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The support of the spreadsheet in the learning of the topic quadratic equations.

Amado, Nélia (ed.) et al., Proceedings of the 12th international conference on technology in mathematics teaching, ICTMT 12. Faro: University of Algarve (ISBN 978-989-8472-68-7). 482-490 (2015).

Summary: We analyse the role of the spreadsheet in the development of algebraic thinking of grade 9 students in the study of 2nd degree equations. The research aims are (i) to understand how students approach their tasks in the spreadsheet, i.e., which representations they use and how they coordinate them, and (ii) the extent to which using spreadsheets in conjunction with working with paper and pencil, influences the development of algebraic thinking, particularly in the use of more formal (algebraic) language. Data analysis focuses on the productions and dialogues of a student while solving tasks with the spreadsheet in the classroom. The spreadsheet, articulated with working with paper and pencil, was important to the student's developing of her algebraic thinking in this topic, boosting the use of a more formal language.

Classification: U73 H33

Keywords: algebraic thinking; spreadsheets; mathematical representations; quadratic equations; formal methods