

IN DEFENCE OF ROMANCE

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life



“
Throughout Covid, DBS never
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from artificial intelligence to
machine learning, blockchain
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.....”

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Smart Parenting: Living with dyscalculia



When
MATHS
does not
ADD UP

**Dyscalculia, which impairs
one's number sense, is as
common as dyslexia but
much less known**



Stephanie Yeo
Senior Correspondent

Imagine that your child is taking the Primary School Leaving Examination (PSLE) but cannot count forwards or backwards mentally.

One student relied on his ruler in the national exam. If he had to, say, add 10 and eight, he would use the line indicators as markers to count forward.

“He failed maths up to Primary 5. He started passing maths only in P6,” says Ms Siti Aishah Shukri, a senior educational therapist with the Dyslexia Association of Singapore (DAS), which helped him.

“He started off with counters in the classroom, but progressed to his own strategy where he used a ruler to count every single number.”

The boy took foundation maths, which has a reduced syllabus, and “did well for the PSLE”, she adds.

Children like him have dyscalculia, a little known congenital learning difficulty that experts say affects about 5 per cent of people.

That is about the same percentage as people with dyslexia, says

Professor Brian Butterworth, emeritus professor of cognitive neuropsychology from the Institute of Cognitive Neuroscience at University College London.

He is a renowned expert on the condition.

“Dyscalculia is being bad at maths, but in a very particular way. It's about not understanding numbers and arithmetic. You might be okay on other branches of maths, like geometry,” he says.

Because children with dyscalculia have an impaired number sense, things that may be intuitive to other kids may not make sense to them, he says.

For instance, they may know that eight is composed of eight “ones”, but not that it is also four plus four. Counting back from a given number, doubling a number or halving numbers are hard for them. The same applies to multiplication tables.

“Dyscalculia is rather like ‘colour blindness’. It's something you're born with and is quite unrelated to intelligence or memory,” Prof Butterworth says.

Studies of twins have shown that it is sometimes inherited, while research on the brain has revealed abnormalities in the region responsible for number processing.

**‘IF YOU CANNOT ADD,
YOU MUST BE STUPID’**

If dyscalculia is as common as dyslexia, why is it not well known? Prof Butterworth says this may be due to several factors.

The condition has not been widely taught in teacher education or educational psychology courses,

although this is slowly changing.

Being good at maths is often seen as a marker of high intelligence as well. “If Johnny can't add nine and six, he must be stupid. This is similar to the understanding of dyslexia 50 years ago, when failing to learn to read was attributed to low intelligence,” he says.

In addition, he feels that “being bad at arithmetic is somehow more acceptable than being bad at reading”.

Yet, the long term cost of undiagnosed and untreated dyscalculia is stark. Prof Butterworth says more research is needed, but he points to a 2008 government study in Britain, which revealed that dyscalculia reduced an individual's lifetime earnings by £114,000 and reduced pupils' chances of achieving five or more GCSEs by seven to 20 percentage points. The General Certificate of Secondary Education is an academic qualification used in England, Wales and Northern Ireland.

In comparison, the impact of dyslexia was less severe. It reduced lifetime earnings by £81,000 and reduced the probability of good GCSEs grades by three to 12 percentage points.

Few famous or successful people have come out as dyscalculic, Prof Butterworth notes. “It would be very helpful if they did.”

In September last year, British singer Robbie Williams did so in a podcast, admitting that he still finds it hard to add or subtract.

IS IT REALLY DYSCALCULIA?

If your child is struggling with maths, first rule out other reasons

such as missing lessons, disliking the teacher or being unable to cope with the speed of the curriculum, says Prof Butterworth.

Ms Aishah adds that it is equally important to distinguish between dyscalculia and dyslexia with mathematical difficulties.

Some dyslexic kids find maths hard because it is language-based, while executive functioning challenges such as poor working memory compound the issue.

The number of students at DAS with mathematical difficulties has grown from 180 in 2014 to 340 this year. Of this figure, about 1 per cent have been diagnosed as having dyscalculia.

Some children have both dyslexia and dyscalculia.

Concerned parents should seek an assessment to find the underlying reasons for their child's maths challenges, she says.

They can talk to their child's school for advice, seek private psychologists or book an appointment at DAS. The latter's fees vary according to the tests needed, but it offers generous bursaries to eligible families.

A spokesman for the Ministry of Education (MOE) told The Straits Times that primary school pupils who need help with basic numeracy skills are placed in the Learning Support for Mathematics (LSM) programme.

“Under the programme, they are taught in small groups of no more than eight by a dedicated LSM teacher who is trained in specific pedagogical approaches. Their progress is also monitored closely and regularly by the teacher.”

MOE did not provide figures on

the number of students with dyscalculia, but it added that “Special Access Arrangement for examinations is not granted to students solely on the basis of dyscalculia”.

Students with what the MOE terms Special Educational Needs can apply to the Singapore Examinations and Assessment Board for relevant access arrangements during national examinations.

Parental support is critical for kids with dyscalculia as they often suffer from maths anxiety, Prof Butterworth stresses.

“Being dyscalculic makes the learner very anxious about anything to do with numbers. Many report that numbers seem like a foreign language that they struggle with.”

“Public failure also engenders anxiety, for example, being the only one in the class to fail a simple number task.”

“Support and encouragement is critical. Praise, not criticism.”

He suggests that parents check out digital games designed for dyscalculics that use “microworlds to show the very basic relationships between sets and numbers”.

These include free ones such as Number Race, and subscription-based games like Meister Cody and Dybuster's Calcularis.

Ms Aishah adds that parents “should be their child's advocate to educate the school's teachers about their child's learning needs so that suitable access arrangements can be provided”.

“This will provide a more equitable learning environment for the child to succeed in school.”

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