

# **Supporting metacognitive monitoring in mathematics learning for young people with autism spectrum disorder: A classroom-based study**

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Previous research suggests that pupils with autism spectrum disorder (ASD) can have difficulties reflecting on their goals and recognising where and when they have made mistakes, which results in problems adapting their learning strategies accordingly. The aim of the current research was to test new computer-based support for young people with ASD who were learning mathematics. The 'Maths Challenge' computer program was developed for this purpose. The aim was to accrue as many points as possible, with more points available for harder questions. The Maths Challenge was structured in a manner which required the learner to reflect on their goals, intentions and performance before and after answering each question in order to regulate their strategy accordingly. They did this by negotiating with the system to increase or decrease (or keep the same) the level of difficulty (and potential points available) for the questions. Forty secondary school children with ASD and 95 typically developing secondary school learners completed the Maths Challenge in either a 'Feedback condition' (where they received support for monitoring the accuracy of their answers, goal reminders and strategy support) or a 'No Feedback condition' (where no support was provided). Contrary to previous findings, learners with ASD were able detect when they had made an error. They were, however, inconsistent in recalling their intentions before and after they answered each question. Crucially, providing feedback about performance, goal reminders and strategy support improved mathematics performance for both groups.