



Reading summary

Rigney, L., Garrett, R., Curry, M., & MacGill, B. (2020), Culturally responsive pedagogy and mathematics through creative and body-based learning: Urban Aboriginal schooling. *Education and Urban Society*, 52(8), 1159–1180.

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Achievement gaps between Indigenous and non-Indigenous school students in mathematics have become an urgent international problem. International research has shown that culturally responsive pedagogies can improve students' academic success, but there has been little Australian evidence of how this can be enacted in Australian classrooms. This article explores how creative and body-based learning might be used to implement culturally responsive pedagogies in mathematics teaching to re-engage urban Aboriginal students.

Culturally responsive pedagogies draw on the cultural strengths and linguistic repertoires of students (in this context, Aboriginal students), and use dialogical and participatory teaching approaches, seeing students as competent and knowledgeable, and building their pride in their culture and engagement with their communities. There has been significant theoretical research on culturally responsive pedagogies, but less attention to how to embed these pedagogies in practice.

Creative and body-based learning uses strategies from drama, multiple artistic forms and embodied activity to encourage students to think creatively, to engage physically, to experiment and to learn from others. In mathematics, this involves an embodied experience of mathematical knowledge or skills, supported by moments of direct instruction. Creative and body-based learning aligns with culturally responsive pedagogies through the enactment of embodied strategies that privilege the standpoint of students as co-creators and co-learners.

The current study sought to investigate the enactment of redesigned pedagogical practices using creative and body-based strategies and the subsequent meaning making of two teachers in a culturally and linguistically diverse primary school in the western suburbs of Adelaide, South Australia. The project began with intensive professional learning for teachers, followed by collaboration with artists and regular supportive workshops.

The teachers found that the activities increased students' engagement and learning outcomes, although the process was gradual for some and not all students responded in the same way. The teachers felt challenged initially, but later responded positively and were ready to take risks. They recognised the importance of developing opportunities for dialogue in their classes to develop their students' mathematics understanding and vocabulary, and that they needed to pay careful attention to ways of engaging Aboriginal students in this dialogue. They built many mathematics activities around Aboriginal Dreaming stories, in collaboration with an Aboriginal artist, which built the cultural as well as mathematical competencies of all students. They learned to carefully observe the different ways Aboriginal students showed that they were engaged in the lessons, even if they did not join in the spoken dialogue. Overall, the teachers witnessed increased levels of procedural, cognitive and affective engagement among their Aboriginal students, while recognising that they engaged when they were ready and when they felt culturally safe.

Take-home messages

Creative and body-based learning: Creative and body-based learning can both inspire creative practice by teachers and foster the improved engagement and learning of all students.

Enabling students to see themselves as competent: When teachers constructed students as 'capable' and offered learning experiences that engaged their bodies and imaginations, students could let go of their cautious learner histories and begin to identify as clever and competent.

Engaging Aboriginal students: When teachers connect the curriculum to Aboriginal students' cultural and linguistic strengths, allow them to use their bodies and creativity in learning, and ensure they feel culturally safe, these students can become engaged in learning, even in mathematics.