

Interactivity, Stereotype threat, and Working memory

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Abstract: The purpose of the current study was to investigate the role of interactivity (the use of pen and paper) in defusing the impact of stereotype threat on difficult mental arithmetic tasks, covering all four operations of mathematics. Eighty-four 16-year-old girls from secondary schools in South East England (UK) participated in this study. Participants carried out (in an educational setting) difficult, multi-digit mental arithmetic tasks in a stereotype threat or control condition, crossed with interactivity or no interactivity. The primary dependent variables were the overall performance of the participants in accuracy, latency to solution, working memory, and mathematics anxiety. Increased interactivity enhanced mental arithmetic performance. Girls in the stereotype condition performed worse in the working memory test than the participants in the control condition. However, there was no causal role of working memory in reduced mathematics performance under stereotype threat. Reasons for this finding and recommendations for future studies are discussed.