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Feted teacher's mission to break innumeracy cycle

EXCLUSIVE

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ONLY one in five Year 9 students can figure out the area of a floor surface even with a calculator and about 90 per cent are unable to answer sums involving positive and negative numbers.

Results from the national numeracy tests this year show that by Year 9, a large majority of students struggle to perform geometric calculations. Only 13 per cent could correctly calculate the surface area of a cube.

About four in five could not write one-sixteenth as a decimal or calculate the size of an angle in degrees, and fewer than half could find the shortest route on a map.

Results for NSW students, contained in the NAPLAN (National Assessment Program — Literacy and Numeracy) report sent to parents by the state Education Department, tend to underestimate the problems with mathematical understanding among students, given NSW performs above the national average.

Academics point to similar conceptual difficulties among aspiring teachers.

As reported in The Weekend Australian, more than half the students in a graduate diploma of education at one university could not answer the question: "If the total cost of three tickets is $5.64, how much will 10 tickets cost?''

Sydney maths teacher Mark Gronow is on a mission to "break this cycle" by addressing the problems that have seen teachers, and consequently high school students, fail to master the building blocks of maths.

Mr Gronow, head of mathematics at Stella Maris College in Manly on Sydney's northern beaches, was yesterday awarded the inaugural $25,000 Brother John Taylor fellowship

research prize by the NSW Catholic Education Commission for his work to boost student engagement with maths.

“My belief is if you go back to the basics, you get outcomes; let’s talk about division, fractions and patterns,” said Mr Gronow, a teacher of 30 years’ standing.

His research project will focus on mathematical structure and address how teachers can focus on teaching problem-solving skills and basic number and operation concepts.

More than 40 per cent of students in Years 7 to 10 were taught by untrained maths teachers, he said.

“As a maths-trained teacher, I can communicate foundations but a PE teacher doing that is just going to be working through the text book,” he said.

Mr Gronow said these concepts were included in the current curriculum but were buried beneath a content-laden syllabus that teachers were struggling to get through within class time.

In the age of the calculator, kids were conditioned to providing instant answers before they had a solid understanding of the actual questions, he said.

Associate Professor in Education at Macquarie University Joanna Mulligan is supervising Mr Gronow’s postgraduate research in the field and said “real mathematical thinking” was being eclipsed by “superficial exercises” in classrooms.

“Mark’s work is about the importance of understanding that two plus three is the same as three plus two,” Dr Mulligan said. “It is about being able to justify and articulate your answer.”