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Generalising through quasi-variable thinking: a study with grade 4 students.

Ubuz, Behiye (ed.) et al., CERME 8. Proceedings of the eighth congress of the European Society of Research in Mathematics Education, Antalya, Turkey, February 6–10, 2013. Ankara: Middle East Technical University (ISBN 978-975-429-315-9). 490-499 (2013).

Summary: A study from the beginning of a teaching experiment to promote grade 4 students' algebraic thinking. It aims to analyse how quasi-variable thinking contributed to the development of generalisation and to the first uses of symbolisation by the students. The data were collected from two mathematical tasks that explored computation strategies. The lessons were taught by the researcher (the first author), the data were collected using video recordings, and the collective discussion moments in the classroom were analysed. The results show how the teacher conducted the exploration of some particular numerical expressions to lead students to generalise the relationships underlying the structure of the calculation strategies. Thereby, using quasi-variable thinking, some students express the generalisation in natural language and start making a pathway to symbolisation.

Classification: H22 C32

Keywords: algebraic thinking; generalization; symbolization; quasi-variable thinking