June 2018

Highest Common Factor

Newsletter of the Australian Association of Mathematics Teachers (AAMT) Inc.

From the President

Passion. It's a word that we use to describe a quality found in our best teachers. No doubt many of us have considered ourselves or a colleague as being passionate. Strong. Energetic. Emotional. Our students might recall our passion as one of the qualities that endeared us to them and perhaps opened their eyes to the joy of mathematics.

On ABC Breakfast recently, David Astle, (wordsmith from the SBS Letters & Numbers program) spoke of the word's origin: pain, suffering, agony and martyrdom. I'm not sure I have met too many mathematics teachers who would literally walk over hot coals to inspire their students! It's also a cliché that often pops up in job applications.

Notwithstanding, we need to recognise that, across the entire gamut of Australian schools and all school sectors, there are many knowledgeable, enthusiastic and committed mathematics educators. I am fortunate to have had the opportunity to work closely with a number of them during my career.

What is the source of this passion? The answer, of course, differs with each individual. For me, it started as child in my grandfather's office. I remember watching him, fascinated, as he skilfully and confidently used an abacus to count the day's takings from the Sunday collection plate.

When I started school mathematics (pre-Sesame Street!), the thing I looked forward to the most was where we got to play with Cuisenaire rods. I found the endless patterns and relationships captivating.

In the early 1970s, my mother brought home an electronic calculator—a Sharp Elsimate EL-120. It could add, subtract, multiply and divide. At the time I thought that this calculator was the pinnacle of technology, even though it could only display three digits at a time (you had to scroll through to read answers greater than 999).

Towards the end of the 1970s, when in Grade 12, I bought my first calculator with all the functions we now associate with scientific calculators. I was the first student at my school to be allowed to sit exams with an electronic device, instead of a book of tables. (I was also part of the first cohort at my school to dispense with slide rules—something that, with the benefit of hindsight, I now regret).

But this is not a story of devices and rapidly changing technologies. It's about the people who guided me in developing my mathematical inquisitiveness: My grandfather, for his eternal patience; my enthusiastic primary teachers that nurtured and guided my early experiences with the subject; and the many teachers at my high school who continued to support and develop my mathematical understandings. In particular I must acknowledge the time, patience and interest that was afforded to me by QAMT Life Member, Bill Simpson. By any measure, Bill was certainly a passionate mathematics teacher, teaching at Brisbane State High School when I was an attending student. I am grateful for his assistance and encouragement. Years down the track, it has been a delight to attend Bill's workshops at AAMT Biennial Conferences. He certainly hasn't lost his passion.

Today, with 35 years of teaching under my belt, I'm still passionate about mathematics and the way it is taught. So, I encourage you

AAMT Office

GPO Box 1729, Adelaide SA 5001
Building D, 80 Payneham Road, Stepney SA 5069
PHONE 08 8363 0288 FAX 08 8362 9288 EMAIL office@aamt.edu.au
www.aamt.edu.au

to reflect: When did you first feel passionate about mathematics? What are the key chapters in your story? Who are the key people who lit the fire for your passion? How will you engage with AAMT to nurture this passion for yourself, or to ignite it in your students and colleagues?

Jurek Paradowski
President
president@aamt.edu.au

Postscript: I would like to acknowledge the leadership of our Immediate Past President, Allason McNamara, and the Councillors who completed their terms as of the Annual General Meeting in April: Karen McDaid and David Shigrov. Their insight and attention to detail have been a hallmark of their time on Council. They have left the AAMT in a sound state for the ongoing Council, and for our new CEO. Finally, I would like to wish outgoing CEO, Will Morony, all the best for a long, healthy and well-deserved retirement. Thank you, Will, for the dedication and passion with which you have guided AAMT for well over a decade.

reSolve: Maths by Inquiry

New reSolve resources

The Modelling Motion lessons are now available for trialling from the Special Topics tab on the reSolve website at www.resolve.edu.au. They provide students with an authentic STEM experience where mathematics is central to understanding the science and technology. The materials were developed by Susie Groves, Brian Doig and John Cripps Clark of Deakin University, and Julian Williams of the University of Manchester. They were trialled in primary and secondary schools with Years 5–8.

Champions' workshops

Champions from around Australia recently enjoyed the opportunity to develop their knowledge about leading cultural change to transform school mathematics. Professor Olive Chapman from the University of Calgary shared her substantial body of research and practice in building professional learning communities in two-day workshops with Champions.

