Scaffolding the Understanding of Scientific Analogies

Yinyuan Zheng
Northwestern University , Evanston, Illinois, United States

Yao Xiao
Indiana University, Bloomington, Indiana, United States

Dedre Gentner
Northwestern University, Evanston, Illinois, United States

Bryan Matlen
WestEd, San Francisco, California, United States

Benjamin Jee
Worcester State University, Worcester, Massachusetts, United States

Florencia Anggoro
College of the Holy Cross, Worcester, Massachusetts, United States

Abstract

Analogy is a mainstay in STEM education. It benefits learning by highlighting important commonalities between concepts and promoting transfer of knowledge. However, students often fail to process analogies deeply, and thus miss the potential benefits. This research aims to equip students with a domain-general strategy for understanding analogies. We created an Analogy Template that guides students through an explicit analysis of the relational matches and object correspondences. To test its effects, we gave undergraduates a series of science analogies. The Training group used the template to analyze the analogies. The Control group explained the same analogies without the template. Then both groups were asked to explain four novel science analogies. Raters blind to condition judged the explanations. Students who successfully completed the template training showed better understanding of the analogies than those in the control group. These results provide initial evidence that analogical training can contribute to science understanding.

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