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**Pasifika Students' Perceptions
of Using Talanoa as an Assessment Tool
in NCEA Level 2 Mathematics**

A thesis
submitted in fulfilment
of the requirements for the degree
of

Master of Education

at

The University of Waikato

by

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THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

2024

Declaration

To the best of my knowledge and belief, this thesis is my original work and does not include any material previously published by others except where explicitly acknowledged.

Furthermore, the content of this thesis has not been submitted to any other university or institution for the award of a degree or diploma.

Tafa Naulivou Sisitoutai

August 16, 2024

Abstract

This study explored Pasifika students' perceptions of Talanoa as a culturally responsive assessment tool in NCEA Level 2 Mathematics, addressing the educational challenges faced by Pasifika learners within conventional Western assessment frameworks. Despite growing recognition of the need for culturally responsive teaching, limited research exists on how alternative assessment tools like Talanoa can reshape students' engagement and outcomes in mathematics.

Using a qualitative methodology grounded in the Kakala Research Framework and employing Talanoa as both a method and research approach, data were collected from six Year 12 Pasifika students in a New Zealand secondary school. Key findings revealed that Talanoa fosters trust, enhances cultural competence, deepens understanding, builds self-confidence, and creates an engaging learning environment. Together, these elements transformed students' attitudes, making the assessment experience more inclusive, supportive, and effective.

This study contributes to addressing systemic inequities in education by proposing culturally aligned assessment tools and offering practical solutions for a more inclusive learning environment. It highlights the potential of integrating culturally responsive practices like Talanoa to improve educational outcomes for Pasifika students, with insights that may also benefit other culturally diverse learners.

Future research could explore how Talanoa-informed frameworks can be incorporated into other subject areas, teacher training programmes, or education policies to create a wider impact on culturally responsive practices. Such studies would help determine the broader applicability of Talanoa as a holistic educational tool beyond mathematics.

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Glossary of Terms

This glossary of terms provides definitions and explanations of the non-English terms and culturally specific phrases used throughout this thesis. These terms, primarily from the Tongan language, are integral to the research methodology and conceptual framework employed in this study.

Fakafeta'i—Conveys the deepest and most profound form of gratitude

Fakalanga—Initiating a process, facilitating its start, and encouraging participation from others.

Fakalanga Fiefia mo Tau'atāina—Stimulating Joy and Intellectual Freedom

Fakalanga 'Ilo mo e Poto—Acquiring Knowledge and Fostering Understanding

Fakalanga Loto-lahi—Cultivating Self-Confidence and Efficacy

Fakalanga Pōto'i Anga—Developing Cultural Competence

Fakalanga Vā Falala'anga—Establishing a Trusting Relationship

Fonua—Land, everything within it: people, mixed kava, and women's wombs

Kāinga—Extended family in Tongan culture

Kakala—A Tongan term for flowers, used metaphorically in research

Kakala 'Iloa—Prestigious or chiefly flowers in Tongan culture

Kakala Vale—Common or ordinary flowers in Tongan culture

Lotu—Church organisation, Spirituality, Christianity, the practice of faith

Luva—To give or devote or sacrifice one's all; presenting findings in research

Māfana—Warm feelings, inner warm; used metaphorically to describe passion

Mālie—A profound sense of excitement and satisfaction that arises from the feeling of māfana, which denotes warmth and comfort.

Talanoa Māfana—Warm feelings arise when the depth of Talanoa deepens, reflecting a profound connection and understanding between participants.

Talanoa Lelei—Significant and meaningful conversation

Talanoa Tui Kakala—Weaving together narratives or concepts during analysis

Talanoa—To talk (in an informal way), to tell stories or relate experiences, etc.

Tauhi-Vā—Nurturing good relationships

Tauhi-Vā Māfana—Fostering warm relationships

Teu—To prepare, a metaphor for organising the research work

Toli—To pick or pluck or break off flowers, a metaphor for data collection

Tu'a'ofa Atu—With heartfelt thanks and warmest regards

Tui—Piercing the flowers to thread them onto a garland

Vā—Referring to sociospatial space or relational dynamics

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Chapter 1: Introduction

1.1 Background of the Study

The educational landscape in Aotearoa-New Zealand is richly diverse, with a portion of the student population comprising individuals from various Pacific Island nations. These students, collectively referred to as Pasifika, include those with ancestral ties to Fiji, Samoa, Tonga, Solomon Islands, Tokelau, Cook Islands, Kiribati, and other Pacific nations. Despite their shared cultural heritage, Pasifika students are not a homogeneous group; they bring a wide array of experiences and perspectives to the educational setting. The educational achievement of Pasifika students has been a persistent concern for educators and policymakers, as evidenced by various studies highlighting the unique challenges these students face (Cunningham et al., 2022; Fa'avae, 2022; Flavell & Cunningham, 2022; Wendt Samu, 2020; Porter-Samuels, 2013; Siope, 2011; Fletcher et al., 2009; Nakhid, 2003).

Culturally Responsive Assessment (CRA) has emerged as a crucial component of inclusive education (Baidoo-Anu et al., 2024). CRA seeks to recognise and value the diverse cultural backgrounds of students, fostering a more equitable learning environment. Traditional assessment methods often fail to capture the full range of students' abilities and knowledge, particularly those from culturally diverse backgrounds. CRA, in contrast, aims to provide meaningful and accurate measures of student learning while respecting and valuing their cultural identities.

1.2 Statement of the Problem

Pasifika students in Aotearoa-New Zealand, face unique educational challenges that can impact their academic performance and overall educational experience (Flavell & Cunningham, 2022). Traditional assessment methods, which often reflect a monocultural perspective, may not adequately capture the diverse ways Pasifika students engage with and understand mathematical concepts (Spiller, 2013; Bensen et al., 2006). There is a pressing need to explore alternative assessment methods that are culturally responsive and can better reflect the strengths and abilities of Pasifika students. Talanoa, a traditional Pacific practice of storytelling and dialogue, presents a potential culturally responsive assessment tool that aligns with the values and experiences of Pasifika students (Vaioleti, 2006). However, there is limited research

on its application as an assessment tool in secondary school settings (Salahshour, 2021; Lawrence, 2020), particularly in mathematics.

1.3 Personal Motivation for the Study

The idea for this study stems from my own experiences as a Pasifika teacher who has been teaching Mathematics in New Zealand secondary schools for over 20 years. Throughout my career, I have encountered numerous Pasifika students who struggled to succeed academically, not because they lacked the ability or intelligence, but because they did not feel their cultures were valued in the classroom. This observation became evident as I witnessed many capable students disengage and underperform simply because the educational environment did not resonate with their cultural identities and values.

From my observations, a consistent pattern emerged: Pasifika students who had strong, positive relationships with their teachers tended to achieve higher grades. This correlation between good student-teacher relationships and academic success prompted me to consider ways to nurture and enhance these relationships. I noticed that students who felt understood and respected by their teachers were more likely to participate actively in class and perform better in their assessments. Recognising the importance of these relationships, I began to seek methods to foster such connections more systematically and effectively.

Moreover, I observed the immense pride Pasifika students have in their cultural heritage. This pride is a significant aspect of their identity and plays a crucial role in their engagement and motivation. I realised that any approach to improve their educational outcomes must integrate and celebrate their cultural backgrounds. Thus, I identified two essential elements that needed to be embraced in our teaching practices: fostering good student-teacher relationships and valuing students' cultural backgrounds. The challenge then became finding a way to integrate these elements into the classroom in a meaningful and effective manner.

Reflecting on my upbringing and the wisdom imparted by my father, I recalled his advice: *“Ko e me’ā ia, ke talanoa’i pē. He ka talanoa pē, talanoa pē, talanoa pē, pea ‘e ma’u pē ‘a e lelei.”* This translates to, “The thing is, just talanoa, nothing else. Just talanoa, talanoa, and talanoa, and you will find the best solution.” This simple yet profound advice highlighted the power of open, ongoing dialogue—a practice deeply rooted in our cultural traditions. It sparked the idea that Talanoa could potentially

address the educational challenges faced by Pasifika students. So, I asked, why not investigate the power of Talanoa?

Talanoa, as a method of storytelling and dialogue, involves open, informal conversations that foster trust and mutual respect. It aligns perfectly with the dual goals of strengthening student-teacher relationships and valuing cultural backgrounds. This realisation led me to consider Talanoa as a potential culturally responsive assessment tool. If Talanoa could be effectively integrated into the assessment process, it might provide a way to engage Pasifika students more deeply, making them feel valued and understood while also allowing teachers to assess their knowledge and skills in a culturally relevant manner.

Thus, the motivation for this study is deeply personal and professional. It seeks to explore how Talanoa can be used as an assessment tool to create a more inclusive and supportive educational environment for Pasifika students. By doing so, it aims to enhance their academic success and overall school experience, ensuring that their cultural identities are not only acknowledged but celebrated within the educational system.

1.4 Research Questions

This research explores the impact of Talanoa on the academic experiences of Pasifika students in NCEA Level 2 Mathematics assessments. Theoretical exploration seeks to understand how Talanoa might transform learners' attitudes towards academic assessments. Meanwhile, the empirical investigation focuses on Pasifika students' perceptions of using Talanoa as an assessment tool in NCEA Level 2 Mathematics. Subsidiary questions further examine students' thoughts on this approach, its differences from traditional methods, and its potential to deepen their understanding of mathematical concepts.

Theoretical Research Question:

How does Talanoa transform Pasifika learners' attitudes towards academic assessments in secondary school Mathematics?

Empirical Research Question:

What are Pasifika students' perceptions of using Talanoa as an assessment tool in NCEA Level 2 Mathematics?

Subsidiary questions:

1. *What are your thoughts on using talanoa as an assessment tool in Mathematics?*
2. *How does this approach differ from your usual assessment methods?*
3. *How does talanoa help you think more deeply about what you are doing?*

1.5 Study Objectives

The objectives of this study are to:

1. Investigate Pasifika students' perceptions of the effectiveness of Talanoa in enhancing their understanding and engagement in NCEA Level 2 Mathematics.
2. Identify the benefits of using Talanoa as an assessment tool from the perspective of Pasifika students.
3. Explore the challenges Pasifika students face when participating in Talanoa-based assessments.
4. Provide recommendations for educators on how to effectively implement Talanoa as a culturally responsive assessment tool in mathematics.

1.6 Research Method and Methodology

This study is grounded in the Kakala Research Framework, a culturally rich and indigenous Pacific approach that is deeply rooted in Tongan values and practices. The framework guided the study's design, placing a strong emphasis on relational and culturally appropriate methodologies. Central to this framework is Talanoa, which was employed as a qualitative research method. This qualitative methodology allowed for in-depth and meaningful engagement with Pasifika students, ensuring their voices and perspectives were central to the research outcomes. The framework and research method are discussed in detail in Chapter 3, providing a comprehensive understanding of how these approaches were implemented throughout the study.

1.7 Significance of the Study

This study holds significant importance for several reasons. First, it aims to contribute to the existing body of knowledge on culturally responsive assessment practices, particularly within the context of Pasifika students in Aotearoa-New Zealand. By exploring the use of Talanoa as an assessment tool, the study seeks to provide insights into how culturally relevant methods can enhance the educational experiences and outcomes of Pasifika students. Second, the findings of this research could inform educational policies and practices, promoting a more inclusive and equitable

assessment framework that recognises and values the cultural diversity of students. Lastly, the study could empower Pasifika students by validating their cultural identities and experiences within the educational system, thereby fostering a greater sense of belonging and engagement.

1.8 Scope and Limitations

The scope of this study is focused on exploring Pasifika students' perceptions of using Talanoa as an assessment tool in NCEA Level 2 Mathematics. The research will be conducted with Pasifika students enrolled in NCEA Level 2 Mathematics at a secondary school in Aotearoa-New Zealand. The study will utilise the Kakala Research Framework and Talanoa methodology to gather and analyse qualitative data from the participants.

Several limitations are acknowledged in this study. First, the research is limited to a specific group of Pasifika students within a particular educational context, which may not be representative of all Pasifika students in Aotearoa-New Zealand. Second, the study relies on self-reported data from the participants, which may be subject to biases or inaccuracies. Third, the implementation of Talanoa as an assessment tool may vary depending on the context and the facilitator's understanding of the method, potentially impacting the consistency and comparability of the findings. Despite these limitations, the study aims to provide valuable insights into the potential of Talanoa as a culturally responsive assessment tool and contribute to the ongoing efforts to create a more inclusive and equitable educational system for Pasifika students.

1.9 Structure of the Thesis

This thesis is structured into several chapters, each building upon the last to provide a comprehensive examination of Talanoa as a culturally responsive assessment tool for Pasifika students in NCEA Level 2 Mathematics.

The *first chapter, the Introduction*, sets the stage by outlining the background of the study, stating the problem, presenting the research questions, objectives, and significance, and discussing the scope and limitations. The *second chapter, Literature Review*, delves into the existing body of research on culturally responsive assessment, the educational challenges faced by Pasifika students, and the principles of CRA, providing a foundation for understanding the context and significance of the study. The *third chapter, Methodology*, describes the research design, including the Kakala

Research Framework and Talanoa methodology, detailing the processes for data collection and analysis. The *fourth chapter, Findings*, presents the results of the study, highlighting the key themes and insights derived from the Talanoa sessions with Pasifika students. The *fifth chapter, Discussion*, interprets these findings in light of the existing literature, discussing their implications for educational practice and policy. The *sixth chapter, Conclusion*, summarises the main findings, discusses the limitations of the study, and offers recommendations for future research and practice. Following these chapters, the *References section* provides a list of all the sources cited throughout the thesis, ensuring academic rigour and allowing readers to locate the original sources. Lastly, the *Appendices* include supplementary materials such as interview guides, consent forms, and additional data that support the main text but are not essential to the central argument. This structured approach ensures a thorough exploration of the research questions and provides a clear pathway from the initial problem statement to the study's conclusions and recommendations.

1.10 Summary

The educational achievement of Pasifika students remains a critical concern in Aotearoa-New Zealand. By exploring the use of Talanoa as a culturally responsive assessment tool, this study aims to address the unique challenges faced by Pasifika students and enhance their educational experiences and outcomes. Through a comprehensive investigation of Pasifika students' perceptions and experiences, the research seeks to provide valuable insights that can inform the development and implementation of culturally responsive assessment practices in Mathematics and beyond. The findings of this study have the potential to contribute to the broader discourse on inclusive education and promote a more equitable and supportive learning environment for all students.

Chapter 2: Literature Review

2.1 Introduction

Culturally responsive assessment (CRA) has emerged as a crucial component of inclusive education, particularly in secondary school settings. This literature review aims to explore the development, implementation, and impact of culturally responsive tools for assessment in secondary education. The significance of CRA lies in its ability to recognise and value the diverse cultural backgrounds of students, thereby fostering a more equitable and inclusive learning environment. CRA is viewed as the use of assessment practices that are sensitive to the cultural backgrounds and experiences of students. These assessment tools are designed to provide meaningful and accurate measures of student learning while respecting and valuing their cultural identities. In contrast to traditional assessment methods, which often reflect a monocultural perspective, CRA seeks to create a more balanced and fair evaluation system that acknowledges and incorporates cultural diversity.

The educational achievement of Pasifika students has been a significant concern for educators and policymakers, particularly in Aotearoa-New Zealand (Cunningham et al., 2022; Fa'avae, 2022; Wendt Samu, 2020; Porter-Samuels, 2013; Siope, 2011; Fletcher et al., 2009; Nakhid, 2003). Pasifika is a collective term that refers to people residing in Aotearoa-New Zealand with ancestral ties to the Pacific Islands, including Fiji, Samoa, Tonga, Solomon Islands, Tokelau, Cook Islands, Kiribati, and other Pacific nations. However, this term does not imply that these diverse Pacific Island nations form a single homogeneous group. Rather, it acknowledges their shared worldviews, values, and common ideas around education (Fistonich, 2023). Within the category of Pasifika students, there is a diversity of experiences. Some students are born in their ancestral homelands, while others are second or third-generation individuals born in Aotearoa-New Zealand (ibid). The term Pasifika is commonly used in most Pacific-related studies and will be employed throughout this literature review. Pasifika students often encounter unique challenges throughout their educational journey. These challenges are multifaceted, encompassing cultural, socio-economic, and linguistic barriers (Fletcher et al., 2009).

The scope of this review includes an examination of the historical context of culturally responsive education, the principles underpinning CRA, current practices and tools, challenges and barriers, benefits, strategies for implementation, and future directions

in research and practice. By synthesising the existing literature on CRA, this review aims to provide educators, administrators, and policymakers with a comprehensive understanding of how culturally responsive tools for assessment can be effectively integrated into secondary school settings with a focus to enhance Pasifika students' academic success.

2.2 Culturally Responsive Assessments (CRA)

The concept of culturally responsive education has evolved over several decades, influenced by the broader movements of multicultural education and social justice in education. One of the pioneering figures in this field is Gloria Ladson-Billings, who introduced the concept of culturally relevant pedagogy in the early 1990s. Her work highlighted the need for teaching practices that not only recognise the cultural backgrounds of students but also use these backgrounds as assets in the learning process (Ladson-Billings, 1995). Geneva Gay further expanded on these ideas, emphasising the importance of culturally responsive teaching. In her seminal book, Gay (2018) outlines the key principles of culturally responsive education, including the validation and affirmation of students' cultural identities, the incorporation of cultural content into the curriculum, and the use of culturally relevant teaching strategies. Russell Bishop has made significant contributions to the field of culturally responsive education, particularly in the context of New Zealand (Bishop, 2010, 2011, 2014; Bishop et al., 2012). Bishop and Berryman's (2006) work focuses on the experiences of Māori students and the importance of culturally responsive pedagogies in improving educational outcomes for Indigenous students. Their research highlights the need for education systems to move beyond deficit thinking and to adopt practices that recognise and value the cultural strengths of students (Bishop & Berryman, 2006).

The concept of culturally sustaining pedagogy has gained prominence in the last decade. Paris (2012) argues for a shift from culturally relevant pedagogy to culturally sustaining pedagogy, which seeks to support the cultural and linguistic competencies of students while simultaneously fostering their academic success. This approach underscores the importance of acknowledging students' cultural backgrounds and actively sustaining and nurturing their cultural practices and identities within the educational context. Paris argues that previous educational frameworks like culturally relevant and culturally responsive pedagogies, though instrumental, do not go far enough in addressing the dynamic and evolving nature of students' cultural identities. He contends that these approaches often implicitly aim to help students of colour

succeed within the existing hegemonic structures rather than transforming those structures to be more inclusive and reflective of diverse cultural practices. Paris stresses that cultures are not static. Therefore, pedagogy must not only be relevant to students' cultural experiences but must also sustain and evolve with those cultures (Paris, 2012). He critiques traditional educational practices that push for assimilation into a dominant culture, arguing that these practices undermine the rich cultural identities that students bring to the classroom.

The evolution of culturally responsive and sustaining education has also been influenced by globalisation and increased cultural diversity in schools. Tyler et al. (2016) explores the complex dynamics of racial diversity in suburban schools. Their study was timely and relevant, addressing the shifting demographics in suburban areas and the implications for educational practices and policies. As classrooms become more multicultural, the need for culturally responsive teaching and assessment practices becomes increasingly evident. Therefore, various challenges for the suburban schools were identified, including resource allocation, staff training and community resistance (ibid). A notable aspect of the study is its comprehensive examination of school responses to diversity. Their work highlights both positive initiatives, such as efforts to promote inclusivity and equity, and the more problematic practices that can lead to re-segregation. This historical context provides a foundation for understanding the development and implementation of CRA tools in contemporary secondary school settings.

2.3 Principles of Culturally Responsive Assessments

CRA is grounded in the principles of inclusivity, cultural relevance, and equity. Ginsberg and Wlodkowski (2009) explore how culturally responsive teaching practices can enhance motivation and learning among diverse student populations in education. They argue that recognising and valuing students' cultural backgrounds and incorporating these perspectives into practices can create a more inclusive and effective learning environment. This view is aligned with Porter-Samuels (2013) who examines the role of teacher cultural responsiveness in improving educational outcomes for Pasifika students in Aotearoa-New Zealand. She stresses the importance of creating an inclusive learning environment that acknowledges and values the cultural identities of Pasifika students. Teachers are encouraged to build strong, respectful relationships with students and their communities, fostering a sense of belonging and engagement within the classroom (Porter-Samuels, 2013). In her article,

Porter-Samuels (2013) highlights the need for integrating Pasifika cultural contexts into the curriculum and assessment practices. This involves using culturally relevant materials and examples that resonate with the students' lived experiences. By doing so, assessments become more meaningful and relatable, thereby increasing student motivation and participation. The concept of equity is central to Porter-Samuels' (2013) argument, advocating for tailored support that addresses the specific needs of Pasifika students. This includes providing differentiated instruction and assessment methods that accommodate diverse learning styles and abilities (ibid). The goal is to create a level playing field where all students have equal opportunities to succeed, encompassing the principles of inclusivity, cultural relevance and equity as essential elements for creating assessments that are fair, meaningful, and reflective of students' diverse cultural backgrounds.

Inclusivity in assessment means recognising and valuing the cultural diversity of students. Ladson-Billings (1995) emphasises the importance of understanding students' cultural contexts and using this understanding to inform teaching practices and curriculum development. Like many other Pacific nations, Tonga has a unique cultural heritage and social structure. Education that does not consider these cultural specifics can often fail to engage students effectively (ibid). Incorporating local stories, traditions and knowledge systems into the curriculum; utilising the native language of students alongside English to ensure better comprehension and connection; engaging local elders, parents and community members in the educational process to provide authentic and inclusive learning experiences and support, are few aspects of CRA can offer. They assist teachers in creating assessment tasks and tools accessible to all students, regardless of their cultural backgrounds (Hammond, 2015).

Cultural relevance is another key principle of CRA. Siopé (2013) contends that cultural relevance promotes "growing from within, using all of the existing knowledge and expertise from within the cultural experiences of the learners themselves" (p. 41). This involves designing assessment tasks that are meaningful and relevant to students' cultural experiences. Culturally relevant assessments reflect the cultural contexts of students' lives, making the assessment process more engaging and meaningful. Siopé's (2013) illustration of Ms Tiffen's scenario highlights how teachers can become cultural learners through interactions with their students. In this case, Ms Tiffen interacted with a group of Tuvaluan students and allowed them to discuss the matter in their own language, provided they used the correct terminology. By doing so, she enabled

them to bring their own experiences and expertise into the learning space. Most importantly, the teacher did not position herself as the expert of their culture, fostering an environment where the students' cultural knowledge was valued and respected. Gay (2018) discusses similar approach when a culturally relevant assessment includes examples and scenarios that relate to the local environment and community practices of the students being assessed. Culturally relevance approach allows the teachers to learn about the culture of their students but through someone else's lens (Siope, 2013).

Equity in assessment ensures that all students have an equal opportunity to demonstrate their learning and knowledge. This involves addressing and mitigating any biases that may exist in traditional assessment methods. Sleeter (2011) contended that equity in education goes beyond being just a curricular method; it is about redefining decision-making authority to incorporate the perspectives of the community, students, and teachers from minority groups to ascertain what knowledge is truly valuable. As Si'ilata's (2014) posits, Pasifika learners should achieve success while maintaining their Pasifika identity, rather than having to conform to the majority or European culture to reach their long-term academic or professional objectives. Standardised tests have been criticised for their cultural bias, as they often reflect the norms and values of the dominant culture. CRAs, on the other hand, aim to create a more equitable evaluation process by recognising and valuing the diverse ways in which students from different cultures may demonstrate their knowledge and skills (Paris & Alim, 2017).

Russell Bishop's research further elaborates on these principles by emphasising the importance of relationship-building in CRA. Bishop and Berryman (2006) introduced the term 'a culturally responsive pedagogy of relations.' The inclusion of the words 'of relations' is crucial for comprehending and defining culturally responsive pedagogy, as it highlights the importance of relationships and distinguishes this approach from merely being culturally relevant or appropriate (Si'ilata, 2014). They argue that meaningful relationships between teachers and students are critical for creating a supportive and inclusive learning environment (Bishop & Berryman, 2006). This relational approach helps to build trust and respect, allowing students to feel valued and understood in the assessment process (ibid). Sisitoutai's (2021) research also underscores the importance of trusting relationships, positing that fepoupou'aki (mutual support) involves collaborative efforts crucial for the resilience and

sustainability of Tongan learners amid social changes. Such relationships facilitate the incorporation of cultural values into assessment methods, encourage parental involvement, and enhance social cohesion within the community (Sisitoutai, 2021). Ualesi (2021) emphasises the same message, highlighting the importance of covenant relationships from a Samoan lens. “The feagaiga covenant relationship goes beyond close, enduring relationships for transformative change, as an important ingredient of culturally responsive, sustaining, and safe practice in Aotearoa-New Zealand” (Ualesi, 2021, p. 90). This excerpt highlights the critical role of trust and relational approaches in interacting with Pasifika communities, emphasising culturally responsive, safe and transformative practices.

CRA are characterised by their adaptability to different cultural contexts. This means that the assessment tasks and tools can be modified to suit the cultural backgrounds and experiences of the students being assessed. Laher and Cockcroft (2013) described this strategy as an emic approach, which refers to a psychological assessment method that is culturally and linguistically specific to a particular context or population. Lee (1998) argues that performance-based assessments (PBAs) allow students to demonstrate their knowledge and skills through projects, presentations, and other creative formats, and can be tailored to include culturally relevant themes and methods of assessment. Similarly, portfolios enable students to showcase a range of work that reflects their cultural backgrounds and experiences (Gay, 2018; Hammond, 2014).