A key message was the importance of fostering a community of inquiry in which participants share a common goal that addresses a pedagogical or mathematical problem. Champions also had the option of participating in a masterclass at which Professor Chapman presented some of the theoretical ideas underpinning her work in leading cultural change.

The overarching goal for the workshops was to equip reSolve Champions to become an ongoing force in Australian mathematics education by:

- developing their understanding and skills in leading cultural change in school mathematics;
- strengthening and extending connections and relationships between themselves, and with affiliated associations and systems;
- working to develop action plans for 2018 and beyond;

—while keeping the reSolve Protocol at the heart of what they do.

Representatives from each of the AAMT Affiliates, and the Government, Catholic and Independent sectors in each State and Territory, worked with Champions to develop those connections.

At the workshop, a short video to explain and promote reSolve was launched. You may wish to show it to your colleagues or at a parents' event; view it at http://tiny.cc/resolve-promo.

Maths300 updates

Maths300 (www.maths300.com) is a subscription website with engaging lessons and professional support. Since AAMT acquired Maths300 last year, the service has continued to function 'as is'—but there has been a lot of planning happening with regards to its future!

The website has just received a 'makeover' to reflect its new look and branding and to make navigation a little easier for both subscribers and non-subscribers alike.

This is an interim makeover, while an entirely new site with different features and greater ease of use is being planned.

A new lesson format has been developed. You can find a sample lesson *Multo! Better than Bingo* which can be downloaded for free at www.maths300.com/updates.html.

A version of the Maths300 software is also being developed for iPads which should be available soon.

AAMT has been working with the affiliated associations in each State and Territory to implement Maths300 professional learning programs. You can find a list of people who can help you and your school with Maths300 at www.maths300.com/learning.html.

AAMT would welcome any comments or suggestions about the site, presentation of materials, or the sort of professional support desired by you and your school; email feedback@aamt.edu.au.

From the CEO

This is my last column as CEO of AAMT. Duncan Rayner will take over the role when I retire at the end of June. This is a huge change for me; please forgive me if what follows is a little self-indulgent.

I started my life in education as a mathematics and science teacher in government high schools in South Australia. After 10 years in various mathematics positions in the SA Education Department's central office, in 1997 I took an 18 month contract at AAMT as Professional Officer. The short term of the appointment was explained as: "We've got enough in reserves to pay you for 18 months; if there is enough income you can stay." So here I am, over 20 years later, the last 10 or so as Chief Executive Officer.

Throughout my career, I have been blessed. As a teacher I worked with some very talented and generous people who taught me a great deal. Most importantly, they helped me get hooked on the buzz that comes from seeing the lights go on in a student's eye when they 'get it'.

My time working in the Department included opportunities to meet and work with many leading teachers and researchers locally and nationally. Again, I had outstanding mentors, particularly several who helped me understand and appreciate mathematics in the primary and early years.

There is no doubt that AAMT has changed a great deal in this 20 years. Since I announced my retirement, a number of people have commented positively on the development of AAMT during my time. My response has been to thank them for their kind words, but to make the point that everything that has been achieved has been a team effort. AAMT is indeed fortunate to attract outstanding people to the Council and leadership positions, to the staff, and as collaborators on the many projects and initiatives we have been involved with over the years.

What has held those people together has been their commitment to:

- supporting and enhancing the work of teachers;
- promoting the learning of mathematics; and
- representing and promoting interest in mathematics education.

These are AAMT's goals—I am pleased to have had the opportunity to work with so many like-minded professionals towards achieving them.

Over the years, I have come to describe my role at AAMT as the 'best job in mathematics education in the country'. I have explained that by saying that I get to work in an area that I am passionate about; with and for people who appreciate what I do; and they pay me money. What a great trifecta!

So what next? When I tell people that I am retiring, I quickly add, "But not from life." I am sure I will be doing all the things I see others who retire doing: spending more time with grandchildren, working around the house at my pace, travelling and (hopefully) looking younger and more relaxed by the day.

