

**Centre for
Educational
Neuroscience**



 **Bloomsbury**
Doctoral Training Centre
for the Social Sciences



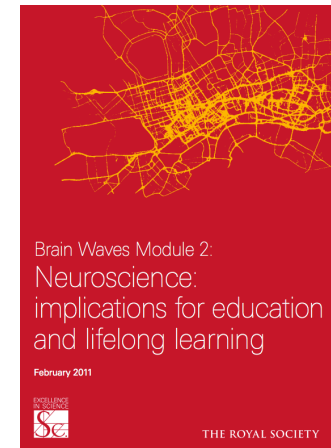
Workshop on Educational Neuroscience

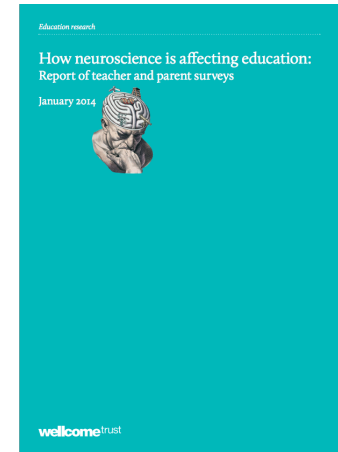
14 March 2014

Birkbeck College

“There is common ground between neuroscience and education that suggests a future in which educational practice can be transformed by science, just as medical practice was transformed by science about a century ago”

– Royal Society Report ‘Neuroscience: implications for education and lifelong learning’ (2011).





“Teachers’ desire to implement interventions based upon neuroscience is evident, but it is running ahead of the evidence base.”

– Wellcome Trust Report ‘How neuroscience is affecting education: Report of teacher and parent surveys’ (2014)

London



Neuroscience



Education



Child development

Cambridge



Centre for Neuroscience in Education

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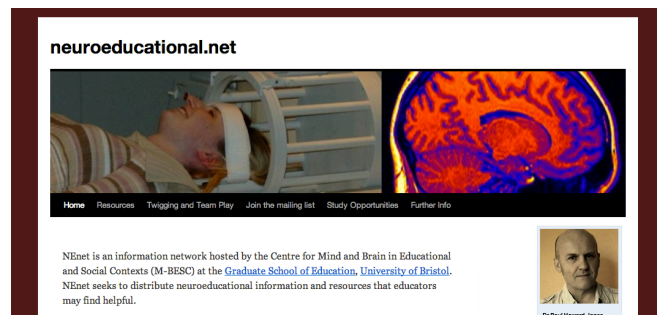
University of Cambridge > Centre for Neuroscience in Education

The Centre was established in 2005, and was the first of its kind in the UK. We are based in the School of Biological Sciences (Department of Psychology) on the Downing Site but we also have strong links with the Faculty of Education. The Centre's aims are to apply the substantial advances in understanding the brain to education.

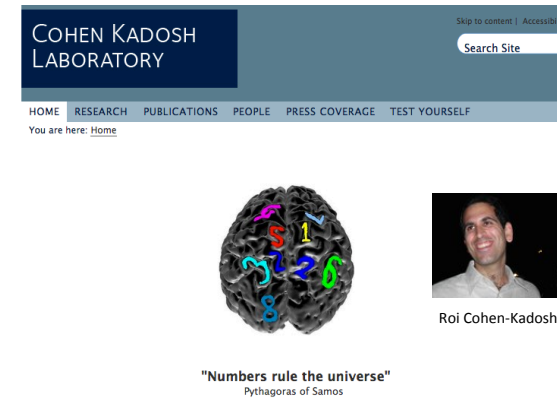
The main research goal of the Centre is to establish the basic parameters of brain development in the cognitive skills critical for education. For example, we aim to understand how the brain functions and changes during the development of reading and maths, exploring the development of related skills such as language, memory, numerosity and attention.



