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Gamification in Education

for engaging tāne ākonga Māori

in their learning spaces



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

Doctor of Philosophy
in
Māori Studies

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Abstract

This PhD research project sought to identify how the motivation and engagement of tāne ākonga Māori (Māori boy students) could be enhanced in English medium education settings in Aotearoa, New Zealand, through a Māori gamification model. The rationale for this focus is to provide tāne ākonga Māori with learning experiences in English medium education settings that better cater to their needs compared to what they are currently receiving. This is critical considering that Māori are a minority in Aotearoa and must conform to an education system not designed to cater to their needs. Furthermore, only 1.9% of kaiako (teachers) in Aotearoa are tāne Māori (Māori men). Consequently, tāne ākonga Māori would benefit from additional support to help meet their needs. This research project is, therefore, embraced by Kaupapa Māori research methodology and consists of two phases of data collection. Phase One involved Pakeke Kōrero, discussion groups with pakeke (older tāne Māori aged 17 and above) that provided pakeke with the opportunity to share their wisdom regarding how to best support the next generation of tāne ākonga Māori. The kōrero (discussions) from Phase One guided Phase Two, the Gamification Implementation, where action research was conducted in an English medium primary school. During Phase Two, feedback was gained from the kaiako and ākonga (student) participants. The data collected provided an intergenerational perspective from tāne Māori, which was then compiled and examined concerning how gamification in education could be tailored to the needs of tāne ākonga Māori. Two factors were identified as significant to the effectiveness of tailoring gamification in education to the needs of tāne ākonga Māori: their cultural needs and their needs as male learners. This project is the first Aotearoa-based doctoral research investigating gamification in English medium primary school education settings catering to the needs of tāne ākonga Māori. The findings from this PhD research prove that gamification in education is highly effective for enhancing the engagement and motivation of tāne ākonga Māori *and* their non-Māori and female peers. The findings are significant because they contribute to a gap in research and knowledge base in the emerging field of gamification in education.

Preface

*E ngā mana, e ngā reo, e ngā karangarangatanga, tēnā rā koutou kātoa.
Mai Tangaroa ki Tawhitipamamao Hawaikipamamao Tawhitiroa Hawaikiroa
Tawhitinui Hawaikinui
E tū e tū ki tai, e tū e tū ki uta
Tae noa ki te ngutu Awa o Waingongoro ki Wairere
Piki ake ki te tihi o Maunga Pukehaupapa
Huri noa ki te Tonga haere tonu ki te Awa o Waingongoro
Ko te waka o Aotea
Ko te iwi o Ngāruahine Ngāruahinerangi
Te Rua o Te Moko me Umutahi ō tātou whenua
Ko Mawhitiwhiti te Marae
Ko Ketetahi te Marae atea
Ko Kanihi te hapū i te taha o tōku Pāpā
Ko William Pakihiwi Tamou rātou ko Retima Paewai ko Brian Ellis ōku tupuna tāne
Ko Shirley Edwards rātou ko Hinepatokariki Rosina Hawea Paewai ko Beverley Ellis
ōku tupuna wāhine
Ko Anthony Teina Paewai rāua ko Shona Ellis ōku mātua
Ko Shannon Ryan Paewai tōku tungāne
Ko Adele Riwai tōku tuakana
Ko Rebecca Rae Paewai tōku māhanga
Ko Hikoi Journey Te Riaki tōku hoa tāne
Ko Waata Te Piira Wai Whenua rātou ko Kanihi Tamou Faith ko Tohumairangi
Paewai ko Maranga Mauri Ora ko Ahirau Nuku Te Riaki āku tamariki
Ko Tamzyn Rosina Te Riaki tōku ingoa*

My name is Tamzyn Te Riaki. I hail from South Taranaki and Wairarapa in Aotearoa (New Zealand). I live under the shadow of Mount Ruapehu with my husband and our five tamariki (children), three boys and two girls. I am an early childhood, primary school, and college kaiako (teacher). I am creative and enjoy art, horse riding, the outdoors, and spending time with my whānau (family). I am a New Zealand Māori and on a lifelong

journey to seek my culture. As I learn more about my identity, my teaching practice continues evolving to align more with my cultural values and beliefs. I respect all peoples of different cultures; everyone has a unique identity and carries their history, knowledge, experiences, values, beliefs, and wairua.

I love teaching and am incredibly passionate about the success of our ākonga Māori (Māori students). However, throughout my years of experience as a kaiako in English medium education settings in Aotearoa, I have regularly witnessed tāne ākonga Māori being misunderstood by their kaiako (predominantly female/non-Māori kaiako), often leading to unfair consequences or outcomes they did not deserve. After reflecting on my observations and discussions with non-Māori colleagues, I have concluded that some of these instances could stem from innocent cultural misunderstandings or fear of inadvertently disrespecting Māori culture. Consequently, this can lead to non-Māori kaiako either avoiding incorporating te ao Māori (Māori worldview) into their teaching practice altogether or simply covering the absolute basics, which barely cater to the cultural values and needs of tāne ākonga Māori. This is not always through lack of wanting or trying; I believe many non-Māori kaiako have a deep respect for te ao Māori and need additional support to better meet the needs of their ākonga Māori.

My background in early childhood teaching has ingrained a passion and respect for play-based learning and developed an in-depth awareness regarding the importance of learning through play. I am also creative and artistic and love sharing this passion with my own tamariki and ākonga. I enjoy the outdoors, animals, and being in the ngahere (forest/bush). Unfortunately, as ākonga grow and move through the education system, these become increasingly phased out in favour of formal academic learning. However, we must remember that ākonga are still tamariki regardless of their age. No matter how old, we still enjoy playing games and the outdoors. The importance of learning through play will never become inadequate just because we get older. Play encourages problem-solving, which in turn fosters innovation and creativity. These are some of the skills we need to instill in our next generation to help prepare them for an uncertain future where innovation is becoming essential to help them solve more significant world problems.

Our tamariki are spending increasing amounts of time gaming, especially on technology. Observing how engaged and motivated my tamariki and ākonga become while they are gaming raised questions such as: *What motivates learners to play the game, persist and stick with problem-solving for so long? What is the science behind it; is this something that can be utilised to motivate ākonga in their learning space?*¹ Preliminary research into these questions led me to the concept of gamification, and the potential that gamification has for supporting ākonga in such fun, creative, and innovative ways of learning is the inspiration for this PhD research.

Cultural values, beliefs, tikanga (cultural customs/practices), and ways of being are deeply rooted in our being and influence us daily on a conscious and subconscious level, affecting how we behave, think, react, and learn. As a Māori, I have a strong respect and passion for my own and everyone's unique cultural aspirations, beliefs, values, and histories. Aotearoa is unique because Māori are the tangata whenua (Indigenous people). To be an educator in Aotearoa, having genuine care and understanding of the Māori culture and knowledge of how to support ākonga Māori in their learning is integral to best cater to their needs.

The English medium education system in Aotearoa has not been designed to cater to the unique needs of Māori.² Consequently, ākonga Māori (especially tāne ākonga Māori) - face challenges in their education settings that their non-Māori peers do not. These challenges include; a lack of tāne Māori kaiako/role models; experiencing teaching and learning methods and content primarily designed and delivered from a western perspective; and ultimately missing out on the full utilisation of their cultural knowledge, values, and beliefs in their learning space. As such, my intentions for this PhD research were to investigate how the needs of tāne ākonga Māori can be better met in English medium education settings and to develop a fun and highly engaging pedagogy for teaching and learning to enhance their motivation and engagement in their learning; tailored gamification in education. Through an approach of tailored gamification, I

¹ Deeper discussion of these questions is had in Chapter Four

² The unique needs of Māori are discussed throughout Chapter Three and Seven of this thesis

believe that the motivation and engagement of *all* ākonga in the learning space can be improved, even if the gamification method is explicitly tailored to the needs of tāne ākonga Māori. This is discussed in-depth throughout this thesis and highlights the potential a pedagogy of tailored gamification poses.

Similarly, Smith (2017) identifies that: “Education and schooling are important sites of struggle given they have traditionally been key agencies in promulgating the ongoing colonisation of Māori. Education and schooling have damaged the validity and practice of Māori language, knowledge, and culture” (p.72). Considering this, tāne ākonga Māori would immensely benefit from integrating gamification elements that cater to their needs through gamification in education (GIE). Furthermore, kaiako could also use gamification elements to help guide their teaching practice in a way that is more tailored to the needs of their male ākonga Māori.

