UC Merced
Proceedings of the Annual Meeting of the Cognitive Science Society

Title
Optimizing the category construction task to promote learning and transfer of knowledge in classroom instruction

Permalink
https://escholarship.org/uc/item/8gf260pk

Journal

ISSN
1069-7977

Authors
Kurtz, Kenneth J.
Cavagnetto, Andy
Honke, Garrett
et al.

Publication Date
2014

Peer reviewed
Optimizing the category construction task to promote learning and transfer of knowledge in classroom instruction

Kenneth J. Kurtz
Binghamton University

Andy Cavagnetto
Washington State University

Garrett Honke
Binghamton University

Nolan Conaway
Binghamton University

John D. Patterson
Binghamton University

James C. Marr
Washington State University

Yan Tao
Binghamton University

Abstract: It is well established that spontaneous transfer of relevant abstract knowledge (i.e., a principle) occurs relatively rarely. There are techniques such as active comparison of co-presented analogous cases that improve performance markedly, but these treatments typically result in a majority negative outcome under optimal conditions and fall off drastically otherwise. Our recent research testing undergraduate participants in a laboratory setting has shown significant success in promoting spontaneous transfer using a category construction technique based on sorting a set of six unlabeled cases into two groups (three of the cases instantiate the target principle). The present work investigates the category construction technique for improving student learning and transfer of principles of evolution in 7th grade science classrooms. We report results showing the general promise of the approach and identify implementation options that improve outcomes for delivering effective category construction training in an authentic instructional setting.