between third and fourth graders, and there were no significant gender differences across all grades (t=-1.71, -.78, -1.70; p>.05). Low school achievers achieved significantly lower and high school achievers achieved significantly higher on the test than average achievers in all grades (F=95.34, 166.17, 129.01; in all cases p<.001). The bivariate correlation test indicated a strong relationship between school achievement and the developmental level of inductive reasoning in all grades (r=.087, .899, .913; p<.001). That is, Palestinian students' school achievements indicate the students' level of inductive reasoning skills. The enhancement of inductive reasoning has already been included in the Palestinian school curriculum, and its effects are visible in the study. Results suggest that introducing and using computer-based testing in the Palestinian schools at early age of schooling could be helpful regardless of gender and level of inductive reasoning skills.

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