The kaupapa (topic) of this PhD research involved investigating an innovative new teaching pedagogy with huge potential for developing new and exciting resources, games and technology. Thus, the focus of this research is timely as it aims to contribute new knowledge that informs educational practice for Māori in the 21st century. This is especially relevant considering the importance of aligning tikanga Māori to technological advancements, especially in education.

Mihi

This PhD research project has concluded sixteen years of study at Massey University. Throughout these years of study, I have gained a Bachelor's in Education (Teaching) Early Years Birth – Eight, a Postgraduate Diploma in Education with Merit in Māori Education, and a Master of Education in Māori Education. I have also worked as a kaiako and started a family throughout this time. I have taught for three years in early childhood education settings, eleven years in English medium primary schools, and have recently began teaching in Secondary school.

During my first year at Massey University, I met my husband, Hikoi Journey Te Riaki. Since then, we have married and had five tamariki. Without the love, support, and encouragement of my husband, our tamariki, whānau, friends, and colleagues, I would not have been able to achieve this endeavour.

Ehara taku toa, he takitahi, he toa takitini

*My success should not be bestowed onto me alone, as it was not individual success, but
success of a collective*

To my darling, there is absolutely no way I could have achieved this without your love, care, endless encouragement, support, and patience. Thank you for encouraging me to do this, for believing in me, for keeping me on track, for lifting me up when I needed it, for your advice, guidance, and most of all, for keeping the fires burning and looking after our tamariki while I have been far too busy and distracted with this kaupapa. I am forever deeply grateful to you, and for us.

To our tamariki, Waata Te Piira, Kanihi, Tohumairangi, Maranga, and Ahirau. This PhD research has meant that, as a whānau, we have had to make many sacrifices. That is, sacrificing family time and holidays to allow for the development and timely completion of this kaupapa. You have each stepped up and supported in your own way, by helping around the house, with each other, and helping Pāpā to hold down our whare. For this, I am forever grateful. Your hard work, efforts, and support over the years have not been unseen. Sorry I have been so busy over these past few years and for not giving you all

the full attention you each deserve from your Māmā. Thank you for being there on the sidelines to cheer me up with your smiles, antics, and love. I love you all and am blessed to be your Māmā. I pray that our collective sacrifice and efforts as a whānau to make this research come to fruition benefits you, our wider whānau, iwi, and future generations.

To my supervisors, Professor Huia Jahnke and Dr Bevan Erueti, thank you for providing me with the opportunity to do this and believing that I could. I am very grateful for your time, support, guidance, and advice you have given me throughout this journey.

To the Massey Ethics Committee, thank you for your time, consideration, and tautoko to conduct both Phases One and Two of this PhD research. I appreciate the kōrero, suggestions, and trust to conduct this study.

To both iwi who gave their tautoko for me to conduct this research in their rohe, with their people. I am truly grateful for your time, consideration, and trust in me to conduct this research. I pray that the outcomes of this PhD research help in some way to ultimately benefit future generations of Māori who attend English medium educational settings. Also, I have worked hard to ensure that iwi consultation has been made a priority for this PhD research, and pray that your voices have been heard, and valued.

To the Board of Trustees, and principals of both schools who gave their tautoko for this PhD research. Thank you for your time, support, and allowing me to come into your school to conduct action research (the Gamification Implementation), especially during the uncertain times of Covid-19 lockdowns. Without your tautoko, this research project would have had to be taken elsewhere, outside of our rohe. I greatly appreciate your support, your trust in me, and have worked hard to ensure that the mana of all those involved is upheld. Furthermore, I anticipate the outcomes of this research will greatly benefit future generations of students and, thanks to you, I have had the privilege to work with colleagues and students whom I am close to. Ngā mihi tino nui ki a kōutou!

To our pakeke (discussion group participants), some of whom came from afar. I am deeply appreciative for you giving your time, energy, thoughts, and genuine aroha to this PhD research. Ngā mihi tino nui ki a koutou - your contributions are fundamental and

have provided an intergenerational perspective for this kaupapa that has ultimately valued your guidance and tautoko. I am especially grateful for your willingness to share, and participate in a manner that allowed deeper kōrero to flow. I pray you feel you have been heard, and your contributions have been recognised in the manner that you intended.

To the kaiako participant, my friend and colleague who I have learnt a lot from, and worked with for a number of years. I will be forever grateful for you rescuing me in the eleventh hour and dedicating many hours of your time during a very busy period of the school year to this kaupapa. Ngā mihi tino nui ki a koe – you are someone who does not expect, or like to be thanked, however, I want to ensure that your efforts are recognised, and you know that your contributions are highly valued. I really appreciate your ongoing support and aroha e hoa, and wish you the best for your new journey.

To the ākonga participants who agreed to participate in this study, and to their whānau who gave their blessing for them to participate. I am truly grateful for you trusting me and being an integral part of this kaupapa. The outcome of this PhD research will ultimately benefit future generations of tamariki (not just tāne ākonga Māori), so your consent and support towards this research project is deeply valued. You, and your child has contributed to this study significantly, and your/their efforts have ultimately laid the foundation for future research and development in tailored gamification for education. You, and your child has been a part of a unique opportunity where their contributions have guided the development of an exciting teaching pedagogy for their own benefit, and that of future generations. Ngā mihi tino nui ki a koutou.

To the current, and future generations of ākonga Māori in Aotearoa. My whānau and I have dedicated many years and sacrificed a lot for this kaupapa. Many others have also given their time, aroha, and wisdom to this PhD research, ultimately for your benefit. I pray that the outcome continues to build and develop an exciting teaching pedagogy, where you can experience a teaching and learning environment which is designed to cater to your cultural values, beliefs, aspirations, and needs (and is *fun!*). Always remember this: you are capable of achieving whatever you want to in life. You are strong, you are worthy, and you are intelligent. Always be *you*.

Thesis overview

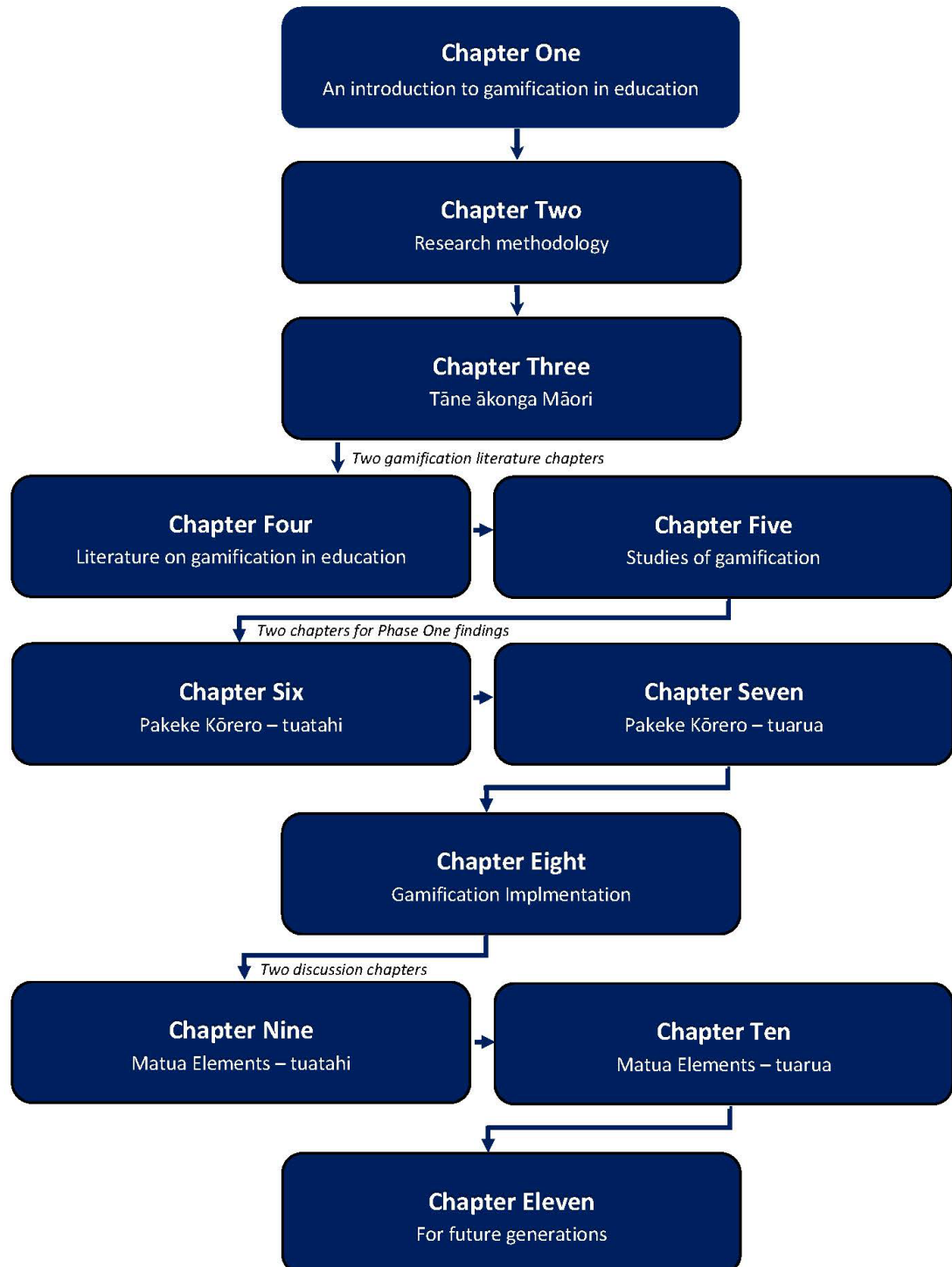


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Glossary of Māori words in this thesis

