

## **New methods make maths approachable**

**‘Maths anxiety’ is being laid to rest through new and innovative approaches, writes Charles Happell.**

Learning mathematics has, for some, all the appeal of eating Brussels sprouts or lying back in the dentist’s chair. It is something to be suffered through and rarely enjoyed.

For too long, maths has attracted this unfair reputation, so much so that ‘maths anxiety’ is now a recognised condition among some Australian schoolchildren (albeit one that doesn’t appear in any medical dictionary).

But help is at hand. A new generation of maths teachers is aiming to counter some of these negative stereotypes, and teach the subject in a way which is less threatening and more accessible and fun. Less emphasis is being placed on the traditional methods such as rote learning of times tables and memorisation of formulas and more on innovative strategies.

Darren Thresher, a primary teacher and academic care leader at Cornish College, in Bangholme, is one of those at the vanguard of this new approach.

He was recently awarded a Teaching Innovation Fellowship at the Victorian Academy of Teaching and Leadership, one of 30 teachers from 26 government and non-government schools across the state to be acknowledged.

Each fellowship provides funding for teachers to design and implement a 12-month innovation project.

Thresher’s project focuses on mathematical problem-solving – improving the duration and quality of attempts while fostering a more positive attitude towards the subject – and developing a more accessible, ‘friendly’ mathematical vocabulary for years 5 and 6 students.

“We were seeing quite a lot of mathematical anxiety in primary school,” he says. “And when we dug down we discovered that many [students] couldn’t do maths because they lost it at the comprehension stage; they simply don’t know what they’re being asked. The language of maths...was becoming a barrier.

“So we’ve tried to change those traditional classroom structures and remove barriers to learning ... so we’re trying to teach students how to think rather than what to think.”

Thresher cites an example of what he means: students were recently asked to measure the volume of a particular shape. One or two students knew the formula for this and were able to apply it to the problem; others tackled it from a different angle.

“There might have been five different approaches used,” he says. “Yes, one might be a whole lot more efficient, but that doesn’t necessarily mean the other four aren’t useful or successful because they all ended up in the same place, with the right answer.”

After six months, early indicators show an increase in student engagement, a decrease in the number of non-attempts at solving problems, and an increase in the duration and frequency of problem-solving attempts.

A similar overhaul is taking place at Camberwell Girls Grammar School.

“Our teachers try to strike the balance between ‘explicit teaching’ – traditional maths teaching techniques – and showing students how they can discover some of the maths rules through inquiry,” says the school’s head of mathematics, Anthony Pasinati.

One student recently solved a geometry puzzle using parallel lines; another by using triangles. Pasinati was delighted at the different approaches – which arrived at the correct answer.

He says although girls’ confidence can sometimes be more easily dented than boys’ when they fail at a maths problem, they are embracing the subject with gusto. This year, 95% of girls in year 11 took maths (the subject is compulsory until year 10) and 85% in year 12.

The most notable change to the CGGS maths syllabus has been the addition this year of a coding unit in years 7 and 8. This helps students become familiar with the language of coding, in this case Python, given that coding is being offered this year as a VCE subject.

“It’s a long way from what you might regard as traditional maths,” Pasinati says, “but it’s important we embrace this kind of change.”

*‘We’re [teaching] students how to think rather than what to think.’*

Darren Thresher