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An arithmetic-algebraic work space for the promotion of arithmetic and algebraic thinking: triangular numbers.

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Summary: This paper presents an experiment that attempts to mobilise an arithmetic-algebraic way of thinking in order to articulate between arithmetic thinking and the early algebraic thinking, which is considered a prelude to algebraic thinking. In the process of building this latter way of thinking, researchers analysed pupils' spontaneous production using a triangular numbers activity. Based on a specific collaborative learning methodology, this study explores the possibility of constructing an Arithmetic-Algebraic Work Space around the process of constructing signs as framed by both activity theory and a technological approach, showing the spontaneous representations produced by seventh grade pupils and their evolution in a socio-cultural environment.

Classification: F60 H20 D20

Keywords: mathematical work space; mathematical thinking; algebraic thinking; arithmetic-algebraic thinking; technology; spontaneous representations; institutional representations; sociocultural milieu

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