2.4 Current Practices in Culturally Responsive Assessments

In secondary school settings, a variety of CRA tools and methods are currently being used to support the diverse learning needs of students (Brown et al., 2022; Bahar & Maker, 2020; Nortvedt et al., 2020; Hue & Kennedy, 2015; Lee, 1998). These tools and methods aim to create a more inclusive and equitable assessment process that recognises and values students’ cultural backgrounds (ibid). One commonly used CRA tool is the portfolio. Lee (1998) contends that the portfolio approach is authentic because it requires students to tackle complex, real-world problems over an extended period. Portfolios allow students to compile a collection of their work over time, highlighting their learning and development in various formats. In doing so, it enables students to demonstrate their knowledge and skills in ways that are meaningful to them, reflecting their cultural backgrounds and experiences.

Performance-based assessment (PDA) is a widely used tool in CRA, requiring students to demonstrate their knowledge and skills through practical tasks such as projects, presentations, and performances (Gay, 2018). Evans' (2023) work highlights the necessity of designing assessments considering students' diverse cultural backgrounds. PDAs aim to create more equitable and meaningful assessments that resonate with students' experiences and cultural identities. These assessments are efficient in culturally diverse classrooms, allowing students to draw on their cultural knowledge and experiences during the assessment process. As Hammond (2014) portrays, a history project might involve students researching and presenting a historical event from their cultural background, allowing them to connect their learning to their personal experiences.

Case studies from various regions provide valuable insights into the implementation of culturally responsive assessments in different cultural contexts. Klenowski (2009) viewed equity in assessment as a sociocultural issue rather than a technical one and emphasises that assessment practices must consider the cultural backgrounds and knowledge systems of Indigenous students to be fair and valid. She argues that incorporating Indigenous perspectives and ways of knowing into the curriculum and assessment practices shows the effort towards CRA designs. It includes using culturally relevant assessment tasks that reflect Indigenous knowledge and traditions, such as storytelling and art (ibid). Evans' (2023) concept of cultural labs in students' think-aloud protocols is highlighted as a method of gathering feedback on the cultural meaningfulness of assessments. She affirms that CRAs are shown to increase student engagement and performance by making learning and assessments more relevant and connected to their cultural backgrounds (ibid).

In New Zealand, Russell Bishop's (2003) work has been instrumental in promoting culturally responsive practices for Māori students. Bishop and Berryman's (2006) research highlights the importance of incorporating Māori cultural values and practices into the learning process. This includes using learning tasks that reflect Māori ways of knowing and being, such as collaborative projects and oral presentations. They argue that these culturally responsive practices have led to improved academic outcomes and increased engagement among Māori students (Bishop, 2014, 2011, 2010, 2003; Bishop & Berryman, 2013, 2009, 2006).

Swann's (2018) study further supports this by showing that integrating culturally sustaining practices and ensuring that middle leaders and teachers engage in ongoing

professional learning and development positively influences student engagement and achievement. Respecting and acknowledging students' cultural identities—such as through correct name pronunciation and the inclusion of Pasifika content in the curriculum—fosters a sense of belonging and accountability among students, which contributes to improved academic outcomes (ibid).

Additionally, the emphasis on pastoral care and strong partnerships with parents and the community demonstrates how a supportive and inclusive school environment can enhance the overall well-being and educational success of Pasifika students. Studies have shown that these practices lead to better academic outcomes and increased student engagement in diverse classrooms (Paris & Alim, 2017).

During the COVID-19 pandemic, the need for culturally responsive pedagogies, including assessment practices, became even more evident. In her article, Ladson-Billings (2021) discusses the importance of leveraging culturally responsive practices to support students' cultural identities during times of crisis. These assessments aim to diagnose and support students' learning rather than merely catch them in failure (ibid). By using a variety of assessment forms, including art, music, and dramatic performances alongside traditional tests, CRAs cater to diverse learning styles and intelligences, ensuring a more equitable evaluation of student abilities (ibid). It fosters academic achievement and strengthens cultural competence, making education a tool for empowerment and social justice rather than a means of perpetuating existing inequalities.

2.5 Challenges and Barriers

While the benefits of CRA are well-documented, there are several challenges and barriers that educators and institutions face in implementing these practices. One of the primary challenges is the lack of teacher training and professional development on CRA (Ladson-Billings, 2021). Many teachers may not have the knowledge or skills needed to design and implement CRAs. These teachers are prone to superficially incorporate diverse cultural elements without critically engaging with underlying social inequities and injustices. This superficiality stems from a lack of deep understanding and genuine integration of cultural responsiveness in pedagogy. Often, educators may include token gestures, such as celebrating cultural holidays or displaying diverse cultural artifacts, without embedding these elements into the curriculum in a meaningful way (ibid). Consequently, this lack of deep understanding

can lead to a reliance on traditional assessment methods that may not be culturally relevant or equitable. Professional development programs focussing on culturally responsive teaching and assessment strategies are essential for equipping teachers with the skills and knowledge needed to effectively implement these practices (Villegas & Lucas, 2002). Without proper training, teachers may not feel confident or equipped to tackle complex issues related to race, culture, and inequality in their classrooms. This gap in knowledge and skills can lead to resistance or apprehension in fully embracing culturally responsive practices.

Another barrier is the limited availability of CRA tools and resources. Many assessment tools and resources are designed with a monocultural perspective, reflecting the norms and values of the dominant culture. Ladson-Billings (2021) highlights several challenges related to limited resources when implementing culturally responsive tools in education. One significant barrier is the unequal access to technology and the internet, which became particularly evident during the COVID-19 pandemic. She found that many students, especially those from socioeconomically disadvantaged backgrounds, lacked reliable access to Wi-Fi or necessary devices such as laptops and tablets. This digital divide hindered their ability to participate fully in remote learning and exacerbated existing educational inequalities (ibid). This can make it challenging for educators to find assessment tools that are culturally relevant and equitable. Developing and disseminating CRA tools and resources is crucial for supporting the implementation of these practices in schools.

Institutional resistance can also pose a barrier to implementing CRA practices (Ladson-Billings, 2021). Some schools and educational systems may resist change, particularly if they are accustomed to traditional assessment methods. This resistance can be rooted in a lack of understanding or awareness of the benefits of CRA, as well as concerns about the feasibility and practicality of implementing these practices (Paris & Alim, 2017). Addressing this resistance requires ongoing advocacy and education about the importance of CRA and its benefits for student learning and equity (ibid).

Additionally, systemic barriers, such as standardised testing and accountability measures, can make it challenging to implement CRA practices. Standardised tests are often criticised for their cultural bias and their inability to accurately measure the learning and abilities of students from diverse cultural backgrounds (Ladson-Billings, 2021). These tests can also create pressure on teachers to focus on test preparation,

rather than on implementing CRA practices. Advocating for changes to standardised testing and accountability measures is essential for creating a more supportive environment for CRA (Banks, 2015).

2.6 Benefits of Culturally Responsive Assessments

Despite the challenges and barriers, the benefits of CRA are significant and well-documented. CRA can lead to improved student engagement, enhanced academic achievement, and the promotion of equity and inclusivity in the classroom (Brown et al., 2022; Bahar & Maker, 2020; Nortvedt et al., 2020; Hue & Kennedy, 2015; Lee, 1998).

One of the primary benefits of CRA is improved student engagement. Research shows that when assessment tasks are relevant and meaningful to students' cultural backgrounds and experiences, students are more likely to be engaged and motivated in their learning (Evans, 2023; Ladson-Billings, 2021). CRAs provide students with opportunities to connect their learning to their personal experiences and cultural identities, making the assessment process more meaningful and relevant (Nieto, 2015). CRA can also lead to enhanced academic achievement. Research has shown that students who are assessed using culturally responsive practices tend to perform better academically (Evans, 2023; Ladson-Billings, 2021). It happens that way because CRAs provide a more accurate and meaningful measure of students' knowledge and skills, considering their cultural backgrounds and experiences. A study conducted by Banks (2015) found that students who were assessed using culturally relevant performance-based assessments showed significant improvements in their academic performance compared to students who were assessed using traditional methods.

Another significant benefit of CRA is the promotion of equity and inclusivity in the classroom. CRAs recognise and value the diverse cultural backgrounds of students, creating a more inclusive and equitable assessment process (Ladson-Billings, 2014; Swann, 2018). This aspect of CRA can help to address and mitigate the biases and inequalities that exist in traditional assessment methods, providing all students with an equal opportunity to demonstrate their learning (ibid). A study conducted by Paris and Alim (2017) found that CRA practices improved academic outcomes and increased engagement among culturally diverse students.

CRA also helps to promote a more positive and supportive classroom environment. A study conducted by Nieto (2015) found that CRA practices improved student-teacher

relationships and created a more positive classroom climate. When students feel that their cultural backgrounds and experiences are valued and respected, they are more likely to feel a sense of belonging and connection to the school community. This sense of belonging has the potential to improved relationships between students and teachers, as well as between students and their peers.

Ladson-Billings (2014) expands on the original concept of culturally relevant pedagogy, highlighting the need for contemporary approaches that address the evolving cultural dynamics of classrooms. It includes updating assessment practices to be more inclusive and reflective of students' current cultural experiences, thereby enhancing their relevance and effectiveness.

2.7 Implementing Culturally Responsive Assessments

Hattie (2020) underscores the importance of Indigenous cultural competency within the teaching workforce. This involves creating and implementing assessments that are culturally responsive and relevant to Indigenous students by integrating Indigenous knowledge, values, and perspectives into curricula and assessment practices. Effective implementation in secondary schools necessitates a comprehensive and strategic approach, including professional development for educators, designing culturally inclusive curricula, and fostering supportive institutional policies and practices.

2.7.1 Professional Development

Professional development is crucial for equipping teachers with the knowledge and skills to implement CRAs. Training on culturally responsive teaching and assessment strategies and ongoing support and coaching is essential. Hattie (2020) emphasises that cultural competence cannot be achieved through a single training session or an online course but requires sustained effort and reflection. Cross et al. (1989) state that cultural competence involves congruent behaviours, attitudes, and policies that enable professionals to work effectively in cross-cultural situations. This necessitates ongoing education, self-assessment, and adaptation.

Ladson-Billings (1995) argues that culturally relevant pedagogy requires educators to develop deep, meaningful relationships with their students, understanding their cultural backgrounds and how these influence learning. This process is time-intensive and requires commitment. Gay (2010) highlights the complexity of culturally responsive practice, which involves critical reflection on cultural assumptions, biases,

and power dynamics in teaching practices. Continuous reflection and adaptation, supported by a school environment that fosters ongoing professional development are essential.

Villegas and Lucas (2002a) and Darling-Hammond and Richardson (2009) stress the importance of high-quality professional development, including collaborative learning opportunities, ongoing workshops, and reflective practices. Guskey (2002) and Desimone (2009) further support the idea that effective professional development should be continuous, reflective, and collaborative, allowing teachers to share best practices and experiences.

2.7.2 Designing Culturally Inclusive Curricula

Culturally inclusive curricula are crucial for implementing CRAs. Such curricula integrate culturally relevant content and themes, employing teaching methods that acknowledge and respect the diverse cultural backgrounds of students. Gay (2018) asserts that inclusive curricula create engaging learning environments. Banks (2017) emphasises that incorporating diverse cultural perspectives enhances student engagement and learning outcomes by fostering a sense of representation and value. Ladson-Billings (1995) introduces the concept of culturally relevant pedagogy, showing that culturally relevant curricula improve academic success and foster positive cultural identities among students. Castagno and Brayboy (2008) find that curricula incorporating Indigenous knowledge and practices are more effective in engaging Indigenous students and improving their academic outcomes.

2.7.3 Criticisms and Challenges

Despite strong theoretical foundations, there are challenges in implementing culturally inclusive curricula. Sleeter (2011) discusses the marginalisation of culturally responsive pedagogy, citing resistance from educators and lack of systemic support as significant barriers. Paris (2012) suggests that culturally responsive pedagogy often fails to sustain students' cultural practices and advocates for culturally sustaining pedagogy, which supports the maintenance and evolution of cultural identities. Au (2022) criticises the constraints of high-stakes testing, arguing that standardised testing pressures limit the incorporation of culturally relevant content, undermining efforts to create inclusive learning environments.

2.7.4 Addressing the Challenges

To overcome these challenges, systemic changes are necessary. Efforts should focus on ongoing professional development, collaboration among educators, and advocacy for policy changes that support culturally responsive and sustaining education practices. By addressing these barriers, educators can create inclusive and empowering curricula for students from diverse cultural backgrounds.

Developing Indigenous cultural competency and implementing culturally inclusive curricula require sustained effort, comprehensive professional development, and systemic support. While there are significant challenges, addressing these can lead to more inclusive and effective educational practices that support the academic and personal growth of students from diverse cultural backgrounds.

2.8 Talanoa, a culturally responsive assessment tool

Talanoa, a traditional Pacific Islands practice of storytelling and dialogue, has been recognised for its potential as a research method and methodology (Vaioliti, 2006; Fa'avae, 2016). However, its application as a tool for assessment has not been extensively explored in the literature. Talanoa involves open, informal conversations that foster trust and mutual respect, making it a culturally relevant method for engaging students in the assessment process (ibid). In the context of academic assessment, talanoa can be used to create a more inclusive and CRA process. By incorporating talanoa into assessments, educators can provide students with opportunities to share their knowledge and experiences in a culturally meaningful way. For example, students might participate in talanoa sessions where they discuss their learning and reflect on their experiences, allowing teachers to assess their understanding and skills in a more holistic and culturally relevant manner. Despite its potential, there is limited research on the use of talanoa as a tool for assessment in secondary school settings. This represents a significant gap in the literature and an opportunity for further research. Investigating the use of talanoa in assessment can provide valuable insights into how CRA practices can be enhanced to better support the diverse learning needs of Pasifika students.

This study situates Talanoa within the framework of culturally responsive assessment (CRA), exploring how Talanoa can address educational inequities often found in Western assessment systems. Traditional assessment methods in mathematics

typically prioritise individual performance and standardised metrics, which may not fully capture the diverse ways Pasifika students demonstrate understanding.

CRA emphasises the need to recognise and respect students' cultural contexts within the learning process. Talanoa aligns with CRA as it nurtures relationships, fosters trust and values cultural identities—elements that are crucial in making assessments more inclusive and reflective of students' lived experiences. By embracing the principles of Talanoa in assessment, educators can create a learning environment where Pasifika students feel respected and understood, potentially leading to greater engagement and deeper learning in mathematics. This theoretical grounding offers a culturally resonant alternative to conventional assessments, aligning educational practices with the values and strengths of Pasifika students and helping to close gaps in achievement that arise from culturally disconnected assessment models.

2.9 Gap in the Research

While Culturally Responsive Assessment (CRA) has been widely studied, few studies have specifically examined culturally responsive assessment for Pasifika students in mathematics. Current literature highlights the importance of inclusive practices but lacks substantial research on assessment methods that respect and reflect Pasifika students' cultural contexts. Given the limited attention to this demographic, this study addresses a unique gap by exploring Talanoa as an assessment tool that aligns with Pasifika students' values.

Integrating Talanoa into mathematics assessment addresses a need for methods that capture Pasifika students' strengths and knowledge through culturally meaningful interactions. By using Talanoa, this study offers an innovative approach that shifts away from traditional, standardised assessments and provides a model for culturally relevant evaluation. It contributes to CRA and lays the foundation for further studies on implementing Talanoa and similar practices across various educational levels and disciplines.

2.10 Summary

Culturally responsive assessment (CRA) is a critical component of inclusive education in secondary school settings. By recognising and valuing students' diverse cultural backgrounds, CRAs create a more equitable and meaningful assessment process. This literature review has explored the historical context, principles, current practices,

challenges, benefits, strategies, and future directions of CRA. The findings highlight the importance of CRA for promoting equity and inclusivity in the classroom, as well as the need for ongoing research and development to support the implementation of these practices. The identification of the gap in research on talanoa as a tool for assessment further emphasises the need for continued exploration and innovation in this field.

Chapter Three: Methodology

3.1 Introduction

Exploring alternative methods for assessing Pasifika students in mathematics is imperative to prevent their potential marginalisation by Western traditional approaches. Traditional assessment strategies often carry inherent cultural biases that may not accurately capture the diverse ways Pasifika students engage with mathematical concepts. Pasifika students bring unique perspectives, cultural backgrounds, and problem-solving methods to the learning environment. These attributes might not align seamlessly with conventional Western methods of assessing mathematical proficiency. Therefore, a comprehensive exploration of assessment practices is essential to acknowledge and validate Pasifika students' diverse mathematical skills and knowledge.

In order to guarantee an equitable and inclusive assessment, educators should explore assessment tools and methodologies that are culturally responsive, acknowledging and incorporating Pasifika cultural values. This could entail using indigenous assessment tools that align with students' cultural experiences and acknowledging and appreciating diverse problem-solving approaches. Engaging students actively in the assessment process through collaborative and participatory practices can offer insights into their mathematical comprehension beyond the constraints of traditional Western assessment strategies.

This study investigates the viewpoints of Pasifika students concerning the implementation of talanoa as an assessment tool in the National Certificate of Educational Achievement (NCEA) Level 2 Mathematics. The premise is based on the cultural background of Pasifika individuals, where talanoa serves as a customary mode of interaction fostering collective learning. The primary focus is to delve into how Tongan secondary school students perceive the utilisation of talanoa as an assessment tool within the context of NCEA Level 2 Mathematics. Examining students' perceptions regarding assessment techniques facilitating the expression of their mathematical ideas, strategies, and problem-solving is an extensive journey beyond the confines of this thesis. Nonetheless, the insights shared by the student participants in this study will contribute a layer to comprehending their perspectives, which deserve further investigation.

In this study, I traverse from traditional assessment methods in Mathematics, instead utilising frameworks that contextualise students' knowledge, concepts, and practices within the educational landscape of Pasifika students in Aotearoa New Zealand. This study is founded on a strength-based approach, emphasising the lived experiences of Tongan students in Aotearoa New Zealand, and initiating thinking and theorising from the perspective of Tongan knowledge and language. Due to the study's focus on descriptive and interpretative data, the research aligns with a qualitative approach, as proposed by Denzin and Lincoln (2011). The design is anchored in a paradigm that integrates indigenous and local knowledge and wisdom into the core of the research to promote the appreciation of ways of knowing and knowledge linked with the Tongan communities (Thaman, 2007). It indicates that employing a qualitative methodology would be the most suitable approach to address the research question.

This study delves into various aspects of participants' learning experiences, shaping their perception of talanoa as a potential culturally responsive assessment tool for NCEA Level 2 Mathematics. The Kakala model, proposed by Thaman (1992, 1997) and its revised version by Johansson-Fua (2023), are deemed suitable for several reasons. Firstly, the researcher being female, the Kakala model resonates effectively, given that Kakala garland-crafting traditionally involves mainly females. Secondly, within the Tongan cultural context, Kakala garland-making entails gathering fragrant flowers and skillfully weaving them into a garland worn on special occasions. Metaphorically, this process reflects the researcher's deep appreciation for the participants' reflections, weaving them into a beautiful garland of flowers. This garland serves as a symbolic presentation to organisations and scholars, allowing them to understand Tongan students' perceptions of how talanoa helps them present mathematical knowledge wholly and appropriately. Lastly, integrating the Kakala Research Framework (Thaman, 2003; Johansson-Fua, 2023) with qualitative research can yield a fragrant, rich, and profound reflective discourse, significantly enhancing the value of this research and contributing to the ongoing research for Pacific Education improvement.

This chapter serves a dual purpose. Firstly, it seeks to establish a linkage between the methodologies employed in Kakala Research Methodology (ibid) and the foundational assumptions that underlie the concepts of Vā (Ka'ili, 2017), Tauhi-Vā (ibid), and Tauhi-Vā Māfana (Paea, 2015). Vā encompasses the significance of relationships, while Tauhi-Vā emphasises the cultivation of positive connections, and Tauhi-Vā Māfana specifically focuses on fostering warm and affirmative relationships. In delving into

this connection, the chapter aims to explore how the principles and practices of Kakala Research Methodology align with and enrich the understanding of Vā-related concepts. The goal of drawing parallels between the two frameworks is to illuminate the synergies and complementary aspects that contribute to a nuanced and culturally grounded research approach. The intention is to extend this exploration by elucidating how the integration of Kakala Research Methodology with Vā, Tauhi-Vā, and Tauhi-Vā Māfana can enhance the depth and authenticity of the research process. This includes considering how Kakala Research Methodology's emphasis on collaboration, cultural sensitivity, and qualitative depth resonates with the ethos of nurturing and sustaining positive relationships encapsulated in the Vā framework.

This chapter is a critical exploration of the convergence between Kakala Research Methodology (KRM) and the cultural underpinnings of Vā, Tauhi-Vā, and Tauhi-Vā Māfana. By establishing this connection it aims to contribute to a more holistic and culturally informed research paradigm that aligns with the values and perspectives inherent in Pasifika cultures.

3.2 Vā, Tauhi-Vā and Tauhi-Vā Māfana

In this study, utilising the concept of vā is central, portraying vā as a dynamic space of relationality wherein individuals establish connections with other beings or entities. According to Ka'ili (2017, 2005), vā is a sociospatial space between people and things, emphasising the relational dynamics within this spatial context. The concept of vā, as described by Ka'ili (ibid), is a shared understanding across various Pacific cultures, including Tonga, Samoa, Rotuma, Tahiti, Aotearoa, and Hawaii. It is noteworthy that in the latter two countries, Aotearoa and Hawaii, the term is spelled as wā (ibid). This consistent recognition of the sociospatial significance of vā or wā underscores its cultural universality and integral role in shaping social relationships across these diverse Pacific communities. It diverges significantly from the Western understanding of space as a mere expanse or open area. Vā goes beyond physical dimensions, encompassing sociospatial elements and emphasising relational and contextual aspects (Ka'ili, 2017, 2005). This distinction highlights the cultural nuances and rich contextual meanings embedded in the Pacific concept of vā, contrasting with the more abstract and geometric understanding of space often prevalent in Western perspectives (Anae, 2010). As Ka'ili (2005) asserts, within the context of kāinga (extended family), the concept of vā encapsulates the intricate sociospatial connections forged among family members intricately woven together through genealogy. In this

framework, *vā* becomes a dynamic and relational space, emphasising the interwoven ties that bind the *kāinga* and define their collective sociospatial existence. In our context, *vā* can be understood as the social spaces intricately formed among *kāinga* members, akin to the weaving together of a mat through genealogical connections (ibid). This analogy emphasises the interwoven nature of social ties within the *kāinga*, drawing parallels between the familial relationships and the meticulous weaving process of a mat.

The study refers to this weaving of *kakala* flowers as a symbol of *tauhi-vā* (nurturing good relationships). The weaving process entails the incorporation of diverse flowers, including *heilala* (*Garcinia sessilis*), *mohokoi* (*Conanga odorata*), *pipi-tongi* and various others, along with leaves (Paea, 2015). These elements are skillfully interwoven and bound together using *fau*, the dried bark of hibiscus plants. The selection of *fau* is deliberate, guided by its durability and ease of manipulation during the weaving process. This choice reflects a practical consideration, ensuring that the material not only withstands the test of time but also facilitates the weaving techniques employed, adding resilience and convenience to the intricate craft. It is an intricate combination of botanical elements and traditional materials that contributes to the creation of a meaningful and culturally rich product, symbolising the interconnectedness and unity within the *kāinga*.

In gathering flowers and leaves to craft a *kakala* garland, it becomes essential for the plaiter or weaver to discern between *kakala 'iloa*, representing more royal or prestigious flowers, and *kakala vale*, denoting the more common or ordinary flowers. The intrinsic value of the *kakala* is inherently tied to the selection of flowers employed in its creation. This concept extends beyond the traditional craft, playing a metaphorical role in guiding my focus during the research endeavour's data collection and analysis phases. The parallel drawn between the *kakala 'iloa* and *kakala vale* serves as a meaningful analogy for the researcher. In the study context, this metaphor underscores the importance of discernment and selectivity in the data collection and analysis. The researcher must be meticulous in identifying and prioritising data elements that align with the metaphorical 'chiefly flowers'—those aspects of the study that carry heightened significance, relevance, or depth.

The concept of *kakala 'iloa* aids the researcher in maintaining a clear and purposeful trajectory throughout the research journey. It becomes a guiding principle, ensuring that the collected data and identified themes are not merely commonplace (*kakala*

vale) but possess the depth, importance, and richness akin to the more esteemed chiefly flowers (kakala 'iloa). This intentional and selective approach contributes to the overall quality and significance (viewing here as māfana—a heartfelt, warm feeling) of the research findings, aligning with the culturally rooted metaphor derived from the art of kakala garland-making.

In this research, I employ tauhi vā māfana to signify the utmost level of nurturing positive and warm relationships. This conceptualisation emphasises a deep commitment to fostering and maintaining connections characterised by genuine warmth and goodwill. As highlighted by Manu'atu (2009), the inherent dynamic quality of māfana as a subjective energiser holds significance in comprehending how Tongans conceptualise and respond to specific situations. This acknowledgment underscores the idea that the dynamic nature of māfana plays a pivotal role in influencing the thought processes and actions of Tongans within particular contexts.

