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Authors

WANG, Rui
Britton, Aaron
Godfrey, Harriet
et al.

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Science Education Helps Suppress Naïve Science Thinking

Rui WANG
University of Cambridge, Cambridge, United Kingdom

Aaron Britton
Queen's University Belfast, Belfast, United Kingdom

Harriet Godfrey
Queen's University Belfast, Belfast, United Kingdom

Aidan Feeney
Queen's University Belfast, Belfast, United Kingdom

Michelle Ellefson
University of Cambridge, Cambridge, United Kingdom

Abstract

Conceptual change is an important consequence of science education, especially when moving from naive to scientific understanding of natural phenomena. However, the change from naïve to scientific thinking is difficult. Recent research suggests that naïve concepts persist alongside scientific concepts in adults, meaning that they must suppress naïve thinking to correctly endorse scientific explanations. Recent behavioural and neuroimaging studies indicate that even professional scientists must suppress naïve thinking. In this study we explored the role of educational experience - both general and scientific - in adults (N = 167, Mage = 26.49 years, SDage = 8.74) verifying scientific statements whose truth value was consistent or inconsistent under naïve and scientific theories. The results indicated that science education experience, but not general education, positively related to both overall accuracy and the ability to suppress naïve thinking. These results shed light on the link between science education and processes of conceptual change.

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