

ZMATH 2016f.00879

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Can younger students succeed where older students fail? An examination of third graders' solutions of a division-with-remainder (DWR) problem.

J. Math. Behav. 19, No. 2, 233-246 (2000).

Summary: In this study, 14 third graders, who had not yet been taught the division algorithm (DA), solved a division-with-remainder (DWR) problem, and their solution processes were examined. Students also solved a set of eight numerical computation tasks involving addition, subtraction, multiplication, and division. In contrast to their poor performance on the division computation tasks and in contrast to the findings in previous studies of DWR problem solving by middle-school students and to the third graders in this study were quite successful in solving the DWR problem. Although the students lacked knowledge of formal procedures for division computation, they successfully used non-division solution strategies that were closely tied to problem context in order to solve the problem. In general, the results indicate that student performance in solving this complex problem was enhanced by their engagement in sense making as they solved the DWR problem. The highly context-embedded approaches used by these students also allowed them to avoid the difficulties in treating the “remainder,” as have been reported in research involving older students.

Classification: F32 D72

Keywords: problem solving; sense making; division; elementary school students; mathematics cognition
doi:10.1016/S0732-3123(00)00046-8