Kupu Māori (Māori word)	English translation
Āhua	Traits, characteristics, attributes, appearance
Ako	To study, learn, advise., or teach
Ako Māori	The principle of culturally preferred pedagogy
Ākonga	Student/s
Aotearoa	New Zealand
Aroha	To love, empathise, care or feel concern for
Āta	Slowly, gently, deliberately, or carefully
Ataahua	Beautiful, handsome, beauty
Atua	God, ancestor with continuing influence, supernatural being
Auahatanga	Creativity
Awa	River, creek, stream
Hā	Breath, breathing, essence
Hapū	Tribe, kinship group, subtribe, clan
Hinengaro	Awareness, mind, consciousness, thought
Hui	Meeting
Ihi	Excitement, thrill, power, charm
Iwi	Tribe, extended kinship group
Ka Hikitia	To step up, lift up, or lengthen one's stride. Ka Hikitia is a Māori Education Strategy for the education sector in Aotearoa
Ka Hikitia – Ka Hāpaitia	The refreshed/most updated version of Ka Hikitia
Kai	Food, consume, meal
Kaiāwhina	Teacher's aide/assistant
Kaitiaki	Guardian, minder, caregiver, trustee
Kanohi	Face

Kanohi ki te kanohi	Face to face/in the flesh/in person
Kapahaka	Māori performing arts/cultural dance
Karakia	Prayer, to recite a ritual chant, blessing
Kararehe	Animals
Kaumātua	Elderly, to grow old, a person of status within the whānau
Kaupapa	Topic, agenda, subject
Kaupapa Māori	Māori approach, Māori customary practice/principles
Kia piki ake i ngā raruraru o te kāinga	The principle of socio-economic mediation
Ki-o-rahi	A traditional Māori ball game
Kohanga reo	Māori language preschool
Kōrero	Talk, speak, speech, to say ³
Kōrero Māori	Speak Māori fluently
Koro	Elderly man, grandfather
Kotahitanga	Togetherness, unity, solidarity
Kupu	Word, vocabulary
Kura kaupapa	Primary school operating under Māori customs, including full delivery and content in te reo Māori
Mahi	To work, trade, employment
Mana	Status, influence, control, power, prestige, authority
Manaakitanga	Kindness, generosity, support, hospitality
Manu tī	A traditional Māori game using feathers (rau)
Māoritanga	Māori culture, practices, and beliefs
Marae	A traditional Māori building - The open area in front of the <i>wharenuī</i> (meeting house), where formal discussions and greetings take place

³ For the context of this research, *kōrero* refers to the discussions had with pakeke throughout Phase One

Matau	The right side
Mātauranga	Knowledge, understanding, wisdom
Mātauranga Māori	Māori knowledge and understanding
Matua	Parent, chief, important
Matua element	Overarching/parental pou (support) elements that represent fundamental elements for the effective teaching of tāne ākonga Māori
Mauī	The left side
Maunga	Mountain
Mauri	Life force, energy, or essence
Mokopuna	Grandchildren/grandchild
Nan	Grandmother
Ngā taonga tākaro	Traditional Māori games
Ngahere	Forest, bush
Pākehā	English, European
Pakeke	To be grown up/adult ⁴
Poi rākau	A traditional Māori game using rākau (sticks)
Pounamu	A green gemstone, jade, treasure
Pōwhiri	A traditional welcoming ceremony on a marae, to welcome
Rākau	A stick, tree, timber
Rangatahi	Younger generation, to be younger
Rau	Feathers
Rohe	Boundary, region, district
Taiao	Environment, nature

⁴ For the context of this PhD research project – *pakeke* are tāne Māori participants aged 17 and above who took part in Phase One

Tamariki	Children, youthful, young
Tāne	Man, husband, male
Tāne ākonga Māori	Māori boy students
Tangata whenua	Local people, hosts, people born on the <i>whenua</i> (land), Indigenous people
Taonga tuku iho	Cultural aspirations
Taonga	Property, goods, treasure, considered of value
Tau Mai Te Reo	Māori Language Education Strategy for the education sector in Aotearoa
Tauira	Student
Tauiwi	Foreigner, non-Māori, more recent immigrants to Aotearoa
Tautoko	Support, advocate, agree, accept
Te ao	The World
Te ao Māori	The Māori world; respecting and acknowledging Māori protocols, customs, values, and beliefs
Te kupu tō te mana	The power of words
Te reo Māori	The Māori language
Te Tiriti o Waitangi	The Treaty of Waitangi. Te Tiriti o Waitangi is the Māori version of The Treaty
Te Whare Tapa Whā	Model of Māori Health by Mason Durie (1982) (Appendix 31)
Tika	To be correct, right, true, appropriate
Tikanga	Correct procedure, habit, custom, manner, rule, practices
Tikanga Māori	Māori customary practices
Tikanga whānau	The support and aroha received by the family unit
Tinana	Body, self, torso, the main part of anything
Tino rangatiratanga	Sovereignty, self-determination, autonomy
Tohunga	To be expert, proficient, chosen expert, skilled person

Tuakana	Elder brother of a male, elder sister of a female, or a more expert person (not necessarily older)
Tupuna	Ancestor, grandparent
Wairua	Soul, spirit, essence, attitude
Waka	Vehicle, canoe
Wana	To be exciting, thrilling, stimulating
Wānanga	To meet, deliberate, discuss, and consider
Wehi	awe, respect or wonder in children
Whaea	Aunty ⁵
Whakapapa	Geneology, lineage, decent
Whakawhanaungatanga	The process of establishing relationships and relating to others. This may include introductions and the sharing of kai.
Whakawhitinga kōrero	Activity sheets ⁶
Whānau	Family, extended family, friends who do not have kinship ties to other members
Whanaungatanga	Kinship, relationship, a sense of family connection
Whenua	Ground, land, territory, domain

⁵ For this PhD research project; the pseudonym *Whaea* is used for the kaiako who participated in Phase Two

⁶ For the context of this study, *Whakawhitinga kōrero* are the question sheets that align with the gamified book *Kai Mish* (Appendix 25)

Chapter One: An introduction to gamification in education

Focus for this PhD research project

This thesis focuses on the education of Year 7 and 8 (10 - 13year old) tāne ākonga Māori (Māori boy students) in English medium education settings. It seeks to identify how gamification in education (GIE) can be tailored in a manner that caters to the needs of tāne ākonga Māori, with the goal of enhancing their motivation and engagement in their learning. The importance of this PhD research project is significant to the development of GIE catered to the needs of tāne ākonga Māori and will also be further examined in this chapter. Furthermore, an outline of the content of each chapter in this thesis will be provided, followed by a background that provides context of tāne ākonga Māori and their experiences in English medium education settings of Aotearoa.

In this chapter, I will identify and discuss the main research question and aim for this study. Additionally, the original research objectives are acknowledged, reflected on, and a discussion is had regarding how and why the objectives and the direction of this PhD research slightly changed throughout the project.

Research question

The main question for this PhD research project is as follows:

How can tāne ākonga Māori be engaged through a Māori gamification model in their learning spaces?

Research aim

This PhD research aims to investigate ways to improve the engagement and motivation of tāne ākonga Māori in their learning spaces through the concept of gamification in education.

