



PHOTOLIBRARY

Let your body do the thinking

Movement, repetition and memory are linked – dancing, walking and even jiving can help difficult concepts to stick in our heads, says **Susan Greenfield**



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Have you ever noticed how it is often easier to recall a phone number when you have a phone in front of you to trace the movements of the numbers? Isn't it remarkable that you can jump on to a bike after 20 years and still manage to get from A to B, even if your progress is wobbly? Our memory for movement (motor skills) is extremely powerful and offers an often overlooked tool for improving learning in the classroom.

An exciting aspect of the human brain is that our thoughts, perceptions and actions mould the strength of connections between neurons, so that these physical connections come to represent our understanding and knowledge of the world around us. It therefore follows that if you can maximise the strength, and breadth, of connections associated with a particular concept, you increase the chance of making it stick.

As educationists, we often focus on using words and visual representations to deliver concepts in a classroom, which use only a fraction of the neural networks at our disposal. In contrast, the motor systems occupy a large portion of our brain and include some of the most evolutionarily advanced systems. Thus, incorporating movement into the learning process offers a powerful tool for deepening the representation of a concept and improving the chance of its being laid down strongly in memory.

During a recent pilot project at The Institute for the Future of the Mind, with Advanced Skills Teachers (ASTs) in

Gloucestershire, we explored how this and other scientific insights could be of practical help to teachers. The group took this idea of motor learning and applied it in some imaginative ways.

Sarah Shaw, a primary teacher from Longlevens Junior School in Gloucester, taught her Year 5 class "The life and stages of a river" through a one-hour dance lesson. After providing the class with a pictorial representation of the water cycle, the pupils worked in groups using movement, dance and music.

Sarah recalls how the lesson stuck with the group: "Six months later, I re-tested the class on their knowledge of the lesson. Many of the children could remember the dance explicitly and were surprised how clearly they could recall the facts. The lesson had been a powerful learning experience."

During 2004-05, I was fortunate to be invited to be "Thinker in Residence" in South Australia. During this time I encouraged the South Australian Neuroscience Institute (SANI) to set up a similar course to that which we developed in Oxford – the Graduate Certificate in Neuroscience/Learning. Out of that course came an example of how an understanding of motor learning could produce impressive results.

A teacher on the course had been struggling to teach the rather abstract concept of negative numbers to her primary school class. Seeing they were in difficulties, the teacher took the class into the playgroup, lined them up side-by-side and drew out a number line. She explained that as they walked one step forward they counted up, and as they

References

Alan Baddeley (2004) *Your Memory: A User's Guide*, Firefly.

Overview of the Science of Learning project at The Institute for the Future of the Mind:
www.futuremind.ox.ac.uk/impact/education.html

South Australian Graduate Certificate in Neuroscience/Learning course details:
www.flinders.edu.au/courses/postgrad/neuro.htm

South Australia "Thinker in Residence" project:
www.thinkers.sa.gov.au/home.html

stepped backwards, they counted down. Two steps forward, move onto 2, a further step forward, 3.

"Now what happens when we move four steps backwards? Where do we go?" she asked.

Immediately, the class saw how you could move "below" zero and grasped the concept of negative numbers. Rather touchingly, when testing the children at the end of term, she noticed the class wriggling in their chairs as they tried to mentally walk the number line.

Bringing movement into the classroom might be a challenge at times, especially with a group of boisterous pupils. However, getting them to jump, jive, walk and talk their way through a difficult concept can be a great way of helping it stick ■

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