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Move your body and learn math! The effect of motor involvement in computer cognitive training on basic mathematical abilities in case of primary school children.

Abstract

Studies confirm the benefits of computer cognitive and cognitive-motor training on the mathematical abilities. We examined the effect of such types of training on number comparison and mental number line processing with the use of computer game “Kalkulilo”. Eighty-eight participants were divided into 3 groups: the group training with “Kalkulilo” on laptop, group training with “Kalkulilo” and Kinect sensor and group of passive controls. Training took 5h and was divided into 10 sessions. The results indicate that training improves the accuracy of number line estimation and reaction time in non-symbolic number comparison in trained groups. This effect is particularly pronounced in the cognitive-motor training group, which suggests that this type of training is more effective than standard one (with computer). Therefore, we conclude that “Kalkulilo” may be a valuable tool not only in math education but also in overcoming the deficits observed in dyscalculia, especially when used with Kinect sensor.