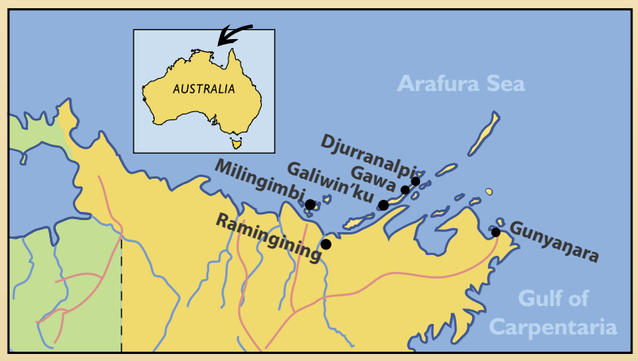
Maths as an Aboriginal Community Practice

A SiMERR project investigating mathematics in a remote Aboriginal Community, its homeland centres, and its schools.



Galiwin'ku is a community of 2100 Yolŋu* Aboriginal people on Elcho Island off the north coast of Arnhemland, NT. Ten Yolŋu consultants from Galiwin'ku and small homeland centre communities were brought to Darwin for a two day workshop. They worked with Balanda** researchers, to discuss issues around maths and maths education in their communities.

* Yolŋu – North East Arnhemland Aboriginal

** Balanda – nonAboriginal



Key findings:

1. Yolŋu have their own system of mathematics embedded and embodied in Yolŋu life.



Dhaŋgal, hospital interpreter "Whatever Yolŋu do in their culture, there is maths in it."

Examples given include working with the moon, tides, winds, seasons, living through kinship to people and the land, and the religious practices of dividing sacred cycad bread.

2. Balanda numbers play an important role in Yolŋu life.



Gurraŋgurraŋ, homeland centre teacher. "How many litres to pour into the generator and how many there are in the tank, how I need to divide it up… When learning about kilometres we did the numbers along the road … from Galiwin'ku to Gawa".

3. Yolŋu children need to have their own 'foundations' in place before they can benefit from Balanda maths.



Lanybalanyba, court interpreter "Our Yolŋu thinking is it's best if our children learn in Yolŋu ways first … before we come in to be learning Balanda … English."



Wulumdhuna, homeland centre teacher, talks about her totemic rock washed over by water as a metaphor for Balanda education. "This water … it comes second, this white education, it comes second after me, (after) I invest my identity here"

4. We best embed our classroom maths pedagogy in those aspects of Yolŋu life which are already ordered through Balanda number.



Frank, musician and broadcaster, "I was learning about multiplying and dividing when I was working, … when you turn it around from doing it at home…, when you go to school … your maths will be very good".



Gotha, elder from Gäwa, "The curriculum coming from Canberra, there is no foundation for us there… They are causing us to… lose direction for our feet. I was just thinking about that Canberra flag. Where is its foundation? That's why we're wandering around without footprints, Yolŋu and white Australians. At Gawa we are living together and learning by ourselves. When the wind blows, when it stops, when the mosquitoes start, those things the land is teaching us, on the maths side, and the kids keep on learning. When the children go to school they learn because they have this knowledge."



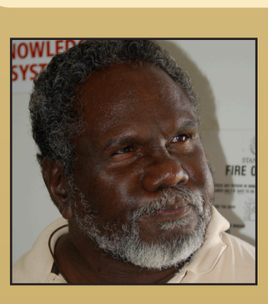
5. Pedagogy for Aboriginal students in the early years should focus on numbers as embodied and embedded generalizations, more than as cognitive concepts.



Waymamba, university lecturer: "The kids in schools … find it very difficult to do school maths… these Yolŋu heads are very different from Balanda, we don't recognise each other…"

Yolŋu children have different minds, depending upon their ancestral connections. They don't share the same concepts or world views. Maths is to do with doing Yolŋu life properly and respectfully. Teaching strategies which attempt to pull together cognitive unities from the various material embodiments of number are confusing to Yolŋu, don't reflect or support Yolŋu pedagogy, and alienate Yolŋu from their systems of embodied value.

6. Good Yolŋu maths education keeps hold of the ethics which are central to all Yolŋu education.



Maratja, translator: "There are two ways which they can learn with respect, both Balanda and Yolŋu ways can be done with respect" Making the social life of community numbers central to classroom practice allows for the retention of two fundamentals of Yolŋu pedagogy: respect and Yolŋu identity formation. Embodied in Yolŋu practice, Balanda numbers cannot lose their embeddedness in Yolŋu value (miŋurr).

This report focuses upon Transforming Pedagogy. Full details of the workshop, and some further analysis following the workshop, can be found at www.cdu.edu.au/macp or through the NT SiMERR website http://simerrnt.cdu.edu.au/mathematics.htm contact: Michael.christie@cdu.edu.au

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