



From Neuroscience to the Classroom

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Language and Reading: The Consequences of the Kantian Brain for the Classroom

Abstract:

The classroom is designed to teach children cultural inventions for which the brain is not evolutionary designed. Hence the classroom environment has to implement cultural recycling of neuronal maps. To do this effectively it has to recruit existing neural infrastructure. Therefore, teaching programmes have to be tailored to the possibilities and limitations of available neural architecture. An example in case is reading, a cultural invention of a few thousand years old. Orthographies and reading methods need to use visual cortex areas in the most optimal way. I will discuss how the characteristics of different orthographies are tailored to the possibilities of complex cells in visual cortex. In addition, different reading methods will be evaluated in the light of our understanding of human brain organization. I will argue that a systematic investigation of culture-brain relations is much needed for optimizing the optimal environment.

About:

Peter Hagoort is director of the Max Planck Institute for Psycholinguistics (since November 2006), and the founding director of the Donders Institute, Centre for Cognitive Neuroimaging (DCCN, 1999), a cognitive neuroscience research centre at the Radboud University. In addition, he is professor in cognitive neuroscience at the Radboud University Nijmegen. His own research interests relate to the domain of the human language faculty and how it is instantiated in the brain. In his research he applies neuroimaging techniques such as ERP, MEG, PET and fMRI to investigate the language system and its impairments as in aphasia, dyslexia and autism.