

EDUCATIONAL NEUROSCIENCE

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News from Education Psychology: Exploring the Intersection of Education and Neuroscience

Advances in brain imaging techniques are offering the tantalizing possibility that researchers may one day understand brain functions to the point where they can help teachers make breakthroughs in the classroom.

That day, however, is not here yet.



Frontiers in Education

Recent results in neuroscience and cognitive science have started to yield information that has the potential to inform classroom practices and improve outcomes for learners.

UW-Madison's annual American Education Week presentations in mid-November focused on this frontier. To watch archived videos of these events, visit www.youtube.com/UWMadisonEducation.

To learn more about the Educational Neuroscience Lab, visit <http://website.education.wisc.edu/edneurolab>

“Cognitive neuroscience is making rapid strides in areas highly relevant to education,” says Mark S. Seidenberg, a cognitive neuroscientist at UW-Madison who has spent the past three decades studying language, reading and dyslexia, and who since 2001 has been using neuroimaging techniques to further this research. “However, there is a gulf between current science and direct classroom applications, and most scientists would argue that filling that gulf is premature.”

Edward Hubbard, an assistant professor with the Department of Educational Psychology and the Waisman Center, and the director of the newly formed [Educational Neuroscience Lab](#), notes that children who have been identified as having difficulties with learning math don't show the same level of brain activity in that portion of the brain as classmates who

don't struggle in math.

“So this suggests there is a biological basis to this,” says Hubbard, whose lab is dedicated to exploring questions linked to where education and neuroscience connect.

While some listening to this presentation titled “Educating the Mathematical Brain” expressed concerns that finding such a biological marker indicating someone will struggle with math could be used as an excuse for an educator to simply write a child off, Hubbard stressed a different perspective.

“Does this suddenly mean that there is nothing for teachers to do?” he asks. “And I think the answer is a resounding no. It's the opposite.” He then notes that all of one's experiences are reflected in the structure and function of one's brain, and that his type of research could help find new ways to drive the malleable brain and build circuits that may not be working properly.

Percival Matthews, also an assistant professor in the Department of Educational Psychology, told conference goers that the potential of neuroscience is often overstated in the popular media, but he nonetheless sees promise in such research.

“Neuroscience gives us another measure and another way to look at a problem,” he says.

Mitchell Nathan, a professor of Learning Sciences in the Department of Educational Psychology, and the director of UW-Madison's Center on Education and Work, notes that some currently believe it's simply not possible to construct a bridge that connects our understanding of the brain to an understanding of what goes on in the classroom.

INEI Affiliates Doing Similar Work:

Robert Hester, Associate Professor– University of Melbourne

John Hattie, Dir. Melbourne Educational Research Institute–University of Melbourne

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