

ABSTRACT

Primary intention of this doctoral thesis is to examine the potential of mathematical word problems and comparison of various solving processes of mathematical word problems among pupils. The theoretical part of this thesis is based on definition of the term “problem” and shows how different basic psychological directions approach this concept. This is followed with narrower definition of mathematical problem with particular regards to solving process itself, its phases and factors affecting its success rate. Afterwards, the mathematical problem is put in concrete terms with mathematical word problem and its diagnostic and didactic potential is examined. Using real examples and modifications, this thesis shows concrete task situation and its practical use in teaching. The actual research processed data obtained as a result of active survey focused on analysis of solutions used by pupils, putting emphasis on occurrence and type of a mistake and the moment of its emergence. The target group was pupils of lower primary schools. This research showed significantly higher success rate of pupils lead by constructive approach. Also, it proved false certain beliefs held by some traditionalists especially about the importance of written mathematical word problems, usage of unknowns or using the routine solution algorithms in general.