3.3 Kakala Research Methodology

This research is framed within an Indigenous Pacific paradigm using the Kakala Research Framework (KRF) as its guiding structure, which is crucial to the foundation of this thesis. The KRF was explicitly selected for its cultural relevance and appropriateness. Kakala, a concept described by Thaman (1992, 1997) as a philosophy for teaching and learning, has been developed into a research framework (Johansson-Fua, 2023) tailored for Pacific research from a Tongan worldview. This idea significantly contributes to decolonising and contextualising Pacific studies and philosophies. Scholars like Perese (2009) advocate for indigenous research frameworks that prioritise indigenous knowledge, voices, experiences, reflections, and analyses of their social, material, and spiritual conditions (Perese, 2009). This argument delineates Pacific research frameworks based on cultural relevance and suitability for reclaiming cultural knowledge, values, and beliefs (Gegeo, 2001; Thaman, 2003).

Johansson-Fua (2023) enabled Tongan researchers to appreciate the indigenous knowledge embedded within Tongan Knowledge Systems while deconstructing the philosophical understanding of their world through participation and experiences. The Kakala Research Framework empowers this research, particularly enabling the articulation of approaches from Tongan viewpoints and recognising Tongan thinking patterns in academic research. It allows for the conceptualisation of Mathematics assessment, situating it within Tongan cultural values and principles such as loto-tō

(humility), faka'apa'apa (respect), tauhi vā (reciprocity and maintaining good relations), and mamahi'i me'a (loyalty).

Thaman (1992, 1997) portrays Kakala as a metaphor for fragrant flowers, emphasising the significance of their distinct fragrance in the Tongan view of Pulotu. In this sacred place, the souls of Tongan aristocrats and chiefs reside. Pulotu is perceived as the origin of chiefly things, including kahokaho (a species of yam), vai-ola (life-giving stream), maama (fire), hou'eiki fafine (women), and kakala (fragrant flowers), according to Filihia (2001), who recounts Tongan mythology on the origin of Heilala (*Garcinia sessilis*)—a chiefly kakala. The story of Heilala derives from the tale of Ikafoli and the mysterious woman he encountered between the Kao and Tofua islands of the Ha'apai group. As the mythical event unfolds, the woman retrieves flowers from Pulotu after her brief interactions with Ikafoli (ibid). The next day, she was discovered seated on the beach, weaving a Heilala flower garland to adorn her head. Ikafoli trailed her to the shores of Nukuleka, a village adjacent to the Tu'i Tonga's abode in Lapaha (where the Palace of Tu'i Tonga was located). While en route to Lapaha, the woman fashioned a kakala necklace from the Heilala plant branches she carried within the folds of her garments. The sap dropped onto the ground as she plucked the flowers from their branches. There, Lapaha gained its nickname, Paki-moe-To'i (translated as 'pluck and sap'). The necklace made of Heilala flowers is called Tuitu'u Heilala because the mystery woman from Pulotu threaded (tui) the flowers while she walked (tu'u) with Ikafoli towards Lapaha. This kahoā Heilala (garland of Heilala flowers) is reserved for individuals of chiefly rank due to its associations with Pulotu.

The Kakala Research Framework draws inspiration from the pioneering work of a Tongan poet and educator, Konai Helu Thaman. Thaman (1992, 1997) envisioned kakala as a symbolic structure for learning, likening it to the art of weaving a garland. Within Tongan culture, a garland of kakala represents a collection of aromatic flowers skillfully woven together, intended for a unique individual or occasion (Thaman, 2007). The process of making a kakala garland involves six distinct stages or elements (*see Figure 1*)

- 1st TEU. During this stage, conceptualisation commences as we engage in talanoa with existing literature, talanoa with the supervisors, engage in talanoa with school leaders and community members, and culminate in the formulation of a research proposal along with all the associated tasks. During this phase, I embarked on securing two supervisors, crafting a research proposal, and initiating

the recruitment plan. Following discussions with my supervisors, it was determined that eligible participants should be associated with a local secondary school, have Pasifika students, and be actively enrolled in NCEA Level 2 Mathematics. These criteria were established to ensure the relevance and specificity of the participant pool to the research focus. Section 3.6 describes the Ethical issues considered in this study, including the recruitment process.

- 2nd TOLI. Toli is the data collection stage. It involves talanoa with participants and talanoa with the research data. As this phase unfolds, we sort the data into categories with codes--similar to how women sort flowers into groups before weaving them together.
- 3rd TUI. In this stage, research data is analysed and started weaving together the findings. We do so with talanoa (talanoa tui kakala). TUI kakala serves the purpose of revealing a concept or telling a story by conveying it through the arrangement of its followers.
- 4th LUVA. This is the reporting stage. We present the research findings and outcomes in the LUVA stage. As the portraiture tool Lawrence-Lightfoot (2005, 1986, 1983) developed, we present the participants' stories in the Thesis.
- 5th MĀLIE. This is the implementation stage. It involves talanoa vā mo e lotu (having relational conversations with): lotu (church, spirituality), fonua (people, place), and ako (schools, teachers), making the findings more relevant and valuable in their contexts
- 6th MĀFANA. Manu'atu defines māfana as "a movement of warm sensibilities that energises the process of mālie" (Manu'atu, 2000, p. 109). It involves talanoa lelei (significant and meaningful discussion) and transformative actions. This is when the community puts into practice the koloa they possess from the research findings, transforming their thinking and behaviour.

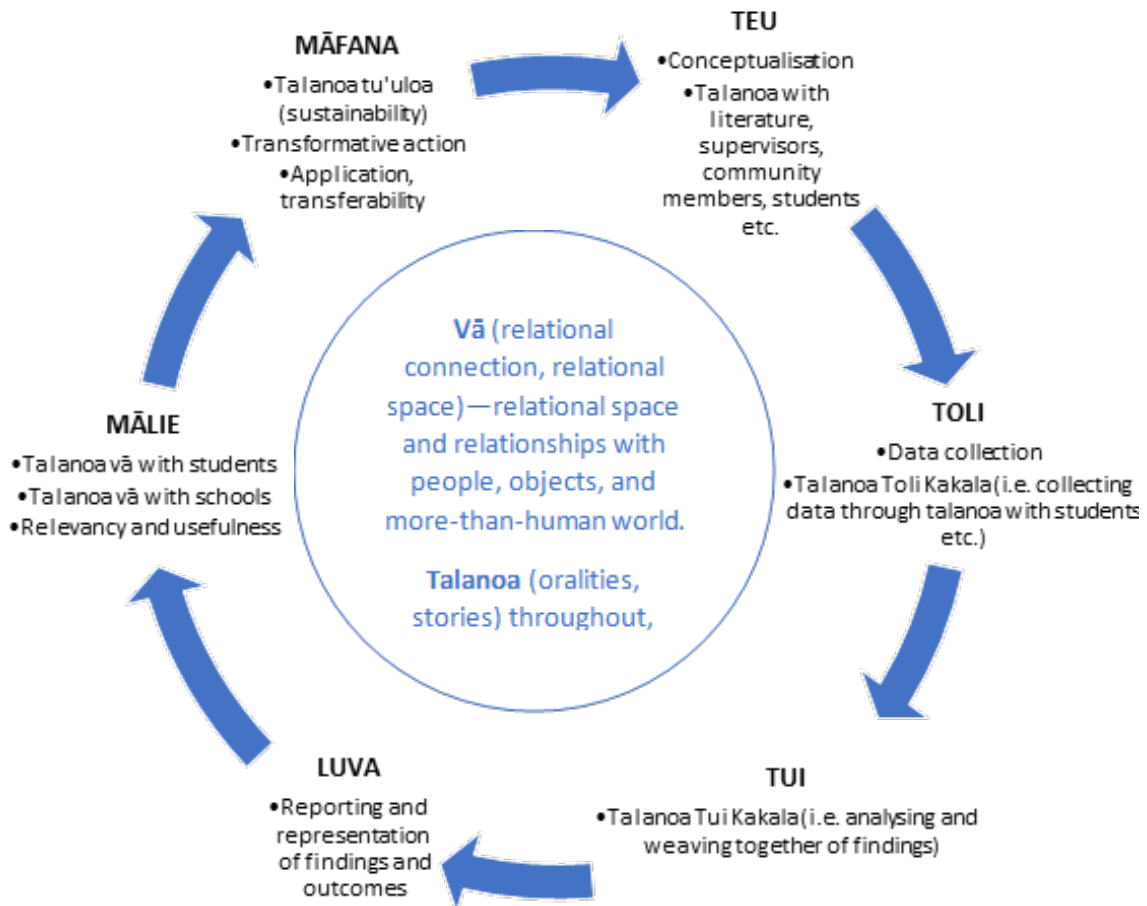


Figure 1. A Conceptual Structure of the Kakala Research Framework

Each stage of the Kakala Research Framework was integral to the methodological rigour of this research, ensuring that the process was both culturally congruent and methodologically sound.

In the Teu phase, initial connections with participants and their communities were established, building trust and setting the foundation for open dialogue. The Toli phase involved using Talanoa sessions to gather qualitative data, where students shared their thoughts and experiences with mathematics assessments. The data was then organised and woven into themes during the Tui stage, aligning their narratives to form a cohesive picture of their experiences. The Luva phase allowed me to present findings back to the community, valuing participants' contributions, while the Mālie phase ensured that their insights were appreciated and acknowledged. Finally, Māfana, reflecting warmth, emphasised the relational aspect of this study, aiming to honour and affirm the students' voices throughout the research process. Using the Kakala Research framework, this study demonstrates a commitment to culturally

appropriate methods that respect and integrate participants' cultural values at every research stage.

3.4 Talanoa, a research method

Talanoa is the chosen method of gathering the participants' descriptive narrative data. It is a known and familiar Indigenous Pacific Research Method and Methodology used in educational research to understand Pasifika people's lived realities and ways of knowing. It is a means of communicating through which Pacific people synthesise knowledge, share ideas, and collaborate (Fa'avae, 2019). Talanoa is a cultural mode of "knowledge transmission" that involves building and enhancing relationships. In casual settings, talanoa may seem flexible and open; however, when used in a Pasifika context, it becomes apparent that the flexibility and the openness of talanoa (resulting from trusting relationships and cultural connections) can deepen the conversation with insightful thinking and critical thoughts (Sisitoutai, 2021; Fa'avae, 2019).

'Talanoa' is derived from two Tongan words: 'tala' meaning to tell or talk, and 'noa', which refers to anything or nothing in particular (Fa'avae, 2016; 'Otunuku, 2011; Vaioleti, 2006). Talanoa aligns with Tongan cultural values of collaboration and respect ('Otunuku, 2011; Vaioleti, 2006) and serves as an approach to foster open dialogue. The talanoa sessions with participants are not constrained by time, as it is essential, in accordance with Tongan culture, for the researcher to be mindful of the interview sessions and allow the participant to determine when they are ready to conclude the talanoa session. Talanoa and portraiture can paint comprehensive and descriptive written portraits of the subjects' lives with the utmost respect as 'a guest' in the Tongan culture.

3.5 Research Questions

The formulation of research questions is a critical component of any study, as it directs the inquiry and shapes the methodological approach. In the context of this study, the research questions have been carefully designed to explore the intersection of cultural practices and educational assessment, with a particular focus on Pasifika students in secondary school Mathematics. Grounded in the theoretical concept of Talanoa—a traditional Pasifika method of dialogue—the research questions aim to investigate how this culturally embedded practice might influence students' attitudes towards assessments and their overall learning experience.

This section outlines the research questions that guide the study, differentiating between theoretical inquiry and empirical investigation. The theoretical question seeks to explore the transformative potential of Talanoa on Pasifika learners' attitudes towards academic assessments, while the empirical question delves into students' perceptions of Talanoa as an assessment tool in NCEA Level 2 Mathematics. Additionally, three subsidiary questions have been included to further unpack students' experiences and reflections on the use of Talanoa in their educational context.

These research questions are pivotal in guiding the study's methodological design and ensuring that the investigation remains focused on the cultural and educational dimensions of the research. By clearly defining the scope and focus of the inquiry, these questions provide a framework for data collection and analysis, enabling a deeper understanding of the impact of culturally relevant practices on Pasifika students' assessment experiences.

3.5.1 Theoretical Research Question

How does Talanoa transform Pasifika learners' attitudes towards academic assessments in secondary school Mathematics?

This question is central to the theoretical framework of this study. It seeks to explore the potential transformative effects of Talanoa on students' attitudes towards academic assessments. In NCEA Mathematics, assessment methods are often rigid and may not align with the cultural values and learning styles of Pasifika students. This question is aimed at understanding whether and how Talanoa, with its emphasis on open dialogue and cultural relevance, can reshape these attitudes, leading to a more positive and engaged learning experience.

3.5.2 Empirical Research Question

What are Pasifika students' perceptions of using Talanoa as an assessment tool in NCEA Level 2 Mathematics?

This empirical question shifts the focus from theoretical exploration to practical investigation. It seeks to gather and analyse the lived experiences and perceptions of Pasifika students who have used Talanoa as an assessment tool in NCEA Level 2 Mathematics. By focusing on the students' voices, this question aims to provide insight

into how they perceive the effectiveness, relevance, and impact of Talanoa in an academic context that typically favours more conventional assessment methods.

Subsidiary Questions

1. What are your thoughts on using Talanoa as an assessment tool in Mathematics?

This question is designed to elicit students' initial reactions and opinions about the use of Talanoa in a subject like Mathematics, where traditional assessment methods are often standardised and structured. It aims to capture their views on how well Talanoa aligns with their learning experiences and cultural values.

2. How does this approach differ from your usual assessment methods?

Here, the objective is to compare Talanoa with more conventional assessment methods that students are accustomed to. This question seeks to highlight the contrasts and possibly the advantages or disadvantages of Talanoa as an alternative assessment method, providing insight into its uniqueness and potential benefits.

3. How does Talanoa help you think more deeply about what you are doing?

This question delves into the cognitive and reflective aspects of learning. It explores whether Talanoa, with its emphasis on dialogue and relational engagement, encourages students to think more critically and deeply about their mathematical work. The responses to this question could reveal the extent to which Talanoa fosters deeper understanding and learning beyond the surface level.

3.6 Participants and Data Collection

This section describes the process undertaken to gain entry into Motunoa South College (a pseudonym for the school involved in this study), ensure the participation of students, and gather the necessary data. It begins by outlining the initial meeting with the School Principal, during which permission to conduct research within the school was requested and subsequently granted. Following this, the process of identifying and recruiting Pasifika students enrolled in NCEA Level 2 Mathematics is described. This includes how participants were approached, informed about the study, and ultimately selected. Additionally, the section discusses the methods used for data collection, such as one-on-one Talanoa sessions and focus group discussions. Information about the participants, including their selection criteria and involvement

in the study, is provided to offer a comprehensive understanding of the research process.

Before commencing the study, an ethics application was submitted and approved by the Te Toi Tangata Division of Education Research Ethics Committee (FEDU013/23), ensuring that all procedures adhered to the necessary ethical standards. The approval of the ethics application provided the foundation for gaining access to Motunoa South College, securing the participation of students, and conducting the research in a manner that respected the rights and welfare of all participants. A copy of the ethics approval is included in the appendices (see Appendix 7). Following this approval, the researcher initiated the process of meeting with the School Principal, recruiting participants, and collecting data through the Talanoa sessions.

3.6.1 Gained Access to School, the research site

The ethical considerations for this study began with a crucial initial meeting with the School Principal of Motunoa South College. During this meeting, the researcher provided a comprehensive overview of the study's purpose and scope, clearly outlining the objectives and the methods that would be employed. The Principal was also informed about the specific request to use Motunoa South College as the setting for the research.

To ensure transparency and to obtain the necessary approvals, the researcher presented the Participant's Information Sheet (see Appendix 3), which detailed the study's purpose, the role of the participants, and the ethical considerations involved. Additionally, the researcher submitted a formal request to gain access to the school facilities and the student body for research purposes (see Appendix 1). The Principal was also provided with a consent form to officially grant access to the school for the duration of the study (see Appendix 2).

The School Principal responded very positively to the proposal and was highly supportive of the research. As a result, access to the school was granted during this meeting, allowing the study to proceed as planned within the school environment. This support was pivotal in enabling the researcher to carry out the study in a manner that respected both the students' educational environment and the ethical standards required for the research.

3.6.2 Access to the Participants

After securing access to Motunoa South College, the next step involved identifying and recruiting participants for the study. The administration office of the school provided a list of all Pasifika students who were enrolled in NCEA Level 2 Mathematics at the time the study was conducted. Due to the relatively small number of potential participants, the selection process was limited in scope. However, I individually approached each eligible student and six Pasifika students (at least 16 years old) expressed their willingness to participate in the study.

To formally initiate their involvement, we held an introductory group meeting where each participant was presented with the Participants' Information Sheet (Appendix 3) and Consent Form (Appendix 4). During this meeting, I explained the purpose and scope of the study in detail, ensuring that all participants understood their role, the nature of the Talanoa sessions, and their right to withdraw from the study at any time without any repercussions. After discussing these details, all six students agreed to participate and completed and signed the consent forms.

Following the completion of the consent process, we moved on to the next phase of the study, which involved one-on-one assessments using Talanoa. These assessments were based on the Practice Assessment Task (Appendix 5) related to Achievement Standard 91256, Co-ordinate Geometry, for NCEA. After all six participants had been assessed individually, we convened a focus group Talanoa session where the students shared their perceptions and experiences of using Talanoa as an assessment tool. This focus group discussion was guided by the questions outlined in the Focus Group Talanoa Schedule (Appendix 6), allowing for an in-depth exploration of their thoughts and insights regarding the assessment method.

3.6.3 Data Collection

The data for this study was collected through a series of Talanoa sessions with six Pasifika students enrolled in NCEA Level 2 Mathematics at Motunoa South College. Talanoa, a culturally responsive and conversational approach, was used both as a method for gathering data and as an assessment tool to evaluate students' understanding and problem-solving abilities in mathematics. These sessions were designed to create a comfortable and supportive environment where students could express their thoughts openly and authentically.

The Talanoa sessions took place in familiar and safe environments, within the school setting, where the students felt at ease. These settings were chosen to ensure that students were comfortable and willing to engage fully in the discussions. The relaxed and informal nature of Talanoa allowed for rich, nuanced conversations, where students could share their experiences, challenges, and insights related to mathematics assessments.

During the Talanoa sessions, the participants were assessed against Achievement Standard 91256, Co-ordinate Geometry, for NCEA Level 2 Mathematics (see Appendix 5). In these sessions, students were presented with a specific mathematical problem related to coordinate geometry and engaged in discussions designed to clarify their understanding of the questions posed. The interactive nature of Talanoa provided a platform for students to articulate their thought processes, ask questions, and explore various approaches to solving the problem. This conversational and culturally responsive approach not only yielded valuable data on the students' mathematical abilities but also underscored the significant role that cultural context plays in shaping their learning experiences. By integrating their cultural identities into the assessment process, Talanoa helped to create a more meaningful and supportive learning environment, allowing students to connect more deeply with the material.

It is important to note that Talanoa was not just a tool for data collection but also served as a method of assessment. By using Talanoa, the study was able to assess students in a way that respected their cultural identities and encouraged deeper engagement with the material. This approach allowed for a more holistic understanding of students' capabilities, moving beyond traditional assessment methods that may not fully capture the strengths and knowledge of Pasifika learners.

Overall, the use of Talanoa in this study was crucial in creating a culturally responsive research environment that valued the students' voices and perspectives, leading to richer data and more meaningful insights into their educational experiences.

3.6.4 Study participants

The table presented below lists the study participants, each identified by pseudonyms to protect their privacy. While their names have been altered, the gender and ethnicity details accurately reflect the participants' true demographics. Notably, two female students were eligible for participation; however, only one was ultimately able to take part in the study, as reflected in the table below.

<i>Pseudonym</i>	<i>Gender</i>	<i>Ethnicities</i>
Moana	Female	Tongan / Samoan
Ioane	Male	Kiribati
Hateni	Male	Tongan / Tokelauan
Bo'oi	Male	Cook Islands Māori
Salesi	Male	Tongan
Fuifui	Male	Cook Islands Māori / Niue

Table 1. Six Pasifika students (at least 16 years old) who participated in this study

It is worth noting that the recruitment process for this study ensured that the participants were not only representative of the Pasifika student population at the school but also genuinely interested in contributing to the research. The careful selection and voluntary participation of these students added depth and authenticity to the study's findings.

3.7 Data Analysis

In analysing the data gathered through Talanoa sessions, this study employed a rigorous process to ensure accurate theme identification and validation while preserving the cultural integrity of the participants' voices. Grounded in the thematic analysis method (Braun & Clarke, 2022, 2006; Clarke & Braun, 2017), this approach involved coding and interpreting student utterances to reveal insights into their perceptions of Talanoa as an assessment tool in mathematics. The process unfolded in multiple stages: familiarising with the data, identifying themes, validating findings, and coding specific utterances. The aim was to ensure that each theme authentically represented students' experiences and perspectives, making the analysis both culturally and contextually relevant.

3.7.1. Data Familiarisation

The first stage involved immersing in the Talanoa data by listening to recordings and reading transcripts multiple times to gain a comprehensive understanding of students' experiences and expressions. This familiarisation phase allowed for preliminary observations of recurring words, phrases, and ideas that students used to describe their experiences with Talanoa-based assessment in mathematics.

During this stage, initial notes were made on emerging patterns, such as expressions of comfort and trust in the Talanoa environment, or descriptions of how they felt that Talanoa allowed them to ‘think out loud’ and explore mathematical concepts in a less intimidating context. These notes served as a foundation for the more systematic analysis that followed.

3.7.2. Theme Identification

After becoming thoroughly familiar with the data, the next step involved identifying overarching themes. Themes were drawn from both recurring ideas across multiple students and unique insights that were particularly powerful or culturally significant. The process of theme identification adhered to the principles of culturally responsive analysis, recognising that students’ expressions of trust, joy, self-confidence, and deeper understanding in a mathematics assessment context were not just cognitive responses but relational and cultural ones as well.

Five major themes were identified:

1. *Fakalanga Vā Falala‘anga (Establishing Trusting Relationships)*: Students expressed feeling more open and willing to engage in Talanoa because they felt their cultural identities were respected, and a trusting relationship between students and teachers was established.
2. *Fakalanga Pōto‘i Anga (Developing Cultural Competence)*: Statements related to students feeling that Talanoa created a culturally inclusive space where they could express themselves fully.
3. *Fakalanga ‘Ilo mo e Poto (Acquiring Knowledge and Fostering Understanding)*: Statements reflecting how Talanoa helped students achieve a more profound comprehension of mathematical concepts.
4. *Fakalanga Loto-lahi (Cultivating Self-Confidence and Efficacy)*: Instances where students mentioned gaining confidence or feeling less anxious about mathematical tasks.
5. *Fakalanga Fiefia mo Tau‘atāina (Stimulating Joy and Intellectual Freedom)*: Students expressed enjoyment in completing the assessment once they fully understood the questions being asked.

3.7.3. Theme Validation

In validating themes identified in this study, Braun and Clarke's (2022) approach to Thematic Analysis (TA) was instrumental. According to Braun and Clarke, TA is a flexible and systematic method that allows researchers to identify, analyse, and interpret patterns within qualitative data, which, in this case, involved Pasifika students' perceptions of Talanoa as an assessment tool in mathematics. Validating themes through Braun and Clarke's TA process involves a thorough, two-stage review where candidate themes are assessed against both the coded data and the overall dataset. This study employed these principles to ensure each theme's relevance, coherence, and alignment with the students' experiences and the research context.

1. Two-Stage Review Process

The theme validation process began with a two-stage review as outlined by Braun and Clarke (2022). First, candidate themes were reviewed against the initial codes to ensure they represented recurring and significant patterns in the data. For example, preliminary coding revealed several statements from students expressing 'comfort' and 'openness' in Talanoa, leading to the candidate theme 'Establishing Trusting Relationships'. This initial review involved checking each code associated with this theme to confirm that it indeed captured elements of trust and relational security within the Talanoa context.

In the second stage, each candidate theme was assessed against the entire dataset to ensure that it captured a broader pattern across multiple participants' experiences, rather than isolated instances. Braun and Clarke (2022) emphasise that themes should represent meaningful and patterned responses that recur throughout the data, rather than one-off remarks. This stage confirmed that themes such as 'Developing Cultural Competence' and 'Creating Awareness and fosters Understanding' were not only relevant to individual students but also shared broadly across the group, suggesting that Talanoa consistently fostered these experiences in the context of mathematics assessment.

2. Defining and Refining Themes

After the two-stage review, each theme was further refined to enhance its specificity and alignment with the data. Braun and Clarke (2022) highlight the importance of refining themes so that each one is distinct and represents a clear pattern in the data. For instance, initial analysis revealed a broad theme around 'positive feelings' in

Talanoa, which was later split into more refined themes: ‘Stimulating Joy and Intellectual Freedom’ and ‘Cultivating Self-Confidence and Efficacy’. This refinement allowed each theme to capture a more precise aspect of students’ experiences—distinguishing between the joy and creative freedom Talanoa encouraged and the personal growth in self-confidence it supported.

3. Active Role of the Researcher in Theme Validation

Braun and Clarke’s (2022) TA approach encourages researchers to actively interpret and make meaning from the data, rather than treating themes as ‘discovered’ facts. In this study, the researcher’s interpretation was critical in recognising the cultural dimensions of each theme. For example, while ‘Establishing Trusting Relationships’ could be interpreted as a general concept, the analysis here highlighted the specific cultural practices and values embedded in Talanoa that nurtured trust, such as the collective and respectful nature of conversations. This interpretation emphasises the cultural specificity of Talanoa, validating that the theme accurately reflected the Pasifika students’ unique experiences.