Bristol

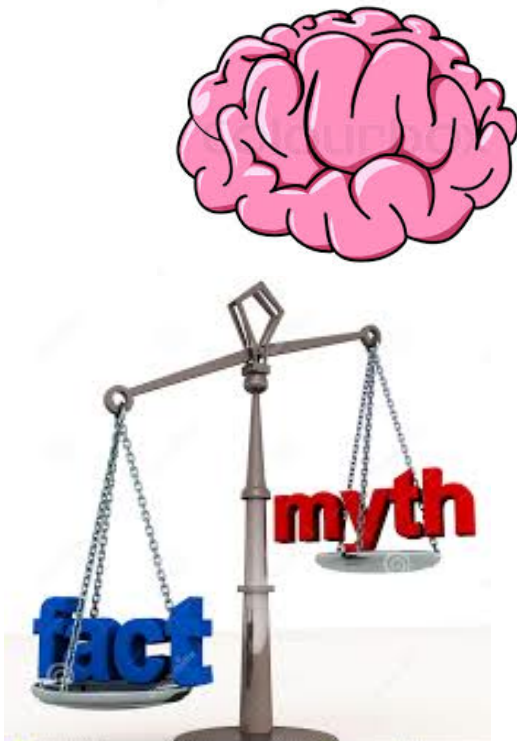


Oxford



Challenges

Neuromyths



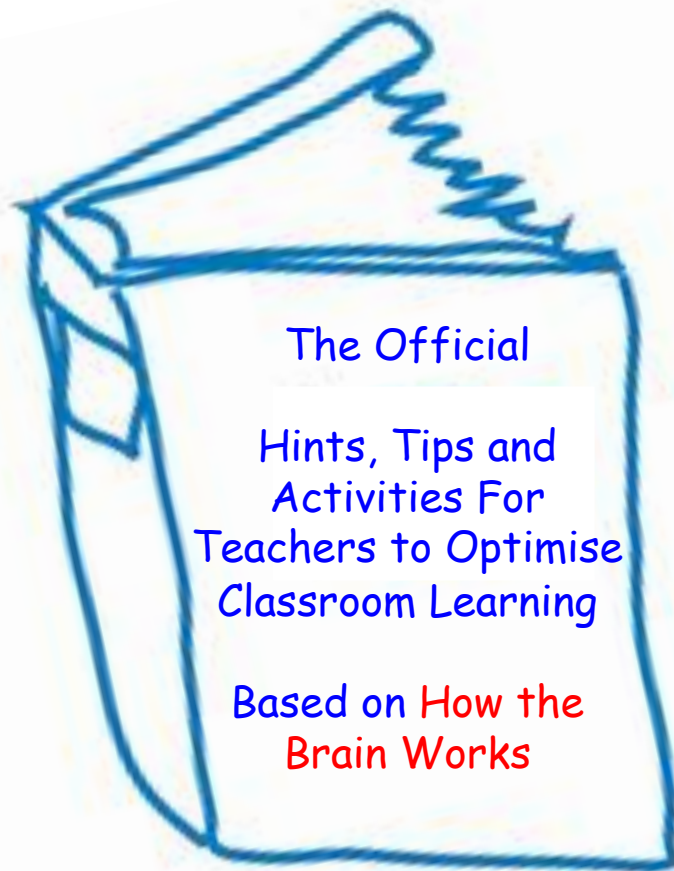
Promises that can't
be delivered (yet)



How to translate neural data into educational implications?

