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Effects of observing and making movements on learning

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Abstract

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EFFECTS OF OBSERVING AND MAKING MOVEMENTS ON LEARNING

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While vicarious learning has been addressed in various ways by researchers and practitioners under the cognitive load theory framework, we know little about the efficacy of movement on improving task performance. This study explored the effect of being involved in movement on performance. We compared measures of task performance when participants observed an interactive task (observe the movement) versus doing the interaction (doing the movement) themselves. An experimental study was conducted using CABRI software (an interactive geometric board), with a geometric problem. The task was moving or observing the movement of a figure and recognising the changes of the measurement and/or shape of the figure while the mathematical properties of the figure are still preserved. A total of 40 participants were randomly allocated to two groups; 20 in 'observing the movement' and 20 in 'doing the movement'. Significant results favoured 'doing the movement' group over 'observing the movement' group. We found support for the hypothesis that being involved in the movement enhances performance more than observing the movement; the benefit of being involved in the movement appeared to be generally robust during task performance, however, there might be some evidence of distracting information when 'observing the movement', as learners have the opportunity of focusing on other irrelevant details (e.g., teacher's voice, salient but irrelevant objects present in the classroom or on the screen) that impose load on their memory and thus may reduce their performance.