



# MAKE IT COUNT



## Numeracy, mathematics and Indigenous learners

Welcome to our fifth newsletter for *Make it count*. We've had a busy few months with some valuable progress being made in all of our Clusters. Cluster Leaders, Critical Friends and the project's external evaluators met in Brisbane; the Expert Advisory Group met at Alberton Primary School; Clusters are beginning to branch out and inspire others; three Clusters presented at the *Closing the Gap* forum in Canberra in May; five Clusters are busy planning their workshops for the AAMT-MERGA conference in Alice Springs in July and, our thinking has progressed from 'cultural competency' to 'cultural responsiveness' when translated to classroom practice - see immediately below for more details.

### IN BRIEF

#### FROM THE CLUSTERS

**Alberton:** developing tools with Critical Friend Steve Thornton to measure mathematics resilience.

**Culunga:** First Steps in Mathematics (FSIM) training & resource making with Indigenous Education Assistants, Education Assistants and teachers.

**Dharug:** supporting Blackett PS to take on the successful *Monday Maths Mob* in Kindergarten.

**Gladstone:** appointment of Cluster Leader Lisa Gray to lead cycles of action learning in investigative approaches to teaching mathematics with Associate Professor Peter Grootenboer.

**Healesville:** With Professor Peter Sullivan using Monash Uni GRIN tutoring program to accelerate achievement outcomes with Professor Peter Sullivan.

**Nerang:** Into second cycle of Leading from the Middle model to develop middle management in mathematics and Indigenous education.

**Noarlunga:** Phase 2 schools trialing sequenced, explicit mathematics lessons developed during 2010 in Phase 1 schools.

**Orange:** Very successful community meeting where *Make it count* advisory group established. Looking to develop online resource in 8ways and culturally responsive mathematics pedagogy.

### Cultural competency or cultural responsiveness?

*Make it count* is grappling with the notion of cultural competency and its translation into academic inclusion in the mathematics classroom. At this stage we are using the term 'cultural responsiveness' when we talk about the teaching learning cycle and 'culturally responsive mathematics pedagogy' to improve achievement outcomes of Indigenous learners in mathematics. On 23 May we introduced this idea on a national stage when a number of *Make it count* members attended DEEWR's *Closing the gap* participants' forum and gave a presentation on the project. The following discusses cultural competency in more detail and comes from one of the project's Critical Friends, Dr Tyson Yunkaporta:

'In this project we are striving for cultural responsiveness – more demanding but ultimately more effective than cultural awareness, sensitivity, tolerance or even inclusion.

We do this because we know that culture impacts on cognitive patterns, habits and strategies, which are by no means universal. In light of this, it makes sense to integrate culturally responsive pedagogies in order to improve outcomes for all students.

To understand culturally responsive practice in Indigenous contexts, you need to understand the way we as Aboriginal people employ complex schema built upon conceptual frameworks of kinship and

*Continued on page 2*

### Personal Learning Plans (PLP) at Dharug

Dharug Cluster school Hebersham Primary had a 90% participation rate of Aboriginal parent/family input in their recent PLP interviews. With their parents/caregivers students reviewed progress and goals. Students were encouraged to identify which

Aboriginal group or groups they belong to and as one Aboriginal Education Assistant from another school in the Cluster



*Natalie Longford (centre) updates her PLP with (from left) her mother Sonia Ballangary, Dharug Cluster Leader Chris Payne and Aboriginal Education Assistant Mona McFarlane holding Natalie's niece Brooke*

commented, 'I want my kids to identify as a person from a particular mob' to give kids a greater sense of identity and ownership.



## CLOSING THE GAP

### PARTICIPANTS' FORUM

*Make it count* participants: Karen Petherick, St Brigid's Primary Schools Nerang Cluster; Duncan Peard, Orange Public School Orange Cluster; Katy Morris, Project Manager; Emeritus Professor Paul Hughes, Chairperson *Make it count* Expert Advisory Group; and Gavin Khan, Project Evaluator with Federal Minister for Education Peter Garrett

## Culturally responsive mathematics pedagogy?

### *Continued from page 1*

country, as part of our cognitive process.