Research objectives

There are several objectives of this research, which are to:

- identify teaching and learning methods through the notion of gamification, which are effective for keeping tāne ākonga Māori highly engaged in their education setting/learning space
- develop a gamification framework that can ‘gamify’ learning spaces, catering to the unique needs of tāne ākonga Māori
- examine the effectiveness of the gamification framework by testing it in situ using action research (the Gamification Implementation)
- re-adjust the gamification framework as needed from the outcomes of the research
- publish the findings based on the most effective methods for teaching tāne ākonga Māori via gamification

The above objectives were confirmed in March 2020. At that time, the primary outcome was to develop a gamification framework for education specifically catered to the needs of tāne ākonga Māori. However, it became apparent during the research process that further investigation was necessary to identify and develop the gamification elements required for the framework. Therefore, the focus of this study shifted from developing the framework, to gathering the research needed to support the identification and development of gamification elements *for* a framework. Ultimately, this shift of focus still fulfills the original aim. Furthermore, the main research question has been answered: the need to develop gamification elements that cater to the cultural needs of tāne ākonga Māori, and their needs as male learners. This will be extensively discussed throughout this thesis and further discussed in the discussion chapter regarding gamification.

The importance of this PhD research

English medium education settings in Aotearoa were not designed to meet the unique needs of ākonga Māori.⁷ The term ‘gamification’ is relatively new to education. Furthermore, very few studies have been conducted on the effects of gamification on

⁷ The unique needs of ākonga Māori are discussed throughout Chapter Three, and Seven of this thesis

Indigenous learners such as tāne ākonga Māori. Therefore, this research fills a significant gap in the field and proposes a Māori model of gamification that pushes the boundaries of current methods of tailored gamification for education.

In this study, I propose two significant factors to consider when tailoring GIE to the needs of tāne ākonga Māori: their cultural needs, and their needs as male learners. In Aotearoa, just 1.9% of kaiako (teachers) in English medium education settings are tāne Māori (Ministry of Education, 2022a). This exceptionally low percentage of tāne Māori educators is concerning for the current and future generations of tāne ākonga Māori. It is, therefore, essential to consider that this lack of tāne Māori kaiako is an influential missing element for tāne ākonga Māori.

In Aotearoa, English medium education settings are primarily designed and delivered from a western perspective. The cultural values, beliefs, and needs of ākonga Māori are not always valued or catered to. Furthermore, ākonga Māori must work much harder than their non-Māori peers to succeed. Consequently, ākonga Māori are then unfairly judged against their non-Māori peers. This is confirmed by Smith (2000), who identifies cumulative effects of colonisation; first, the demeaning of the Māori language, knowledge, and culture. Secondly, ākonga Māori are being directly compared to their non-Māori peers who are advantaged because the education system is designed from their cultures' values, beliefs, and perspectives. Smith also claims, "The second crisis is contained in high and disproportionate levels of academic underachievement experienced by Maori students as compared with Pākehā [European] students" (p.62).

As mentioned earlier, this is the first Aotearoa-based PhD research focused on tailoring gamification to the needs of tāne ākonga Māori, and has significant potential for ensuring the cultural values, beliefs, and needs of ākonga Māori do not get left behind in the advancement of new and innovative teaching and learning strategies, and initiatives such as gamification. GIE encourages educators to be more creative and innovative in their teaching practices. The contribution to the knowledge base is integral due to the ability of GIE to be tailored to the cultural values and beliefs of tāne ākonga Māori and their needs as male learners. Therefore, when kaiako *thoughtfully* adopt the model of tailored gamification and are dedicated to ensuring their ākonga Māori succeed, kaiako could have

a powerful impact on their ākonga. This is articulated by Smith (2000), who argues:

Where Indigenous people are in educational crisis, Indigenous educators and teachers must be trained as change agents to transform these undesirable circumstances. They must develop a radical pedagogy (a teaching approach for change). Such pedagogy must also be informed by their own cultural preferences and respond to their own critical circumstances (p.70).

As a Māori educator who teaches ākonga Māori, the basis for this thesis is partially in response to Smith's challenge. Furthermore, this research contributes to the existing body of knowledge and provides essential data from which gamification elements catered to the needs of tāne ākonga Māori can be derived. This is a huge step forward in developing a teaching and learning strategy that is future-focused, innovative, and aligns with Māori cultural values and beliefs. Technology and other creative initiatives for teaching and learning are rapidly advancing. For Māori, it is essential to ensure that their cultural values, beliefs, and tikanga do not get overlooked while keeping up with advancements in teaching and learning, especially in English medium education settings. Exploring how te ao Māori (the Māori world/knowledge/beliefs) can safely advance with our ākonga (students) is therefore integral to ensuring they are experiencing the best teaching and learning practices that cater to their needs. Similarly, Hanus and Cruz (2016) identify the great potential that gamification has, stating that "Unfortunately, due to the recent and speedy movement towards gamification its effects have yet to be fully explored, and the mechanisms behind the positive benefits for gamification have yet to be academically isolated and studied" (p.584). GIE is an emerging initiative with immense potential. As such, now is the time to ensure Māori tikanga and cultural values and beliefs are recognised, valued, and utilised in such an exciting advancement for teaching and learning.

How to read this thesis

Chapter One: An introduction to gamification in education

This chapter introduces myself as the primary researcher and my positionality as a teacher of tāne ākonga Māori. The rationale behind the focus on tāne ākonga Māori is discussed, emphasising the high percentage of ākonga Māori attending English medium education settings in Aotearoa and the low percentage of Māori educators – especially tāne Māori educators. Then, the benefits of using GIE and what gamification is in this context are discussed. The term ‘gamification in education’ is often confused with other technology/game-based initiatives such as e-learning, online learning, game-based learning (GBL), or serious games. Therefore, the terms are defined with relevant examples. These discussions set up the rest of the thesis to answer the main research question: *How can tāne ākonga Māori be engaged through a Māori gamification model in their learning spaces?*

Chapter Two: Research methodology

This PhD study employed a mixed methods approach underpinned by a Kaupapa Māori research methodology. Kaupapa Māori can be understood as research conducted by Māori, for Māori, with Māori. Iwi (tribal) consultation was made a priority for this study and was conducted prior to any data collection with two iwi who reside in the rohe (area/district). Once tautoko (support/acceptance) was gained from both iwi, qualitative data was then collected throughout two different phases of data collection. Phase one involved Pakeke Kōrero with pakeke (older tāne Māori aged 17 and above). The kōrero (discussions) guided Phase Two, the Gamification Implementation, where gamification was tested via action research in a senior class at an English medium primary school. The kaiako and ākonga participants were observed, interviewed, photographed, and videoed. The data collected throughout Phase One and Two was analysed using thematic analysis. This chapter identifies the rationale behind the choice of research methods. It outlines the order of events, including significant challenges such as the withdrawal of the first kaiako participant and disruptions caused by Covid-19.

Chapter Three: Tāne ākonga Māori

This PhD research has identified two significant factors for tailoring GIE to the needs of tāne ākonga Māori; their cultural values and beliefs; and their needs as male learners. This chapter provides context for both. Essentially, this chapter helps to build understanding regarding why tāne ākonga Māori require further support to help them achieve their full potential in English medium education settings in Aotearoa. Furthermore, specific issues tāne ākonga Māori face in English medium education settings are identified and discussed, including what has already been put in place to attempt to support them and factors that affect them specifically as males, with links to relevant literature. This includes how tāne ākonga Māori are primarily taught from a non-Māori, female perspective due to the limited number of not only male but tāne Māori kaiako in English medium education settings.

Chapter Four: Literature on gamification in education

This chapter includes a broad scope of current literature on gamification. Essentially, a deeper understanding of how gamification works is provided. This includes identifying what it is about playing games that keep us engaged, motivated, and able to persist for long periods, even through complex gaming content. Also, a discussion is had regarding what happens in our brains when we experience a win. Additionally, the advantages and disadvantages of gamification will be examined, including concerns regarding the use of certain gaming elements, especially if gamification is not well-designed. Finally, the idea of tailoring gamification and its effects on the learning of ākonga is investigated. In particular, this chapter identifies a lack of tailoring gamification to the cultural needs of ākonga. Here, the significance of this research is highlighted, especially regarding the focus to specifically cater GIE to the needs of tāne ākonga Māori.

