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THE EFFICIENCY OF COGNITIVE TUTORING PROGRAMS IN REDUCING MATH ANXIETY FOR PRIMARY SCHOOL CHILDREN

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Abstract
Starting from the negative effects of math anxiety on students' mathematical performance, the article presents the most effective teaching methods designed and tested in the classroom in order to alleviate math anxiety. We will provide a theoretical synthesis of cognitive tutoring approaches based on the practice of mathematical skills in a systematic and organized way, using training programs. We will analyze the typology of the cognitive tutoring programs developed and tested in the classroom during the last decades. We will define three categories of cognitive tutoring programs, depending on the type of tutor involved in the training sessions. We will present the efficiency and the limitations of each type of program in part by delimiting the purpose, methods and procedures of each model. Summarizing the efficiency of cognitive tutoring programs we will delineate and support through practical arguments the efficiency of tutoring sessions based on one-on-one tutoring and training following the model developed by Fuchs et al. (2008) and tested by Supekar et al. (2015) using creative and innovative game-based methods. We will refer to new practical interventions based on cognitive tutoring programs in order to promote the mechanisms of improvement of math anxiety in children in the primary classes, starting from the premise that repeated exposure to mathematical stimuli and adequate training can lead to the reduction of math anxiety and to an increase in the school performance for primary school children.

Keywords math anxiety; learning mathematics; cognitive development; cognitive tutoring programs

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