

ZMATH 1998f.04118

Schliemann, Analúcia D.; Araujo, Cláudia; Cassundé, Maria Angela; Macedo, Suzana; Nicéas, Lenice

Use of multiplicative commutativity by school children and street sellers.

J. Res. Math. Educ. 29, No. 4, 422-435 (1998).

Die Autoren vergleichen die Anwendung des Kommutativgesetzes der Multiplikation bei Schulkindern im Alter zwischen 6 und 9 Jahren und brasilianischen Straßenverkäufern, die nur unregelmäßig eine Schule besucht hatten, im Alter zwischen 9 und 14 Jahren. Die Ergebnisse zeigen, daß die Straßenverkäufer, die im wesentlichen Additionsstrategien für die Lösung multiplikativer Probleme verwenden, die Kommutativität nutzen, falls dadurch Rechenschritte eingespart werden können.

We analyzed use of the commutative property for solving multiplication problems by children who learn about multiplication in schools and by street vendors who solve multiplication problems through repeated addition. Subjects were Brazilian street vendors with irregular school attendance, who had received no, or very little, school instruction on multiplication, and 1st- to 3rd-grade Brazilian school children. Results from 2 studies show that use of commutativity to solve multiplication problems is closely related to use of multiplication. Street sellers who rely exclusively on repeated addition to solve such problems may, however, use multiplicative commutativity if it represents a clear reduction in the number of computational steps needed to reach a solution. But their justifications for its use are often based on knowledge about multiplication. (Abstract)

Classification: F32

Keywords: socio-cultural aspects; situated cognition

doi:10.2307/749859