Chapter Five: Studies on gamification

The main idea of this chapter is to highlight the misconceptions between the terms gamification and GIE, an additional confusion to the technology and game-based initiatives, such as e-learning, online learning, game-based learning (GBL), and serious games. Therefore, studies of both gamification and GIE are examined to illustrate the differences between the terms. Here, tangible examples give clarity to provide a deeper

understanding of GIE. As such, a table illustrating 19 studies of gamification and GIE has been recorded and is presented in Appendix 28. In short, these studies illustrate what GIE looks like in practice (especially compared to what gamification looks like in practice), which aids in providing further clarity for recognising when GIE is being used within a learning space or when gamification has been used to enhance a game or technology-based initiative. Finally, limitations and recommendations for future research identified by the researchers of the 19 studies are discussed. Ultimately, this chapter clarifies the terms gamification and GIE and begins to paint a picture of what GIE can look like. The terms gamification and GIE are clarified to avoid any misconceptions between the terms. Finally, the need for boundaries (or guidelines) to help guide educators through the process of gamifying their learning spaces is highlighted. Hence, it is argued that a specific framework for gamification in *education* is needed.

Chapter Six: Pakeke Kōrero tuatahi and

Chapter Seven: Pakeke Kōrero tuarua

Chapters Six and Seven identify the findings from Phase One, Pakeke Kōrero, where pakeke participated in discussion groups. The point of these discussion groups was to provide pakeke with the opportunity to contribute their wisdom, ideas, and feedback regarding how to best support the next generation of tāne ākonga Māori who attend English medium education settings. From Pakeke Kōrero, potential ‘Matua Elements’ and their corresponding gamification elements for tailoring GIE to the needs of tāne ākonga Māori were derived to guide the Gamification Implementation of this study, where the gamification elements were trialled in an English medium education setting.. The process of deriving these elements required fusing Pakeke Kōrero, knowledge of te ao Māori, gamification, and male learning needs. Given this, the discussions are comprehensive and are split into two parts across two chapters. Chapter Six focuses on wairua and culturally responsive pedagogy, and Chapter Seven is focused on the influence of the kaiako, and meaningful learning. The gamification elements derived are identified at the end of each section. Then, at the conclusion of Chapter Seven a summary of all the gamification elements derived from Pakeke Kōrero is provided.

Chapter Eight: Gamification Implementation

This chapter identifies the findings from Phase Two of this research, the Gamification Implementation. Here, the gamification elements derived from Pakeke Kōrero were trialled in an English medium primary school. Then, the gamified learning space was compared to a non-gamified (traditional) learning space. The findings within this chapter examined two main factors that were investigated: observations of the kaiako (Whaea) and ākonga participants (ākonga), and the learning space. Additionally, a description of the gamified activities is provided and linked with the gamification elements that align with each activity. Throughout the chapter, written observations of participants, feedback from their interviews, photographs, and video footage (taken with full consent of all participants and their whānau) are consolidated to illustrate what gamification tailored to the needs of tāne ākonga Māori could look like.

Chapter Nine: Matua Elements tuatahi, and

Chapter Ten: Matua Elements tuarua

Chapters Nine and Ten collate and discuss the key findings from Phase One (Pakeke Kōrero) and Phase Two (Gamification Implementation) of this PhD research to answer the question: *How can tāne ākonga Māori be engaged through a Māori gamification model in their learning spaces?* The discussions within these chapters examine the two components this study claims are significant for tailoring GIE to the needs of tāne ākonga Māori: their cultural and male learning needs. Essentially, the discussions consolidate knowledge of gamification, mātauranga Māori, male learning needs, and kōrero from pakeke in Phase One to propose a set of 'Matua Elements' for tailoring GIE to the needs of tāne ākonga Māori. Hence, these chapters contain in-depth discussions of each Matua Element and their corresponding gamification elements identified in Chapter Six and Seven. Chapter Nine focuses on the Matua Elements *Mauri*, *Mātauranga Māori*, and *Whanaungatanga*. Chapter Ten focuses on the Matua Elements *Te Ao*, *Tikanga*, *Tinana*, and *Auahatanga*. Feedback from pakeke, ākonga participants, and their kaiako are collectively considered within these discussions, using examples from Phase Two, providing an intergenerational perspective from tāne Māori. These discussions are critical for this PhD research as they form the groundwork for identifying and developing gamification elements specifically for tāne ākonga Māori.

Chapter Eleven: For future generations

This final chapter highlights the main conclusions stemming from the research question. In brief, particular emphasis is placed on the influence that kaiako have in the learning space, notably regarding their impact on the motivation and engagement of their ākonga. Then, a discussion is had regarding how the gamifying process can be used within teaching practice to guide kaiako when using the teaching and learning strategies pakeke have identified as being highly effective for encouraging tāne ākonga Māori. Next, the logistics of gamifying a learning space are discussed, followed by the importance of developing a gamification framework for education. Here, using a framework is strongly recommended, particularly ensuring the gamified learning space is well-designed. Also, the limitations of this study are identified, and recommendations for future research. Finally, the methodology for this study is reflected on, including unexpected insights which arose during the research process.

Background

In Aotearoa, according to the Ministry of Education (2022a), 85% of kaiako in primary school education settings are female, and only 14.8% are male (with 0.2% ‘unknown,’ p.1). Furthermore, and highly relevant to this PhD research, only 1.9% of male kaiako in Aotearoa are tāne Māori. Consequently, this is concerning for tāne ākonga Māori, especially as they experience a lack of tāne Māori kaiako and male role models in their learning space. Considering this, tāne ākonga Māori would benefit from experiencing teaching and learning practices that cater to their cultural needs as Māori and their needs as male learners. Therefore, I have dedicated many years to seeking a solution to support both tāne ākonga Māori and their kaiako (both Māori and non-Māori kaiako). From my experience, I note that with the right intention, the engagement, intrinsic motivation, and happiness of tāne ākonga Māori in English medium education settings could be significantly improved.

Māori people are the tangata whenua of Aotearoa. Māori are unique, rich in culture, language, values, beliefs, and traditions, but are the minority in their own lands, make up

only 17.3% of the population of Aotearoa (Statistics New Zealand, 2023) and constitute nearly 33.2% of the school population (Ministry of Education, 2024). As a colonised people, Māori have had to learn to adapt to a society designed to meet the needs of western peoples and a world that often clashes with te ao Māori. Consequently, the education system within which ākonga Māori are expected to be educated does not meet their unique needs as Māori, as Sheriff (2010) argues, “Māori children have been predominantly educated within an education system which promoted, and continues to promote, a western worldview” (p.1).

According to the Ministry of Education (2019), only 11% of ākonga Māori in Aotearoa attend Māori medium schools, whereas 89% of ākonga Māori attend English medium education settings. Furthermore, only 11.3% of teaching staff in primary school education settings in Aotearoa are Māori (Ministry of Education, 2022a). Hence, a high percentage of the teaching workforce is non-Māori teaching ākonga Māori daily. Ākonga Māori are predominantly exposed to and taught from a western perspective and judged against and compared to their non-Māori peers who are thriving in the system made to accommodate their needs. Similarly, Sheriff (2010) points out that “Within this system Maori students have been labelled as academic under-achievers, primarily in relation to a Pākehā-constructed definition of achievement, and this situation has existed for many years” (p.1). Therefore, it is urgent to provide ākonga Māori who attend English medium education settings with teaching and learning experiences that align with their cultural values and beliefs and acknowledge the unique perspectives of te ao Māori. This could help Māori have more equitable success opportunities in English medium education settings without losing their culture.

Statistically, tāne ākonga Māori struggle more than Māori girls to succeed. The Ministry of Education (2007a) identified boys are over-represented in statistics relating to; early problems in reading, disengagement from school, lower achievement in reading and writing, and lower qualification attainment. The report highlighted notable differences between boys and girls, specifically struggling with participation, engagement, and achievement. Consequently, tāne ākonga Māori are more likely to be stood down and suspended, excluded, or expelled. They are less likely than girls to gain University Entrance, NCEA, or participate in and gain a higher-level qualification. The lack of male

kaiako/role models in education settings is concerning.

Participants in this PhD research identified that playing games and sports is guaranteed to be highly engaging and motivating for tāne ākonga Māori. Combining this knowledge with tools already proven to enhance ākonga engagement and participation includes technology, gaming, and, more recently, gamification. As Schwartz (2019) confirms, “Games are remarkably motivating and engaging, they utilize a number of mechanisms to encourage people to engage with them, often without any reward, just for the joy of playing and the possibility to win” (p.1). According to Schwartz, technology and gameplay have continually proven to be highly engaging for ākonga in a manner that sustains prolonged engagement:

A person playing a video game may try repeatedly for days to master the smallest task, ‘dying’ again and again until finally succeeding, and yet that very same person might feel completely discouraged and unmotivated after getting less than a perfect score on a quiz in class (p.1).

With this in mind, incorporating highly engaging gaming elements into education settings could help boost the engagement and motivation of tāne ākonga Māori and *all* ākonga through gamification. Also, the outcome of this research is not strictly limited to Year 7 and 8 tāne ākonga Māori. Due to the substantial potential for enhancing the motivation and engagement of its users, there is a valid argument that GIE can benefit ākonga of all ages, genders, and ethnicities.

