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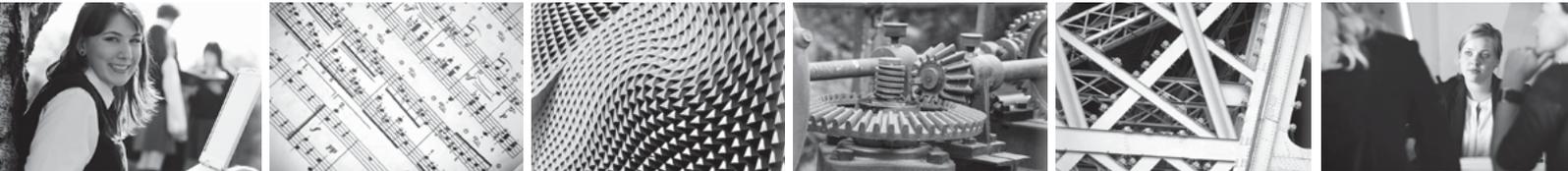
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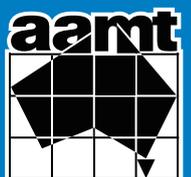


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opinion

Mathematics education: Who's responsible?

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Mathematics education features regularly in the media. The most recent international testing results highlight a decline in Australia's mathematics achievement when compared to other countries. So, who's responsible? Is it teachers, or should parents and the broader community share some of the blame? Typically, teachers are the first to be blamed because they work at the coal face, spending significant amounts of time with students, making them an easy target. But shouldn't the wider community, as a society that considers it acceptable to proudly claim "I'm not good at maths" take some portion of the blame?

Numeracy and mathematics education is everyone's business

As a society, everyone needs to take some responsibility for the decline in mathematics achievement and we all need to collaborate on a plan to move from a decline to an incline. There are three groups of stakeholders who need to work together: the general community, the policy makers and school systems that influence and implement the policies, and the teachers.

It seems everybody's an expert when it comes to mathematics education because we all experienced schooling in some form. Many say: "I survived rote learning—it didn't hurt me". The world has changed, access to information and technology has improved dramatically, and the traditional 'chalk and talk' practices are no longer appropriate in today's classrooms. Many hold a limited view of school mathematics as drill and practice and computation. Although it's important that students build fluency, it's simply not enough. We must promote problem solving and critical thinking—making the purpose of learning mathematics visible to students. It is, after all, problem solving that forms the core of national and international tests.

Community pressure for teachers to use text books and teach using outdated methods, along with a crowded curriculum and a perceived requirement for teachers to 'tick curriculum boxes', regardless of student progress, causes significant tensions for teachers. Consider the limited number of face to face teaching hours allocated to teacher education degrees and the expectations that all teachers suddenly become experts upon graduation. We must understand that teachers need continued support beyond their tertiary education to develop their skills. In addition, rather than focusing on students' learning, the crowded curriculum leads them to focus on getting through the curriculum and this often leads to a 'back to basics' approach of text books, work sheets and lots of testing that does not create students who can problem solve, problem pose and problem find.

This is where the policy makers and school systems must come into play by providing support for high quality and sustained professional learning and encouraging primary teachers to gain expertise as specialist mathematics teachers. We have a strong curriculum that promotes problem solving and critical thinking both through the Proficiencies and the

General Capabilities. However, teachers need to be supported by all stakeholders to use these tools and focus less on teaching mathematics as a series of isolated topics that make little sense to students.

What can we do?

There are no easy solutions, but one thing is clear. We need to disrupt the stereotypical perceptions of what school mathematics is and how it should be taught. We need the community to support our teachers and work with them rather than against them. Parents need to actively incorporate mathematics into conversations with their children, and more importantly, need to display positive attitudes towards mathematics and learning. It's just not good enough to say "I'm not good at maths". Let's band together and make some changes that will ultimately benefit the most important stakeholders of all, the children of Australia.