



Paper Innovative Assessment Technologies in Educational Games Designed for Integrating Assessment into Teaching.

11h-12h30: Main conference room - Olympia Bourse Ballroom

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Technology offers a great deal of new opportunities in educational assessment and vitalizes testing situation by allowing innovative task presentation, including multimedia, which increases motivation. Instead of providing single indicators, such as a test score, technology-based assessment may produce rich, contextualized data sets, which supports the transition from single testing to complex systems of assessments. The purpose of this pilot study is to investigate the opportunities and effectiveness of applying educational games and embedded innovative assessment technologies to improve students' reasoning skills. First and second grade (age 6 to 8) students constituted the experimental group ($n=38$), whereas the control group consisted of 137 students. The effectiveness of the training was measured with an inductive reasoning test, comprising 37 figural, non-verbal items (Cronbach $\alpha=.87$). Beside test-based data collection, innovative assessment technologies are explored by logging metadata, such as facial expressions and head movement (captured by web camera). There was no significant change in performance between pre- and post-test in the control group ($t=1.44, p>.05$), while the experimental group managed to achieve significant development in the experimental period ($t=-10.65, p<.00$), significantly outperforming the control group by more than one standard deviation on the post-test. The effect size of the training program was $d=.87$ ($p<.01$). The most frequent facial expressions were those of surprise (31%), happiness (24%) and anger (16%) during the training. Disgust (7%), fear (3%) and sadness (1%) were less frequent. No significant differences were found between genders with regard to the distribution of the different expressed emotions. The distributions of the facial expressions did not show significant relationships with level of reasoning skills. Our findings provided further empirical evidence that innovative assessment technology gives the possibility to integrate assessment into teaching by giving proper assessment tools to monitor both cognitive (e.g. reasoning) and affective (motivation, interest, boredom) processes.

Paper Comparing different item-types in paper-based and computerized environment.

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László Hülber

Altering the measuring valuation processes of technologically based results is not only modifying the medium but the CBA provides such possibilities - compared to the PB testing which can reform the whole measuring valuation process. For responsible alteration the media effect has to be identified with regards of (1) sample, (2) test characteristics, (3) technical parameters. My objective was to separate those mathematic erudition fielded items which are primarily responsible