

Functional magnetic resonance imaging (fmri) to assess anatomy recall in undergraduate students

Mauro Vaccarezza
Curtin University

What's your research question?	TO ASSESS ANATOMY RECALL AND ANATOMY LEARNING BY MEANING OF FUNCTIONAL MAGNETIC RESONANCE IMAGING by Luke Jardine, Mauro VACCAREZZA and Karla Mare School of Pharmacy and Biomedical Sciences, Curtin University (LJ and KM are Third Year Human Biology Pre-Clinical students)
Main point of your idea...	fmRI measures indirectly brain activity. We will measure by fmRI brain activity during anatomy recall in a small cohort of first year biomedical students exposed to different educational tools (wet specimens, 3D printed material, digital images)
Importance of your idea...	A neuroscience-based assessment is lacking in LT science; furthermore , this neurocognitive method is useful to validate and weight different resources in Anatomy education
What is the context?	Curtin University First year Biomedical Students and the MRI Facility at SCGH, Perth, WA
Does it require a methodology? If yes, what is it?	Functional Magnetic Resonance Imaging (fmRI) measures brain activity by detecting changes associated with blood flow. This technique relies on the fact that cerebral blood flow and neuronal activation are coupled. When an area of the brain is in use, blood flow to that region also increases. It uses blood oxygen level dependent (BOLD) contrast to identify brain region that have an increased metabolism.
What (if any) are the meta issues?	We are going to measure mainly the recall learning activity , it would be great to measure learning mechanism and pathways in real time, but it is not possible (a personal wearable fmRI is not yet available).
What are the implications for SoTL?	Neurosciences applied to Learning and Teaching re-inforce the findings of evidence based-results, help to validates educational tools and also help (possibly)to assess new methods of LT.
Is there a professional practice outcome and is it applicable across disciplines?	This method applied on measuring learning and recall processes related to spatial structures can be extend in other educational fields (Chemistry, Architecture, Engineering, etc).

<p>What is your key question to or insight sought from the 'critical friends'?</p>	<p>Feasibility, correct controls and assessments of the working hypothesis: the main used tools in Anatomy education activate the same cognitive areas in the brain related to spatial recognition and spatial ability.</p>
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