

# Learning to “see” structure in educational materials: The roles of perceptual learning, teacher gesture, and peer collaboration

Tuesday, 25 March 2025, 17:00

## Prof. Dr. Martha Alibali

Vilas Distinguished Achievement Professor  
Department of Psychology  
University of Wisconsin–Madison, USA



Learning to “see” structure in educational materials is important for acquiring content knowledge, solving problems, and building conceptual understanding. In this talk, I focus on factors that influence how pupils learn to “see” structure in educational materials, such as mathematical inscriptions and science diagrams. I consider three aspects of instructional practices that affect learners’ attention to structure: opportunities for perceptual learning, teachers’ gestures, and peer collaboration. In the first part of the talk, I present evidence that opportunities for perceptual learning in mathematics help learners to “see” structure and support generation of new problem-solving strategies. In the second part, I present evidence that teachers’ gestures to relevant features of mathematical representations promote learners’ attention to structure. In the final part, I consider peer collaboration as a social context in which collaborators help one another attend to structure. I conclude by considering implications for instruction and for understanding strategy discovery and learning.

