

# CROSS-SECTIONAL ANALYSIS OF STUDENTS' ANSWERS TO A REALISTIC WORD PROBLEM FROM GRADE 2 TO 10

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Since the 80s and 90s of the last century, a number of investigations have revealed that students tend to exclude their real-world knowledge when solving mathematical word problems that seem to be solvable by routine steps. A superficial strategy (term borrowed from Verschaffel and De Corte, 1997) consists of searching for numerical data in the text of the word problem, selecting and executing one or more of the basic arithmetic operations, and providing a numerical answer which is usually the result of the arithmetic calculations. The aim of the current research is to reveal a developmental trend in students' realistic answers by means of using a simple routine-like word problem. Besides exploring the rate of realistic reactions in different age-groups, our sampling procedure enabled for investigating whether there are “crystallization points”, i.e. classes where the majority of the students provide realistic solutions. The sample consisted of 1346 students from six age-groups from grades 2 to 10. Two versions of a simple arithmetic word problem (the Pocket Money problem by Ambrus, 2016) was used in the investigation. Students from grade 2 to grade 6 received the simpler version with smaller numbers, and students from grade 6 to grade 10 received the version with large numbers (the sample of the 6<sup>th</sup> grade students was halved retaining the possibility to reveal any potential effect the magnitude of the numbers may have caused.) The results show that there seems to be a growing tendency in the rate of realistic answers, but even in the higher grades it always remains below 4%. There were only three classes where at least 4 students gave realistic answer; two in Grade 10, and one in Grade 8. They formed a minority in their classrooms against those whose answer could be categorized as non-realistic.

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## References

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