4. Cultural Consistency and Peer Validation

To ensure cultural authenticity, an additional validation step involved peer (or cultural advisor, if you like) validation. Braun and Clarke (2022) note that peer validation can enhance the rigour of thematic analysis, especially by providing external perspectives. The peer confirmed that the identified themes resonated with cultural practices, such as Developing Cultural Competence, where students felt that Talanoa encouraged expressions of identity and culture in a way that Western assessment methods often do not. This step validated the themes as not only coherent within the data but also culturally meaningful.

5. Example of Theme Validation in Coding Decisions

To illustrate the theme validation process further, consider the coding decision related to ‘Awareness and Understanding’. During the coding stage, several student utterances described how Talanoa helped them see math differently or understand the assessment question better. Initially, these were grouped under a broad understanding theme. However, upon deeper review using Braun and Clarke’s (2022) method, it became clear that students were attributing their enhanced understanding specifically to the collaborative and discussion-based nature of Talanoa. Consequently, the theme was refined to ‘Creating Awareness and fosters Understanding’, validating that

Talanoa’s dialogic process facilitated more profound learning rather than just surface-level understanding.

By following Braun and Clarke’s (2022) systematic two-stage review, defining and refining themes, and actively interpreting data with cultural insights, this study validated each theme to ensure it was both representative of the data and aligned with Pasifika cultural values embedded in the Talanoa approach. This process resulted in themes that accurately capture the relational, cultural, and educational dimensions of Talanoa as an assessment tool in mathematics.

3.7.4. Coding of Student Utterances

The coding process involved categorising student utterances according to the validated themes. Each student statement was examined carefully to determine which theme it best represented. To illustrate this process, here are some examples of coding decisions made during the analysis:

Example 1: A student stated, *“When we trust our teachers, we feel more comfortable asking questions... and participating in class activities.”* This statement was coded under the theme Fakalanga Vā Falala‘anga (Establishing Trusting Relationships), as it highlighted how Talanoa helped the student trust that the teacher would listen to her views with an open mind. This trust does not imply that teachers will refrain from providing corrections when students are off track; rather, it means that students trust their teachers to provide feedback in a way that will not make them regret asking questions.

Example 2: Another student mentioned, *“Having a Talanoa with someone you can understand and talk to, who knows your culture – that’s comforting and empowering. It motivates you to delve deeper into problem-solving, answer more questions, and succeed in the assessment.”* This was coded under Fakalanga Pōto‘i Anga (Developing Cultural Competence), as it emphasised the importance of meaningful connectedness in the educational experiences of Pasifika students. They highly value their cultures, and it is comforting and empowering for them when teachers recognise and connect with these cultures in culturally appropriate ways.

Example 3: Another student remarked, “*Talanoa allows you to walk through [the question] and understand it more. It helps you relate the question to a [familiar situation], making it easier to understand and [complete].*” This was categorised under Fakalanga ‘Ilo mo e Poto (Acquiring Knowledge and Fostering Understanding), as it illustrated how Talanoa deepened the student’s comprehension of mathematical concepts. It was also coded under Fakalanga Loto-lahi (Cultivating Self-Confidence), as it emphasised how understanding the assessment question empowers Pasifika students to engage more deeply with the tasks.

Example 4: A statement such as “*At first, I just needed to understand because I don’t really get what I was asked to do. But then, after we used the Talanoa tool, I understood it and, therefore, knew what to do. The wording of [the question] was complicated. It was hard to understand. Talanoa makes me more engaged with the task,*” was coded under Fakalanga Loto-lahi (Cultivating Self-Confidence and Efficacy), reflecting the student’s increased self-assurance and reduced anxiety in a Talanoa-based assessment setting.

Example 5: Lastly, a student expressed, “*Yeah... me too. It’s good to have a Talanoa with someone who understands your background and culture.*” This was coded under Fakalanga Fiefia mo Tau‘atāina (Stimulating Joy and Intellectual Freedom), as it reflected the positive experience of being trusted, understood, and accepted. Joy and a sense of freedom to think without fear of making mistakes arise within a strong, supportive relationship between students and teachers.

Each utterance was thus carefully considered within its cultural and relational context, ensuring that the coding aligned with both the literal meaning and the underlying cultural implications of each statement. This process was essential for preserving the integrity of the students’ voices and accurately capturing their experiences with Talanoa-based assessment.

3.7.5 Themes in the Tongan language

I chose to present the themes in this thesis in the Tongan language because it allows me to interpret the data in a way that feels authentic and genuine to my cultural identity as a Tongan educator. Immersing myself in this educational research journey,

I wanted to connect deeply with my students' experiences, and I felt the best way to achieve this was through a Tongan lens. By viewing the data in this way, I am able to see and understand their perceptions not as abstract concepts but as expressions that resonate with shared cultural values and meanings.

One might ask why this is important. For me, interpreting the research data through my native Tongan lens provides a level of comfort and authenticity that would be hard to achieve otherwise. Tongan is more than a language; it's a cultural framework that shapes how I understand relationships, emotions, and knowledge. By naming themes in Tongan, I can honour these nuances and represent the relational and emotional dimensions that are inherent in my students' expressions. Terms like Fakalanga Vā Falala'anga (Establishing Trusting Relationships) and Fakalanga Loto-lahi (Cultivating Self-Confidence and Efficacy) carry meanings that go beyond the words themselves, embodying values of mutual respect, warmth, and personal growth. These are values that shape not only how my students learn but also how they experience the Talanoa process as an assessment tool in mathematics.

In making this choice, I want to acknowledge that my intention is not to devalue or diminish the values and perspectives of other cultures. Rather, my approach reflects a commitment to faithfully representing the unique cultural context of this study, which centres on Tongan and Pasifika students' experiences. I recognise that other cultural lenses are equally valid and bring their own strengths to educational research. My decision to interpret this data through a Tongan lens is simply an effort to stay true to the lived realities and worldviews of my students, whose voices and values lie at the heart of this research.

Presenting themes in Tongan keeps me grounded in my cultural identity throughout this research process. I feel most true to myself, and to my participants, when I interpret their experiences through my native lens. This approach allows me to draw on my own cultural knowledge and lived experiences, helping me relate to their perceptions in a way that respects the cultural subtleties they bring to their learning. I want these findings to reflect not only my academic analysis but also a faithful representation of my students' experiences within the Tongan cultural sphere.

Through this personal and culturally aligned approach, I believe the themes represent more than just academic findings. They are an authentic reflection of how I understand the data, rooted in the values, relationships, and identities we share. This method allows me to convey a holistic perspective on the value of Talanoa in mathematics

assessment, providing an interpretation that resonates with Tongan students and honours our shared heritage.

3.8 Grounded Theory

Grounded theory is a qualitative research methodology aimed at constructing theories from collected data rather than testing pre-existing hypotheses. According to Birks and Mills (2015), grounded theory is designed to generate a theory firmly rooted in empirical data. This approach involves systematically gathering and analysing data to derive concepts and patterns, which allows for the development of new theoretical insights or frameworks (Kreuger & Neuman, 2006). Grounded theory emphasises generating theories based on empirical evidence and typically involves processes like open coding, axial coding, and selective coding to categorise and analyse data until theoretical saturation is achieved (ibid). This process leads to the formulation of substantive theories.

This study adopts a grounded theory approach while honouring Indigenous Pacific knowledge and modes of theorising to understand Pasifika education (Uasike Allen et al., 2022; Sanga, 2021) based on the lived experiences and perspectives of Tongan secondary school students undertaking NCEA Level 2 Mathematics. Departing from the conventional application of grounded theory, this study shifts the focus towards theorisation and conceptualisation rooted in Tongan knowledge systems. This deliberate shift aims to honour and acknowledge the narratives, language, and cultural wisdom shared by the students involved in the study.

3.8.1 Constant Comparative Analysis Method

In this study, Glaser's (1965) constant comparative analysis method was employed as an approach for analysing the qualitative data collected through the Talanoa sessions. This method, rooted in grounded theory, involves the systematic comparison of data to identify patterns, themes, and categories that emerge from the participants' experiences and perspectives (Postholm, 2019; Memon et al., 2017; Anderson & Jack, 2015).

The constant comparative method was particularly well-suited for this study because it allowed for the iterative process of data analysis, where each piece of data was compared with others to refine and develop categories that accurately represented the students' experiences. As new data was collected from the Talanoa sessions, it was

continuously compared with existing data to identify similarities and differences, ensuring that the analysis was grounded in the participants' voices.

The process began with the transcription of the Talanoa sessions, after which the researcher conducted an initial coding of the data. During this phase, the researcher identified key phrases, concepts, and ideas that were significant to the research questions. These initial codes were then grouped into broader categories that reflected the emerging themes related to the use of Talanoa as an assessment tool and its impact on Pasifika students' learning experiences.

As more data was analysed, these categories were continuously refined through comparison with new data, allowing for the development of more nuanced and comprehensive themes. This iterative process ensured that the analysis remained dynamic and responsive to the data, rather than being constrained by pre-existing assumptions or theories.

The use of Glaser's (1965) constant comparative analysis method enabled the researcher to build a rich, grounded understanding of the participants' experiences with Talanoa. It also facilitated the identification of key themes such as trust, cultural competence, self-confidence, and the joy of learning, which were central to understanding how Talanoa transformed the students' attitudes towards education. This method's rigorous and systematic approach ensured that the study's findings were deeply rooted in the participants' actual experiences, providing a solid foundation for the study's conclusions and implications.

3.9 Ethical Considerations

This study upheld rigorous ethical standards to ensure the protection and respect of all participants involved. Informed consent was a cornerstone of the ethical process, with participants being fully briefed on the study's purpose, methods, and their role within it. They were required to sign consent forms, confirming their voluntary participation and understanding that they could withdraw from the study at any time without any repercussions. However, it was also clearly communicated that while every effort would be made to protect their privacy and anonymity, the nature of the focus group Talanoa sessions meant that complete confidentiality was not possible. In these sessions, shared stories often built upon one another's ideas, making it difficult to remove individual data if a participant chose to withdraw after the discussions had taken place.

The Talanoa sessions were conducted during school hours in a room reserved specifically for the project within the administration building. To ensure minimal disruption to the students' regular schedules, a school runner delivered notes to the participants' teachers, informing them that the students were required to be at the office. This arrangement helped to maintain the privacy and anonymity of the participants, as the room was located away from other students, and no one could see inside from the outside.

No publications or reports from this study will include the names or other identifying information of the participants, ensuring that their identities remain protected. All research data were securely stored within the University's secure storage system, adhering to the University's guidelines. The data will be kept safely for a period of five years, after which it will be destroyed. Additionally, participants will be provided with a summary of the study's findings, allowing them to see how their contributions helped shape the research outcomes.

A copy of the Participants' Information Sheet, which outlines the purpose and scope of this study, along with the ethical considerations, can be found in Appendix 3 at the end of this thesis. The Appendices also includes other ethics-related documents such as permission to access the school (Appendix 1), consent to use school facilities (Appendix 2), participants' consent form (Appendix 4), the practice assessment task (Appendix 5), and the Talanoa schedules (Appendix 6).

3.10 Establishing Validity and Reliability

In this study, ensuring validity and reliability was crucial to producing credible and trustworthy findings. Given the qualitative nature of the research, several strategies were employed to establish these critical aspects (Cohen et al., 2017; Heale & Heale, 2015), with a focus on accurately capturing the experiences and perspectives of the Pasifika students involved.

1. Cross-checking: Cross-checking was a key strategy used to enhance the validity of the study. This involved using both audio recordings and notes as data sources to verify and validate the findings. By comparing the audio recordings with the notes, I ensured that the data was accurately captured and interpreted. This process confirmed the consistency of the findings and provided a more comprehensive understanding of the participants' experiences, thereby reducing the risk of bias or misinterpretation.

2. *Member Checking*: Member checking was employed as another critical method to ensure the validity of the findings. After transcribing the Talanoa sessions and identifying preliminary themes, the participants were invited to review summaries of their contributions. This allowed the participants to verify the accuracy of the data and to clarify or expand on their statements if necessary. By involving the participants in this validation process, the study ensured that their voices were authentically represented and that the conclusions drawn were based on their true perspectives.

3. *Reflexivity*: Throughout the research process, I aimed to maintain a reflexive approach, continuously reflecting on personal biases, assumptions, and potential influences on the study. This reflexivity was documented in a research journal, where I recorded thoughts and reflections on the data collection and analysis processes. By acknowledging and addressing these biases, the objectivity and credibility of the study were enhanced.

4. *Consistency and Reliability*: To ensure reliability, the study adhered to a consistent approach for data collection and analysis. The Talanoa sessions were conducted systematically, with each session following a clear set of questions to maintain uniformity throughout the data collection process. Audio recordings further supported this consistency by providing a reliable record of the sessions that could be reviewed during the analysis phase. Additionally, the constant comparative analysis method was employed to analyse the data iteratively, allowing for the refinement of themes and categories as new data emerged.

5. *Audit Trail*: An audit trail was maintained throughout the research process, documenting each step from data collection to analysis. This detailed record of decisions and actions provided transparency and allowed for the research process to be reviewed by others, thereby contributing to the reliability of the study.

By implementing these strategies, the study effectively established validity and reliability, ensuring that the findings were both credible and robust. These measures contributed to the overall trustworthiness of the research, providing a solid foundation for the study's conclusions and implications.

3.11 Summary

The exploration of methodology identifies the Kakala Research Framework as a culturally responsive approach for guiding the study. This framework, rooted in Tongan cultural values, is used to structure the research, emphasising the importance of relationships and cultural context in understanding Pasifika students' experiences. The study employs the Talanoa Methodology, a qualitative approach that uses talanoa sessions—culturally significant dialogues—to collect data from six Pasifika students. Talanoa served both as a data collection method and an assessment tool, allowing for a deeper understanding of the students' mathematical abilities. The chapter also discusses ethical considerations and strategies for ensuring validity and reliability, such as cross-checking data and member checking, to provide a robust foundation for the study.

Chapter 4: Findings

4.1 Introduction

This research study was conducted at Motunoa South College (MSC)¹ in Aotearoa, New Zealand. The student participants were chosen based on their ethnicity and their current enrolment in Mathematics NCEA (National Certificate of Educational Achievement) Level 2. There were six students participating in the study. Initially, participants were asked to attempt an assessment in Coordinate Geometry NCEA Level 2 using the *'traditional'* summative assessment method. Subsequently, they were asked to partake in a similar assessment task using the Talanoa as an assessment tool. Following this, students joined a focus group Talanoa session to share their stories as they reflected on their experiences in both situations.

The study aimed to explore Pasifika students' perceptions, within the context of New Zealand secondary school, on the use of Talanoa as an assessment tool for NCEA Level 2 Mathematics. The study sought to examine how Talanoa, as a culturally responsive tool, aids Pasifika students in grasping the questions posed. The overarching research question for this study is: What are Pasifika students' perceptions of using Talanoa as an assessment tool in NCEA Level 2 Mathematics?

4.2 Talanoa mei he fakalanga Talanoa (*the Talanoa from Talanoa*)

Talanoa from Talanoa means that the insights and understandings gained through the Talanoa process are derived from the very practice of Talanoa itself. It highlights how the reflective and dialogic nature of Talanoa can generate valuable perspectives and deeper understanding directly from the practice of conducting Talanoa sessions. This chapter presents the findings based on the Talanoa data gathered from the study participants, Pasifika students, who were studying NCEA Level 2 Mathematics at the time this study was conducted. When interviewing participants about their experiences with Talanoa, open-ended questions were employed to avoid predetermining the themes. This approach allowed participants to express their thoughts and experiences freely, leading to more genuine and varied responses. As a result, the data was rich and nuanced, providing deeper insights into the participants' perspectives.

The constant comparative analysis method (Postholm, 2019; Memon et al., 2017; Anderson & Jack, 2015; Glaser, 1965) was employed in this study, where each Talanoa

transcript was examined for recurring ideas. These ideas were then used to form themes that will be discussed later. Participants referenced key aspects of Talanoa in their discussions, including Fakalanga Vā Falala'anga (Establishing Trusting Relationships), Fakalanga Pōto'i Anga (Developing Cultural Competence), Fakalanga 'Ilo mo e Poto (Acquiring Knowledge and Fostering Understanding), Fakalanga Loto-lahi (Cultivating Self-Confidence and Efficacy), and Fakalanga Fiefia mo Tau'atāina (Stimulating Joy and Intellectual Freedom). The subsequent sections describe these key aspects, refer to them from this point forward as themes, and highlight their significance in supporting Pasifika students, particularly in relation to summative assessments in mathematics.

4.2.1 Fakalanga Vā Falala'anga (Establishing Trusting Relationships)

The study findings suggest that talanoa aids in establishing a trusting relationship between Pasifika students and teachers, as well as between the students and their peers. Moana expressed appreciation for the company and support provided by her teacher,

“I liked the company that you gave me... Yeah. You need someone that you trust that cares about you. (paused) I think... I'd rather be with someone that I know. Like, I know and trust that I would feel safe and secure to ask them questions”,

emphasising the need for trust and care in the relationship. Her statement reflects that feeling safe and secure with someone she trusts encouraged her to ask questions and actively engage in the given tasks. This sentiment highlights the role of trust in fostering a learning environment where students feel comfortable expressing their ideas and seeking guidance.

Salesi echoed Moana's sentiment by emphasising the selective nature of sharing stories and experiences. *“Yeah. We don't just share a story with anyone. We shouldn't. Yeah...”* His statement underscored the idea that trust is essential in forming meaningful connections and sharing personal insights or struggles. This observation highlights the importance of trust in talanoa. As Salesi mentioned, Pasifika students are reluctant to share their stories, ideas or concerns with people they do not trust. Within the Tongan context, talanoa often involves participants sharing their backgrounds, which may include personal and family stories. These stories are

considered sacred by some families and may contain information that protects their identity and preserves their inheritance.

Ioane's immediate response further reinforces the significance of trust in the teacher-student relationship. His emphatic statement, "*Nah! I can't. It has to be someone I trust,*" underscores the non-negotiable nature of trust when it comes to learning and assessment. This statement implies that trust is a prerequisite for him to feel comfortable seeking assistance or sharing his thoughts with someone, particularly in an educational context. Ioane's response emphasises that trust is not optional but rather essential for effective communication and collaboration between students and teachers. His insistence on trusting someone before engaging with them suggests a personal boundary or standard that he holds regarding his interactions. This boundary reflects his understanding of the importance of establishing genuine connections based on trust, rather than simply interacting with any teacher. Ioane's hesitation to engage without trust implies a desire for emotional safety and security in his interactions.

Following 'Ioane's sentiment, Bo'oi emphasised, "*I cannot have this Talanoa with any teacher. Some teachers are picking on us, and I don't want to Talanoa with them. I think they don't like us.*" In agreement with Bo'oi, Hateni added, "*teachers must be keen to talanoa with us, because sometimes they are busy with something, and it would be hard to talanoa with them when they are busy.*" When the study participants were asked to explain how trust encourages them to engage with their learning and assessment, Moana replied, "*When we trust our teachers, we feel more comfortable asking questions... and engaging in class discussions.*" This sentiment aligns with the notion that trust fosters a supportive environment where students feel empowered to express themselves authentically and seek guidance without fear of judgment or repercussion.

4.2.2 *Fakalanga Pōto'i Anga (Developing Cultural Competence)*

The study results reveal that Talanoa helps develop cultural awareness among Pasifika students and their teachers. Moana, a female participant in this study, expressed the significance of engaging in Talanoa, emphasising the importance of connecting with someone who shares an understanding of her culture. She said, "*Having a Talanoa with someone that you can understand and talk to, and know your culture. That's comforting and empowering. It pushes you, like, to delve more into problem solving, answer more (of the) question so that you pass the assessment.*" Her

concern articulated that having a Talanoa with such an individual provides a sense of comfort and support, which in turn motivates her to actively participate and strive to excel in assessments.

Moana's statement reflects the profound impact of culturally responsive interactions within the educational context. By engaging in Talanoa with someone who understands and respects her cultural background, Moana feels validated and empowered to contribute to the learning and assessment processes. This validation fosters a supportive environment where she feels encouraged to share her knowledge and perspectives without hesitation. In alignment with Moana's perspective, Salesi concurs, emphasising the unifying nature of Talanoa regardless of specific cultural backgrounds. He suggests that the identity of the individual engaging in Talanoa with you, whether they are Tongan or from a different culture, is irrelevant. What truly matters, according to Salesi, is the sense of unity and shared experience fostered by the Talanoa process. He said, *"Yeah. It doesn't matter if they're... like, if the person who's talanoa with you, is Tongan and the other person might be like a different culture. At least, we know, we're all like one."* When students know that their teachers acknowledge and respect their culture, they can feel a sense of belonging within the larger family of learners. Ultimately, fostering a collaborative spirit that empowers them to engage with the tasks entrusted to them.

4.2.3 Fakalanga 'Ilo mo e Poto (Acquiring Knowledge and Fostering Understanding)

The study findings indicate that talanoa fosters cultural awareness and helped Pasifika students acquire knowledge and understanding. Through talanoa, study participants testified that many aspects of the questions being asked became clearer. According to Moana, *"Talanoa was very helpful."* *"Yeah, especially for someone who struggles in Maths. Talanoa could be a very helpful tool,"* Salesi replied. In line with this idea, Moana further explained, *"It was helpful because... when I read the question, I did not understand it. But Talanoa made me understand it."* In mathematical problem-solving, it's not just about finding the right answer. The articulation of the solution clearly and logically is also important. Understanding the question allows one to express the solution coherently and relevant to the given problem. It enables effective communication of the solution to others, whether through written explanations or oral presentations.

This endorsement of Talanoa Summative Assessment tool underscores its effectiveness in promoting understanding and clarity in educational contexts. Through the practice of Talanoa, students such as Moana and Salesi have the chance to participate in open and meaningful dialogues with their teachers, fostering a deeper understanding and connection in their learning experiences. This dialogue facilitates a deeper exploration of the questions posed, allowing for clarification of any ambiguities or uncertainties that may arise. Talanoa, as explained by my participants, serves as a tool that enables them to grasp the nuances, context and intentions behind the question being asked. In the opinion of Salesi he states, *“True. It made more sense through talanoa... You realise that... it’s... it’s not a hard question.”* Salesi and Moana nodded their heads in agreement, wearing big smiles. In line with Salesi and Moana’s sentiments, Bo’oi and Hateni expressed similar views. According to Bo’oi, *“[talanoa] helped me understand more clearly than just doing it all by myself, and it gave me a more open mind, like, it made me think a little bit more.”* Talanoa is described here as a tool that encourages Pasifika students to delve in deeper in solving mathematical problems when they understand the question at hand. Hateni explains, *“talanoa allows you to walk through it [the question] and understand it more. It makes you relate the question to a situation that you know, making it easier for you to understand it and get it done.”*

Engaging in Talanoa allows students to ask questions freely. This prompts them to think critically about the problem at hand, consider various approaches, and evaluate the validity of different solutions. As Bo’oi reflected on his experiences with the Talanoa, he claimed that the tool made the questions *“easier to understand. It’s clearer when the questions are explained through Talanoa. It makes me think all [about everything].”* He further explained that *“at first, I just needed to understand. I didn’t really get what the question was trying to tell me. Its wording was difficult to understand, but after using the Talanoa tool, I understood it.”* These views have highlighted the potential of Talanoa to enable Pasifika students to connect with the teacher, and therefore, the tasks at hand; creating an environment for them to feel comfortable to ask questions and develop their critical thinking skills.

The data reveals that Talanoa helped Pasifika students develop confidence in mathematics. While observing Fuifui conduct the assessment using TSAT, he demonstrated confidence in solving the problem once he comprehended the question. He successfully resolved the issue by applying the appropriate formula for calculating

distance and gradient. As he expressed, “*Yeah... talanoa made the question easy to understand, less distractions and focused more.*” Interestingly, when Fuifui mentioned ‘less distractions and focused more’, it appears that he pictured talanoa tool appropriate for a one-on-one talanoa or a small group session. This view was also brought up by Hateni when he said, “*the room can get noisy and distractive. But talanoa helped me to focus more.*” According to Hateni, the traditional way of conducting assessments in Mathematics tends to involve everyone in the classroom doing the assessment simultaneously. This approach usually distracts Pasifika students from concentrating on solving the problems. Hateni used his experiences with Talanoa to emphasise the potential of the TSAT to keep him focused on the tasks. As a result, all distractions in his surroundings seemed to be ignored when he understood the question and focused on solving it. This mindset emerges when one understands the question and knows what they are tasked to do, enabling them to concentrate on the task at hand while disregarding surrounding distractions.

Pasifika students may aim for lower grades if they struggle to understand the question. Throughout my teaching career, I have frequently heard from students, especially Pasifika and Maori students, questioning the importance of achieving with merit and excellence. My participants alerted me to this issue. Presumably, this attitude arises when students fail to grasp the tasks assigned to them. Bo’oi asserts, “*I simply needed to understand it [the question]. So... yeah... talanoa, like, it motivates pupils to go for higher grades than just achieved.*” Initially, students like Hateni felt disheartened by their struggle to comprehend the question. However, through talanoa, he found the motivation to engage in profound reflection. According to him, “*the question seemed hard to understand at first, but once I understood what I didn’t understand [through talanoa], it encouraged me to delve deeper and do more.*”

When students encounter difficulty understanding a mathematical problem, they may face several challenges, including misinterpretation, anxiety, frustration, and ineffective problem-solving strategies. Bo’oi affirmed, “*if I do not understand the question... I will be stressed.*” Hateni responded, “*yeah. I will be stressed, too.*” Lack of understanding the question can lead to stress in students through several interconnected pathways. Mathematics, by its nature, requires a clear grasp of concepts and the ability to apply these concepts to solve problems. When students struggle to understand what a question is asking, they face several challenges that can escalate their stress levels. Bo’oi declares, “*It is shameful not to understand the*

question... yeah, it would be embarrassing for me.” Hateni confidently retorted, “I would feel regret for coming to class. I would rather not be there to the assessment than be embarrassed in there.”

