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Modelling reality in mathematics classrooms: The case of word problems

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Abstract

An abundance of recent research, in many countries, has documented a very widespread tendency of children to answer school mathematics word problems with apparent disregard for the reality of the situations described by the text of these problems. Analysis of this behaviour strongly suggests that an explanation is not to be found in some cognitive deficit of the children, but rather in the culture of the classroom wherein word problems are presented in stereotyped fashion, with an implicit assumption that a solution involving the application of one or more of the basic arithmetical operations to the numbers mentioned in the text is appropriate and unproblematical. Taking such contextual influences into account, the observed behaviour of the children may be considered a reasonable response. An alternative conceptualisation of word problems, as situations calling for mathematical modelling taking into account real-world knowledge where appropriate, is proposed, with suggestions as to how it could be implemented.



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