Due to the limited research on the effects of gamification in English medium primary school education settings, more clarification is needed regarding the definition of GIE and the identification and development of gamification elements. Consequently, a deeper examination was conducted in this PhD research into how to gamify a learning space and answer the main research question.

Defining gamification in education

To understand the concept of gamification and how it works, it is first necessary to clarify common misconceptions. The term ‘gamification’ often leads one to think of technology. Also, the concept of ‘gamification in education’ provokes thoughts of ākonga immersed in technology using computers, screens, or other devices engrossed in gaming - this is **not** GIE. Misconceptions that GIE is immersing ākonga in technology and gaming can misleadingly put educators and especially whānau off the idea of GIE without truly understanding what it is or its potential. Therefore, this chapter will clarify what GIE is and its potential for enhancing the engagement and motivation of ākonga in their learning space. It is also important to note the use of the term ‘learning space.’ This deliberate use of terminology addresses the fact that learning does not solely happen inside the classroom. Learning may happen outside or in any other location not specific to a classroom, such as a marae (a traditional Māori building/meeting space) or in the ngahere. Additionally, this chapter addresses the confusion between the terms e-learning, online learning, GBL, serious games, and GIE to help build clarification between the different terms. Furthermore, the terms gamification and gamification in education (GIE) will be further explained to provide clarity. Finally, gamified learning theory (GLT) will also be discussed in relation to gamification.

Is it gamification in education?

GIE is often mistaken for e-learning, online learning, game-based learning (GBL), or serious games. In order to understand what GIE is, it is necessary to first elaborate on these various terms. Hence, they will now be discussed in further detail to provide clarity.

E-learning

E-learning is when appropriate technology is selected and used to support and re-enhance teaching and learning experiences. E-learning covers a broad spectrum of technology and electronic media such as apps, digital books, videos, the internet, iPads, and computer programmes. E-learning can be used in a classroom to help motivate learners to practice skills and basic facts. Some examples of e-learning include podcasts, Vooks/Epic (digital libraries), virtual instructor-led training, apps used on iPads, and using the internet for

research projects.

Online learning

Online learning is when learning takes place over the internet. This could be via distance learning, but it could also occur inside a classroom. While participating in online learning, ākonga can communicate with their kaiako using online tools such as email or instant messages via online portals. Some examples of online learning include Education Perfect, Google Classroom, Code Avengers, E-Ako (Maths), IXL Maths, Hapara, and Zoom, with the latter being commonly used during the Covid-19 pandemic.

Game-based learning

GBL is playing a game as part of the learning process and is a type of gameplay that has defined learning outcomes. For instance, various types of GBL include board games, real-life games, and digital games. Common examples of games applied to a GBL approach include Kahoot, Hour of Code, Minecraft Education Edition, Scratch, Prodigy, Ki-o-Rahi (a traditional Māori ball game), and Monopoly.

Serious Games

Serious games (sometimes referred to as applied games) are specifically designed to have a primary purpose other than entertainment. Serious games are generally developed for use in fields such as education, health care, defense, scientific exploration, engineering, city planning, politics, and emergency management. More specifically for educational contexts, serious games create a purposeful learning environment where key curriculum areas are targeted for explicit learning. There is a very fine line between Serious Games and GBL. In short, GBL is a learning methodology, and serious games make GBL possible. Some examples of serious games include Microsoft Flight Simulator (1982), PeaceMaker (2007), World Without Oil (2007), and Working With Water (2020). Finally, Minecraft Education Edition (2018) is one of the most popular serious games. It is known as one of the first serious games to demonstrate a clear link between gaming and education.

Gamification in education

As mentioned earlier, GIE refers to the integration of gamification elements into teaching and learning practices and, consequently, the learning space to enhance the engagement and motivation of ākonga. GIE is a teaching pedagogy; it is not an intervention or programme. Learning becomes more fun and motivating by using the elements of a game to enhance a learning experience. An example of GIE is provided in Chapter Eight of this thesis, where the findings from the Gamification Implementation are identified. In short, gamification elements identified by pakeke during Phase One of this PhD research (as being effective for enhancing the motivation and engagement of tāne ākonga Māori) were implemented into the learning space in a fun and engaging manner.

An umbrella term

One prominent argument in this thesis is the concerns raised by the common misconceptions between the above technology and game-based initiatives. The importance of deciphering which is being used (e-learning, online learning, GBL, serious games, or GIE) is fundamental to their success. Therefore, to help prevent the repetition of listing each term throughout the discussions in this thesis, an acronym has been developed to act as an umbrella for all of them.

The acronym is *EOGL*. The ‘E’ represents electronic media or technology-based, similar to the E in e-learning. The ‘O’ represents the word ‘or.’ The ‘G’ represents game-based initiatives, and the ‘L’ represents learning, classifying the terms as Electronic or Game-based Learning. Hence, ‘EOGL’ represents the various technology or game-based initiatives listed above; e-learning, online learning, GBL, serious games, and GIE.

Definitions

Gamification

Gamification refers to when gaming elements are used in a non-gaming context to enhance the motivation and engagement of its users. On a more global scale, gamification is used in organisations, businesses, and, more recently, education. An example of gamification in businesses is Centrical (2022), which is a software that claims to “let you incorporate engagement and recognition into anything – driving anyone from your top

players to your mid-performers to adopt the right behaviours and stay continuously motivated to excel” (p.1). Here, Central uses gaming elements such as challenge, reward, story, competition, and narratives to motivate and reward their employees for hard work and effort while also effectively maintaining a highly engaging and rewarding working environment. The point of Central is to, therefore, enhance the engagement and motivation of the business’s employees through the notion of gamification.

Gamification in education

Essentially, GIE is the integration of gamification elements into teaching and learning practices and, consequently, the learning space to enhance the motivation and engagement and motivation of ākonga. To clarify, GIE is not turning the learning process as a whole into a game. It is not simply playing a game, using technology, or adding fun elements into the learning space. Gamification is a teaching pedagogy; it is not an intervention or programme. The fun elements of a game enhance the learning experience, making learning more fun, engaging, and motivating for ākonga. GIE could include the use of technology; however, it is optional for an effectively gamified learning space. The importance of using gamification elements and having a well-designed gamified learning space is fundamental and will be further discussed later in this thesis.

Gamification elements

It is essential to note the difference between the terms ‘gaming elements’ and ‘gamification elements.’

- **Gaming elements** are intended for gaming design and are the components that make up a game. Gaming elements can also be used for gamification. Research into gaming elements has confirmed over 80, including reward, competition, strategy, avatars, narrative, theme, story, rules, feedback, and aesthetics.
- **Gamification elements** are for GIE and can be utilized to tailor gamification to the specific needs of ākonga. Therefore, (for the context of this research) gamification elements consist of components that make up a highly engaging teaching and learning space that caters to the cultural needs of tāne ākonga Māori and their needs as male learners.

Gamified learning theory

Research has proven that gaming elements do not directly affect learning; instead, the gaming elements stimulate learning-related behaviour, consequently increasing the participants' motivation and engagement. This concept is called the gamified learning theory (GLT). Zaric et al., 2021, maintain that “Learner-related behaviour, like any behavior, can influence learning. The GLT implies that gamification does not affect learning directly but is instead used to stimulate learning-related behavior in a mediating or moderating process” (p.71). GLT identifies three factors that influence gamification, including personal (learning tendencies), situational (time and space), and context (circumstances; why).

Due to its ability to promote behavior change, gamification is being utilized worldwide to promote *positive* behaviour change in areas such as environmental conservation, where consumers are rewarded for recycling used bottles or picking up cigarette butts, or physical activity, where consumers are rewarded for exercising regularly. Krath et al. (2021) state: “because of these positive effects, gamification is increasingly adopted in various use cases to promote behavioural change, for example towards engagement in pro-environmental behavior, physical activity or knowledge transfer” (p.3). Understanding GLT and knowing that gamification promotes behavior change is essential for effective planning when attempting to gamify a learning space. Also, awareness of the personal and situational influences of ākonga and the learning context will allow the gamifying process to be catered more directly to their needs. This can be achieved for tāne ākonga Māori by identifying their learning and cultural needs as male learners.

Why use gamification in education?