I will not be walking away from being involved in mathematics. One of my post-retirement projects is working with the group developing the Australian bid to hold the 15th International Congress on Mathematics Education (ICME15) in Sydney in 2024. We were very close to securing ICME14 for 2020 and are determined to go one better this time. For me, however, this is not just a matter of being competitive. In 1984 I was lucky enough to attend ICME5 when it was held in Adelaide. It was a pivotal event in my professional career in very many ways. I hope that I can be part of creating the same opportunities for another generation of teachers. 1984 was the only time the congress has been held in the southern hemisphere. Celebrating the 40th anniversary in 2024 is something to aim for. Watch this space…

In conclusion, I wish to say a very big thank-you to to all those people who have made my time at AAMT so richly rewarding and enjoyable. I also want to encourage all teachers of mathematics to continue to 'fight the mathematical good fight' for all our young people. They deserve nothing less.

Will Morony
Chief Executive Officer
wmorony@aamt.edu.au

AAMT conference in 2019

Plans are under way for AAMT's 27th Biennial Conference which will be held 9–11 July 2019 in Brisbane. Keynote speakers include:

- James Tanton, ambassador for the American Mathematical Association, perhaps better known for 'Exploding Dots';
- Catherine Attard from Western Sydney University; and
- Sara Herke from the University of Queensland will deliver the Hanna Neumann Memorial Lecture.

The conference is being convened in collaboration with the Queensland Association of Mathematics Teachers. The last time the conference was held in Queensland was in 2003, so start planning for a warm getaway next July! More details later in the year.

Collaboration between AAMT and your local association

The mathematics teacher associations in the States and Territories are the 'owners' of AAMT—people from those associations (the Affiliates) govern AAMT through its Council. In recent times, the Affiliates and AAMT have seen the value in working more closely together in the interests of you, our members. To this end, AAMT and each Affiliate has now signed a *Memorandum of Understanding* to identify the set of mutual commitments in the relationship.

Much of what is included in the documents has been happening anyway, but it is good to have those things documented. There is a fair bit in common between the eight individual MoUs. That is unsurprising because in broad terms the associations are on about the same things and work in similar ways. But there are some unique elements in some that provide scope for new initiatives and ways of working.

Over time, the MoUs will help to strengthen the collaboration that will benefit all concerned. If you are interested in what the MoU for your association says, please feel free to contact your AAMT Councillor (see www.aamt.edu.au/Contact/Council) or contact the AAMT Office: office@aamt.edu.au.

Australian Mathematics Competition

The Australian Mathematics Competition (AMC) is one of Australia's largest school-based mathematics competitions run by the Australian Mathematics Trust.

The AMC is an engaging 30-problem competition that demonstrates the importance and relevance of mathematics in students' everyday lives; it is open to students in Years 3–12.

The AMC is run by teachers in schools and offers ongoing support and resources prior to and on the day of the competition. The competition is available in two modes: online and paper. Registration closes:

- 15 June 2018 (paper version)
- 2 August 2018 (online version).

Go to www.amt.edu.au/mathematics/amc.

The Australian Mathematics Trust is also holding a competition for teachers who register this year: for every five students above your 2017 number, your school will earn one entry into the prize draw.

- First prize is a two-hour workshop for either teachers or students delivered to your school by AMT's Chief Mathematician (valued at $3500).
- Second prize is enrichment material for the Mathematics Challenge for Young Australians (MCYA) 2019 for up to 50 students (valued at $2100).
- Third prize is free entry into the 2019 AMC for up to 100 students (valued at $650).

For more information, see www.amt.edu.au.

AAMT Treasurer

Rom Cirillo (WA) has been appointed AAMT Treasurer until AAMT's AGM in 2020. No election was necessary as his was the only nomination received. Nominations for Treasurer are made by Councillors before 31 March in each even-numbered year with elections held (if necessary) at the AGM.

National Mathematics Talent Quest

Judging for this year's National Mathematics Talent Quest will be held at the offices of the Mathematical Association of Victoria on 6 September with the awards ceremony to be held at La Trobe University (Bundoora) on 18 October.

Contact your local affiliated association to find out the details of your local competition; see www.aamt.edu.au/Membership/Affiliates for contact information

Writing for AAMT journals

Whether you are an early career or highly experienced teacher, sharing your knowledge and experience is a great thing to do: it not only allows you to reflect on and document your teaching practices, but assists others to learn or question their own. Submissions are always sought for AAMT's three journals: *Australian Primary Mathematics Classroom*, *The Australian Mathematics Teacher*, and *Australian Senior Mathematics Journal*. You can find sample articles and information about submitting articles at www.aamt.edu.au/Journals.