

hcf highest common factor

Newsletter of The Australian Association of Mathematics Teachers Inc.

March 2011

From the President Building strong mathematics associations: The case for connecting researchers and practitioners



The recent Council meeting of AAMT endorsed a strategic plan to guide emphases and activities over the next three years (see www.aamt.edu.au/About-AAMT/Strategic-Plan). AAMT is currently developing a new constitution. The focus of both the strategic plan and the constitution is to identify ways in which the affiliated associations and AAMT can work together to pursue their respective aims. In fact, in determining priorities in our activities, anything that improves the experience of students when learning mathematics, supports teachers in doing that, and enhances the community's perceptions of mathematical ways of seeing the world is worth doing. Not only is there an imperative for AAMT and its affiliates to work together toward these common goals, but also it will be useful for us to decide whether there are other associations with which there would be advantages in AAMT forming closer relationships. In this message, I want to focus on mathematics education research.

With Doug Clarke and Barbara Clarke, I have been working on some research exploring students' experience at school and particularly with mathematics tasks. We found that students' opinions were diverse. This is not

surprising. What was surprising was that they were very different from each other. Students hold strongly divergent views on what is meant by learning, by interest in school, in their confidence that they can do mathematics, in their satisfaction with their mathematics classes, in the type of tasks they feel they can learn from, the type of tasks they claim to enjoy, the structure of lessons they claim to enjoy, the structure of lessons that they feel they can learn from, their grouping preferences, and their preferences for the choice of tools.

This was of interest to us as researchers partly because there is an assumption in much research that students hold coherent views on such topics and the task of researchers is to identify those views.

Such research is also of interest to teachers and there are significant implications for approaches to teaching. Based on the above findings, it seems that learners would benefit if teachers acknowledge the diversity of confidence and satisfaction in their students. It also seems that learners will benefit when teachers plan a variety of lesson structures, choose a range of task types, utilise a diversity of grouping practices, and incorporate a range of learning tools, at least over time.

In other words, the example mentioned above has as many implications for practice as it has for future research and researchers. It raises the question of what are the best ways of facilitating access of teachers to research such as this.

Australia has an active and productive mathematics education research community as evidenced by the productivity of the Mathematics Education Research Group of Australasia (MERGA) conference and publications. There is also a substantial appetite for teachers to find out about research. The ACER conference in 2010 titled *What Research Tells Us About Effective Mathematics Teaching and Learning* attracted over 900 participants. The challenge for AAMT, MERGA, and other interested associations is to find ways to connect researchers with practitioners. An obvious advantage is for teachers to hear findings from researchers about what works in schools. Another advantage would be for more direct influence and input from practitioners on the emphases, questions, theories chosen, and even the research methods used by researchers.

This creates challenges and also opportunities for AAMT and its affiliates. The very successful AAMT journals APMC, AMT and ASMJ are an ideal avenue for researchers to translate their own findings, and the findings of others, into advice for practitioners. Researchers are encouraged to submit such articles and I invite teachers to comment on those articles when they appear.

The various conferences of the affiliated associations are also an ideal place for researchers and practitioners to meet and to hear the opinions of each other. It would be very helpful for researchers to offer to present sessions at those conferences that are syntheses

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supporting and promoting mathematics education

of research and which translate research findings for practitioners. Practitioners would benefit by attending those sessions and researchers would benefit by teachers expressing their views on the value of the research reported for them in their practice.

One significant opportunity for researchers and teachers to come together is at the combined AAMT and MERGA conference this year in Alice Springs in July. For more information about the conference and for registration, go to www.aamt.edu.au/aamt-merga-conference. We look forward to seeking you at the conference.

Peter Sullivan, President

Secretary's report 2010

This is an abridged version of the report presented to the AAMT Council in January. The full version is available at www.aamt.edu.au/Publications-and-statements/Reports.

The AAMT has positioned itself as Australia's leading professional organisation of mathematics teachers and continues to maintain a high standing in the education community in Australia. This report highlights some of the significant activities undertaken by the AAMT in 2010.

