

# *Response to Specific Training for Students With Different Levels of Mathematical Difficulties*

ANNA MARIA RE

MARTINA PEDRON

PATRIZIO EMANUELE TRESSOLDI

DANIELA LUCANGELI

*University of Padua, Italy*

**ABSTRACT:** *The purpose of this study was to determine the efficacy of specific, individualized training for students with different levels of mathematical difficulties. Fifty-four students, with either severe or mild math difficulties, were assigned to individualized training or to a control condition. Ten students with severe math difficulties (“dyscalculia”) and 17 with mild math difficulties in the individualized training conditions were trained to improve their accuracy and fluency in math, compared to 9 students with severe math difficulties and 18 with mild math difficulties that were in the general training group (control condition). Students in the individualized training condition (both with dyscalculia and with mild math difficulties) outperformed the control groups after the training and at a later follow-up in almost all math components. Overall, this study supports the feasibility of treating both severe and mild mathematical accuracy and fluency difficulties with specific, customized training.*

**M**athematics disabilities are identifiable in approximately 5% to 9% of school-age children (e.g., Badian, 1983; Gross-Tsur, Manor, & Shalev, 1996). This proportion is similar to the prevalence of reading disabilities; however, fewer systematic studies have focused on math-related skill deficits (Rasanen & Ahonen, 1995), despite the fact that they are associated with life-long difficulties at school and in the

workplace. For example, mathematical competence accounts for variance in employment, income, and occupational productivity even after intelligence and reading have been explained (Rivera-Batiz, 1992).

Presently, in Italy, about five students in a typical class are believed to have mathematical learning difficulties (Lucangeli & Cornoldi, 2007), which means that approximately 20% of students have some level of difficulty with arithmetic. The prevalence of math-related disorders,