

Learning and teaching are uncorrelated in an algorithm transmission task

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Abstract

Selective social learning is thought to be crucial for cumulative cultural evolution, as it helps preserve valuable but complex knowledge. Traditional models of cultural evolution have emphasized selection for performance. However, recent experiments demonstrate a potentially paradox: learning from high performers can compromise transmission. Should learners select teachers based on their performance or their teaching ability? This study examines whether teaching ability correlates with performance in algorithmic concept learning. Thirty participants learned a sorting algorithm from examples and explained the concept to beginners. A second cohort rated the helpfulness of these explanations after learning the concept themselves. Using an algorithm we developed to assess how well participants had learned the concept, we found no significant relationship between teaching effectiveness and task performance. Our results extend findings from prior research to the setting of algorithmic concept learning, and highlight a fundamental dilemma in cultural transmission.