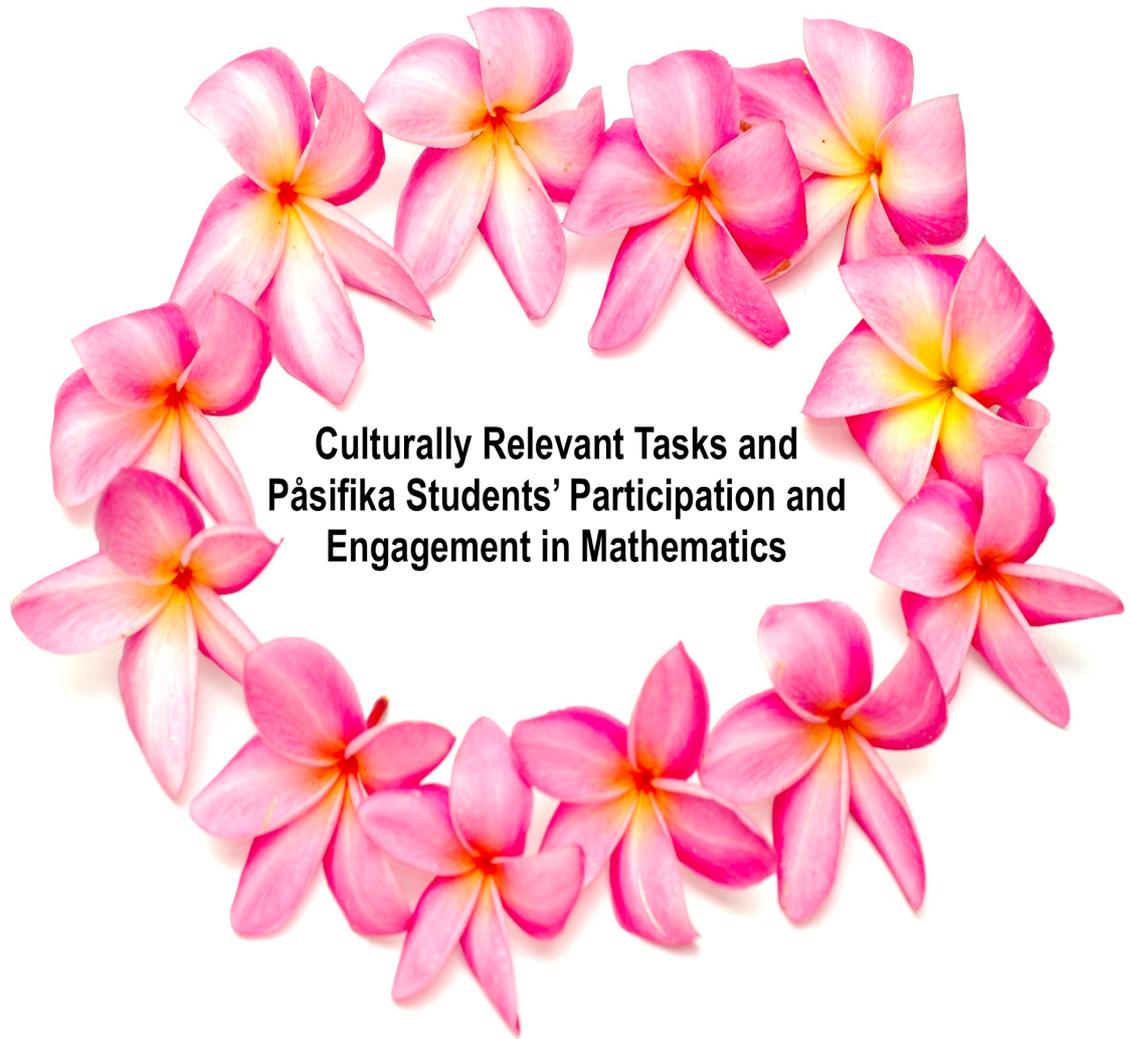


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**Culturally Relevant Tasks and
Påsifika Students' Participation and
Engagement in Mathematics**