Misinterpretation can stem from various sources, such as unfamiliar terminology, unclear instructions, or a lack of prerequisite knowledge. As the complexity of Mathematical concepts increases, so does the potential for misinterpretation. Not understanding a question can shake a student’s confidence in their mathematical abilities. This lack of confidence can lead to anxiety and stress, particularly if the student feels they are expected to know the answer. Over time, this can develop into a more profound belief that they are ‘not good at maths,’ further exacerbating stress and anxiety. Ioane expresses, *“[without Talanoa] It was hard to understand the question. It was challenging to understand it. But when you started to talanoa about it, I was like, Oh! yeaah! Right!”*

Participants like Salesi and Moana, shared their experiences, highlighting the tool’s unique approach to learning and assessment. Salesi observed a shift in his comprehension when engaging Talanoa around questions and problems, noting that vocalising thoughts and working through issues collaboratively was far more beneficial than solitary study. Reflecting on his encounter with the Talanoa tool, he expresses, *“you started to realise... like, talking through the questions and the problem... it was like, easier to understand than just doing it by yourself.”* Similarly, Moana appreciated the teacher-assessor’s role in guiding thought processes when she attempted the assessment with Talanoa. She asserts, *“Like, you weren’t... you weren’t telling us the answers or how to get the answers. You were helping us to think through it [the question]. That’s what was useful and helpful about Talanoa.”* This method of prompting students to think critically and navigate their way through problem solving was pinpointed as the crux of Talanoa’s success. These firsthand accounts underscore the tool’s potential to transform educational practices by fostering a deeper, more autonomous form of performance.

The research data captures an insightful dialogue between participants Moana and Salesi regarding the implementation of Talanoa as an assessment tool. Their candid responses provide a nuanced perspective on the potential consequences of not integrating Talanoa into the assessment process. Moana’s humorous remark, *“That’s alright. I’m failing (laughs),”* sets a tone of light-hearted resignation, which resonates

with the group as they share a collective laugh. This initial response hints at a prevailing sentiment of indifference towards traditional assessment methods.

In his reflection on his experiences with the talanoa assessment tool, Salesi emphasised, *“I won’t be able to... like, do the answer. It’ll take me a whole hour just to understand the question. I’ll just easily give up. I’ll just fail and give up right there. Therefore, talanoa helps me to understand the question.”* Salesi’s comment further elucidates the apprehensions surrounding conventional assessment techniques. His acknowledgment of a ‘high chance of failure’ underscores the perceived inadequacy of current evaluation practices. Salesi’s willingness to admit his potential struggles with understanding questions highlights a significant barrier to academic success. He articulates the daunting prospect of feeling overwhelmed and ultimately giving up in the face of complex assessment tasks.

Moana echoes Salesi’s sentiments, expressing a similar nonchalance towards academic achievement. She avers, *“I will literally say, I wouldn’t care. I’m gonna fail, and I’ll just walk out.”* Her assertion that she ‘doesn’t care about passing’ underscores a sense of disillusionment with the education system’s emphasis on conventional assessment. Moana’s readiness to ‘just walk out’ in the event of failure speaks volumes about the lack of engagement and motivation fostered by traditional assessment methods.

Salesi’s closing remark emphasises the value of Talanoa beyond its role in academic assessment. He asserts, *“Yeah... me too. Also, it’s good to have a talanoa with people who’s like, have the same culture as you and stuff. Like, you could understand it more..”* He underscores the importance of cultural understanding and connection, suggesting that Talanoa facilitates a deeper comprehension of the subject matter, particularly for individuals sharing a common cultural background. This acknowledgment underscores the multifaceted benefits of incorporating culturally relevant assessment approaches, which extend beyond academic outcomes to encompass personal and cultural empowerment.

4.2.4 Fakalanga Loto-lahi (Cultivating Self-Confidence and Efficacy)

The study indicates that Talanoa encourages Pasifika students to build confidence in tackling problem-solving activities in Mathematics. Throughout the study, I observed that the participants desired confidence in the classroom. This confidence is nurtured through key elements, including the cultivation of strong relationships and the recognition of the classroom’s multicultural environment. Moana emphasised the

importance of having someone trustworthy and caring to support this growth. Here, she expressed her desire for a learning environment where trust and care are nurtured. Trust and care are fundamental for nurturing confidence in student performance. Throughout the study, participants repeatedly expressed their desire for trusting and caring relationships with their teachers, highlighting how such relationships are essential for nurturing confidence in students.

Students feel confident when their teachers can positively relate to them and encourage the expression of their cultural perspectives. Moana expressed that she felt a sense of comfort when her teachers acknowledged and valued her culture. She explained that engaging in a talanoa with someone who understands and respects her cultural background provided her with a reassuring and supportive environment. This comfort refers to a condition in which students understand the question and feel safe to express their opinions. As Moana observed, “...it pushes you to answer[do] more questions...” In supporting Moana, Salesi stated, “*Talanoa made me understand [the question]*”, indicating the link between comprehending the question, enhancing teacher-student relationships, and becoming confident in problem-solving. As Moana affirmed, “*you weren’t telling us the answer... you were helping us to think through [the question].*”

The practice of Talanoa plays a vital role in building students’ confidence by connecting problem-solving tasks to familiar, everyday situations. Hateni illustrated this by explaining how talanoa facilitates a deeper understanding of questions, making them more approachable and easier to resolve by relating them to known contexts. He also added, “*Talanoa makes me think about the problem and try relating it to a familiar situation.*” Hateni emphasised the importance of connecting the question’s context to his environment, highlighting how Talanoa cultivates confidence in Pasifika students by relating the problem at hand to their environment. He examined the context as he continued, making it relevant to his situation. This process of contextual exploration can be likened to engaging in Talanoa with the text, potentially encouraging the student to consider diverse perspectives. The result of this approach, as Salesi observed, was a clearer understanding, revealing that the question was not as difficult as initially thought, thus highlighting Talanoa’s ability to nurture confidence in students. As Bo’oi noted, engaging in Talanoa expanded his mindset and encouraged deeper thought, highlighting how this approach nurtures students’ confidence and empowers them to explore their thinking processes more thoroughly.

Bo’oi affirmed the efficacy of talanoa by stating that it *“allows you to express more of your ideas. It makes me... think.”* This affirming statement from Bo’oi indicates the aspects of Talanoa potentially nurture students’ confidence in attempting a question. It enables you to unpack your thinking or ideas regarding the question being asked. When Bo’oi was tasked with solving a given problem, he took considerable time to comprehend what the question demanded of him. He explained, *“At first, I just needed to understand because I don’t really get what I was asked to do. But then, after we used the Talanoa tool, I understood it and, therefore, knew what to do. The wording of [the question] was complicated. It was hard to understand. Talanoa makes me more engaged with the task.”* This engagement with the task shows how Talanoa enables Bo’oi to connect and relate to the question. The Talanoa Summative Assessment tool helped Bo’oi demystify the question and understand it. He became more confident with the task, encouraging him to articulate his thought processes and reasoning in a narrative format, promoting deeper reflection and critical thinking. As Hateni observed *“...it prompts me to question a lot of things and view the problem from different sides [perspectives].”* This observation underscores the importance of engaging in open, inclusive dialogues that allow individuals to explore issues from multiple perspectives. An approach sought in this study is vital for nurturing confidence among Pasifika students. It creates a safe space where students feel valued and heard. This environment encourages students to express their thoughts, question deeply, and consider different viewpoints without fear of judgment. Such a practice not only enhances critical thinking skills but also bolsters students’ self-esteem as they realise that their opinions matter and they can contribute meaningfully to the activity at hand.

4.2.5 Fakalanga Fiefia mo Tau’atāina (Stimulating Joy and Intellectual Freedom)

Incorporating Talanoa into mathematics assessment was found to enhance students’ enjoyment and stimulate a sense of liberation from the constraints typically associated with misunderstanding assessment questions. The data reveals that Talanoa helped students comprehend questions more clearly and reduced the stress and frustration often felt during assessments. For instance, Bo’oi mentioned, *“[Talanoa] helped me understand the question more clearly.”* Salesi observed that discussing the problems helped bring clarity to the tasks. Talanoa transformed the learning experience by boosting students’ confidence and reducing their fear of making mistakes. Salesi

highlighted how this approach helped him better understand questions, which in turn made him feel more assured and less apprehensive about getting things wrong. These testimonies come from an appreciative heart filled with māfana (warmth and joy) and mālie (enjoyment). Moana's reflection, that engaging in Talanoa with someone who shares mutual understanding motivates her to tackle more questions, exemplifies this idea. The sense of connection and enjoyment that comes from such interactions fosters a positive and enthusiastic learning environment.

The theme of Fakalanga Fiefia mo Tau'atāina exemplifies how Talanoa transformed the learning experience into one of joy and intellectual freedom. The culturally responsive approach of Talanoa dismantled the rigid structures of traditional teaching methods, allowing Pasifika students to engage with complex concepts more intuitively and enthusiastically. Hateni highlighted that Talanoa facilitates a step-by-step clarification process, which enhances understanding. This process led to a deeper understanding and engagement, as Bo'oi reflected on how it expanded his mindset and encouraged deeper thinking about the problem. His experience underscores the vital role that joy plays in fostering a commitment and eagerness to learn. It indicates that when students find joy in their educational experiences, they are likely to invest their time and energy into understanding complex concepts. In this study joy was found to transform learning from a mere obligation into a pleasurable pursuit, making students more eager to explore and solve problems.

Talanoa was found to liberate students from the frustration and isolation often felt when they struggle to understand mathematical problems, fostering a more inclusive and understanding learning environment. Bo'oi emphasised the sense of relief Talanoa provided: "*Talanoa Tool made the question easier to understand.*" Similarly, Hateni highlighted that Talanoa enables a step-by-step exploration of questions, effectively turning confusion into clarity. The supportive environment created by the Talanoa Tool liberated students from being mā (shy) to ask questions and enabled them to express their ideas freely and engage more deeply with the content, leading to a more joyous and intellectually freeing learning experience.

Talanoa aligned with Pasifika students' cultural backgrounds, enhancing the relevance and accessibility of their learning experiences. Moana's experience underscored this, as she noted that engaging in Talanoa with someone who shares a mutual understanding motivates students to engage more actively with their work. This engagement is not merely academic but also emotional and cultural, fostering a

holistic learning experience. It went beyond facilitating academic engagement. It seemed to nurture a sense of belonging and cultural pride among the Pasifika students in this study. By incorporating their cultural practices into the learning environment, students felt valued and understood, which could boost their self-esteem and motivation. This positive reinforcement is crucial for their overall development, as it encourages them to enjoy the learning process and take ownership of its journey.

The effectiveness of Talanoa is rooted in trust and cultural competence, which are foundational to liberation and enjoyment in learning. Students may feel more at ease and are more likely to participate actively when they perceive their teachers as culturally competent and trustworthy. For instance, Moana highlighted the significance of trust, noting that a meaningful Talanoa requires a supportive and caring relationship. This trust translates into a more profound engagement and willingness to tackle challenging problems, as students feel supported and understood. Salesi added, *“Yeah... me too. Also, it’s good to have a Talanoa with someone who understands our background and culture,”* highlighting the necessity of cultural relevance in effective communication.

Hateni observed that when teachers actively engage in Talanoa, it demonstrates their care and understanding of cultural practices. This cultural competence not only built trust but also fostered a sense of belonging and respect, making students more open and receptive. These qualities reflect the liberation and enjoyment found in learning. Bo’oi’s experience exemplifies how Talanoa broadened his perspective, encouraging him to think more critically and engage more deeply with the material. As Hateni pointed out, *“It prompts me to question a lot of things and think more critically.”* For the participants in this study, this method shifted the focus from passive reception of information to active exploration and understanding, fostering a deeper and more meaningful engagement with mathematical concepts.

Overall, these insights demonstrate that the culturally responsive nature of Talanoa, grounded in trust and cultural competence, played a crucial role in transforming the learning experience into one that was liberating and joyous for participants. By fostering a supportive and understanding environment, Talanoa helped these Pasifika students overcome the challenges of traditional assessment methods, leading to greater confidence, enthusiasm, and intellectual freedom.

4.3 Summary

This chapter examines the effectiveness of Talanoa, a culturally sensitive educational approach, through five key aspects based on student experiences: Fakalanga Vā Falala‘anga (Establishing Trusting Relationships), Fakalanga Pōto‘i Anga (Developing Cultural Competence), Fakalanga ‘Ilo mo e Poto (Acquiring Knowledge and Fostering Understanding), Fakalanga Loto-lahi (Cultivating Self-Confidence and Efficacy), and Fakalanga Fiefia mo Tau‘atāina (Stimulating Joy and Intellectual Freedom). Students reported that trust and mutual respect significantly enhanced their learning and assessment experiences. The focus on Cultural Competence within Talanoa encouraged active student participation and made them feel understood and validated. This approach improved their comprehension of questions, boosted their confidence, and enhanced their problem-solving abilities in mathematics. Furthermore, Talanoa was found to cultivate essential skills for deep thinking, empowering students to evaluate issues from multiple perspectives and express their ideas more clearly.

Chapter 5: Discussion

5.1 Introduction

This chapter is a critical platform for interpreting and synthesising the study findings regarding Pasifika students' perceptions of employing talanoa as an assessment tool in the National Certificate of Educational Achievement (NCEA) Level 2 Mathematics. The study was driven by a desire to understand how cultural methods of the Talanoa Tool could be effectively integrated into mathematical assessments to enhance the educational experiences and outcomes for Pasifika students. The themes derived from the data are Fakalanga Vā Falala'anga (Establishing Trusting Relationships), Fakalanga Pōto'i Anga (Developing Cultural Competence), Fakalanga 'Ilo mo e Poto (Acquiring Knowledge and Fostering Understanding), Fakalanga Loto-lahi (Cultivating Self-Confidence and Efficacy), and Fakalanga Fiefia mo Tau'atāina (Stimulating Joy and Intellectual Freedom).

The chapter describes how the abovementioned themes contribute to a deeper understanding of Talanoa as an assessment tool and the broader implications for educational practice and policy. It will explore how the study findings relate to existing literature on culturally responsive pedagogies with emphasis on culturally informed assessment methods in the learning of New Zealand Secondary School Pasifika students. Through a nuanced exploration of the Talanoa Tool, this chapter will elucidate the profound influence of culturally relevant educational practices on student engagement, particularly within the unique context of Pasifika students in New Zealand.

5.1.1 The Concept of Fakalanga

In Tongan, the verb fakalanga holds significant meaning in daily life. At its heart is the word langa, which can mean to lift or raise (Churchward, 1995), much like uprooting a plant to prepare it for transplanting. This process of transplanting is quite involved, requiring careful steps to ensure the plant thrives in its new home. The soil from its original spot is carried along, providing essential nutrients as the plant adjusts to its new surroundings.

Fakalanga is also used metaphorically, especially when there is a need to enhance or improve an action. It is often tied to ideas that come up during a Talanoa session,

highlighting how fakalanga encourages proactive and responsive change. Just as with transplanting, fakalanga is valued in this study as a cultural approach that helps nurture new knowledge. Churchward describes fakalanga as “to start, provoke, instigate, or get going.” In this study, I use fakalanga to inspire action based on my study findings, focusing on the Talanoa. So, in the following discussion, we will use fakalanga to delve into participants’ perceptions of using Talanoa as an assessment tool in mathematics, which builds Trusting Relationships, acquires Knowledge and Understanding, enhances Cultural Competence, boosts self-confidence, brings Joy, and promotes Intellectual Freedom.

5.2 Fakalanga Vā Falala’anga (Establishing Trusting Relationships)

5.2.1 The concept of Fakalanga Vā Falala’anga

The data suggests that when trust is established, Pasifika students are more likely to actively engage in learning, which is consistent with the views expressed by Moana, “*When we trust our teachers, we feel more comfortable asking questions... and partaking in class activities.*” Pasifika students believe they are more likely to participate actively in class, ask questions, and take academic risks when a trusting teacher-student relationship exists. A trusting relationship is deemed the first step in creating a conducive learning environment for Pasifika learners. Mauigoa (2014) argues that trust is cultivated through reciprocity, a mutual exchange of respect and understanding between school leaders, teachers, students and their families. This trust is essential for fostering effective collaboration and creating a culturally responsive school environment that meets the unique needs of Pasifika students (Sisitoutai, 2021).

The fakalanga vā falala’anga concept centers on creating a trusting relationship between Pasifika students and their teachers. According to the study findings, Pasifika students long to experience joy and a sense of intellectual freedom in their learning. Establishing and nurturing a trusting relationship requires considerable time and energy (Mauigoa, 2014; Gibbs, 2010), much like investing in a solid foundation for a building project. This investment is crucial as it provides the essential space and opportunity for each student to discover their full potential and completely express their opinions in full.

5.2.2 Trusting Relationships improves Student Engagement

The findings highlight that a trusting relationship is essential for student engagement in learning and assessment processes. This was evident from Moana's perspectives, "...you need someone that you can trust, who cares about you." This insight underscores the value of trust in the educational worldview of Pasifika students. Trust provides the foundation for sharing stories and opinions, starting with a simple conversation where connections are established, and evolving into more insightful talanoa as the relationship deepens. Trusting relationships are crucial for student engagement in learning and completing assessment tasks.

Fakalanga vā falala'anga concept highlights the importance of establishing trust as the basis for effective educational interactions (Mauigoa, 2014). This educational talanoa builds trust between Pasifika students and their teachers, setting the stage for meaningful dialogue (Gibbs, 2010). The statements from Moana and Ioane further highlight the need for a secure and culturally competent environment where students feel safe to talanoa, ask questions and engage deeply with their learning material.

Trusting relationships enable students to feel secure and valued, fostering a sense of belonging and motivation. When students trust their teachers and believe they genuinely care about their well-being and success, they are more likely to participate actively in class, engage with their coursework, and take intellectual risks. This engagement is critical for deeper learning and academic success. Therefore, fostering trusting relationships is key to enhancing student engagement and overall educational outcomes. As Jensen and Bennett (2016) discussed, interactional trust involves creating communicative spaces that foster free and open dialogue. This study shows that students like Moana feel more secure and willing to engage with educational activities when they trust their teachers. A culturally competent environment, characterised by trust, enhances student engagement and promotes deeper interaction with the learning material (Mauigoa, 2014). Establishing trusting relationships is pivotal in creating a supportive educational environment where Pasifika students thrive.

The study indicates that when students trust their teachers, they are more likely to participate actively, ask questions, and share their thoughts without fear of judgment. This openness leads to a more engaging and interactive learning experience, crucial for academic success. Trust enables students to connect with their teachers and peers

on a deeper level, fostering a sense of community and belonging (Gibbs, 2010). In this context, the role of trusting relationships in enhancing student engagement cannot be overstated.

5.2.3 Trusting Relationships underpins Collaboration and Growth

The study highlights that Pasifika students place significant importance on trusting relationships with their teachers. Such trust not only encourages active participation in class but also fosters a sense of security that emboldens students to take academic risks. This perspective was echoed by Moana, who emphasised the comfort and confidence that trust brings in engaging with classroom activities. It highlights the foundational role of a trusting relationship in creating a conducive learning environment where Pasifika students feel safe to explore and express their ideas. Establishing a trusting relationship is the first step towards effective collaboration between teachers and students, and between students and their peers. Participants emphasised that trust enables open and meaningful Talanoa, a culturally appropriate approach that enhances mutual understanding and respect.

Moana remarked, *“Having a Talanoa with someone that [you trust]... can be comforting and empowering. It pushes you to delve more into problem-solving.”* This participant’s stance highlights how a trusting relationship fosters a supportive environment and encourages more profound engagement with academic challenges. The comfort provided by a trusting relationship creates a safe environment for the students to express their thoughts and interact more freely, leading to more precious and productive discussions. This sentiment reflects Cranston’s (2011) assertion that a trusting relationship is the ‘glue’ binding educational individuals together, fostering collaboration and professional growth. It strengthens and nurtures the teacher-student relationship, particularly for Pasifika students and their teachers (Laumemea, 2018).

Fostering relationships and growth through trust is reflected in Mayger and Hochbein’s (2021) findings, which show that community schools thrive on nurturing trusting relationships. This approach fosters strong partnerships and community involvement, benefiting both students and families. Partnering with Pasifika families and communities has been identified as a crucial aspect of Pasifika learners’ education (Sisitoutai, 2021). Tongan families, in particular, value lotu (spirituality, religiosity)

and ako (education) as the most prominent elements that uphold their cultural treasures (ibid). When schools form partnerships with Pasifika families, they begin with talanoa (open dialogue). As this partnership talanoa develops, relationships also grow. This relationship is deemed the driving force behind improved engagement of Pasifika students in their educational endeavours (ibid). A trusting relationship nurtures a supportive learning environment that enhances student engagement and academic achievement.

5.2.4 Talanoa aids in the Establishment of Trusting Relationships

The study shows that Pasifika students long to establish a trusting relationship with their teachers, but “*teachers must be keen to [engage in] talanoa with [them].*” Talanoa serves as a tool for establishing and maintaining trusting relationships. When participants were asked to share their experiences with Talanoa as an assessment tool, the conversation consistently focused on trust. A trusting relationship must be established and maintained. The participants viewed Talanoa as an effective means of initiating and strengthening trusting relationships, highlighting its dual functionality. But how does Talanoa aid in the establishment of a trusting relationship? Why is it essential for our Pasifika families to have a trusting relationship with the school leaders? The data indicates that a trusting relationship is the first step toward engaging Pasifika students in learning. Tongan parents value school leaders highly in their societal hierarchical structures (Sisitoutai, 2021) and instruct their children to respect them akin to their own fathers and mothers.

Establishing a trusting relationship begins with a simple talanoa. Talanoa helps establish a connection between Pasifika students/families and their teachers, fostering a sense of trust. This trusting relationship empowers Pasifika parents to encourage their children to engage with education, ensuring that homework and assessment tasks are completed and helping them feel valued and supported. These parents commonly assist their children through talanoa, a method of open and respectful dialogue in family talks. This family talanoa helps maintain the established trusting relationships between teachers, parents, and their children. The need for a trusting relationship is closely linked to the desire for a teacher who cares about students’ well-being and acknowledges the diverse cultures in the classroom. This perspective aligns with the work of Muigoa (2014), who identify trust as a critical component in educational settings, facilitating changes and improvements. Establishing and

maintaining trust through Talanoa is essential because it creates a supportive environment where students feel valued and motivated to engage in their education. This connection not only enhances their academic performance but also fosters a positive and inclusive learning atmosphere.

5.2.5 Talanoa nurtures Trusting Relationships

The study results highlight that Talanoa nurtures trusting relationships. Salesi's and Ioane's emphasis on the selective nature of sharing knowledge and struggles highlights the necessity of interpersonal trust in educational settings. This emphasis reflects the trusting relationships discussed by Jensen and Bennett (2016), where relational dynamics are built on mutual respect and understanding, crucial for developing a supportive educational environment. Baxter and Ehren (2023) also discuss the necessity of trust in leadership for effective school operation, noting that relational trust facilitates the open exchange of ideas necessary for adapting to and implementing school improvements.

This study perceives trust as a fundamental element of Talanoa. It invites students to participate in conversation and facilitates teacher-student interactions based on a trusting relationship. The findings show that Pasifika students will engage in Talanoa and share their concerns if a trusting relationship is in place. Talanoa, by fostering trust, creates an environment where Pasifika students feel empowered to express their thoughts and engage deeply in their learning. Establishing and nurturing trusting relationships through Talanoa is essential for creating a supportive and effective educational environment for Pasifika students.

5.2.6 Talanoa requires Teachers' willingness to talk with students

The study findings indicate that Pasifika students value teachers' willingness to talanoa. The comments from Bo'oi and Hateni underline the importance of teacher availability and their genuine interest in engaging with students. This sentiment points to the aspects of trusting relationships that are crucial for maintaining a supportive learning environment (Oldehaver, 2021). Bo'oi and Hateni's observations highlight the importance of teachers being physically, sympathetically, and cognitively available to their students, reflecting a commitment to fostering a nurturing environment where students feel valued and supported.

The insights shared by Bo’oi and Hateni about teacher availability and their genuine engagement highlight another critical aspect of relational trust—its impact on student willingness to participate in learning activities. Mayger and Hochbein (2021) discuss how trust as social capital within schools enables resource leveraging, aligning with the idea that trusting and supportive teacher-student relationships empower students to express themselves and engage more fully with their education. Baxter and Ehren (2023) explore trust in the challenging socio-economic landscape of South African primary schools, noting that trust in leadership is crucial for navigating these complexities effectively. This view parallels the trust needed in this study’s context, where Pasifika students’ perceptions of their educators’ trustworthiness can impact their engagement and learning outcomes in mathematics.

This section explores the critical role of trusting relationships in the educational experiences of Pasifika students, emphasising the Tongan concept of Fakalanga Vā Falala’anga. Establishing trust between teachers and students is essential for creating a supportive and engaging learning environment. It fosters open communication and mutual respect through tools like Talanoa. Participants in the study highlight the significance of teacher availability and genuine interest in students. This trust facilitates active participation, encourages academic risk-taking, and enhances student willingness to engage in learning activities. Trust is portrayed as a fundamental element in the relational dynamics within schools, impacting student engagement, learning outcomes, and the overall educational atmosphere, particularly for Pasifika students.