This PhD research confirms that GIE is highly effective in enhancing the motivation and engagement of *all* ākonga. Additionally, ākonga who participated in a gamified learning space got to experience many other benefits of the different components of gamification, including the advantages that learning through games provides. Some of these advantages include but are not limited to; more fun which leads to increased engagement, motivation, and participation – ākonga *want* to participate instead of *having* to; ākonga develop a more profound knowledge of the subject matter; more opportunities for problem-solving and innovation; the ability of ākonga to retain new information increases; and ākonga can

view their learning in more complex ways. Furthermore, the cultural values and beliefs of ākonga can be integrated through GIE via tailoring the gamification elements. Finally, GIE has vast potential for promoting relationship development, which is essential in education. These benefits of using GIE will now be further discussed to emphasise how GIE can be highly beneficial for ākonga and their learning.

Research has confirmed that gamification has many benefits for learning, as identified by Krath et al. (2021), who maintains that gamification “contributes to a variety of learning outcomes, most of which are cognitive in nature ... studies report on significant improvements in critical thinking, creative thinking, knowledge acquisition and content understanding and perceptual skills” (p.3). The integration of the fun elements of a game through gamification, such as competition, reward, strategy, points, and the use of gamification elements that align to te ao Māori, such as taiao (the environment), ngā taonga tākaro (traditional Māori games), whanaungatanga (kinship/a sense of family connection) and kotahitanga (unity), helps to disguise the learning and create a more fulfilling and ultimately, more fun learning experience. Consequently, the fun disguises the fact that ākonga are learning, a concept that Gee (2007) identifies good game designers can accomplish, stating that good game designers are “‘practical theoreticians of learning’ because they know how to design games in which players are learning without knowing it” (p.21). Therefore, a well-designed gamified learning space is imperative to the success of GIE and will be further discussed later in this thesis.

Fun and play are essential for the learning and development of tamariki, and are influential elements in a gamified learning space. Research has shown that when tamariki have fun and are involved in a highly engaging activity, their ability to retain new information improves, and their capability to view their learning in more complex ways increases. Piaget (1957), a theorist known for his theory of child development, identifies that play is fundamental for tamariki’s learning (McLeod, 2018). Piaget’s theories were not explicitly related to education but to learning phases based on his tamariki’s observations. Researchers who studied his work later explained how features of Piaget’s theory could be applied to teaching and learning. Piaget identified that active learners are more likely to develop problem-solving skills, as they must be discovered and cannot be taught. Therefore, it could be plausible that a gamified learning environment has

significant potential for advancing the learning of *all* ākonga, and increasing their engagement and motivation in the learning space.

The unique needs of ākonga, including cultural values and beliefs, can be integrated through GIE by tailoring the gamification elements. For example, ngā taonga tākaro could be incorporated into a gamified learning environment and connect ākonga Māori to their tūpuna (ancestors) through meaningful play and learning. Traditionally, Māori tūpuna developed games and activities to master necessary skills and practice for warfare through the use of ngā taonga tākaro. According to Brown and Brown (2019), considered experts in this area, ngā taonga tākaro were ‘spiritually conceived from the environment’ (p.3). Brown and Brown claim our tūpuna listened to their Atua (Gods), observed their taiao, and, with their Tohunga (skilled leaders), collaboratively perfected over 300 ngā taonga tākaro. Brown and Brown suggest ngā taonga tākaro were used for various reasons, including enjoyment and social and educational tools. Brown and Brown discuss further benefits ngā taonga tākaro gave our tūpuna: “creativity, skill development, peace, health, emotional displays, social binding and technological innovations to collectively help future-proof their beloved tribes” (Brown & Brown, 2019, p.3). Playing ngā taonga tākaro can therefore provide a meaningful connection for tāne ākonga Māori that ensures their cultural values and beliefs are well integrated into their learning space through GIE.

Another advantage learning through games provides, essential for ākonga and their learning, is relationship building. McGonigal (2010), an American game designer and author, states, “there is a lot of interesting research that shows we like people better after we have played a game with them - even if they have beaten us badly” (unpaginated). McGonigal further explains how playing a game with someone takes a lot of trust. This trust comes from the fact that when you play with someone, you trust that; they will spend their time with you; they will follow the rules of the game; will value the same goal; and will stay and play until the game is finished.

McGonigal (2010) further confirms that “playing a game together actually builds up bonds and trust and cooperation, and we actually build stronger social relationships as a result” (unpaginated). Playing games in education could, therefore, encourage a learning space where trust, whanaungatanga, cooperation, and kotahitanga are nurtured. Ākonga

will also have opportunities to practice developing and maintaining positive relationships with their peers and kaiako. Learning through purposeful play and games could therefore support kaiako to build stronger relationships with their ākonga and ākonga to build relationships with one another as they whakawhanaungatanga (the process of establishing relationships) through playing games or through the use of gamification elements in their learning space. More specifically, in relation to gamification, ākonga will experience these relationship-building benefits while playing games by integrating gamification elements into the learning space.

The benefits of using GIE in educational contexts, therefore, are boundless. One of the objectives of this research is to investigate how these benefits can be utilized in a way that is specifically catered to the needs of tāne ākonga Māori. Accordingly, the following chapter will identify and discuss how this will be achieved in a manner that embraces the cultural values and beliefs of tāne ākonga Māori.

Chapter Two: Research methodology

Given the aim of this PhD research, it was essential to consider *how* to integrate tāne ākonga Māori cultural and learning needs through gamification. One of the objectives was to explore both positive and negative experiences tāne Māori had throughout their time in English medium education settings. Then, from this feedback, gamification elements were derived for tailoring gamification in a manner that caters to the learning needs of tāne ākonga Māori. Therefore, this study required feedback from older and younger tāne Māori to achieve an outcome extended from tāne Māori for tāne Māori. This is especially relevant considering that I am a Māori female. As such, this study employed a mixed methods approach underpinned by a Kaupapa Māori research methodology.

Throughout this chapter, I first identify the key principles of Kaupapa Māori research and how they align with this project. Second, I outline two critical phases of data collection and discuss the order of events. Third, I discuss the data analysis, including the use of qualitative data, observation analysis, and thematic analysis. Fourth, complications that arose throughout the project are highlighted and critiqued. Finally, I summarise the requirements and methods of this PhD research, including observation, photography, videoing, and interviewing of tamariki under the age of sixteen. Additionally, pakeke were also interviewed via discussion groups. Accordingly, a rigorous ethical process was required to protect all involved. As such, a detailed discussion regarding the ethics process is had at the end of this chapter.

Kaupapa Māori research

Kaupapa Māori embraces te ao Māori and all that encompasses being Māori and identifying as Māori. For Māori, our deep connections to our whenua (land) and wairua (soul; spirit) align with rich tikanga, kaupapa, and values. Tuhiwai Smith (2017) claims that Kaupapa Māori theory embraces the wider Māori worldview, stating “there is the possibility within Kaupapa Māori research to address the different constructions of Māori knowledge” (p.25). Similarly, Smith (1990), a distinguished Māori researcher in

Aotearoa, identifies six principles to help build an understanding of Kaupapa Māori theory, including Tino Rangatiratanga (the principle of self-determination), Taonga Tuku Iho (the principle of cultural aspiration), Ako Māori (the principle of culturally preferred pedagogy), Kia piki ake i ngā raruraru o te kainga (the principle of socio-economic mediation), Whānau (the principle of extended family structure), and Kaupapa (the principle of collective philosophy). As identified by Smith, his initial six principles have since been expanded on by other Māori researchers in Aotearoa, including The Treaty of Waitangi (the principle of the Treaty of Waitangi) identified by Pihama (2001) and Āta (the principle of growing respectful relationships) identified by Pohatu (2005). Additionally, Massey University (2017)⁸ upholds the values of Tika (purposefulness), Manaakitanga (cultural and social responsibility), Mana (justice and equity), and Whakapapa (relationships), which are also discussed in this section.

Tino Rangatiratanga – the principle of self-determination

The principle of Tino Rangatiratanga refers to self-determination, the power of authority, and the right to make decisions. As Smith (1990) highlights, “the notion of Tino Rangatiratanga asserts and reinforces the goal of Kaupapa Māori initiatives: allowing Māori to control their own culture, aspirations and destiny” (p.2). In an educational context, Tino Rangatiratanga aims to ensure that Māori, including ākonga, their whānau, and wider iwi can influence and contribute to how and what their tamariki are being taught in English medium education settings. More specifically, regarding this PhD research, this principle refers to the right of tāne ākonga Māori to have their learning needs recognised and met by policy and educators within English medium education settings. This is especially relevant for ākonga Māori in Aotearoa because they sit within an education system that was not designed for them and continues perpetuating colonialist ideologies. Therefore, in the current environment, ākonga Māori require more support to reach their full potential.

