MIND, BRAIN, AND EDUCATION

CALL FOR PAPERS

Special Section: Science Education

What Can Be Learned From Neuroscience Research to Enhance Science, Technology, Engineering, and Mathematics (STEM) Education

The goal of this special section is to bring together research from science/technology, engineering, and mathematics education, especially as related to cognitive neuroscience. The purpose is to explore how neuroscience may provide an insight into the basic mechanisms that underlie education in science, mathematics, engineering, and technology and provide a new transdisciplinary account of learning and teaching. Proposals are due on July 15, but they will also be considered at later dates.

Cognitive processes such as imagery in scientific reasoning, thought experiments, learning by mimicking an expert, learning by doing, learning through sensory interaction in the science laboratory, learning through problem solving in science projects, constructing mental models through sensory cues, memory of principle cues in scientific observation, and construction of causal models are all well established processes that underlie scientific reasoning. This special section is dedicated to research that relates neuroscience with education in science, mathematics, and technology. We use the term Science Education to stand for mathematics and technology education too. The following topics are encouraged, but other topics are also welcomed:

- Everyday knowledge and scientific knowledge
- Neural mechanisms of sensory interaction in the science laboratory and their relations to learning
- Thought experiments, imagery, and learning in science—a neurocognitive point of view
- Design of cognitive technology for science learning
- Metaphors and learning in science
- Causal reasoning in science learning
- Mental models
- Memory and learning in science
- The mirror neuron system, imitation, and science learning
- Imitation and the mirror neuron system in student–teacher interaction in the science classroom
- Dyscalculia and science/mathematics learning
- Brain science, assessment, and testing of educational outcomes
- Brain–computer interfaces and their implications for science learning
- Mechanisms of learning from multisensory simulations in science

A broad range of types of articles are encouraged: articles reporting research, conceptual articles, reviews, reports about practice, commentaries, and letters are all welcome. For details and guidelines please see the editorial page for this journal: http://www.wiley.com/bw/submit.asp?ref=1751-2271&site=1

For questions please send a message to the section editor, Prof. Miriam Reiner, at Miriamr@technion.ac.il.