The AAMT successfully convened the *Ways Forward—Teacher support and the Australian Curriculum: Mathematics* conference. This mapped out priorities and actions for AAMT to foster effective implementation of the *Australian Curriculum: Mathematics* and associated professional learning opportunities and was attended by over 100 representatives from education systems, schools, and universities.

The AAMT has continued to work with the Australian Curriculum, Assessment and Reporting Authority (ACARA) in the consultation processes around both the K–10 and Year 11–12 *Australian Curriculum: Mathematics*. The AAMT has also contributed items to the pilot of the Australian Curriculum Connect project being facilitated by Education Services Australia (ESA). This project aims to link teaching and professional learning resources to the content in the Australian Curriculum.

The AAMT Office is working in collab-

oration with the Mathematics Education Research Group of Australasia (MERGA) to convene a joint conference in Alice Springs in July 2011. The conference program will aim to blend the interests, and strengthen the professional relationships between, classroom teachers, teacher educators and researchers.

The Make it Count Project is now into its second year. Eight clusters of schools across five Australian states have identified particular needs and developed action plans to improve the teaching and learning of mathematics, including developing strategies to meet the common project focus of enhancing community engagement.

National Mathematics Day was celebrated on Friday 21 May 2010. A range of resources and readings to share and promote effective teaching and learning of mathematics were made available on the AAMT website.

The seventh Reach for the Stars National Literacy and Numeracy Week activity was titled "Fit for Thinking". Over 80 200 students across the country were involved in timed shuttle relays, collectively dropping over a million shuttles into containers and running over 43 200 kilometres!

The annual National Mathematics Talent Quest (NMTQ) provided an opportunity for students to investigate a mathematical topic and present their findings in a range of ways.

The 42nd National Mathematics Summer School was successfully conducted in January. The Summer School is a collaborative project between the AAMT and the major sponsors; the Australian National University in Canberra who hosts the event, the University of Sydney and the AL Blakers Memorial Fund.

The National Professional Standards Committee—Mathematics (NPSCM) has continued to play a key role in supporting the Recognising Excellence: Highly Accomplished Teachers of Mathematics Project 2008–2012 being conducted in collaboration with the Catholic Education Office of Melbourne. The NPSCM is also investigating the revision of the AAMT Standards in the light of the *National Professional Standards for Teachers* and the *Australian Curriculum: Mathematics*.

The AAMT successfully completed the Standards for Accomplished Primary Teaching project for the Australian Institute of Teaching and School Leadership (AITSL) this year. The project involved developing draft *Standards for Accomplished Primary Teaching*.

AAMT was contracted by the Australian Securities and Investment Commission (ASIC) to provide advice on the promotion and support of Consumer and Financial Literacy in the context of the *Australian Curriculum: Mathematics*. The initial part of this work has now been successfully completed, and discussions are under way between AAMT and ASIC about extending the project.

The AAMT has successfully completed a report for the Australian Government about online professional learning programs, resources and projects in Australia.

The AAMT embarked upon a productive process to develop a Strategic Plan and organisation structure to ensure that the AAMT is a responsive, relevant and practical professional association to its membership. There have also been discussions and related matters concerning governance and review of the AAMT Constitution.

The AAMT remains very active in maintaining contact with a range of community groups including: National Education Forum (NEF), Australian Mathematics Trust (AMT), International Assessments National Advisory Committee, Australian Council of Heads of Mathematical Sciences (ACHMS), Aboriginal Summer School for Excellence in Technology and Science (ASSETS), Australian Institute Teaching and School Leadership (AITSL), the Australian Curriculum, Assessment and Reporting Authority (ACARA), and the CSIRO Scientists in Schools Project. The AAMT has also supported the International Mathematics Olympiad team. These relationships have been mutually beneficial and are invaluable in gaining information about initiatives and projects to which AAMT can contribute.

The AAMT Executive greatly appreciates the role played by the office staff in effectively meeting the objectives of the Association.

