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# Application Of the Cognitive Learning Strategy „Step by Step“ In Solving Textual Mathematical Problems

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## Abstract

Textual mathematical problems are an integral part of mathematics teaching; by solving them students learn and acquire skills they will need in everyday life to solve real life situation and problems. The aim of this paper was to research the impact of cognitive strategy „Step by step“ in solving textual mathematical problems from application of linear or quadratic equations in first and second grade students at three-year vocational high school. The „Step by step“ cognitive strategy guides students through the process of processing information through seven steps, thus improving the ability to solve textual mathematical problems for students with learning disabilities. Reduces superficial reading of the text, eliminates difficulties in planning resolution procedures and effects on impulsive mathematical calculus. The results of the research are presented by the analysis of student papers on the solution of given textual mathematical problems from application of linear or quadratic equations. The research has shown that the „Step by step“ cognitive strategy influence student's individual levels. Discussion and conclusion of the paper bring insight on the impact of the „Step by step“ cognitive strategy on different reading ways of the mathematical problem text. It influenced reduction of superficial reading and impulsive calculating. Furthermore, during problem solving, the cognitive strategy had an impact on student work organisation enabling overcoming most difficult step which is translating text into mathematical language.

**Keywords:** equations; research; skills; students; teaching