Surveying the prevalence of neuromyths in teaching is fascinating to educational neuroscientists. But rather than continuing to chart beliefs in neuromyths, it’s time to consider their impact and how we can address them.

At school, a child might be told by her teacher that she has a visual learning style. The teacher might then provide learning materials that rely heavily on pictures for that child, in order to help her learn. The child may internalise the notion that she is a visual learner (as opposed to an auditory or kinaesthetic learner), and this may influence her approach to learning for years to come.

"The presence of neuromyths has been partly blamed on the ‘seductive allure of neuroscience’. But recent research on this phenomenon suggests that this effect isn’t so powerful after all."

Unfortunately, this is an example of a neuromyth. There is no such thing as a visual learner, or an auditory learner, or a kinaesthetic learner, and there is no evidence that teaching according to “learning styles” improves learning. Nonetheless, this myth has been around for decades (I remember taking a test to find out my learning style at school) and is still believed by many teachers. And it is just one of many myths about the way our brains learn.

Researchers have been keen to find out which neuromyths teachers hold. Surveys reporting the prevalence of neuromyths have been undertaken across the world. These surveys report that, to varying degrees, teachers believe in a whole host of myths. As well as learning styles, other common myths are that we only use 10% of our brain most of the time, that learners are either left- or right-brained, and that not drinking enough water causes the brain to shrink.

The presence of neuromyths has been partly blamed on the “seductive allure of neuroscience”. This is the idea that neuroscientific ideas and explanations are very persuasive, particularly when accompanied by pictures of the brain. But recent research on this phenomenon suggests that this effect isn’t so powerful after all. Arguably the greatest blame lies with profit-making companies who sell schools expensive training days so that, for instance, teachers can identify the “learning styles” of their pupils.
“To take the case of learning styles, there is clearly a concerning possibility that cutting off modes of learning will be detrimental to a child’s development.”

While surveys of neuromyths tell us about teacher beliefs, we are lacking information about how these have a real impact in the classroom. To take the case of learning styles, there is clearly a concerning possibility that cutting off modes of learning will be detrimental to a child’s development. A student designated a “visual learner” no longer gets the chance to improve his auditory skills. A “kinaesthetic learner” may not ever get the opportunity to properly learn something that is best learnt visually. These are troubling possibilities.

But in order to move the field forward, it is important that we go further than surveying beliefs in neuromyths. Yes, these surveys provide shocking findings about what teachers (and the general public) believe about the brain - perhaps among scientific researchers there is a seductive allure of surveying neuromyths.

“It’s time to take what we know about the prevalence of neuromyths, determine their role in the classroom, and figure out how we can work with teachers to stop their potentially damaging effects.”

But the aim of educational neuroscience is to improve learning. For many of these neuromyths, we have no evidence addressing the impact of belief on teaching and learning. As we have seen above, belief in some neuromyths may have a negative impact in the classroom. But perhaps belief in other neuromyths has no impact in the classroom at all.

It’s time to take what we know about the prevalence of neuromyths, determine their role in the classroom, and figure out how we can work with teachers to stop their potentially damaging effects.

A mini-series on evidence in the classroom

- Bringing scientific evidence to the classroom
- Neuromyths in education (current blog post)
- Identifying what works in education
- Brain training for children
- Fostering a growth mindset
- Electrical brain stimulation to enhance learning

Further articles in this series will look at so-called brain training educational programmes, and the challenge of conducting large scale studies in schools.
The illustration accompanying this blog post is entitled “Maybe Knowledge Will Win After All.” It was created by Nora Maria Raschle for the new blog she and her colleague Réka Borbás, both developmental neuroscientists, launched in September 2017 with the goal of disseminating knowledge in a way that is both fun and easily understandable for everyone. Their blog, called “We Are All Born Scientists,” is definitely worth a visit!

This article was published on BOLD, the Blog on Learning and Development. If you would like to share it with others, please do not use this PDF but instead link to the original post at https://bold.expert/neuromyths-in-education/.