5.3 Fakalanga Pōto’i Anga (Developing Cultural Competence)

5.3.1 The concept of Fakalanga Pōto’i Anga

The study findings suggest that when students see their culture reflected in classroom activities, it validates their identity and enhances their engagement. For instance, Salesi noted that the teacher’s ethnicity is less important than their recognition of students as cultural beings. He used the phrase, “*At least we know we’re all like one,*” signifying unity as a group of culturally oriented individuals. This viewpoint aligns with Vavrus’s (2008) research, which found that culturally responsive teachers transformed traditional teaching methods by incorporating and honouring students’ cultural backgrounds in the classroom. This approach acknowledges students’ diverse cultural backgrounds and values their importance (Gay, 2018). By doing so, it

recognises students' cultural identities and seeks to incorporate their cultural perspectives into instruction (Vavrus, 2008), fostering a sense of belonging in the learning space.

The concept of Fakalanga pōto'i anga, which translates to developing cultural competence and a welcoming, approachable nature, is essential in fostering positive interactions between teachers and students from diverse cultural backgrounds. This concept revolves around teachers' interactions in a culturally appropriate manner, using Talanoa—a narrative tool that builds bridges between different cultural understandings. Talanoa helps professionals develop cultural competence, enhancing the educational experience of Pasifika youth (Ioane, 2017). She argues that by engaging in talanoa, professionals can build trust and open lines of communication, which are essentials for effective support and intervention. Understanding and respecting cultural practices and values through talanoa leads to more culturally sensitive and effective service delivery (ibid). Cultural competence involves understanding and respecting students' cultural backgrounds, influencing how teachers plan and deliver educational content. Teachers' cultural competence is vital for connecting Pasifika students' cultural identities with educational content.

Understanding and implementing Fakalanga pōto'i anga in educational settings is crucial for creating an inclusive and supportive environment for Pasifika students. It enables teachers to connect with their students on a cultural level, enhancing engagement and educational outcomes. By embracing cultural competence through Fakalanga pōto'i anga and Talanoa, teachers can create a more inclusive and effective educational environment for Pasifika students, leading to improved engagement and learning experiences.

5.3.2 Talanoa nurtures an Inclusive and Culturally Supportive Environment

The study findings emphasise that talanoa aids in nurturing an inclusive and culturally supportive learning environment. It has the potential to develop and enhance teachers' cultural competence, fostering an inclusive and supportive environment for Pasifika students' education. Moana's statement, "*I like the company you gave me... I feel safe to ask questions,*" highlights a critical finding: the teacher's ability to understand, respect, and effectively interact with students from diverse cultural backgrounds nurtures a safe environment. This sense of safety and belonging

is essential for Pasifika students to participate actively in class activities and attempt assessment tasks. Vaioleti (2006) notes that Talanoa involves more than mere conversation; it fosters empathy and mutual respect, which are essential for cultural competence in education. Engaging students through culturally relevant methods allows teachers to better understand their students' backgrounds, leading to a more inclusive learning environment (Eden et al., 2024). Research indicates that students who feel supported and understood by their teachers are more likely to succeed academically (Hoytt et al., 2022; Bal, 2018). Culturally competent teachers build stronger relationships with their students, enabling them to express their thoughts and questions freely (Bishop & Berryman, 2009), like Moana's experience. Culturally responsive practices like Talanoa are vital in establishing teachers' cultural competence.

However, critics argue that implementing culturally responsive tools may face challenges. One concern is the potential lack of training and preparedness among teachers to use this tool effectively (Sleeter, 2012). Without adequate professional development, there is a risk that teachers might misunderstand or misapply the principles of the tools, leading to superficial or ineffective practices. Additionally, institutional and systemic barriers within educational systems may hinder the adoption of culturally responsive tools like Talanoa (Ladson-Billings, 1995). Traditional educational structures and curricula might resist integrating tools perceived as divergent from standardised practices.

Moreover, there is concern that an overemphasis on cultural tools might inadvertently isolate Pasifika students from the broader educational framework, rather than integrating their cultural perspectives into a holistic educational approach (Gay, 2018). Critics argue that while cultural competence is essential, it should not come at the expense of high academic standards and rigorous educational outcomes (Banks, 2017). It is crucial to create an inclusive and supportive learning environment integrated with high academic standards to ensure students are culturally affirmed, academically challenged, and prepared for future success. Educational policies should support integrating cultural competence within a framework that emphasises high academic standards. Policies should encourage schools to develop practices that promote both cultural understanding and academic excellence.

5.3.3 Talanoa fosters Meaningful Connections and Understanding

The study findings reveal that the Talanoa tool utilises a narrative approach to bolster cultural competence by cultivating meaningful connections and mutual understanding between teachers and students. Moana reflected on her experience with the Talanoa, noting that engaging in Talanoa with someone who can converse with you, understand you, and acknowledge your culture is both comforting and empowering. Her reflection highlights the comfort and support derived from interacting with someone who understands and values her cultural background. This interaction does not simply aid in passing assessments; it empowers students to participate more fully and confidently in their educational pursuits. Engaging in Talanoa with someone who understands and respects her cultural background provided Moana with comfort and motivation to participate actively and excel in assessments. Research supports the positive impact of cultural responsiveness on student engagement and achievement (Gay, 2018; Paris & Alim, 2017; Ladson-Billings, 1995). Bishop and Berryman (2009) argue that culturally responsive teaching, including approaches like Talanoa, empowers students by affirming their identities and fostering a sense of belonging in the educational environment. This empowerment is essential for motivating students to participate actively and excel academically.

While not explicitly stated in the study findings, Salesi's perspective implies that non-Pasifika teachers can become integrated into the Pasifika 'cultural sphere'. He highlighted the benefits of engaging in talanoa with individuals who share your culture, as it fosters greater understanding. Salesi seems to indicate that when a teacher develops cultural competence and values students' cultural perspectives, the students perceive those teachers as members of their cultural group. This competence is built upon a trusting teacher-student relationship, enriched through Talanoa, which plays a critical role in the educational outcomes of Pasifika students. This relationship-based pedagogy enhances student engagement and builds trust and respect, which are crucial for developing and maintaining cultural competence. Lewis-Chiu et al. (2017) emphasise the importance of teachers facilitating the development of cultural competence, suggesting that such competence is essential for addressing the diverse needs of students.

The implications of this study for educational policy and practice are profound. Integrating culturally responsive tools like Talanoa into the curriculum supports the

academic success of Pasifika students and enriches the educational experience for all students by promoting understanding and appreciation of diverse cultures. By fostering cultural competence through tools like Talanoa, educators can create more inclusive and supportive learning environments, thereby enhancing student engagement and academic success.

5.4 Fakalanga ‘Ilo mo e Poto (Acquiring Knowledge and Fostering Understanding)

5.4.1 The concept of Fakalanga ‘Ilo mo e Poto

The study results highlight that Talanoa enhances Pasifika students’ awareness and understanding. The concept of Fakalanga ‘Ilo mo e Poto, which translates to ‘acquiring knowledge and fostering understanding’, leverages Talanoa (a conversational process) to help Pasifika students comprehend assessment questions, particularly in Mathematics. Study participants expressed a strong desire to understand assessment questions, as comprehension allows them to access their knowledge and devise the best solutions. Blair et al. (2013) found that more than half of their student participants reported that timely feedback frequently helped in their learning. Timeliness is a significant issue, with students noting that delayed feedback hinders their ability to learn from mistakes and improve future performance (ibid).

Understanding assessment tasks through Talanoa helps Pasifika students approach their work with greater confidence. Stefani (1998) argues that traditional assessment methods often lack student consultation and advocates that students must understand assessment criteria to become independent learners. This academic partnership reduces the likelihood of misinterpreting questions and motivates them to engage with the task, and improves their overall performance (Stefani, 1998). Irons and Elkington (2021) support this argumentation, suggesting feedback is crucial for enhancing student learning and enhancing self-confidence. It helps students develop self-assessment skills, preparing them for lifelong learning (Irons & Elkington, 2021). By creating a supportive environment, Talanoa enables students to engage more fully with the learning material and enhances their academic success. The effectiveness of Talanoa in fostering comprehension and confidence among Pasifika students underscores its value in educational settings. When culturally relevant methods are prioritised, educators can better support Pasifika students in overcoming challenges and achieving their academic goals.

5.4.2 Talanoa enhances Comprehension in Mathematics

The study results suggest that Talanoa enhances students' understanding. According to Moana, "*Talanoa was very helpful.*" Salesi added, "*Yeah, especially for someone who struggles [with] Maths. Talanoa [is] a very helpful thing.*" Moana explained, "*It was helpful because... when I read the question, I did not understand it. But Talanoa made me understand it.*" These findings highlight Talanoa's ability to clarify questions for Pasifika students, making it easier for them to grasp what is expected in their assessments. Through open and respectful dialogue, talanoa not only helps students understand the content but also provides them with a deeper comprehension of the requirements and objectives of their tasks. This process empowers Pasifika students by demystifying the expectations, thus enhancing their ability to engage with and complete their work effectively. As a result, talanoa fosters a supportive learning environment that bridges gaps in understanding and encourages academic success. The findings are aligned with Gay's (2018) and Klenowski's (2009) work on performance-based assessments, which emphasise assessment methods that allow students to demonstrate their knowledge and skills through practical tasks such as projects, presentations, and performances, where Talanoa (oral communication) is involved. Evans' (2023) think-aloud protocols reflect the Talanoa aspect of the cultural labs' concept, highlighting the importance of gathering feedback-Talanoa on the cultural meaningfulness of assessment tasks.

This supportive environment allows students to voice their confusion and work through misunderstandings. Verbal processing during Talanoa helps break down comprehension barriers, such as language difficulties or unfamiliar terminology, making Mathematics more accessible. By improving comprehension and creating a space where students can express and clarify their thoughts, the Talanoa tool makes complex subjects like Mathematics less intimidating and more approachable for Pasifika students. The insights from Moana and Salesi underscore the effectiveness of the Talanoa Tool in fostering a deeper understanding and engagement in learning, particularly for Pasifika students facing unique educational challenges.

5.4.3 Talanoa clarifies Complex Mathematical Concepts

The study findings highlight that Talanoa plays a crucial role in clarifying mathematical problems for Pasifika students. For example, students like Moana and

Salesi have found that Talanoa helps them realise that their difficulties often arise from comprehension issues rather than the inherent complexity of the tasks. Moana, for instance, noted that Talanoa significantly improved her understanding of the questions. This approach helps students unpack the question and identify its requirements more effectively. Gibbs et al. (2022) highlight that employing culturally relevant practices enhances comprehension and engagement among Pasifika learners, especially in complex subjects like Mathematics. Lorraine Spiller's research also supports this view, noting that such engagement leads to heightened trust and confidence among students (Spiller, 2013).

Understanding the question is as crucial as solving it. Talanoa creates a space where students can voice their confusion and work through misunderstandings, making complex mathematical concepts more accessible. This verbal processing helps break down comprehension barriers, allowing students to grasp the questions better and determine effective solutions. By improving comprehension through culturally relevant methods, Talanoa not only enhances students' understanding of mathematical problems but also builds their confidence and trust in the learning process. This approach is particularly beneficial for Pasifika learners, who may face unique educational challenges. The effectiveness of Talanoa in clarifying mathematical problems underscores its value in educational settings, promoting deeper engagement and understanding among Pasifika students. This approach aligns with broader educational goals of fostering inclusive and supportive learning environments.

5.4.4 Talanoa fosters Understanding

The study suggests the Talanoa tool fosters a supportive learning environment crucial for the academic success of Pasifika students. Hateni asserts, "*Talanoa allows you to walk through [the question] and understand it more. It makes you relate the question to a situation that you know, making it easier for you to understand it and get it done.*" Abella (2018) underscores the significant impact of using culturally relevant pedagogy in New Zealand classrooms, particularly for Pasifika and migrant children. She affirms that talanoa is crucial for capturing the authentic voices and experiences of Pasifika individuals. This method creates an environment built upon trusting relationships. The Ministry of Education's Tapasā framework supports this by helping teachers become more culturally aware and competent (Ministry of Education, 2018). One way

to enhance cultural competence is by understanding the potential of talanoa. Talanoa inherently fosters cultural awareness, guiding practitioners with principles and characteristics that help build relationships (Fa'avae, 2016). As relationships deepen, the quality of the talanoa also improves. This enhanced connection allows for more open and honest communication, fostering a greater understanding between individuals (Fa'avae & Fonua, 2020). The richer the relationships, the more effective talanoa becomes in facilitating meaningful dialogue and mutual respect.

The Talanoa tool enables students to relate assessment questions to familiar situations, fostering motivation and deeper engagement. This culturally responsive tool makes learning and assessment contexts more relatable and compelling, helping students aspire for higher grades. By providing a supportive environment, Talanoa encourages students to engage more fully with the material and reduces feelings of alienation or confusion. Culturally relevant pedagogy, as facilitated by Talanoa, helps bridge the gap between students' cultural backgrounds and educational demands. This approach enhances academic performance and builds a more inclusive and supportive learning environment which is essential for the Pasifika students' success. The effectiveness of the Talanoa Tool in fostering a culturally relevant and supportive learning environment aligns with broader educational goals. By making learning contexts relatable and compelling, Talanoa promotes deeper engagement and higher academic achievement among Pasifika students.

5.4.5 Talanoa reduces Mathematics Anxiety in a culturally responsive manner

The study results suggest that the interactive nature of Talanoa helps alleviate students' anxiety about their academic abilities, particularly in Mathematics. Bo'oi expressed, *"If I do not understand the question... I will be stressed."* Hateni agreed, *"Yeah. I will be stressed, too."* Bo'oi further noted, *"It is shameful not to understand the question... yeah, it would be embarrassing for me."* Hateni added, *"I would feel regret for coming to class. I would rather not be there for the assessment than be embarrassed in there."* These statements reveal the emotional burdens students carry, underscoring the significance of talanoa in providing support and reducing stress. Van Vuuren (2016) found that culturally responsive facilitating strategies enhance engagement and build confidence among Pasifika students, empowering them to tackle mathematical problems more effectively. Mathematics anxiety is a cognitive disorder characterised by terror, vulnerability, and tension during the mathematical problem-

solving process (ibid). It includes negative attitudes towards Mathematics, fear of failure, lack of self-confidence, and exam pressure. The Talanoa Tool creates an interactive and supportive environment where students can openly discuss their difficulties, reducing these anxiety-inducing factors. This approach not only alleviates fear and tension but also builds confidence and positive attitudes towards Mathematics. By addressing Mathematics anxiety through culturally responsive methods, the Talanoa Tool helps Pasifika students overcome barriers to learning. This reduction in anxiety leads to improved engagement and academic performance, making Mathematics more accessible and less intimidating. The success of the Talanoa Tool in reducing Mathematics anxiety underscores the importance of culturally responsive teaching strategies. By creating a supportive and interactive learning environment, Talanoa empowers Pasifika students to achieve greater success in their academic pursuits.

Empowering students through culturally relevant teaching methods, such as Talanoa, not only enhances their academic performance but also boosts their confidence and engagement. This approach is particularly beneficial for Pasifika students, as it respects and integrates their cultural backgrounds into the learning process. The success of Talanoa in empowering students and enhancing academic performance highlights the importance of culturally tailored educational tools. By focusing on students' unique cultural identities and learning styles, these tools can improve educational outcomes and foster a more inclusive and supportive learning environment.

Integrating Talanoa into the assessment process helps create an environment that respects and values students' cultural backgrounds. It improves engagement and comprehension and establishes a good rapport between Pasifika students and others in their learning space. This communal and supportive nature of Talanoa aligns with the broader educational goal of fostering an inclusive and effective learning environment (Lawrie et al., 2017). By leveraging cultural communication styles and oral traditions, educators can enhance the learning experience for Pasifika students, encouraging them to take risks and persist in their academic endeavours.

Fakalanga 'ilo mo e potu, meaning creating awareness and fostering understanding, utilises Talanoa to help Pasifika students comprehend assessment questions, particularly in Mathematics. By creating a secure and culturally relevant

environment, Talanoa encourages students to voice their confusion, ask questions, and clarify their understanding, thereby enhancing comprehension and confidence. This method addresses comprehension barriers, reduces Mathematics anxiety, and fosters independent thinking and problem-solving skills. Experiences from students like Moana, Salesi, Bo’oi, and Hateni highlight its effectiveness in making complex subjects more accessible, promoting deeper engagement, and improving academic performance.

5.5 Fakalanga Loto-lahi (Cultivating Self-Confidence and Efficacy)

5.5.1 Fakalanga Loto-lahi Concept

The study reveals that Talanoa helps Pasifika students to develop self-confidence and a sense of efficacy in education. Developing self-confidence and efficacy among Pasifika students is essential for their academic success, particularly in mathematics. The concept of Fakalanga Loto-lahi highlights the empowering role of Talanoa in fostering self-efficacy and confidence in students. Narratives and reflections from study participants underscore the importance of trust and care in learning environments. These elements are fundamental in nurturing confidence and encouraging students to engage actively in classroom activities. This section will discuss how recognising and valuing students’ cultural backgrounds enhances their comfort and confidence, improving their overall educational experience.

5.5.2 Talanoa helps building Confidence and enhancing Academic Performance

The study outcomes indicate that Talanoa empowers students by boosting their confidence in engaging with tasks. Salesi remarked, *“You started to realise... like, talking through the questions and the problem... it was like, easier to understand than just doing it by yourself.”* This statement highlights how Talanoa enables Pasifika students to explore and understand the question more effectively. As students gain clarity, their confidence in their own abilities begins to grow. Moana explained, *“You weren’t telling us the answers or how to get the answers. You were helping us to think through the question. That’s what was useful and helpful about Talanoa.”* Thinking through the question involves engaging deeply with the problem at hand, rather than simply seeking quick solutions. The study views it as an indication of building confidence in learning. This process of unpacking the problem with Talanoa encourages critical thinking and reflection, allowing individuals to explore different perspectives and understand the underlying issues. McPeck (2016) argued that critical

thinking is more than just posing questions; it involves using reflective scepticism appropriately within the context of the problem being examined. Like McPeck's (2016) emphasis on reflective scepticism within a specific context, Talanoa encourages critical thinking through open conversation and mutual understanding. In Talanoa, the norms and standards of the cultural context guide the discussion, ensuring that scepticism and questioning are used appropriately and constructively.

Integrating the culturally specific approach of Talanoa with McPeck's idea of reflective scepticism develops a more profound and contextually sensitive form of critical thinking. This blend not only honours cultural traditions but also enhances problem-solving by leveraging the collective wisdom and norms of the community involved. Manueli (2012) notes the positive impact of culturally tailored educational tools on the academic engagement of Pasifika students. The Ministry of Education's Tapasā framework enhances teachers' effectiveness by focusing on the unique cultural identities, languages, and communities of Pasifika students (Ministry of Education, 2018). The empowerment through understanding provided by Talanoa contributes to improved academic performance. By guiding students to think through questions rather than giving direct answers, Talanoa helps bridge the cognitive gap between students' cultural frameworks and educational demands. This approach fosters independent thinking and problem-solving skills, making learning more effective and meaningful.

5.5.3 Talanoa encourages Risk-taking and Persistence

The study findings indicate that talanoa fosters a passion for learning among Pasifika students and encourages risk-taking and persistence. This interactive approach helps students embrace challenges and stay committed to their educational goals. Moana's insight illuminated this aspect when she affirmed, "*Talanoa pushes [her]*" to go beyond the surface and challenge her own thinking, leading her to a deeper understanding. This perception complements Salesi's observation that Talanoa helps him connect with the learning context and grasp it more thoroughly. Villegas and Lucas (2007b) suggested that leveraging oral traditions and integrating oral-based methods, such as storytelling, fosters a supportive learning environment where students can ask questions and clarify doubts without fear of judgment. Such an environment encourages risk-taking and persistence, which are crucial for building confidence in problem-solving. This perspective helps us understand that when students engage

with tasks in a culturally familiar context, they feel more motivated and understood, thereby encouraging risk-taking and persistence.

5.5.4 Talanoa develops Self-efficacy

The study shows that Talanoa can develop self-efficacy among Pasifika students. By engaging in open and supportive dialogue, Talanoa provides students with a platform to express their thoughts and questions without fear of judgment. As Bo’oi observed, “[Talanoa] allows you to express more of your ideas... it makes you think.” Self-efficacy is defined by Bandura (1977) as “people’s judgements of their capabilities to organise and execute courses of action required to attain designated types of performances.” As understanding grows, self-efficacy starts to develop. This interaction not only helps clarify academic concepts but also reinforces students’ belief in their own abilities. As students participate in Talanoa, they experience a sense of validation and support, which boosts their self-esteem and encourages them to tackle challenges with greater assurance. This growing self-confidence is crucial for their overall academic success and personal growth, as it empowers them to approach learning tasks with a more positive and resilient mindset.

The findings reveal that Talanoa stimulates deep thinking and active engagement with tasks. Bo’oi’s experience highlights how this approach encourages reflective thinking and a more profound connection with the assessment material. This process of unpacking thoughts and ideas leads to a better understanding of questions and builds confidence in tackling complex problems. Freire (2018) advocates for dialogic learning, where open conversations stimulate critical thinking and empower learners to understand and transform their realities. This sentiment aligns with Filoi (2020), who discusses how Talanoa promotes effective learning strategies tailored to local educational needs, including critical thinking and problem-solving. Similarly, Mercer and Wegerif (1999) assert that exploratory talk and dialogue in the classroom contribute to higher-order thinking skills and enhanced problem-solving abilities. Together, these perspectives support the view that talanoa fosters a learning environment where deep thinking and engagement are cultivated, ultimately leading to improved understanding and confidence in addressing complex tasks.

Creating a supportive atmosphere and promoting open communication are vital for cultivating self-confidence and efficacy among Pasifika students in mathematics. The

study revealed that Talanoa fosters a supportive environment that empowers students. Through open communication and personal expression, Talanoa helps students build confidence in their mathematical abilities and fosters a sense of achievement. Participants like Moana highlighted the necessity of trust and care in learning environments, stating, “*You need someone that you trust and who cares about you.*” Trust and care are foundational in nurturing confidence, as students are more likely to engage and participate actively in a classroom where they feel valued and understood. Research by Tschannen-Moran and Hoy (2000) indicates that trust between teachers and students affects students’ willingness to take academic risks and engage in learning activities, promoting a positive classroom climate, and enhancing self-efficacy and confidence. Similarly, Bishop et al. (2003) emphasise the role of culturally responsive pedagogies in building trust and improving educational outcomes for Māori students.

The study suggests that Talanoa fosters a deeper understanding and boosts students’ confidence by encouraging them to connect mathematical problems with familiar, everyday experiences. Hateni observed that this approach helps students break down questions by relating them to situations they already understand. By incorporating real-life contexts into their learning, talanoa helps students see the relevance of mathematical concepts and applications. This approach allows students to connect abstract problems with practical experiences, making complex ideas more accessible and comprehensible. Nuthall (2007) argues that learning is more effective when new knowledge is linked to students’ existing knowledge and experiences. Contextualising problems within familiar settings helps students make sense of abstract concepts, thereby increasing their confidence. Brown et al. (1988) emphasise the importance of situated cognition, where learning is contextual and meaningful to the learner’s real-world experiences. As students engage in discussions that bridge their academic learning with their personal lives, they gain a clearer understanding of the material and develop greater confidence in their problem-solving abilities. This contextual approach helps Pasifika students grasp mathematical concepts more effectively and fosters a more engaging and supportive learning environment.

5.5.5 Talanoa facilitates Cultural Values Awareness, improving Self-confidence

The study reveals that talanoa enables teachers to foster cultural awareness, which, in turn, encourages Pasifika students to build self-confidence. By integrating cultural

perspectives into their teaching, teachers create an environment where students feel valued and empowered. This cultural recognition enhances students' engagement, fostering their personal growth and academic self-esteem. Moana's experience underscores this, as she felt reassured when her culture was acknowledged, noting that engaging in talanoa with someone who understands and respects her cultural background is truly comforting.

When students feel comfortable in the talanoa context, they are more likely to open up and share their personal stories and concerns. This environment of mutual understanding and respect helps Pasifika students articulate their thoughts and questions more clearly and fosters a sense of belonging and validation. As students engage in these culturally responsive dialogues, they become more confident in expressing their ideas and addressing challenges. This increased comfort and openness contribute to a more supportive learning atmosphere, where students can explore their academic and personal development with greater ease and assurance. Gay (2010) underscores the importance of culturally responsive teaching, noting that it fosters a supportive learning environment where students feel respected and valued. This approach not only improves academic performance but also bolsters students' confidence. Ladson-Billings (1995) discusses how culturally relevant pedagogy empowers students by validating their cultural identities and experiences in the classroom.

This section explores the importance of cultivating self-confidence and efficacy among Pasifika students, particularly in mathematics. It introduces the concept of Fakalanga Loto-lahi, which highlights the empowering role of the Talanoa approach in cultivating self-confidence and efficacy. Talanoa fosters a supportive atmosphere that promotes open communication and personal expression, helping students build confidence in their mathematical abilities. The study emphasises the necessity of trust and care in learning environments, and how acknowledging and valuing students' cultural backgrounds enhances their comfort and confidence. Additionally, the Talanoa approach encourages students to contextualise mathematical problems within familiar real-life situations, thus improving understanding and confidence. Finally, Talanoa stimulates deep thinking and engagement, fostering critical thinking and problem-solving skills among students.

