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The role of justification in small group discussions on patterning.

Smith, C. (ed.), Proceedings of the British Society for Research into Learning Mathematics (BSRLM). Vol. 32, No. 3. Proceedings of the day conference, University of Cambridge, UK, June 17, 2012. London: British Society for Research into Learning Mathematics (BSRLM). 109-114 (2012).

Summary: Swedish students have not been successful in solving geometrical pattern tasks in the TIMSS study and as a result it has been introduced as explicit core content in the National Syllabus (Lgr11) for grades 1–6. Analysis of video recordings of three student groups working with a task taken from TIMSS07 showed that students' initial approach to the task was often unsuccessful. In this situation it was then a call for justification that led them on, for example through questioning why a solution was correct or what the answer meant. The call for justification came from the teacher, from other students or from a student's wish to understand. An implication of this study is that students would benefit from incorporating justification as an essential part of their problem solving process.

Classification: E50 H20 D50

Keywords: problem solving; justifying; patterning; argumentation; TIMSS tasks; educational research; observations; video data; group work; elementary algebra

<http://www.bsrlm.org.uk/IPs/ip32-3/BSRLM-IP-32-3-19.pdf>