We reference landscape; we reference family and community, mapping our knowledge onto these relationships with people and place.

We reference images and signs from people and place, picturing knowledge processes and systems, forming adaptive strategies. We reference narrative, as place is intimately connected with story, without which it would simply be space.

This kind of cognition is not simple or primitive, and requires complex, holistic thinking for the navigation of multiple systems, laws and viewpoints simultaneously. Arguably, this kind of thinking is becoming more valuable in an increasingly complex world.

The development of this kind of cognition requires constant interplay and balance between supported, modelled teaching and independent, hands-on learning. But at its core, Aboriginal pedagogy hinges upon people and place – land and community. Any learning not situated within these two dimensions will produce limited outcomes for our students.

Culturally responsive teaching involves grounding learning in students' own

experience and knowledge of people and place, and ensuring the school and classroom environment reflect these.

Our point of entry into culturally responsive practice for teachers was an Aboriginal pedagogy framework known as [8ways](#), which was produced in Western NSW. It combines Aboriginal pedagogies with mainstream quality teaching to give teachers a familiar but authentic point of entry into Aboriginal ways of knowing and learning. As their understanding grows, they work with community and students to tailor their teaching practices to respond to the diverse lived realities of all their students. So for culture we look at how, not what. Ways, not things. Process, not content. We are recognising that culture is not what your hands touch, it's what moves your hands.'

### **Pedagogical tool developed**

*Make it count* has developed a pedagogical tool that incorporates elements of each of the states pedagogical frameworks and which is adapted from the South Australian Teaching for Effective Learning Review Tools.

The tool is designed for educators to use in classroom observation with their buddies or trusted colleagues or when viewing videos of themselves teaching to

consider culturally responsive mathematics pedagogy and the quality of their teaching in mathematics education with Indigenous learners. (The tool is probably relevant when looking for cultural responsiveness generally). It covers three important components:

- Being intentional
- Being effective
- Being responsive

When using the tool teachers will be asking such questions as:

- ✓ Am I clear about *what* mathematics I want Indigenous students to learn?
- ✓ Is the mathematics important/significant/relevant for their learning?
- ✓ Am I responding to what's happening in the learning?
- ✓ Am I reading the cues that indicate
  - understanding/misunderstanding?
  - engagement/disengagement?
  - appropriate/inappropriate level of challenge?
- ✓ Did what I design enhance learning for Indigenous learners?
- ✓ Did they learn it? How do I know?

This draft tool is available on the *Make it count* online learning network to encourage discussion about culturally responsive mathematics pedagogy. Go to: <http://aamt-makeitcountnetwork.ning.com>.

