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The Effect of Varying Problem Contexts on Learning Probability Rules

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Abstract: While previous research shows that varying problem contexts generally facilitates learning (Ranzijn, 1991), it is still unknown how much variability is ideal. Since it is often more economical for teachers to use consistent problem contexts, it is valuable to know how much variability is needed. We examined this in teaching probability. Students randomly assigned to one of three groups learned four rules with four worked examples each, differing in context variability: One group learned four rules with the same cover story (all examples for all rules used cards), the second group with different cover stories per rule (multiplication taught with cards, permutation, with spinners), and the third group with varying cover stories within each rule (addition taught with cards, spinners, marbles, and dice). Learning with context varying within rules led to the greatest learning gains from pretest to posttest. We discuss implications of these findings and underway follow-up research.