Beyond the 64 Squares: Does Chess Instruction Enhance Children's Academic and Cognitive Skills? A Meta-Analysis

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Abstract: In recent years, pupils' poor achievement in mathematics has been a concern in many Western countries. Chess instruction has been proposed as one way to remedy this state of affairs, as well as improving other academic topics and general cognitive abilities. The aim of this paper is to quantitatively evaluate the available empirical evidence that skills acquired during chess instruction in schools positively transfer to mathematics, reading, and general cognitive skills. The selection criteria were met by 24 studies (40 effect sizes), with a total of 5,221 participants. The results show (a) a moderate overall effect size (g = 0.34), and (b) a significant positive effect of duration of treatment ($p < .05$). However, almost no study controlled for placebo effects by using an active control group. For this reason, there are still doubts about the real effectiveness of chess instruction – in spite of some promising results.