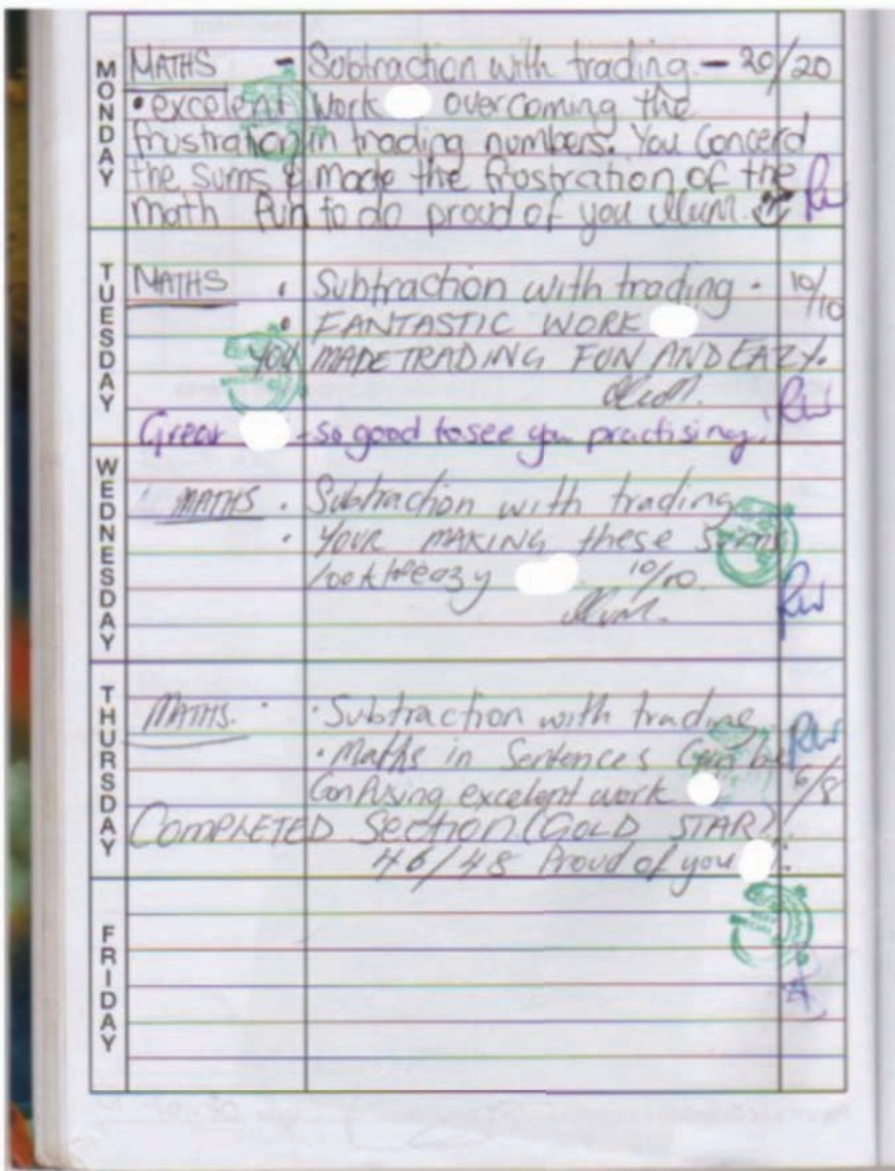
**Good news story: Andrew switches on to mathematics**

Ruby is a middle primary teacher in an urban school in one of the *Make it count* Clusters. She is very experienced in using the Accelerated Literacy (AL) pedagogy and explicitly teaching the cultural orientation necessary to engage in school learning. (For example in literature she draws attention to why authors choose particular adjectives so the reader will like the main character). Ruby has the results to show that she is making a difference in the literacy outcomes of her Aboriginal students. Her Cluster is applying AL principles to the teaching of mathematics through the use of explicit, scaffolded and highly sequenced pedagogy. Ruby discusses the change in one of her Aboriginal students:

*At the beginning of the year and throughout most of term one Andrew, a Year 4 Aboriginal boy, presented as a quiet, under achiever who was lacking in confidence particularly in the area of mathematics. Towards the middle of term one I changed my pedagogy in this subject area and brought it into line with how I taught Accelerated Literacy. For our maths lessons my teaching Mentor and I planned a series of scaffolded, sequential lessons in the area of "place value"...We noticed immediate results in both enthusiasm and confidence building within the classes. The scaffolding, small incremental steps and questioning that follows the Accelerated Literacy pedagogy allowed the students*

*to become confident in asking and answering questions and gave us a better indication of their true understanding. It was easier to assess gaps in learning and address these with the students.*

*Andrew in particular, began to shine in the lessons. He gradually became more confident to offer answers. He now asks questions when he doesn't understand. He shows that he enjoys mathematics and is eager to share his knowledge with others. He goes home and shares what he knows with his parents who have been delighted with this transformation. They have written notes in his diary that confirm this:*



**WHAT ANDREW'S DIARY TELLS ME:**

This was not set as homework. He just went home and did it himself every night for the week. (I always say to the children that they can practise Maths at home. Until this, hardly any children ever did extra Maths at home.)

Andrew's mum commented on his enthusiasm in his diary. "He conquered his frustration of the Maths", wrote Mum.

By Thursday Andrew has started solving written, question problems and was able to transfer these into symbols and calculate successfully. "Proud of you Andrew", says Mum.

Surprisingly, at the next student-parent-teacher interview both parents attended and commented very favorably on Andrew's attitude, success and enjoyment in Maths.

