



UNIVERSITY OF
CANBERRA



**What makes for successful teaching of mathematics
for remote and very remote learners?
The importance of middle leaders.**

Prof Robyn Jorgensen

Background

- Funded by the ARC through the Discovery Grant Scheme
- 32 case studies of successful remote schools
- Schools are remote or very remote schools
- Schools have at least 80% Indigenous learners
- “Success” defined through NAPLAN, or by recommendation – schools supply data of their “success”

Project Intent

- To identify what is working in remote Indigenous mathematics education
- To develop case studies of successful practice to
 - Celebrate the work of those in the schools
 - Share with other teachers and schools
- To identify trends (and differences) across schools
- To describe, not evaluate, practices used in schools

Context

- Schools are predominantly staffed by early career teachers – as practitioners as well as leaders
- There is often a high turnover of teachers
- Indigenous people are often employed in support roles for the classrooms and school
- Professional development is difficult to access due to remote location
- Schools vary in size, type, sector, location

Distribution of Schools

	Gov	Catholic	Indep	To be sought	Total
WA	9	3	7		19
QLD	4			4	8
SA	2			2	4
NSW	3			2	5
NT			1	1	2
Total	18	3	8	9	38

Method

- Ethnographic case studies
 - Interviews with the leadership team (vision, big picture)
 - Interviews with teaching and support staff (practice)
 - Interviews with community members
 - Observations of lessons
 - Productive pedagogy profiling
 - Collection of school documents
- Development of individual case studies
 - Uploaded to project website
- Development of macro analysis of project
 - Nvivo, Leximancer, statistical analysis

Model

Envisioned

Vision for the school – high expectations of all participants; common and consistent approach; Leadership (distributed), supportive culture at the school, supportive learning culture; professional learning for staff; sharing vision, embedding practice, sustainability

Enabled

Recruiting and training of staff – teachers and support staff; databases to inform teaching and action; professional development; targeted staff to work with teachers and support staff, resources

Enacted

Assessment for learning; lesson structures; differentiation; scaffolding; targeted learning; language; culturally responsive pedagogy; consistency in approaches; explicit teaching of concepts and strategies; making goals explicit; pacing; small groups; whole class teaching; early years focus

Common Themes

Topic	Frequency
Numeracy leadership	112
Aboriginal education workers	97
Language of the students	83
Community	61
Grouping students	61
Language of mathematics	53
High expectations	50
Activity based learning	47
Explicit teaching	44
Transience of teachers	40
Behaviour of the students	39
Making maths fun, enjoyable	39
Problems with attendance	38
Strategies to improve attendance	33
Worksheets, textbooks	32
Whole school planning	28
Consistency, routine, structure	22
Relationships with families, community	20

Roles of Middle Leaders

- Conduit between the vision and leadership team and the enactment of practice at the classroom level.
- Providing scaffolding for teachers to develop quality learning opportunities for schools
- Provide senior leadership team with feedback and input into future directions
- Make sense of the social, cultural and political context of the community in order to create learning opportunities for the Indigenous students
- Build the skills and knowledge of the local people employed at the school

Characteristics of Middle Leaders

- Have strong mathematical content knowledge
- Have strong pedagogical content knowledge
- Strong knowledge for differentiating learning
- Require and build trust/respect/autonomy among the staff – leaders and teachers, Aboriginal teacher support staff

Professional Learning

- The middle leader builds a common and consistent approach to teaching mathematics across the school
 - Inducts staff into the approaches used at the school
 - Provides exemplars of work
 - Provides feedback on teaching
 - Models the approach/es to teaching mathematics
 - Collects and uses student data to inform teaching
 - Supports teachers to understand student data and act on it
 - Develops differentiated teaching to cater for the diversity within a class
 - Works on the development of a consistent approach and plans across the school


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Challenges

- Funding the role
- Having the right person for the role
- Supporting the learning of the Middle Leader –
increasing the repertoire of skills of middle leaders
 - Remote support v/s face-to-face support

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- Questions?



<http://www.canberra.edu.au/research/faculty-research-centres/stem-education-research-centre/research-projects/remote-numeracy>