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Watson, Jane M.; Moritz, Jonathan B.

Fairness of dice: A longitudinal study of students' beliefs and strategies for making judgments.

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One hundred eight students in Grades 3, 5, 6, 7, and 9 were asked about their beliefs concerning fairness of dice before being presented with a few dice (at least one of which was “loaded”) and asked to determine whether each die was fair. Four levels of beliefs about fairness and four levels of strategies for determining fairness were identified. Although there were structural similarities in the levels of response, the association between beliefs and strategies was not strong. Three or four years later, we interviewed 44 of these students again using the same protocol. Changes and consistencies in levels of response were noted for beliefs and strategies. The association of beliefs and strategies was similar after three or four years. We discuss future research and educational implications in terms of assumptions that are often made about students' understanding of fairness of dice, both prior to and after experimentation. (Authors' abstract)

Classification: D53 D52

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