A thesis presented in partial fulfilment of the requirements for the
degree of

Master of Education in
Mathematics Education

Massey University (Manawatu)
New Zealand

Libby Sara Cunningham

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Abstract



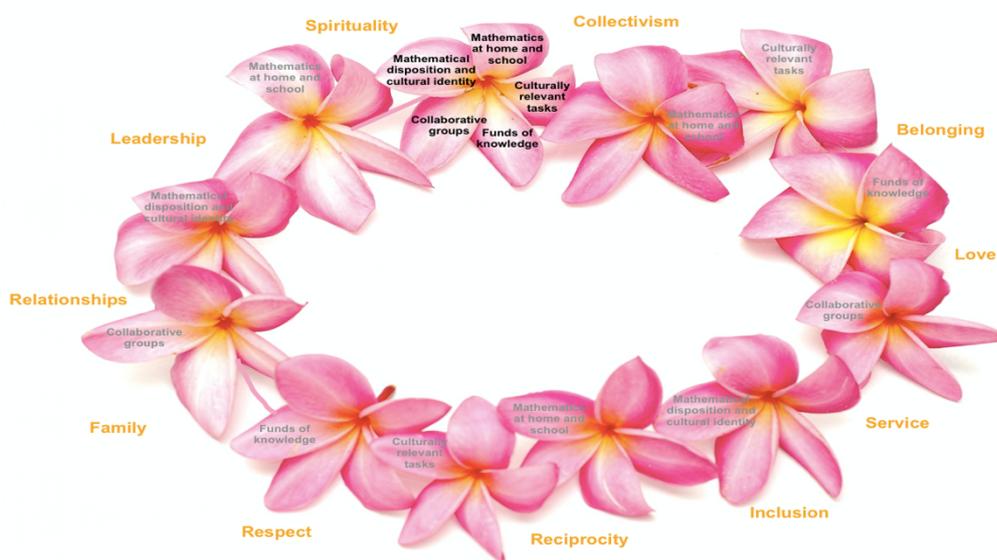
Påsifika students' academic achievement in mathematics continues to remain a priority for New Zealand education (Ministry of Education, 2013). Research in both the New Zealand and international contexts identifies the need for New Zealand classrooms to foster culturally responsive and mathematical practices that align with Påsifika students' cultural values, backgrounds, interests and experiences. As a result, Påsifika students will have increased opportunities to participate and engage in mathematics while developing a cultural identity within New Zealand classrooms.

This study utilised the Påsifika students' and their families' funds of knowledge to design culturally relevant mathematical tasks. These tasks were used within the students' mathematics classroom where the teacher was supported to implement culturally responsive and mathematical practices. It examined how the use of culturally relevant tasks while enacting the reviewed cultural and mathematical practices could foster Påsifika students' participation and engagement in mathematics.

This study used qualitative research methods with an ethnographic case study approach while drawing on Påsifika research frameworks (Lemanu, 2014; Sauni, 2011). 11 Year 5 and Year 6 students who descended from the Pacific Islands participated in this study. Semi-structured interviews were completed at the beginning and end to find out the Påsifika students' perspectives about their experiences of their culture and mathematics. Throughout the study, photo-elicitation interviews were used to identify Påsifika students' cultural funds of knowledge and mathematical experiences that they engaged in outside of school. This information was used to work with the classroom teachers to design culturally relevant mathematics tasks. Observations were made of the students' behaviour and interactions while working on these tasks within their

classroom setting. After each observation, focus group interviews were conducted to gain insight into the students' perspectives of the task and learning experience. The use of a variety of methods provided greater evidence of data that I drew on to support my findings.

The results illustrated key findings and recommendations that have been visually represented using a frangipani (kalosipani/ pua fiti/ fiti pua/ tipani)¹ ula-lei². Each petal on the frangipani flower represents the key themes that emerged. These are as follows; mathematics at home and school, culturally relevant tasks, funds of knowledge, collaborative grouping and mathematical disposition and cultural identity. These key themes are supported by a group of learners which include parents, teachers and students and are bound together by the core Pāsifika values. The key themes, community of learners and cultural values form the ula-lei. This study revealed these components as being effective practices that educators should develop to support Pāsifika learners' participation and engagement in mathematics.



¹ The frangipani plant is translated to kalosipani in Tonga, pua fiti in Samoa, fiti pua in Niue and tipani in the Cook Islands.

² Traditional Pacific Island necklace

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