

ZMATH 2016f.00613

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Challenge: always a good thing?

Adams, G. (ed.), Proceedings of the British Society for Research into Learning Mathematics (BSRLM). Vol. 35, No. 2. Proceedings of the day conference, Durham University, UK, June 6, 2015. London: British Society for Research into Learning Mathematics (BSRLM). 7-12 (2015).

Summary: The importance of providing students with challenge has become entrenched in our understanding of learning, set down as the first teaching standard and sought by Ofsted. But what do we mean by challenge? Challenge implies a testing task, a result of struggle. While struggle may be a path to learning for some, reproducing Piaget's idea of cognitive conflict as the precursor of change, I would argue that for many children mathematical struggle is not stimulating but threatening, and leads to the phenomenon of mathematics anxiety. This paper uses my doctoral research of six intervention sessions with each of four small groups to illustrate the reaction of low-attaining students to challenge. I find that the learning of algebraic concepts is hampered by feelings of panic and low self-esteem, and that the more challenging the material, the less appropriate the response. Improved results were achieved by reinforcing and developing students' understanding of unchallenging material, corresponding to Bryant's belief that confirming evidence is better for learning. The significance of this for teachers is to recognize that challenge is not universally positive, but developing unchallenging material by stealth can be preferable.

Classification: D43 D53 H23 C23

Keywords: educational research; learning; challenge; challenging work; stimulating; low achievement; mathematics anxiety; self-esteem; self-concept; behaviour; lower secondary; elementary algebra; manipulative materials; affective variables; avoidance strategies

<http://www.bsrlm.org.uk/IPs/ip35-2/BSRLM-IP-35-2-02.pdf>