LEARNING AND DEVELOPMENT

The social brain

Children learn through social interaction, says Professor Bruce Hood, a mind expert. So why teach them by rote?

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SINGAPORE – The brain, according to Professor Bruce Hood, is a social creature.

Since the hunter-gatherer days of early humanity, when language first developed, the human brain has been a tool for learning through interaction and communication. Our current methods of learning — out of textbooks, in a classroom — only emerged in the last few hundred years.

"We have been learning for hundreds of years by copying, something which animals do," Prof Hood said yesterday. "Scientific learning is something that has only existed for a couple of hundred years."

An experimental psychologist by training, Prof Hood is the Director of the Bristol Cognitive Development Centre at the University of Bristol in the United Kingdom. He is in Singapore to deliver the STAR lectures — held at MediaCorp from Wednesday to today — as part of the Singapore Science Festival, explaining the workings of the human brain to over 2,000 students.

"We have a particularly social brain," Prof Hood said, which is tied to how the human brain came to be.

About 300,000 years ago, the human brain underwent a growth spurt, which led to the development of the modern human.

One of the areas that grew the most was the frontal lobes. This is the part of the brain where high-level thinking happens, from making decisions to doing maths, to storing temporary information like names and phone numbers.

Professor Bruce Hood, the Bristol Cognitive Development Centre's Director, gave lectures at MediaCorp this week as part of the Singapore Science Festival. PHOTO THE ROYAL INSTITUTION

However, impulse control and social behaviour are also governed by our frontal lobes. Alcohol, for example, lowers social inhibitions because it affects this region of the brain.

One theory goes that the sudden development in the frontal lobes was spurred by the development of language, as early humans banded together to hunt and grow their own food.

"As language started to take place, we were able to communicate concepts symbolically," said Prof Hood. And, once that happened, "you could start to transmit information from one generation to the next".

In other words, the basis of learning was social.

Crucially, the frontal lobes are also the least developed part of the brain at birth and undergo major changes on the path to adulthood, paralleling the early evolution of the brain. As social interaction drove the development of our ancestors' brains, there is evidence that it, too, affects a developing child's brain.

"Brains in isolation don't make any sense," said Prof Hood. "Brains are evolved to learn from other brains. If you were to raise a child in isolation, they would not end up with a brain like ours."

Humans learn by making changes in the way the neurons connect to each other, said Prof Hood, which is something that constantly happens when we interact with others.

"When we read somebody, we make predictions on what they're going to be like. We try to find some common ground to have communication," he said. "We're always in this situation of trying to put ourselves in someone else's shoes."

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> DIRECTOR OF THE BRISTOL COGNITIVE DEVELOPMENT CENTRE, UK

The importance of early social education, he said, is why he is against the idea of controlling the environment of young children in order to drill them in specific subjects.

An extreme example he raised was the neglected children in communist Romania's orphanages. Many not only became socially impaired because of their forced isolation but also became cognitively stunted, something that could not be reversed in adulthood.

"The reason we have such long childhoods is because we need to become social animals," said Prof Hood. "If you take a child out of that learning environment, out of that experience of becoming social, it's very difficult to reintegrate."

As a lecturer himself, Prof Hood emphasises engaging his students emotionally rather than by rote learning. He said: "Simply throwing facts at children is not the way to teach them because they won't learn. The brain is always trying to piece (information) together into stories. The more you can link information into a meaningful story, the better you can remember it."