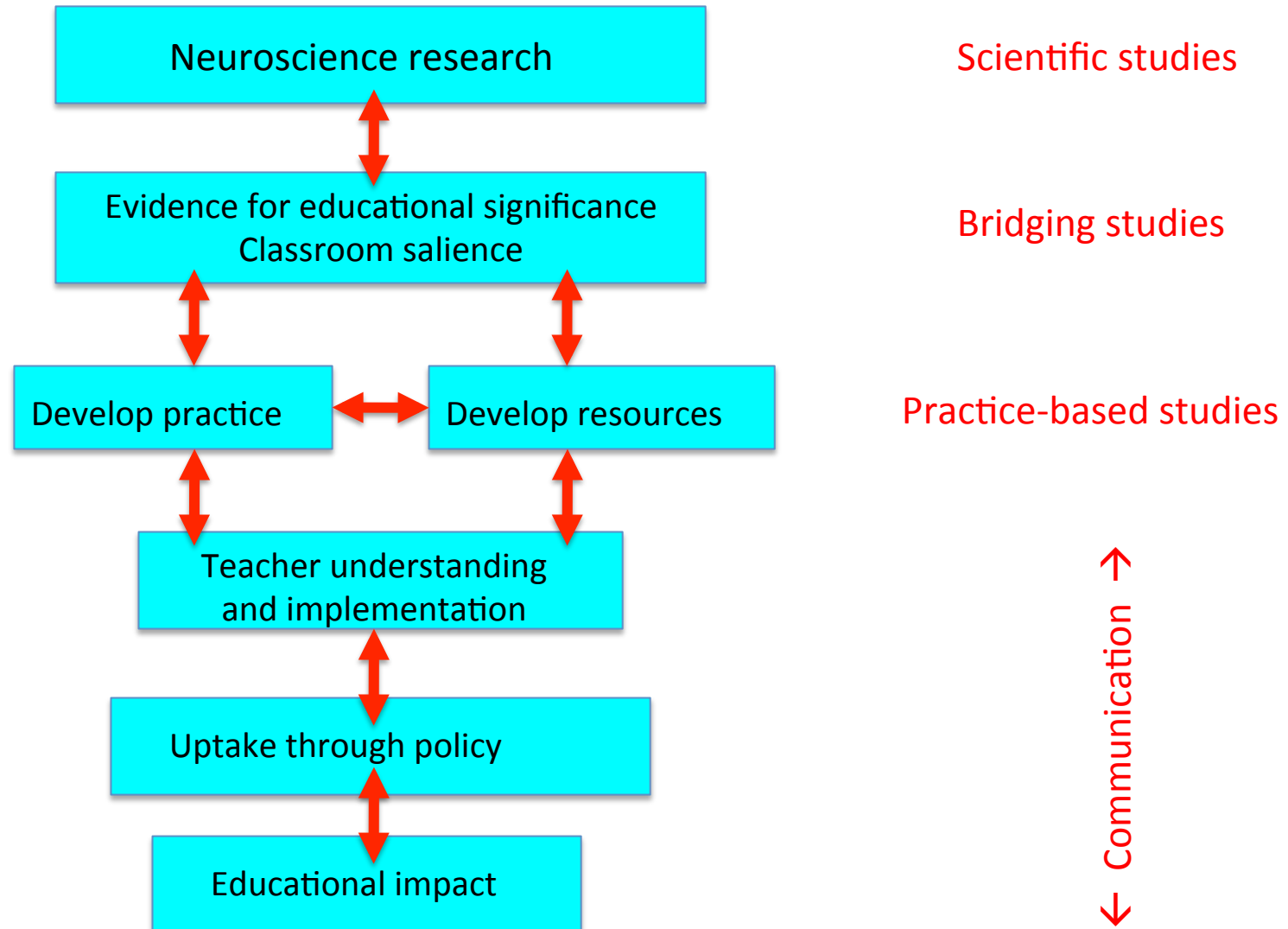
What do (some) teachers want?

- Some hints and tips on what actually works



Educational
neuroscience is
an inherently
translational field

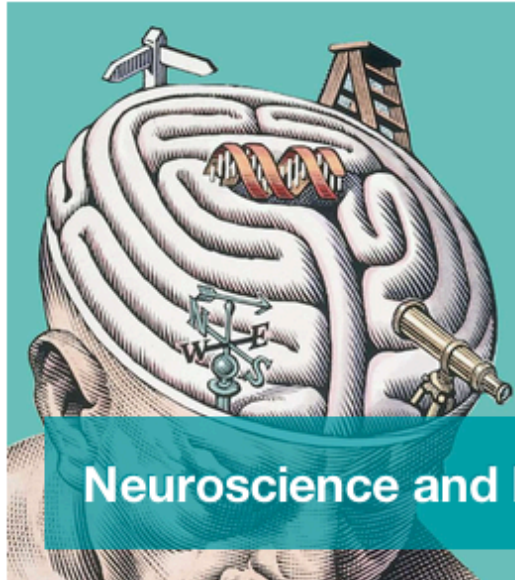
How neuroscience and education might interact – Paul Howard-Jones



wellcometrust



Education
Endowment
Foundation



*Using insight from
neuroscience
to improve
education*

Neuroscience and Education Round

Neurocognitive processes and their potential education application (Howard-Jones, 2014)

Topic	Evidence	Distance to application
Mathematics – non-symbolic and symbolic representation of number	Medium	Moderate
Mathematics – finger gnosis	Medium	Near
Mathematics – mental rotation skills	Low	Distant
Mathematics – maths anxiety	Medium	Near
Reading	Medium	Near
Exercise	Medium	Near
Sleep, nutrition, hydration	Low	Near
Genetics	Medium	Distant
Embodied cognition	Medium	Moderate
“Brain training” of executive function	Medium	Moderate
Spaced learning	High	Near
Interleaving	Medium	Moderate
Testing	High	Moderate
Learning games	Medium	Moderate
Creativity	Low	Moderate
Personalisation	Low	Moderate
Neurofeedback	Medium	Moderate
Transcranial electrical stimulation (TES)	Medium	Distant

Educational Neuroscience

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WILEY Blackwell