Geoff Gillman, Secretary

From the CEO

One of the important tasks for the annual meeting of the AAMT Council is to consider and provide guidance on the work of the Association for the coming year. An outline of some of that discussion suggests that 2011 will be a very busy year for AAMT:

- revising the catalogue and developing improved ways for making people more aware of the great resources that are available;
- working with editors to further improve the quality of the AAMT journals;
- developing a position paper and other materials in the area of tutoring in mathematics (position papers in some other areas are also under consideration);
- maintaining a strong voice in the work on the senior years of the *Australian Curriculum: Mathematics*;
- a number of projects that are underway in areas such as Consumer and Financial Literacy, effective and innovative use of ICTs in everyday learning of mathematics, the Make it Count project to develop approaches and resources to support Indigenous students' learning, using the AAMT Standards to identify and acknowledge Highly Accomplished Teachers of Mathematics and the Reach for the Stars project as part of National Literacy and Numeracy Week; and
- other projects that are under development and awaiting final agreement: these include developing video vignettes to support professional learning of early childhood educators, developing guidelines on the mathematics that should be included in pre-service teacher education courses, contributing to the development of the resource bank that teachers will be able to access to support their teaching in the context of the new

national curriculum, developing professional learning modules to support the implementation of the *Australian Curriculum: Mathematics*.

All of that as well as the AAMT–MERGA Conference in Alice Springs in July!

As can be seen from the list of projects and other activities, the recent publication of version 1 of the *Australian Curriculum: Mathematics* by the Australian Curriculum and Assessment Authority (ACARA) and of the *National Professional Standards for Teachers* by the Australian Institute for Teaching and School Leadership (AITSL) are influencing the direction of AAMT's work. This is inevitable as Australia moves to more national approaches to school education.

One of the key aspects of the AAMT *Strategic Plan* is that we need to form partnerships and work with others. The work outlined above involves AAMT working with a very wide range of organisations. These include other professional associations (the Australian Mathematical Society, the Mathematics Education Research Group of Australasia, the Statistical Society of Australia, Early Childhood Australia), national and state governments, and other organisations (ACARA, AITSL, Australian Securities and Investments Commission, Catholic Education Office, Melbourne).

Most of all, our aim is to work with and for you, our members. Not all of these projects and initiatives will be of direct interest or relevance to you, of course. But please take the time to keep an eye out for opportunities to become involved or have your say. As a member you will receive regular emails from AAMT about our work. A regular look at the website is a good way to keep in touch, too.

Will Morony, Chief Executive Officer

Have Sum Fun Online

The Mathematical Association of Western Australia has been running this interactive online quiz for over a decade. AAMT has joined forces with MAWA to help promote the activity across Australia.

Have Sum Fun Online is a maths quiz of problems and puzzles for school teams of four students. The competition consists of three rounds of 10 questions, with each round accessible on the website for one week. Rounds are a week apart.

There is still time to enter teams in the Term 2 quizzes. For more details go to www.havesumfunonline.com.

ICT in everyday learning

The *ICT in Everyday Learning: Teacher Online Toolkit* project (pedagogy-centred ICT professional learning) will enhance the capacity of in-service teachers to effectively incorporate varied technologies in classrooms while assisting the implementation of the *Australian Curriculum*. The project will develop, trial and disseminate online professional learning resources that support the commonwealth government's Digital Education Revolution initiatives. The resources will be designed to be accessed by individual teachers and by school leaders.

AAMT is one of several professional associations in partnership with universities and Education Services Australia to undertake this work. For further information about the project go to www.aamt.edu.au/Activities-and-projects/ICT-ESA-Project.

Last chance to get your 2011 Problem Pictures Mathematics Calendar

This 12-month calendar published by AAMT has 13 stunning full-colour A4 photographs with accompanying problems and investigations. Problems generally appropriate for Years 4–10+

1 calendar: \$22.00 (non-members \$27.50)

2–4 calendars: \$16.50 each (non-members \$20.60)

5 or more: \$12.00 each (non-members \$15.00)

Prices include GST and postage. #AAM2011

"They are fantastic problems and good decoration for the maths classroom."

To order, contact the AAMT office or go to www.aamt.edu.au/Webshop.



