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# Neuromyths in language teaching

## Webinar handout

by Jane Delaney

### Are these statements true or false?

1. We mostly only use 10% of our brains. **False**

*It doesn't make sense from an evolutionary viewpoint.*

*No inactive areas of the brain have been observed using MRI or other imaging and mapping techniques.*

2. Co-ordination exercises can improve integration of left and right hemispheric brain function. **False**

*While it has been clearly proven that exercise and physical fitness have a significant impact on the cognitive skills of students and on brain function, no studies show that short bouts of coordination exercises “awaken” the brain or improve communication between the two hemispheres.*

3. Individuals learn better when they receive information in their preferred learning style. **False**

*No empirical, valid evidence shows that tailoring the teaching method to a specific “style” improves student performance.*

*If classification of students' learning styles has practical utility, it remains to be demonstrated. (Pashler, McDaniel, Rohrer, and Bjork, 2008)*

4. The right half of the brain is the creative half and the left half is the analytical half, and our individual traits are determined by which half is dominant. **False**

*No direct scientific evidence supporting the idea that different thinking styles lie within each hemisphere: a massive oversimplification.*

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Data shows that subsystems in both hemispheres are activated for parts of the reading process, e.g., decoding written words or recognising speech sounds.

Scientists nowadays think that while there are some functional asymmetries, the two brain hemispheres do not work in isolation, but rather together in every cognitive task. (Springer S.P. and Deutsch, G., 1998)

## The latest cognitive neuroscience research tells us that learning is enhanced when...

- there is repetition of material (Zhan et al., 2018; Adams and Delaney, 2023)
- there is individual attention to a student by a teacher (Schachter, 2000)
- excitement occurs at the time the material is presented (Perugini et al., 2012; Leventon et al., 2018)
- students activate what they already know (Beker K., Jolles D., Lorch R. F., Broek P., 2016)

## Further Reading

If you are interested in exploring some of the themes mentioned in the webinar, these websites are a good place to start!

<https://pz.harvard.edu/projects/visible-thinking>

<https://teaching.vt.edu/teachingresources/adjustinginstruction/priorknowledge.html>

<https://theconversation.com/lets-scrap-the-neuromyths-no-you-arent-a-visual-or-auditory-person-141957>

<https://www.frontiersin.org/articles/10.3389/fpsyg.2021.719692/full>

<https://www.oecd.org/education/ceri/neuromyth1.htm>

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A recording of Jane's webinar can be watched here: <https://www.teachingenglish.org.uk/news-and-events/webinars/webinars-teachers/inclusion-neurodiversity-and-neuromyths-elt-mini-event-0>