(After Andrew shared this homework, many children in the class started bringing in pages and pages of self-initiated practice of the current concept we were tackling.)



## Emeritus Prof. Paul Hughes' observations on improving learning outcomes

*These observations are related to the Make it count project but are printed because they are relevant to any projects working to improve achievement outcomes of Indigenous learners...*

The absolute focus of the project is student outcomes for Indigenous students so it is imperative to have clear and comprehensive data on all of your individual Indigenous students involved from the beginning of the Project. The idea has to be to build a profile of your students and map any changes that identifies improvements, or not, of their learning. As non-attendance and engagement is a big issue in Indigenous education I do hope that you are also tracking the effect on outcomes for your individual students – including for comparison those students with good attendance. For information the WhatWorks project has recently published the ninth in its series of Core Papers entitled 'Using Data to Close the Gap'. This may be a useful resource for people in the clusters, and certainly the WhatWorks team will welcome feedback.

[http://www.whatworks.edu.au/upload/1299639771659\\_file\\_9Data.pdf](http://www.whatworks.edu.au/upload/1299639771659_file_9Data.pdf)

I congratulate you on being prepared to closely interrogate your own pedagogy for by doing this we may well find very useful ideas in the teaching of mathematics. I understand that some of you are videoing your teachers at work and using these as prompts for reflection and analysis. Whilst this can be very scary it is highly valuable

### Make it count videos

*Make it count* has developed a number of videos about the project which are available to schools through the online learning community. Hear Professor Peter Howard, Kerry Toomey and Harry Langes discuss community



as a component of professional development – and this is what the project is about.

Engaging with parents of all students is really just a part of a teacher's normal duties, so there ought not be a 'big deal' about teachers engaging with the parents of their Indigenous students. In fact I would have thought that your school would have these processes in place already because you have had Indigenous students in your schools for many years. However, if teachers aren't doing their job, that is one thing. It is another matter if Indigenous parents aren't reciprocating and becoming engaged – that could indicate that the strategies for engaging those parents need to change.

There is a long history of efforts at 'social inclusion' of Indigenous students through barbecues, family days and the like. However, if these do not get beyond 'feel good' outcomes to creating academic inclusion then we are wasting energy and effort. I am not aware of any definitive research which demonstrates that the inclusion of cultural matters or cultural relevant curricula actually produces best outcomes. Also - remember that cultural matters are not what is tested in outcomes for Indigenous students in mathematics.

In the end, the only measure of success for the project – and justification for all the work – is what pedagogy is best for achieving real improvements in Indigenous students' learning in mathematics.

engagement or Kevin Giles from the Gladstone Cluster in Queensland talk about their investigative approach to teaching mathematics in the middle years. To view go to:

<http://aamt-makeitcountnetwork.ning.com>

## NETWORKED LEARNING COMMUNITY

Join our online network of educators:

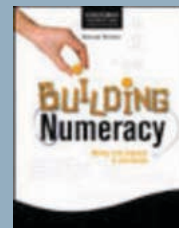
<http://aamt-makeitcountnetwork.ning.com>

## RESOURCES & READINGS

AAMT collaborations with The Learning Federation - for units of work and digital resources go to:

[www.aamt.edu.au/Activities-and-projects/The-Learning-Federation](http://www.aamt.edu.au/Activities-and-projects/The-Learning-Federation)

[Building Numeracy](http://www.aamt.edu.au/Webshop/Entire-catalogue/Building-Numeracy) by George Booker: [www.aamt.edu.au/Webshop/Entire-catalogue/Building-Numeracy](http://www.aamt.edu.au/Webshop/Entire-catalogue/Building-Numeracy)



For previous newsletters: <http://makeitcount.aamt.edu.au/Documents> or email Melinda at: [admin@aamt.edu.au](mailto:admin@aamt.edu.au)

## Contact us

Caty Morris  
National Manager  
Indigenous Programs  
[cmorris@aamt.edu.au](mailto:cmorris@aamt.edu.au)

Melinda Pearson  
Project Officer  
[admin@aamt.edu.au](mailto:admin@aamt.edu.au)

Ph: 08 8363 0288  
<http://makeitcount.aamt.edu.au>