5.6 Fakalanga Fiefia mo Tau'atāina (Stimulating Joy and Intellectual Freedom)

5.6.1 Fakalanga Fiefia mo Tau'atāina Concept

The data shows that Talanoa stimulates joy and fosters a sense of intellectual freedom in education among Pasifika students. The concept of Fakalanga Fiefia mo Tau'atāina highlights how Talanoa can bring joy and promote intellectual freedom in Pasifika students' learning experiences. This section explores how Talanoa enhances students' understanding and fosters emotional engagement. By providing clarity, Talanoa positively impacts both students' academic performance and emotional well-being, making learning more relatable and enjoyable. Additionally, we will discuss how Talanoa fosters a sense of intellectual freedom, encouraging Pasifika students to express and explore ideas without fear.

5.6.2 Talanoa cultivates Joy through Understanding

The study findings indicate that Talanoa enhances Pasifika students' understanding and fosters a sense of joy in education. Salesi remarked, "*True. It made more sense through Talanoa... You realise that... it's... it's not a hard question,*" wearing a big smile. Salesi's smile reflected a joyous heart, stemming from his realisation that the assessment question was not difficult to understand. This clarity directly impacts students' academic performance and emotional well-being, making learning contexts more relatable, understandable and enjoyable. This observation aligns with Gay (2010), who argues that incorporating students' cultural backgrounds into teaching strategies enhances student confidence and improves their overall performance in education. Ladson-Billings (1995) supports this view, highlighting that culturally relevant pedagogy validates and incorporates students' cultural experiences, thereby fostering a deeper understanding and a sense of joy. Bishop and Berryman (2006) further emphasise that a culturally responsive teaching approach creates a supportive environment that nurtures students' emotional well-being and academic confidence, further reducing anxiety, stimulating joy and liberating students' thinking. By understanding the impact of Talanoa, educators can create more inclusive and supportive learning environments that benefit Pasifika students.

5.6.3 Talanoa stimulates Joy by mitigating stress

The study results suggest that Talanoa helps students understand questions more clearly and reduces stress, underscoring its emotional benefits. Bo’oi stated, *“If I did not understand the question, I would be stressed.”* This observation highlights how stress can impact cognitive ability during assessments. Stress affects cognitive performance and contributes to overall anxiety and disengagement from learning (Kim et al., 2023; Mendl, 1999). The findings indicate that implementing culturally responsive strategies like Talanoa provides a supportive framework that alleviates stressors, promoting a more relaxed and focused mindset. By addressing students’ emotional and psychological needs, teachers can create an environment where students feel more confident and capable, enhancing their academic performance and well-being (ibid). This aligns with the broader educational research that emphasises the importance of culturally relevant pedagogy in improving student outcomes (Gay, 2018).

Talanoa is perceived in this study to offer emotional support that leads to a more enjoyable and engaging learning experience. The participants observed that when Pasifika students used Talanoa, the clarity they gained in understanding assessment questions reduced their anxiety and increased their enjoyment of learning. This finding is supported by Skinner and Pitzer (2012), who found that positive emotions like joy enhance student engagement and motivation. Moreover, the use of Talanoa fosters a sense of belonging and validation of cultural identity among Pasifika students, which is crucial for their academic success and psychological well-being (Chu et al., 2013). Therefore, the study highlights the multifaceted benefits of Talanoa in educational settings. By incorporating such culturally responsive practices, educators can better support Pasifika students’ learning processes, reduce their stress levels, and enhance their overall academic and emotional well-being.

5.6.4 Talanoa fosters a sense of Intellectual Freedom

The study results suggest that Talanoa fosters a sense of intellectual freedom by allowing Pasifika students to explore concepts and express ideas freely. Hateni stated, *“[Talanoa] prompted me to question a lot of things and view the problem from different perspectives.”* This experience of questioning and viewing problems from different perspectives indicates that Talanoa encourages deep thinking and intellectual

curiosity. Bo'oi's experience of developing a more open mind and engaging in deeper thought illustrates how Talanoa fosters intellectual freedom and growth. By providing a non-judgmental space, Talanoa allows students to engage deeply with content, ask questions, and consider multiple viewpoints, which are essential components of intellectual freedom and academic development. Implementing Talanoa as a pedagogical approach can enhance the educational experiences of Pasifika students. It promotes intellectual freedom and prepares students to tackle complex problems with a more nuanced understanding, leading to better academic performance and more profound engagement with learning materials.

The study findings support the view that Talanoa enhances understanding and problem-solving skills in Mathematics. The notion of verbalising and discussing problems appears in the work of Sullivan (2013). Talanoa, by its very nature, aligns with this educational approach by encouraging open dialogue and collaborative learning. By recognising the benefits of Talanoa in promoting intellectual freedom and deeper thinking, teachers can adopt and integrate this approach into their teaching methods, creating a more inclusive and intellectually stimulating educational environment. Incorporating Talanoa into the classroom not only benefits Pasifika students but can also enrich the learning experiences of all students. It fosters a culture of mutual respect and understanding, where diverse perspectives are valued and explored. This approach can lead to a more dynamic and interactive classroom environment, where students are motivated to think critically and engage deeply with the material.

Furthermore, Talanoa aligns with contemporary educational theories that emphasise the importance of social constructivism, where learning is seen as a social process. By engaging in Talanoa, students co-construct knowledge through dialogue and interaction, leading to a richer and more meaningful learning experience (Overton, 1983; Vygotsky, 1978). Therefore, the integration of Talanoa into educational practices offers substantial benefits. It promotes intellectual freedom, deep thinking, and analytical skills, while also creating an inclusive and supportive learning environment. Educators who adopt this approach can enhance the academic and personal development of their students, preparing them for the complexities of the modern world.

5.6.5 Talanoa strengthens Emotional Intelligence and Cultural Pride

According to the study findings, Talanoa fosters emotional intelligence and cultural pride beyond traditional academic success metrics. By engaging in Talanoa, students develop a greater understanding of their own emotions and those of others, which is a key component of emotional intelligence. Emotional intelligence involves the ability to recognise, understand, and manage our own emotions, as well as the ability to recognise, understand, and influence the emotions of others (Goleman, 1996). For instance, Bo'oi observed that Talanoa helped him develop a more open mind and think more deeply. This reflection suggests that Talanoa enhances cognitive skills and fosters a deeper emotional understanding and empathy towards others. This emotional growth can lead to better interpersonal relationships and a more positive learning environment.

Moreover, Talanoa reinforces cultural pride among Pasifika students by validating their cultural identity and heritage. Hateni's experience, where he was prompted to question various aspects and consider problems from different angles, suggests that Talanoa encourages students to explore and appreciate their cultural narratives and perspectives. This cultural exploration strengthens their sense of identity and pride in their heritage, which is crucial for their overall well-being and self-esteem (Durie, 1998). As a culturally responsive pedagogical approach, Talanoa creates a platform where students can share their personal and communal stories. This sharing of narratives is more than just an educational exercise; it is a powerful act of cultural reaffirmation. When students see their cultural practices and perspectives valued in the classroom, it validates their identities and experiences. This validation is essential for fostering a positive self-concept and cultural pride.

Pasifika students, whose cultural narratives and practices might not be prominently featured in mainstream educational curricula, Talanoa provides an opportunity to see their cultural heritage reflected in their learning environment. This inclusion can counteract feelings of marginalisation and invisibility that these students might experience in more conventional educational settings. As students discuss and reflect on their cultural stories, they develop a deeper appreciation of their heritage and a stronger sense of belonging. Cultural pride, fostered through practices like Talanoa, has significant implications for students' overall well-being and academic success. Research shows that a strong sense of cultural identity is linked to higher levels of

self-esteem, resilience, and academic motivation (Phinney, 1997). When students feel proud of their cultural background, they are more likely to engage positively with their educational experiences and persevere through academic challenges.

The study's observations illustrate how Talanoa creates a culturally relevant and emotionally supportive environment. Moana reflected on this, noting that engaging in Talanoa with someone who understands and respects her culture is both comforting and empowering. She explained that this support encourages her to engage more deeply in problem-solving and tackle more questions, ultimately helping her succeed in assessments. This sense of comfort and empowerment derived from engaging with someone who understands and shares the same cultural background can enhance a student's motivation and engagement. This view is echoed in the works of Gay (2010), Ladson-Billings (1995), and Skinner and Pitzer (2012), who argue that culturally responsive teaching improves academic performance and bolsters emotional well-being and cultural pride. By fostering a sense of cultural pride and emotional support, Talanoa goes beyond traditional academic metrics to address the holistic development of students. This approach can lead to more profound and sustained academic engagement, as students feel valued and understood within their cultural context. Emphasising emotional and cultural engagement can create a more inclusive and supportive educational environment that benefits all students. Recognising the pivotal role of emotional and cultural engagement in student success, educators should strive to incorporate Talanoa and other culturally responsive teaching methods into their practice. This holistic approach supports the academic achievements of Pasifika students and enhances their emotional and cultural well-being, contributing to their overall personal and academic development.

Therefore, Talanoa plays a crucial role in stimulating joy and fostering a sense of cultural pride by enhancing comprehension, reducing stress and anxiety, and fostering emotional engagement. By providing a supportive and inclusive environment, Talanoa encourages students to express themselves freely and engage deeply with the material. This approach promotes a non-judgmental and culturally responsive learning environment, allowing students to enjoy their education and express ideas freely, thereby improving academic performance and emotional well-being.

5.7 Summary

This chapter critically examines the findings of the study. It integrates these findings with existing literature on culturally responsive education, focusing on how Talanoa can enhance the assessment experiences of Pasifika students in NCEA Level 2 Mathematics. The study reveals that the establishment of a trusting relationship, referred to as Fakalanga Vā Falala‘anga, is essential for fostering student engagement and creating a supportive learning environment. Talanoa is shown to be particularly effective in building these trusting relationships, which are crucial for encouraging Pasifika students to actively participate in class and take academic risks. When students trust their teachers, they are more likely to engage deeply with the material, ask questions, and express their thoughts freely.

Another theme that emerged from this study is the development of cultural competence, known as Fakalanga Pōto‘i Anga. The study explores how Talanoa nurtures cultural competence among students and teachers, thereby making the learning environment more inclusive and supportive for Pasifika students. The findings underscore the importance of reflecting students’ cultural identities in the classroom, as this validation enhances their engagement and sense of belonging.

The theme of acquiring knowledge and fostering understanding, Fakalanga ‘Ilo mo e Poto, highlights Talanoa’s role in improving Pasifika students’ comprehension of mathematical concepts and assessment tasks. By creating a supportive environment where students can clarify their understanding, Talanoa reduces anxiety and contributes to better academic performance. The open dialogue facilitated by Talanoa helps students overcome comprehension barriers, making complex subjects more accessible and less intimidating.

The chapter also discusses how Talanoa cultivates self-confidence and a sense of efficacy, which is captured in the concept of Fakalanga Loto-lahi. The study suggests that Talanoa empowers students by encouraging deep thinking and problem-solving. It provides a platform for students to express their ideas, which in turn fosters independence and resilience in their learning journey. This empowerment is crucial for building the self-confidence needed to tackle academic challenges effectively.

Finally, the chapter addresses the theme of stimulating joy and intellectual freedom, known as Fakalanga Fiefia mo Tau‘atāina. The findings indicate that Talanoa brings a sense of joy and intellectual freedom to the learning process by reducing stress and

promoting a non-judgmental space for exploration. This approach not only enhances student' assessment experience but also improves their emotional well-being, making learning more positive and enjoyable.

Overall, the chapter illustrates the profound impact of culturally relevant educational practices like Talanoa on student engagement and success, particularly within the unique context of Pasifika students in Aotearoa, New Zealand. It argues for the broader application of such practices in educational policy and pedagogy to improve outcomes for Pasifika learners.

6. Conclusion and Recommendations

6.1 Introduction

This chapter concludes the study by summarising the key research findings in relation to the research questions and aim, highlighting their value and contributions. It also reviews the study's limitations and suggests opportunities for future research.

The study aimed to explore Pasifika students' perceptions, within the context of New Zealand secondary schools, on using Talanoa as an assessment tool for NCEA Level 2 Mathematics. The results indicate that Talanoa, as a culturally responsive tool, helps Pasifika students to (i) establish a trusting relationship with their teachers, (ii) develop cultural competence among those practising it, (iii) enhance knowledge acquisition and understanding, (iv) cultivate self-confidence and efficacy, and (v) foster joy and a sense of intellectual freedom in their education. Six students participated in the study, offering valuable insights into their experiences with traditional summative assessments and the culturally responsive Talanoa approach. The findings highlight the transformative impact of Talanoa on students' learning experiences.

6.2 Revisiting the Research Questions

The following section revisits the main research questions alongside additional subsidiary questions, as detailed in Table 2 below. The primary research questions are divided into empirical and theoretical categories. Following Table 2, there is a discussion providing key answers for each question. The discourse begins with the empirical questions in section 6.2.1. The theoretical question is addressed in section 6.2.2, focusing on the contribution of the fale (traditional house) concept to understanding Talanoa as a culturally responsive assessment tool for Pasifika learners.

RESEARCH QUESTIONS

Theoretical Research Question:

How does Talanoa transform Pasifika learners' attitudes towards academic assessments in secondary school Mathematics?

Empirical Research Question:

What are Pasifika students' perceptions of using Talanoa as an assessment tool in NCEA Level 2 Mathematics?

Subsidiary questions:

- 1. What are your thoughts on using talanoa as an assessment tool in mathematics?*
- 2. How does this approach differ from your usual assessment methods?*
- 3. How does talanoa help you think more deeply about what you are doing?*

Table 2. The research questions

The following section summarises the perceptions of Pasifika students regarding the use of Talanoa as an assessment tool in NCEA Level 2 Mathematics and explores how this culturally responsive approach transforms their attitudes towards academic assessments. Through a detailed analysis of the five key themes that emerged from the study, this section provides insights into the effectiveness of Talanoa in improving both the assessment experiences and outcomes for Pasifika learners. The discussion also addresses how these themes contribute to a positive shift in students' attitudes towards their academic journey, ultimately fostering a more inclusive and supportive learning environment.

6.2.1 Empirical Research Question

What are Pasifika students' perceptions of using Talanoa as an assessment tool in NCEA Level 2 Mathematics?

Pasifika students perceive Talanoa as a culturally responsive assessment tool that enhances their educational experience in several key ways. First, Fakalanga Vā Falala'anga (Establishing Trusting Relationships) emerged as a crucial theme. Talanoa helps establish a strong foundation of trust between students and teachers, which is essential for creating a safe and supportive learning environment. This trust enables students to engage more openly in assessments, allowing them to ask questions and seek help without fear of judgment. The secure atmosphere fostered by Talanoa encourages students to participate actively and with confidence.

The second theme is Fakalanga Pōto'i Anga (Developing Cultural Competence). Talanoa resonates deeply with Pasifika students because it acknowledges and respects their cultural backgrounds. By integrating cultural elements into the assessment

process, Talanoa makes learning more relatable and meaningful, which motivates students to engage more deeply with the content. This cultural relevance also fosters a sense of belonging among students, helping them feel that their identities are valued and that their unique perspectives are important in the educational process.

Fakalanga 'Ilo mo e Poto (Acquiring Knowledge and Understanding) is the third theme identified in the study. Talanoa facilitates open dialogues that help students clarify complex assessment questions, reducing misunderstandings and making the material more accessible. Through discussions and collaborative problem-solving, students can break down challenging concepts and relate them to familiar situations, leading to a deeper understanding of the subject matter. This iterative process of dialogue and reflection enhances students' problem-solving abilities and overall comprehension.

The fourth theme, Fakalanga Loto-lahi (Cultivating Self-Confidence and Efficacy), highlights how Talanoa boosts students' confidence in their mathematical abilities. The supportive environment created by Talanoa encourages students to tackle complex tasks with greater assurance, knowing they have the support of their teachers and peers. This confidence is further reinforced by the method's ability to connect academic content to real-life situations familiar to the students, making the material less intimidating and more approachable. As a result, students develop a stronger belief in their capabilities and are motivated to strive for higher academic achievements.

Finally, the theme of Fakalanga Fiefia mo Tau'atāina (Stimulating Joy and a sense of Intellectual Freedom) reflects how Talanoa transforms the learning experience into one that is both enjoyable and intellectually liberating. Students report feeling less stressed and more enthusiastic about their learning when assessments are conducted through Talanoa. The positive and interactive nature of this approach encourages students to immerse themselves more deeply in mathematical concepts, leading to a richer understanding and appreciation of the material. By making assessments more engaging and less daunting, Talanoa fosters a supportive environment where students feel motivated to invest more time and effort in their studies, ultimately leading to better educational outcomes.

6.2.2 Theoretical Research Question

How does Talanoa transform Pasifika learners' attitudes towards academic assessments in secondary school Mathematics?

The transformation of Pasifika learners' attitudes towards academic assessments through Talanoa can be understood through the five key themes that emerged from the study. The first theme, trust and relationship building, plays a foundational role in this transformation. Talanoa fosters trusting relationships between students and teachers, creating a secure environment where students feel safe to express themselves and engage fully in their learning. This trust is crucial for shifting students' attitudes from apprehension to confidence, as they become more willing to take academic risks and participate actively in assessments.

The second theme, cultural relevance and competence, also significantly influences students' attitudes. By integrating cultural elements into the assessment process, Talanoa acknowledges and respects the cultural identities of Pasifika students, making learning more meaningful and relatable. This cultural connection motivates students to engage more deeply with their studies and fosters a positive attitude towards their educational journey. When students feel that their cultural backgrounds are valued, they develop a stronger sense of belonging and a more positive outlook on their academic assessments.

Enhanced understanding and clarity is the third theme that contributes to the positive shift in students' attitudes. The open dialogues encouraged by Talanoa allow students to clarify complex concepts and reduce confusion, leading to a deeper understanding of the material. This enhanced comprehension not only improves academic performance but also boosts students' confidence in their abilities. As students begin to see assessments as opportunities for growth rather than obstacles, their attitudes towards learning and assessments become more positive and proactive.

The fourth theme, increased confidence and efficacy, further illustrates how Talanoa transforms students' attitudes. The supportive environment fostered by Talanoa encourages students to believe in their abilities and approach assessments with confidence. This self-assurance is reinforced by the method's ability to connect academic content to real-life situations familiar to the students. As students internalise their capacity to succeed, they develop a more positive attitude towards assessments and are motivated to achieve higher academic outcomes.

Lastly, the theme of joy and intellectual freedom highlights the profound impact Talanoa has on students' attitudes towards learning. By reducing the stress and anxiety typically associated with assessments, Talanoa makes the learning process more enjoyable and engaging. Students report feeling less intimidated by assessments and more enthusiastic about their studies when conducted through Talanoa. This positive transformation in the learning experience not only improves academic performance but also fosters a lifelong love of learning, as students come to view education as a positive and fulfilling journey rather than a daunting challenge.

To further understand how these themes interact and contribute to a holistic learning experience, we turn to the fale conceptual framework. This framework, symbolised by the traditional Pasifika fale (house), serves as a powerful metaphor for illustrating how trust, cultural competence, and other critical factors come together to create a strong, stable foundation for student success. The following section delves into the fale framework, providing a detailed analysis of its components and their significance in fostering a positive and empowering educational journey for Pasifika students.

6.3 Fale, a symbol of an inclusive Educational Framework

In constructing a fale (house), the foundation is the most critical element, providing stability and support for the entire structure. In this study, trust represents the foundation of the educational experience. Just as a solid foundation ensures the longevity and safety of a house, trust between students and teachers is essential for creating a safe and supportive learning environment. This trust fosters open communication and encourages students to engage more fully with their learning. For instance, students like Moana expressed how having a trusted teacher made them feel secure and comfortable, enabling them to participate actively and seek guidance without fear. Without this foundational trust, the educational structure would be unstable and unable to support the other key aspects of learning.



Figure 2. Kaute Pasifika Village Fale in Hamilton illustrates the five aspects referred to in this study: the foundation, the porch steps, the porch, the door and the living area (Kaute Pasifika Trust, 2024).

Leading up to the porch are the steps, which symbolise cultural competence. These steps provide the necessary transition from the outside world into the more intimate spaces of the home, much like cultural competence bridges the gap between students' diverse backgrounds and the educational content. Cultural competence ensures that the unique perspectives and experiences of Pasifika students are acknowledged and respected. This aspect of the study highlights how incorporating students' cultural heritage into the learning process creates a more inclusive and relatable environment. As Moana noted, engaging in Talanoa with someone who understands her culture provided a sense of comfort and motivation, which is essential for students to climb the steps toward deeper engagement and learning.

The porch itself represents the acquisition of knowledge and understanding. It is the welcoming space where initial interactions take place and where students begin to grasp new concepts. The porch is a transitional area where students can pause and reflect before fully entering the more personal spaces of the house. In this study, the porch symbolises how Talanoa facilitated a deeper understanding of mathematical problems. Through open dialogues and discussions, students like Salesi found that Talanoa helped clarify assessment questions, making them more accessible and less intimidating. This initial grasp of knowledge is crucial for students to feel prepared and confident as they move forward in their educational journey.

Entering through the main door is akin to developing self-confidence and efficacy. The door represents the threshold students cross when they begin to internalise their abilities and trust in their capacity to succeed. Just as a door provides access to the inner sanctum of a home, self-confidence opens new possibilities for students to explore and engage with their education more deeply. This study found that Talanoa boosted students' confidence in their mathematical abilities. By understanding the questions better and feeling supported, students like Bo'oi were more willing to express their ideas and tackle problems with greater assurance. Crossing this threshold is essential for students to fully participate and thrive in their learning environments.

Finally, the living area of the fale represents the joy and intellectual freedom that comes from a well-rounded and supportive educational experience. This space is where individuals feel most comfortable and free to express themselves, much like how Talanoa transformed the learning experience for Pasifika students. The living area is a place of relaxation, enjoyment, and meaningful interaction, reflecting how Talanoa reduced stress and fostered enthusiasm for learning. Students like Moana and Salesi found that engaging in Talanoa made the assessment process more enjoyable and less daunting, allowing them to explore and solve problems with a sense of joy and intellectual liberation. This metaphorical living area is where the holistic benefits of a culturally responsive and supportive education are fully realised, leading to deeper engagement and a more fulfilling educational journey.

Overall, this study highlights the benefits of integrating Talanoa as an assessment tool in NCEA Level 2 Mathematics for Pasifika students. The findings demonstrate that Talanoa fosters a trusting and culturally competent learning environment, enhances understanding and problem-solving skills, builds self-confidence, and creates a joyful and intellectually liberating educational experience. By acknowledging and respecting students' cultural backgrounds, Talanoa transforms traditional assessment methods into a more inclusive, supportive, and effective approach. This study underscores the potential of culturally responsive pedagogies like Talanoa to improve educational outcomes and foster a deeper, more meaningful engagement with academic content.

6.4 Reflections

The study conducted on the use of Talanoa as an assessment tool provided insights into the assessment experiences of Pasifika students. Reflecting on the process, several

aspects went well, while others revealed opportunities for improvement and further exploration.

6.4.1 What went well

One of the key strengths of this study was the successful application of the Talanoa method, which fostered an environment of trust and openness among participants. The use of Talanoa allowed the Pasifika students to express their thoughts and experiences in a manner that resonated with their cultural identities. This alignment between methodology and cultural practice enhanced the depth and authenticity of the data collected, contributing to a richer understanding of the students' perceptions.

Another positive outcome was the validation of the Kakala Research Framework as an effective approach in educational research involving Pasifika communities. The framework's emphasis on relationality and cultural sensitivity was crucial in guiding the research process, ensuring that the participants' cultural values were respected and integrated into the study.

Furthermore, the study was conducted in a school where strong, positive relationships had already been established between myself and the school community. Both the staff and students knew that I respected them, and they reciprocated with the same degree of respect. This mutual respect and familiarity created an environment where the research could be conducted comfortably and appropriately. It is important to acknowledge that if I were a stranger to this learning environment, the experience might have been significantly different. For Pasifika people, establishing a good relationship is essential for success in academic activities, including research. The existing connections within the school were instrumental in facilitating the smooth execution of this study.

6.4.2 Areas for improvement

While the study achieved its objectives, there were some areas that could be enhanced in future research. A challenge encountered was the small number of Pasifika students available for recruitment. It is unfortunate that there are not many Pasifika students taking NCEA Level 2 Mathematics. For instance, there were only two female students eligible, and only one was available to participate. This situation indicates a broader issue: Pasifika learners are increasingly opting for educational pathways that do not

require NCEA Level 2 Mathematics. This trend highlights the serious struggles that our Pasifika learners face, particularly in subjects like mathematics, and suggests a need for further investigation and support.

Additionally, considerations regarding the scope of the study and the potential for applying Talanoa in other subject areas are important. These points are discussed in detail in Section 6.6, where further suggestions for broadening the research and exploring the applicability of Talanoa across different academic disciplines are provided.

6.4.3 Additional insights

Throughout the research process, it became evident that culturally responsive assessment tools like Talanoa do more than just measure academic performance; they play a crucial role in shaping students' attitudes towards learning and their sense of belonging in the educational environment. This insight suggests that the integration of such practices should be a priority in educational policy and curriculum development, particularly in culturally diverse settings.

Moreover, the study underscored the importance of professional development for educators in implementing culturally responsive practices. The success of Talanoa in this study was partly due to the researcher's deep understanding of the cultural context, which suggests that teacher training programs should include components on cultural competence and the use of indigenous methodologies.