New President Elect



Dr Kim Beswick has been elected to the AAMT Executive as President Elect. A former secondary school teacher, Kim is now an Associate Professor in Mathematics Education at the University of Tasmania. She is a former President of the Mathematical Association of Tasmania, and has just retired as co-editor of the AAMT journal *Australian Primary Mathematics Classroom*. Kim will be a member of the AAMT Executive 2011–2014, serving her term as AAMT President 2012–13.

Kim joins the Executive as former Immediate Past President Judy Anderson steps down after serving on the AAMT Executive 2007–2010. Judy was warmly thanked for her work at AAMT's January Council meeting.

New editors for AAMT journals

New editors have been appointed for two of AAMT's journals. Thanks go to Tracey Muir and Kim Beswick (both from the University of Tasmania) who have stood down after three years as editors of *Australian Primary Mathematics Classroom* (APMC). The new editors are Paul Swan (who co-edited the journal in its early years) and Linda Marshall, both from Edith Cowan University in WA.

Thanks also go to Judith Falle (University of New England, NSW) who has stood down as editor of *The Australian Mathematics Teacher* (AMT) after more than five years in that role. The new editor is Bruce White from the University of South Australia.

The new editors were formally appointed by the AAMT Council at its January meeting and, by the time you read this, have already produced their first issues.

Submissions from academics and practising teachers are always sought for all AAMT journals and should be submitted via the AAMT office.

AAMT–MERGA conference

Already over 300 people have registered for the joint AAMT–MERGA conference to be held in Alice Springs, 3–7 July.

While AAMT and the Mathematics Education Research Group of Australasia (MERGA) have had shared days at conferences before, this is the first truly joint conference and aims to blend the interests of and strengthen the professional relationships between classroom teachers, teacher educators and researchers.

Offers to present at the conference have closed and a draft program will be available on the conference website shortly. This event is shaping up to be a somewhat different conference to what both AAMT and MERGA members have experienced in the past—and should be an excellent event both professionally and socially.

Note that early bird registration rates close on 6 May. For more information about the conference, go to www.aamt.edu.au/aamt-merga-conference.

Reach for the Stars

AAMT will again be running its popular data collection activity as part of National Literacy and Numeracy Week (29 August – 2 September). This year's activities are currently being developed, so keep an eye on the AAMT website or check your next AAMT mailing for details.

National Mathematics Day

Look to the AAMT website in April for suggestions and activities for celebrating mathematics on Friday 20 May.

AAMT news feeds

Much more happens in the world of mathematics education than can regularly be reported in this newsletter, so AAMT runs various electronic news feeds via Facebook, Twitter, and email. These are free and anyone can sign up. For more information, go to www.aamt.edu.au/News.

DATES TO NOTE

Annual General Meeting

The AGM of the AAMT will be held at 9.00 am on Sunday 10 April 2011 at the Hilton Melbourne Airport Hotel. Members are welcome to attend. NB: According to the AAMT's current constitution, the AGM has only one item of business: the acceptance of the Association's audited accounts. Any member wishing to view the accounts may request copies by contacting the AAMT office.

28–29 April 2011

MASA Annual Conference
www.masa.on.net

6–7 May 2011

MAT Annual Conference
<http://mat.aamt.edu.au>

Friday 20 May

National Mathematics Day
www.aamt.edu.au

23–25 June

QAMT Annual Conference
www.qamt.org/qamt/annual-conference

3–7 July 2011

AAMT-MERGA Conference
Mathematics: Traditions and [New] Practices
Alice Springs, NT
www.aamt.edu.au/aamt-merga-conference

14–19 July 2011

15th International Conference on the Teaching of Mathematical Modelling and Applications
Mathematical Modelling: Connecting to Practice
Melbourne, Vic.
<http://dlibrary.acu.edu.au/staffhome/jibrown/ictma.html>

12–14 August 2011

MAWA State Conference
www.mawainc.org.au

19–20 August

CMA Annual Conference
www.canberramaths.org.au

29 August – 2 September 2011

National Literacy and Numeracy Week
Check www.aamt.edu.au for Reach for the Stars information

16–18 September

MANSW Annual Conference
www.mansw.nsw.edu.au

1–2 December 2011

MAV Annual Conference
www.mav.vic.edu.au

