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Exploring the role of confidence, theory of intelligence and goal orientation in determining a student's persistence on mathematical tasks.

Joubert, M. (ed.) et al., Proceedings of the British Society for Research into Learning Mathematics (BSRLM). Vol. 30, No. 1. Proceedings of the British congress of mathematics education, BCME-7, University of Manchester, UK, April 6–9. 2010. London: British Society for Research into Learning Mathematics (BSRLM). 151-158 (2010).

Summary: We consider Dweck's (1986) theory on the relationships between students' beliefs concerning the nature of intelligence, their learning goal orientation, their confidence, and their willingness to seek challenges and to persist when faced with difficulties. Dweck's theories have been studied for the past 20 years, for example by Stipek and Gralinski (1996) among many others. In this study the beliefs and behaviour of 182 third level students were investigated. These students had all chosen to pursue an undergraduate course in a numerate subject. It was found that the relationships between theories of intelligence and goal orientations were more complicated than those postulated by Dweck, and in particular seem to differ between the male and female students. We also found that a student's theory of intelligence, goal orientation, and confidence in his mathematical ability influenced his persistence at difficult mathematical tasks. However, once again, differences were found between the male and female groups.

Classification: C25 C65

Keywords: confidence; goal orientation; theory of intelligence; persistence; student beliefs; educational research; gender differences