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Breen, Sinead; O’Shea, Ann; Pfeiffer, Kirsten

“The backwards ones?” – Undergraduate students’ reactions and approaches to example generation exercises.

Smith, C. (ed.), Proceedings of the British Society for Research into Learning Mathematics (BSRLM). Vol. 32, No. 1. Proceedings of the day conference, University of Manchester, UK, March 3, 2012. London: British Society for Research into Learning Mathematics (BSRLM). 7-12 (2012).

Summary: As part of a project exploring the design and use of mathematical tasks to promote conceptual understanding of calculus concepts, first year undergraduate students were assigned homework problems which required them to use various processes including generalising, conjecturing, evaluating statements, analysing reasoning and generating examples. In subsequent interviews with five students, a number of them spontaneously referred to the example generation problems posed as being the “backwards ones” or requiring them to work backwards as well as forwards. In this paper, the authors report on the students’ reactions to a particular example generation exercise, the strategies they adopted in an effort to solve such problems, and what they feel and they learnt in the process.

Classification: D55 I45 I55 I25

Keywords: example generation tasks; conceptual understanding; interview data; calculus