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Prospective secondary mathematics teachers' interpretations of students' thinking.

Smith, C. (ed.), Proceedings of the British Society for Research into Learning Mathematics (BSRLM). Vol. 33, No. 3. Proceedings of the day conference, University of Edinburgh, UK, November 16, 2013. London: British Society for Research into Learning Mathematics (BSRLM). 19-24 (2013).

Summary: Teachers' understanding and interpretation of students' mathematical thinking are among the important components of knowledge for teaching as often stressed by the mathematics education community. Thus, teachers should acquire and enhance their knowledge and skills for understanding and interpreting students' thinking even before they begin their professions. In teacher preparation programs, using documentation of instructional practices such as students' written works and video records of classroom lessons would provide prospective teachers with opportunities for in-depth exploration of students' thinking. Thus, the purpose of this study was to investigate to what extent prospective secondary mathematics teachers enhanced their interpretation of students' thinking when they first worked on non-routine tasks themselves as students and then examined actual solutions produced by high school students. Twenty-five prospective mathematics teachers were the participants of the study. The data sources consisted of individual reflection papers, focus group interviews and notes of prospective teachers while working on students' work and field notes. The results showed that as a result of investigation of students' thinking manifested in the students' written works and video cases, prospective teachers started to question and tried to examine the details of students' thinking and to understand students' ways of thinking in depth.

Classification: C30 D49

Keywords: preservice teacher education; mathematical thinking; students' thinking; non-routine tasks; prospective teachers' knowledge; educational research; video records
<http://www.bsrlm.org.uk/IPs/ip33-3/BSRLM-IP-33-3-04.pdf>