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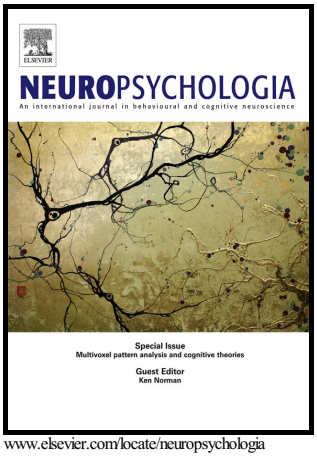

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ACCEPTED MANUSCRIPT

Coaching positively influences the effects of working memory training on visual working memory as well as mathematical ability

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Abstract

The goal of the present study was to test whether the amount of coaching influenced the results of working memory training on both visual and verbal working memory. Additionally, the effects of the working memory training on the amount of progress after specific training in mathematics were evaluated. In this study, 23 children between 9 and 12 years of age with both attentional and mathematical difficulties participated in a working memory training program with a high amount of coaching, while another 25 children received no working memory training. Results of these groups were compared to 21 children who completed the training with a lower amount of coaching. The quality of working memory, as well as mathematic skills, were measured three times using untrained transfer tasks. Bayesian statistics were used to test informative hypotheses. After receiving working memory training, the highly coached group performed better than the group that received less coaching on visual working memory and mathematics, but not on verbal working memory. The highly coached group retained their advantage in mathematics, even though the effect on visual working memory decreased. However, no added effect of working memory training was found on the learning curve during mathematical training. Moreover, the less-coached group was outperformed by the group that did not receive working memory training, both in visual working memory

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