

TITLE:

The influence of the order of information in word problems on their difficulty for lower secondary pupils

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ABSTRACT:

Research has shown an influence of various parameters of word problems on their success rate and solving strategies that are used by pupils. In case of the order of information variable, most of research has focused on word problems, in which the order of information corresponds, or not, with the order of events described in the problem statement. This thesis differs from them by aiming at word problems without the sequence of this kind in their situational models. Two sets of problems solved by ninth grade pupils of four secondary schools situated in Prague were analysed. In order to recognize the influence of the analysed parameter, the combination of qualitative and quantitative approach was used. Item Response Theory (IRT) was used to analyse the parameter from the quantitative point of view. The written solutions of pupils were also analysed in a qualitative way and later amended by additional interviews with pupils. No influence of the parameter was found on either success rate or solving strategies in any of the analysed word problems. There was also no influence of the parameter on any expected aspects of the solutions, namely on the choice of the variable in relation to which the other elements are expressed, and on the side of equation on which the information about the whole is stated. The pupils chose as a variable the second element stated in a sentence and almost exclusively put the information about the whole on the right side of the equation. From the qualitative way, the thesis provides insight into strategies which pupils used when solving the problems and into mistakes they made.

KEYWORDS:

word problems, word problem parameters, word problem solving strategies, order of information