6.5 Key Findings

This research has revealed critical insights into how Talanoa, as a culturally responsive assessment tool, significantly impacts the learning and assessment experiences of Pasifika students in NCEA Level 2 Mathematics. Grounded in the voices of six Pasifika students, the study explored how the integration of Talanoa fosters cultural connections, enhances understanding, and promotes student confidence and academic success.

Five key themes emerged, each highlighting the transformative role of Talanoa in fostering:

1. *Trusting Relationships*: Talanoa establishes and nurtures trusting relationships between students, teachers, and peers. These relationships

create a supportive environment where students feel safe to express their thoughts, ask questions, and engage deeply with mathematical problems. Trust was identified as foundational for student engagement and for fostering a sense of belonging, which is critical for Pasifika learners.

2. *Cultural Competence*: Through Talanoa, teachers demonstrated cultural competence by valuing and respecting the students' identities and backgrounds. This validation of cultural identity fostered a sense of belonging and motivated students to participate actively in assessments, bridging the gap between traditional academic practices and the students' lived experiences.
3. *Enhanced Understanding*: Talanoa demystified complex mathematical problems, helping students better comprehend the assessment tasks. By engaging in dialogue, students articulated their thoughts, clarified their understanding, and approached problems with greater confidence and creativity.
4. *Self-Confidence and Efficacy*: The practice of Talanoa empowered students by building their confidence in problem-solving. Students felt motivated to engage more deeply with tasks and to aspire for higher grades. The process cultivated a mindset of persistence and resilience, which are essential for academic success.
5. *Joy and Intellectual Freedom*: The use of Talanoa transformed the learning environment into a space of joy and liberation. Students experienced reduced stress and a greater willingness to tackle challenging tasks. This positive atmosphere was instrumental in fostering enthusiasm and a commitment to learning.

Together, these findings underscore how Talanoa addresses the educational challenges faced by Pasifika students and enriches their learning experiences by fostering a culturally affirming and academically empowering environment.

6.5.1 Significance of Findings for Pasifika Students

The findings underscore the transformative potential of Talanoa in addressing the unique educational challenges faced by Pasifika students. By embedding cultural practices into the assessment process, Talanoa bridges the disconnect often felt in

traditional academic settings. It affirms the cultural identities of Pasifika learners, fostering not only academic success but also emotional and cultural empowerment. This holistic approach contributes to creating equitable and inclusive educational environments where Pasifika students can thrive.

6.5.2 Contribution to NCEA Mathematics Assessment Practices

This study demonstrates that Talanoa aligns well with the objectives of modern assessment by promoting deep thinking, collaborative learning, and authentic engagement with mathematical concepts. It provides a framework for educators to adopt culturally responsive teaching practices that enhance student outcomes, particularly for those from underrepresented communities.

6.5.3 Recommendations

1. *Ongoing Research:* Further studies should explore the long-term impact of Talanoa on various subjects and student demographics to ensure its scalability and sustainability across educational contexts.
2. *Integration into Curriculum:* Educational policies should prioritise the incorporation of Talanoa as a standard assessment practice, especially in subjects like mathematics where cultural disconnection often hinders comprehension and engagement.
3. *Teacher Training:* Professional development programmes must equip teachers with the skills and cultural competence necessary to implement Talanoa effectively.

Talanoa is more than a tool for assessment; it is a culturally grounded pedagogy that transforms the learning experience for Pasifika students. It cultivates trust, nurtures cultural connections, and empowers students to approach learning with confidence and joy. By embracing Talanoa, educators and policymakers have an opportunity to create meaningful change in the educational journeys of Pasifika learners, fostering not just academic success but a deeper sense of belonging and pride in their cultural identity.

6.6 The Study Contributions

This study makes contributions to educational research and the education of Pasifika students by highlighting the importance of culturally responsive assessment methods

and demonstrating the effectiveness of Talanoa as a tool in enhancing student learning experiences. The key contributions of this study are outlined below.

6.6.1 Emphasising Cultural Responsiveness and Trust

The study underscores the need for culturally responsive pedagogies in education. By integrating Talanoa, the study provides evidence that incorporating cultural practices into educational frameworks can enhance student engagement, understanding, and performance. This insight challenges the conventional Western-centric assessment methods, advocating for more inclusive and diverse educational practices. It highlights the critical role of trust in the educational process. Trust, as the foundation of the educational experience, is essential for creating a safe and supportive learning environment. This finding contributes to educational research by emphasising that trust between Pasifika students and teachers can lead to more effective learning outcomes, thereby encouraging educators to prioritise relationship-building in their teaching practices. The study findings indicate that practising talanoa in Pasifika students' educational context helps establish a trusting relationship and improves students' understanding and engagement.

6.6.2 Enhancing Student Engagement and Build Confidence

The use of Talanoa in assessments allows Pasifika students to engage more deeply with the content and understand complex mathematical problems better. The open dialogue and culturally resonant framework help students relate to the material, thereby improving their comprehension and problem-solving skills. This approach directly addresses the learning needs of Pasifika students, making education more accessible and effective for them. The supportive environment created through Talanoa nurtures students' confidence in their academic abilities. By facilitating a deeper understanding of assessment questions and providing a platform for students to express their ideas freely, Talanoa boosts self-efficacy and motivates students to aim higher in their academic pursuits. This confidence is crucial for Pasifika students' overall academic success and personal development.

6.6.3 Creating a Joyful and Inclusive Learning Environment

Incorporating Talanoa into the learning process fundamentally transforms Pasifika students' educational experience, infusing it with a sense of joy and intellectual freedom. By alleviating the stress often associated with traditional assessments and fostering a vibrant, positive, and culturally resonant atmosphere, Talanoa empowers students to feel more comfortable and deeply engaged in their studies. This enriched and supportive environment not only motivates Pasifika students to immerse themselves more fully in their educational journey but also nurtures a genuine enthusiasm for learning. As a result, students are more likely to dedicate greater time and effort to their studies, ultimately leading to enhanced academic performance and a more fulfilling, holistic educational experience.

6.6.4 Benefits of Indigenous Knowledge Systems

By utilising the Kakala Research Framework and Talanoa, the study showcases the value of indigenous knowledge systems in academic research. This approach not only validates the cultural heritage of Pasifika students but also provides a model for other researchers to integrate indigenous methodologies into their work, thus promoting a more holistic and inclusive approach to educational research.

Overall, this study contributes to educational research by advocating for culturally responsive teaching methods and demonstrating the effectiveness of indigenous knowledge systems. It offers a valuable framework for educators to build trust, enhance cultural competence, and create a supportive and engaging learning environment for Pasifika students. By highlighting the benefits of Talanoa, the study provides a practical and effective approach to improving the educational experiences and outcomes for Pasifika students, fostering their academic success and personal growth.

6.7 Limitations and Recommendations

While this study offers valuable insights into the use of Talanoa as an assessment tool for Pasifika students in NCEA Level 2 Mathematics, it is not without its limitations. Acknowledging these limitations is crucial for understanding the scope of the findings and for guiding future research in this area.

6.7.1 Sampling

The study was conducted with only six students from a single school, Motunoa South College (MSC) in Aotearoa, New Zealand. This small sample size limits the generalisability of the findings. While the experiences and perceptions of these students provide important qualitative data, they may not be representative of all Pasifika students or even those in different schools or regions. Future research with larger and more diverse samples would help to validate and expand on these findings.

Future studies should aim to include a larger and more diverse sample of Pasifika students across multiple schools and regions. This would help to ensure that the findings are more representative and generalisable. Including students from different age groups, educational levels, and cultural backgrounds within the Pasifika community would provide a broader understanding of how Talanoa can be effectively implemented in various contexts.

6.7.2 Limited Scope

The study focused solely on NCEA Level 2 Mathematics. While the results indicate that Talanoa can be an effective assessment tool in this context, it is unclear whether these findings would apply to other subjects or levels of education. Mathematics has specific challenges and learning processes that may differ from those in subjects like English, Science, or Social Studies.

Further research is needed to explore the applicability of Talanoa across different disciplines and educational stages, investigating whether the positive impacts observed in mathematics are consistent across a range of subject/discipline areas. This would help to determine the versatility and adaptability of Talanoa as a culturally responsive teaching method.

6.7.3 Potential Researcher Bias

As with any qualitative study, there is a potential for researcher bias in data collection and interpretation. The researcher's background, perspectives, and interactions with the participants can influence the findings. Although efforts were made to ensure objectivity, such as using open-ended questions and constant comparative analysis, the subjective nature of qualitative research means that some degree of bias is inevitable.

Future studies could benefit from employing multiple researchers or triangulating data sources to mitigate this limitation.

6.7.4 Cultural Specificity

The study's focus on Talanoa, a culturally specific method, raises questions about its transferability to other cultural contexts. While Talanoa is deeply rooted in Pasifika traditions, its principles and practices may not resonate with students from different cultural backgrounds. The effectiveness of Talanoa in promoting understanding and engagement might vary in non-Pasifika settings. Comparative studies involving culturally diverse student groups would provide more comprehensive insights into the universality and adaptability of such culturally responsive assessment tools.

Future research should include comparative studies that evaluate the effectiveness of Talanoa alongside other culturally responsive teaching methods. This would help to identify best practices and determine whether certain methods are more effective in specific contexts. Comparing Talanoa with other indigenous or culturally adapted educational frameworks could provide a more comprehensive understanding of how to support diverse learners.

6.7.5 The Horizons: Short-term versus Long-term Evaluations

The study evaluated the immediate effects of Talanoa on students' perceptions and understanding of mathematics. However, it did not assess the long-term impact of this approach on academic performance, retention of knowledge, or overall educational outcomes. Longitudinal studies tracking students' progress over time would be necessary to determine the sustained benefits and potential challenges of integrating Talanoa into the educational system. This longer-term perspective would help in understanding how continuous use of culturally responsive methods influences students' academic pathways and personal development.

To assess the long-term impact of Talanoa on students' academic performance, retention of knowledge, and overall educational outcomes, longitudinal studies are recommended. Tracking students' progress over multiple years would provide valuable insights into the sustained benefits and potential challenges of integrating Talanoa into the educational system. This approach would help to understand how continuous

use of culturally responsive methods influences students' academic pathways and personal development.

6.7.6 Teacher Training and Implementation

Another important area for future research is the investigation of teacher training and the practical implementation of Talanoa in classrooms. Understanding the challenges and successes that teachers encounter when adopting this method would provide valuable insights into how to effectively train and support educators. This research could explore the development of professional development programs and resources that help teachers integrate Talanoa and other culturally responsive practices into their teaching.

Acknowledging these limitations is crucial for contextualising the findings of this study and guiding future research. Despite these constraints, the study offers valuable insights into the potential benefits of culturally responsive teaching methods like Talanoa. Addressing these limitations in future research will help build a more comprehensive understanding of how to effectively support Pasifika students and other culturally diverse learners in educational settings. By doing so, future research can build on the initial findings of this study and contribute to a deeper understanding of how Talanoa and other culturally responsive teaching methods can be effectively used to enhance the educational experiences and outcomes of Pasifika students and other culturally diverse learners. These studies will provide valuable insights for educators, policymakers, and researchers aiming to create more inclusive and supportive educational environments.

6.7.7 Significance and Limitations of Talanoa

This study contributes to the understanding of culturally responsive assessment practices by exploring Talanoa as a method that aligns with Pasifika students' cultural identities. In the context of NCEA Level 2 Mathematics, Talanoa offers an approach that contrasts with conventional assessment methods, fostering trust, understanding, and student engagement. By situating Talanoa within CRA, this study provides insights into how culturally relevant methods can improve educational outcomes and engagement for Pasifika students in mathematics. These findings can guide educators and policymakers in developing inclusive practices that better reflect the needs and strengths of diverse student populations.

Although Talanoa presents promising results, its cultural specificity may limit its generalisability beyond Pasifika students. Additionally, as this research is based on a single group within New Zealand, the findings may not fully apply to broader or different educational contexts. The study also recognises that the researcher's own cultural background may influence interpretations, introducing potential bias. Future research could explore the adaptability of Talanoa-inspired methods to other subjects or student groups, examining how culturally resonant assessment tools might be tailored to various educational settings.

6.8 Summary

This thesis explored the use of Talanoa as a culturally responsive assessment tool in NCEA Level 2 Mathematics, focusing on the perceptions and experiences of Pasifika students. The research was guided by the Kakala Research Framework and emphasised the importance of culturally relevant practices in enhancing educational outcomes for Pasifika learners.

Key findings revealed that Talanoa fosters trust, cultural competence, understanding, and self-confidence among students, thereby transforming their attitudes toward academic assessments. The study also highlighted the crucial role of established relationships within the school community in facilitating effective research, particularly in contexts involving Pasifika learners. However, it also identified significant challenges, such as the limited number of Pasifika students pursuing mathematics at this level, pointing to broader educational issues that require attention. While the study focused on a specific group and subject, it suggests that Talanoa has the potential to be applied more broadly across different disciplines.

The study concludes with recommendations for educators and policymakers to incorporate culturally responsive methods like Talanoa in their practices and to support Pasifika students more effectively in their educational journeys. The findings contribute to the broader discourse on inclusive education and provide a foundation for future research aimed at improving educational equity and outcomes for Pasifika students.

7. References

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8. Appendices

Appendix 1: Permission to Access the School

Mr
Principal
Motunoa South College
New Zealand

Kia ora,

Greetings. I write this letter in my capacity as a member of Motunoa South College staff and postgraduate student at the University of Waikato, seeking permission to conduct research at your School for my Master's thesis research. The research topic is "Pasifika students' perceptions on their experiences of using talanoa as an assessment tool in NCEA Level 2 Mathematics." This project will commence once Ethical approval is received.

I would like to request permission to access a small group of year 12 students for my Master's thesis project and to use the Motunoa South College facility for my research. These 6-8 participants (Pasifika students) will experience the use of Talanoa in an NCEA Level 2 Mathematics practice assessment. This will be followed by a talanoa focus group for about 1.5-2 hours on a later day. The focus group talanoa will collect data on their perceptions on their experiences of using talanoa as an assessment tool in NCEA Level 2 Mathematics. The nature of the focus group talanoa is where participants will share opinions from personal experiences and knowledge.

The intended commencing time for the research is the last week of term 2 (Monday 26th June 2023).

Thank you for your time, and I look forward to hearing from you soon.

This research has been approved by the University of Waikato Faculty of Education Ethics Committee on June 7, 2023. Approval number: FEDU013/23

Appendix 2: Consent to Access the School

[The Principal of Motunoa South College will complete and sign in this form to indicate the approval of the request to access the participants and to use the school facility for my project.]

Dear Researcher,

I am pleased to inform you that your request to access the group of year 12 students and to use the school facility to conduct your research project activities has been approved.

By signing below, I declare that you are authorised to access the participants and to use our facility, located at, to conduct your research project activities.

.....

<Name>

Principal of Motunoa South College

This research has been approved by the University of Waikato Faculty of Education Ethics Committee on June 7, 2023. Approval number: FEDU013/23

Appendix 3: Information Sheet for Participants

Research Title: Pasifika students' perceptions on their experiences of using talanoa as an assessment tool in NCEA Level 2 Mathematics.

The Researcher: Tafa Naulivou Sisitoutai

Supervisors: Dr Frances Edwards and Associate Professor Sashi Sharma

My name is Tafa Naulivou Sisitoutai, and I am completing my study at the University of Waikato, towards a Master of Education degree.

Participation in this research project is voluntary. You do not need to partake if you don't wish to be involved in the project. If you choose to participate in this research, you will be asked to sign the consent form. By signing the consent form, you are informing us that you:

- (i) understand what you have read,
- (ii) consent to partake in the research project,
- (iii) consent to share your perceptions as data in this project.

What is the project about?

The aim of this project is to explore Pasifika students' perspectives in Aotearoa on the effects of using talanoa (as a culturally responsive approach) for assessing Pasifika students in NCEA Level 2 Mathematics, to find out what they think of using talanoa as an assessment tool in Mathematics?

This study will contribute to Pacific Education and explore and develop theoretical issues and practical implications for improving learning and teaching by implementing a culturally located educational assessment model.

Who is undertaking the project?

This project is being conducted under the supervision of Dr Frances Edwards and Assoc. Prof. Sashi Sharma in the Faculty of Education at the University of Waikato. The research will contribute to fulfilling the requirements for the degree of Master of Education, due to be completed early next year. It has been approved by the University's Ethics Committee.

What does participation in this research involve?

Participation in this research project will involve 6-8 Year 12 Pasifika students. Firstly, participants will be assessed using talanoa for a practice NCEA Level 2 assessment task in Coordinate Geometry. The researcher will guide the talanoa assessment for an hour per participant. This will allow you to experience the use of talanoa as an assessment tool in NCEA Level 2 Mathematics.

This research will be done in the focus group talanoa. Focus group talanoa is the project's method to gather Pasifika students' views and opinions, concerning the research topic and questions. The focus group talanoa will be facilitated by the researcher, who will guide the group conversations.

The contributions you will share with the group during the focus group talanoa comprise the data for this research project. We intend to audio record your talanoa and interactions; thus, we seek your permission to allow us to do so.

We anticipate the focus group talanoa session to last 1.5 hours and will take place in a private venue at Motunoa South College. The tentative date for the two 'focus group talanoa' sessions is scheduled for Thursday, 29th June 2023.

You will be invited to review the group's collective summary key points from the focus group talanoa on Tuesday 18th July 2023 at the same venue. During this review session, participants will work collaboratively to approve and/or make amendments to the summary key points.

Are there any risks associated with participating in this project?

One of the crucial elements of focus group talanoa is your interaction with other participants. Therefore, as a participant, you will not be anonymous to other participants. There is an ethical expectation that what is shared and talked about in the focus group talanoa is respected and will remain there. This is to protect everyone involved. The group will be reminded again of the ethical expectation on the day of the actual focus group talanoa.

Although we cannot guarantee complete anonymity, we can ensure that the reporting of the research findings will use codes or pseudonyms to maintain and protect your confidentiality to people and communities outside of the project.

Your confidentiality is important to us. Whatever you share with the group will be stored in a locked cabinet and/or in a password-protected digital storage facility for a period of five years. The focus group data and resources are accessible only to the researcher and supervisors. All representation of the data through publication outputs will ensure it does not bring harm or dishonour to you and the other participants, the school and the community.

Can I withdraw from the study?

Participation in this research project is completely voluntary. As a participant, you can choose to contribute (or not contribute) to the focus group talanoa. You can pass the opportunity to other participants if you do not want to contribute to the talanoa. You are not under any obligation to participate. Because of the nature of a focus group talanoa, it is not possible to withdraw your contribution from the group's discussion.

Will anyone else know the results of the project?

All information you provide as part of your participation in the project will remain confidential and private. No publications arising from the research will contain names or other identifying information. Pseudonyms will be used so that no personal details will be linked to you. All non-identifying data (e.g. data sets and transcripts) used for publication will be securely kept for a period of five years then it will be destroyed. Identifying data such as consent forms will be securely stored consistent with the agreements made under section 9(4)(a) of the University's Ethical Conduct in Human Research and Related Activities Regulations 2008.

Will I be able to find out the results of the project?

Once the research project has been completed, I will meet with you and give you a summary. You are free to ask questions at any time during the study.

Who do I contact if a dispute arises?

If disputes arise, participants will be informed to contact the researcher (Tafa Naulivou Sisitoutai) <email address> in the first instance. The supervisor (Dr Frances Edwards) <email address> will be contacted if there is no resolution.

Who do I contact if I have questions about the project?

Tafa Naulivou Sisitoutai can be contacted at any time at <hidden info> or via email at <hidden info>. Alternatively, you can contact Dr Frances Edwards <hidden info> or Assoc. Prof. Sashi Sharma <hidden info>.

What are the benefits of the research project?

Your contributions to the project will inform future research work on Pacific education practices in developing educational success amongst Pasifika learners in Aotearoa New Zealand.

This research has been approved by the University of Waikato Faculty of Education Ethics Committee on June 7, 2023. Approval number: FEDU013/23

Appendix 4: Participation Consent Form

Research Title: Pasifika students' perceptions on their experiences of using talanoa as an assessment tool in NCEA Level 2 Mathematics.

Researcher: Tafa Naulivou Sisitoutai

I _____ (*name of participant*) have read and understood the nature of the research project and agree to participate as requested. I agree with the following statements (*please tick*):

- I understand that full or complete anonymity is difficult to achieve, and I trust that there will be measures in place (such as the use of codes or pseudonyms) to maintain and protect my confidentiality to people and communities outside of the project.
- I understand that my responses will be audio recorded, and all related materials will be kept in a locked filing cabinet or password-protected storage facility for a period of five years before being destroyed.
- I understand I do not have to contribute to every topic in the talanoa / focus group.
- I understand that my participation is voluntary and that I can withdraw from the project up to (two weeks) when the summary data is returned back for checking; and due to the collaborative nature of the talanoa, it will be difficult to remove my contributions.
- I understand the findings of this research could be presented at conferences, community events, schools, and church gatherings, and written up in academic journals.

Signed _____

Date _____

This research has been approved by the University of Waikato Faculty of Education Ethics Committee on June 7, 2023. Approval number: FEDU013/23

Appendix 5: Practice Assessment Task (AS91256—Co-ordinate Geometry)

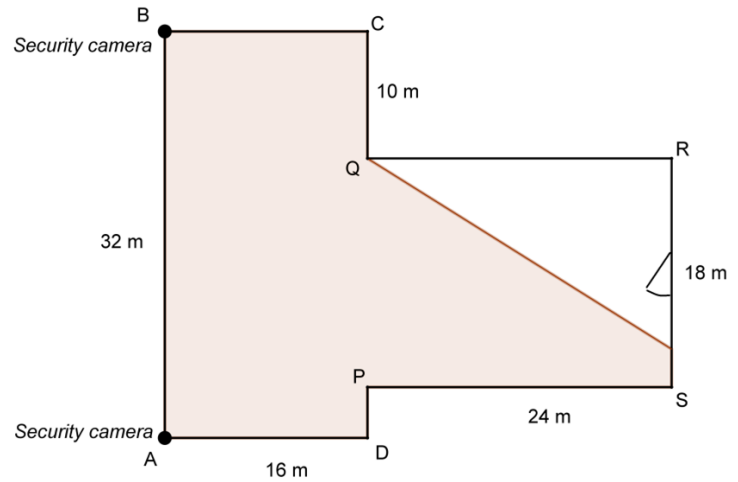
‘Security Camera’

The diagram to the right is a rough sketch of a museum section.

ABCD was the original room, but an extension (PQRS) has been added.

A new two-metre-wide door has been installed in the centre of RS.

Security cameras that can rotate through any angle to scan the inside of the building were installed at A and B before the extension was built. The shaded part on the diagram indicates the area scanned by the camera located at B.



While the range of the security cameras is large enough to scan long distances, they have an effective range (clear enough to identify any details in pictures) of 50m.

Apply coordinate geometry techniques to investigate how well the cameras scan the section of the museum with its new extension.

Use a coordinate system with its origin at A.

For your investigation:

1. Find out if the corner of the museum at S is within the effective range of the camera at B
2. Find out if camera A scans the new door.
3. Carefully describe the area that is not scanned by either security camera.
4. The camera that is at B can be shifted along wall AB. However, the museum staff would want the distance it is moved to be a minimum.

What is the minimum distance along the wall AB that the camera needs to be moved so that a camera covers the entire area of the section of the museum?

The quality of your discussions and reasoning, particularly with respect to any decisions and assumptions you make will determine your overall grade.

Appendix 6: Focus Group Talanoa

Research Topic:

Pasifika students' perceptions on their experiences of using talanoa as an assessment tool in NCEA Level 2 Mathematics

Research Question:

What are Pasifika students' perceptions of using talanoa as an assessment tool in NCEA Level 2 Mathematics?

The talanoa session will begin by welcoming participants with native Pasifika greetings. I will thank them for taking the time to be here and aim to make them feel comfortable by connecting with them on topics they are familiar with, such as something related to home, the community, or school. This will help ease them into the conversation before we discuss the research.

These questions guide the talanoa

1. What are your thoughts on using Talanoa as an assessment tool in Mathematics?
2. How does this approach differ from your usual assessment methods?
3. How does talanoa help you think more deeply about what you were doing?

This research has been approved by the University of Waikato Faculty of Education Ethics Committee on June 7, 2023. Approval number: FEDU013/23

Appendix 7: Ethics Committee Letter of Approval

Te Wānanga Toi Tangata
Division of Education
The University of Waikato
Private Bag 3105
Hamilton,
New Zealand, 3240

Division of Education Research
Ethics Committee (DEREC)
fedu.ethics@waikato.ac.nz
www.waikato.ac.nz



THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

7/6/2023

Dear Tafa Naulivou Sisitoutai

Division of Education Research Ethics Committee Application Approved FEDU013/23

I am pleased to advise you that your ethics application for the project entitled “Pasifika students’ perceptions on their experiences of using talanoa as an assessment tool in NCEA Level 2 Mathematics.” was approved by Te Wānanga Toi Tangata Division of Education Research Ethics Committee on June 7th, 2023.

Please be aware that the Te Wānanga Toi Tangata Division of Education Research Ethics Committee must be advised (by memo) of any changes to the details recorded in your ethics application. Please send any such advice to fedu.ethics@waikato.ac.nz. You will receive a memo of approval once the change(s) has been considered.

Kind regards

Chair

Te Wānanga Toi Tangata Division of Education Research Ethics Committee (DEREC)