Key messages (so far) from *Make it count*

February 2011

Teachers need to hold, and convey, high expectations of their Indigenous students.

At the same time they must hold, and convey, high expectations of themselves as teachers of Indigenous students.

Teaching for effective learning

Teaching Indigenous learners to become numerate, or more numerate, and to master mathematical concepts provides them with a 'passport' for further learning and life chances.

1. Learning happens when relationships between students and teachers are positive and when connections with family and school are mutually supportive.
2. Key to better mathematical learning outcomes for Indigenous students is helping them to develop and maintain positive attitudes to mathematics through teaching the dispositions and skills of effective mathematical learning and thinking that equip them to solve problems and apply their understandings, whatever the context.

"The importance of the teacher-student relationship is paramount when considering how best to help Indigenous students. Teachers who empathise with, and genuinely connect with, their Indigenous students, are able to develop positive classroom environments in which students are genuinely happy, and want to attend."

3. Successful role models, whether they are Indigenous or non-Indigenous, are important factors in raising expectations and improving levels of student engagement and attendance.
4. Teachers need to explicitly teach learners mathematical language so they are able to articulate what, how and why they are learning.
5. When planning teaching units of work it can be useful to begin with the outcomes and final product that will go home to parents/family/community and then backward map the sequence of lessons.
6. Indigenous students are more receptive to learning opportunities when organisational structures such as school development plans overtly value their culture.

"Indigenous ways of learning must be acknowledged and considered in planning classroom activities."

7. Hands-on activities allow for enhanced learning to take place in a more social atmosphere.

Engaging with parents, family & community

Establishing the right conditions that allow for a constructive interplay between community/family/parental perspectives and professional judgements made by educators in the mathematics classroom can be challenging for schools. Community building can take considerable time, thought and sustained effort. Educators' cultural competency is directly related to their success in engaging with community.

1. By focusing on their development of cultural competency, educators are more able to actively challenge deficit views and assumptions they and others may have about Indigenous communities.
2. Educators need to consider Indigenous parents' own experiences in schooling and in learning mathematics and build their confidence to talk positively to their children about mathematics.
3. Developing and creating new communities and systems in schools for educators and community to work together may be more successful than trying to identify and access existing communities.
4. Indigenous education assistants (IEA) can be crucial to building strong connections, resilience and trust between schools and their communities and families. When this happens, schools see a higher level of student engagement with increased confidence levels and self esteem. It also allows for parents and community to develop greater understanding of school processes. Schools will be more aware of parent/community needs, opinions and desires for their children, particularly in learning mathematics.

Make it count is developing an evidence base and examples to illustrate these Key Messages.

Make it count: *Numeracy, mathematics and Indigenous learners*. A project of The Australian Association of Mathematics Teachers (AAMT) Inc., funded by the Australian Government as part of the Closing the Gap initiative.

Learning for effective teaching

Make it count is challenging teachers of Indigenous learners to unlearn old habits and perceptions about the teaching and learning of mathematics and to put their assumptions and practices under the microscope.

1. Key to better mathematical learning outcomes for Indigenous students is improving educators' beliefs and attitudes to mathematics, and mathematical pedagogy.
2. As teachers engage in professional development and learning through *Make it count*, and come to better understand how they themselves learn mathematics, they better understand how their Indigenous students learn mathematics.
3. Improving the mathematical content knowledge and pedagogical content knowledge of teachers, as well as that of IEAs and Education Assistants leads to greater levels of confidence and purpose in their teaching, greater engagement with students, and more of a team approach to the teaching, learning and assessment processes.
4. Mathematics curriculum is vertical where each concept builds on the previous concept. This necessitates a clear scope and sequence of the concepts. With deep knowledge of the learning sequence, it becomes very clear for the teacher when students have reached the necessary understanding and skills that precede a mathematical concept. It gives the teacher greater command and flexibility in the learning sequence and clearly pinpoints entry points necessary for consolidation and repetition until students have grasped the concept.

"Teacher content knowledge is vital. Just changing pedagogy is not enough. Without deep curriculum knowledge teachers become confused in planning sequences for learning."

Professional learning communities

The *Make it count* professional learning communities are providing educators with opportunities for the exploration and generation of new knowledge about teaching and learning in numeracy, mathematics and Indigenous students. The collection and sharing of intelligence from people with a range of expertise and experience is occurring through collaboration and dialogue with opportunities for educators to co-construct in safe, but challenging, learning communities.

1. Teachers need to hold and convey high expectations of their Indigenous students and, at the same time, hold high expectations of themselves as educators. This requires the commitment of like-minded professionals to the common goal of improved mathematical outcomes for Indigenous students.
2. A good deal can be achieved when there is goodwill, intent, and collegial sharing both within and across schools. Improvements are best achieved by focusing on a specific area and fostering relationships. Developing a common bond and shared language in mathematics with a common focus and building inter-school capacity are keys to success.
3. Sharing expertise within the Cluster develops more of a professional learning community.
4. Educators need to be able to participate in action learning/research where they design, act, observe and reflect. This includes being able to examine data to determine progress and the next steps.
5. Successful learning communities have a focused, structured approach to what they want to achieve.

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