⁸ Massey University’s *Code of Ethical Conduct for Research, Teaching and Evaluations Involving Human Participants* (2017)

Taonga Tuku Iho – the principle of cultural aspiration

The principle of Taonga Tuku Iho, or cultural aspiration, ensures that the unique paradigm of what it is to be Māori is affirmed, considered, and valid in its own right. This includes Māori ways of knowing, doing and understanding, respecting unique cultural and spiritual beliefs, and incorporating te reo Māori (the Māori language), tikanga Māori (Māori customs/practices), and mātauranga Māori (Māori knowledge). As Pihama (2010) maintains, “while the theoretical assertion of Kaupapa Māori is relatively new, Kaupapa Māori as foundation is not. Kaupapa Māori is extremely old – ancient, in fact. It predates any and all of us in living years and is embedded in our cultural being” (p.6). Regarding this research project, this principle reinforces the notion that tāne ākonga Māori deserve to participate in learning experiences where they are exposed to their cultural ways of doing, knowing and understanding. Within the context of English medium education in Aotearoa, this is tantamount to neglecting their cultural heritage, rights, and beliefs. As such, I believe that educators and the policies that drive education initiatives should advocate for the rights of ākonga Māori to ensure their cultural aspirations, values, and beliefs are embraced.

Ako Māori – the principle of culturally preferred pedagogy

The principle of Ako Māori, or culturally preferred pedagogy, acknowledges the unique, fundamental teaching and learning practices that are deeply rooted in Māori beliefs, customs, values, and ways of being. This principle is strongly linked to this PhD research, as it acknowledges the right of tāne ākonga Māori to experience culturally relevant teaching and learning environments. Likewise, Smith (2017) argues that “Māori want an education system that fits their language, knowledge, and cultural aspirations rather than one that educates Māori away from their heritage language, knowledge, and culture” (p.72). Hence, teaching and learning practices that acknowledge te ao Māori (such as tailored gamification) would give tāne ākonga Māori more of a chance to reach their full potential. Although there are initiatives such as the Kohanga Reo (Māori language preschool) and Kura Kaupapa (Māori language primary school) movements, Smith affirms the notion that “conventional schooling continues to reproduce a significant learning gap between Māori and non-Māori and, arguably, this gap is widening. What is lacking is a range of viable, Māori-focused options” (p.73).

Kia piki ake i ngā raruraru o te kāinga – the principle of socio-economic mediation

This principle recognises that Māori occasionally experience negative pressure, stereotypes, and feedback from society. This is confirmed by Royal (2017), who states that “Kaupapa Māori is concerned with overcoming negative statistics and factors of Māori educational underachievement, poor health status and more, through research and theory making” (p.93). Therefore, this principle attempts to resolve, support, and mediate Māori from such pressures to uphold Kaupapa Māori and Māori ways of being as valid and a positive way forward. In this PhD research, this principle directly addresses the ‘widening gap’ between Māori and non-Māori ākonga in English medium education settings, providing a possible solution (tailored gamification) as a positive way forward both for tāne ākonga Māori and their kaiako, whether they are Māori or non-Māori. Here, Smith (2017) sums up this point succinctly and argues:

Education and schooling have damaged the validity and practice of Māori language, knowledge, and culture. However, education and schooling are also locations to be struggled over as they have the potential to be reformed as sites that can deliver Māori aspirations (p.72).

As the above quote demonstrates, while the issues related to education and schooling are complex, it is critical to examine them to pay attention to how they can become places of positive influence, especially for Māori.

Whānau and Whakapapa – the principle of extended family structure

The principle of Whānau, or extended family structure, is explained by Smith (1990) as an integral element of Kaupapa Māori. Here, Whānau and Whakapapa (genealogy; lineage) share a close relationship as both are linked to familial relationships. Regarding research ethics, Whakapapa and Whānau refer to the quality of relationships formed between the researcher(s), their participants, and the systems put in place to maintain and support those relationships. These are discussed in more detail below.

Māori have deep connections with the world, as well as each other. We identify spiritual

connections with the whenua, maunga (mountains), awa (rivers), and other significant, sacred places that hold special meaning. Whakawhanaungatanga, connections to tupuna, and connections/whānau links between generations are all integral to Māori ways of being, knowing, and culture. Similarly, in Tuhiwai Smith's (2017) following quote, she points out the significance of whānau to Kaupapa Māori and also examines the direct link whānau have to research, stating:

in terms of research, the whānau is one of several Māori concepts that have become part of a methodology, a way of organising a research group, a way of incorporating ethical procedures that report back to the community, a way of 'giving voice' to the different sections of Māori communities, and a way of debating ideas and issues that impact on the research project (p.25).

With this in mind, numerous relationships needed to be developed, maintained, and nurtured throughout this research project. First, the relationship between myself and the local iwi/hapū (tribes/subtribes) was imperative. This included making the intentions of the study clear from the beginning, and ultimately ensuring that the local iwi knew that the benefits of the research were aimed at supporting their tāne ākonga Māori. This was achieved through iwi consultation, which happened before any data collection, and was conducted for both iwi residing in the area. Additionally, in accordance with values regarding reciprocity and manaakitanga (hospitality), iwi consultation also occurred at the conclusion of this research, where iwi (and the participants) were given the first chance to see the findings of the project.

Initially, for Phase One, there was the relationship and rapport between myself and pakeke. The relationships between pakeke were also important to note, as they were participating in in-depth discussions with each other. Therefore, creating and maintaining a friendly, honest, open space where they felt safe sharing was crucial. It was essential to establish and promote a good relationship not only with myself but also between pakeke.

To help promote and maintain these relationships, kai (food) was provided. The set-up was cosy and private and included elements of mauri (energy) to help promote a safe, calm space, including a fire, a rock, some plants, the mat, and the use of a rugby ball to

use as a ‘talking stick’ (Figure 1). The rugby ball was an excellent deterrent from awkwardness and a good icebreaker. This is because it added an element of distraction that pakeke could fidget with while they were talking. It also added a fun element for pakeke as they passed the ball to each other between turns.

Figure 1 - The set-up of the Pakeke Kōrero



During Phase Two, due to the collaborative nature of this research, the relationship between myself and the kaiako participant was imperative. For example, there needed to be trust, non-judgment, and clear communication regarding how ākonga would engage with the activities and the discussion topics. Moreover, the kaiako needed to feel safe, not forced into anything, and open to trying a new teaching and learning pedagogy. Additionally, the kaiako needed to feel like she could share any feedback she had – negative or positive – without fear of judgment.

Next were the relationships between myself, the Year 7 and 8 Māori boy participants, and their wider whānau. Ākonga needed to feel safe and open to sharing their opinions and feelings about their learning experiences. They needed to feel like they were not being judged and could share their feedback without fear of ‘getting into trouble’ or receiving a negative response. Also, the whānau of ākonga needed to trust that their tamariki would be kept safe, their identities protected, and be reassured that they would not be exploited.

Kaupapa – the principle of collective philosophy

The principle of Kaupapa, or collective philosophy, refers to a topic or matter for discussion, plan, or purpose. Further, it recognises kaupapa as representing the wider collective vision and aspirations held by Māori communities. Pihama (2010) affirms the

validity of Kaupapa Māori and the importance of Māori coming together to discuss, plan, and collectively work together to create positive ways forward for Māori. Here, Pihama asserts it evolves “from a base of being Māori, from whānau, hapū, iwi and from collective Māori movements” (p.12). This PhD research involved the coming together of many participants, including pakeke, younger tāne ākonga Māori, their kaiako, whānau, and both iwi from the area via the iwi consultations. Moreover, many discussions were had regarding the benefit of future generations of tāne ākonga Māori who attend English medium education settings. Throughout all the discussions, a holistic, more comprehensive picture was gained concerning how to better support tāne ākonga Māori in English medium education.

Te Tiriti o Waitangi – the principle of the Treaty of Waitangi

The Treaty of Waitangi is known as the founding document of Aotearoa, and is an agreement between the British Crown (the settlers of Aotearoa) and Māori signed in 1840. The Treaty is written in English (the Treaty of Waitangi) and te reo Māori (Te Tiriti o Waitangi). Although the Treaty of Waitangi was deemed to maintain the same meaning as Te Tiriti o Waitangi, there are important differences between the two versions that are largely caused by indirect translations between the English language and te reo Māori. This is identified widely in literature in Aotearoa, including O’Sullivan et al. (2021), who states, “From its inception, the nature of the agreement [of the Treaty of Waitangi] has been contested. Disagreements often arise because ... the Māori and English language versions are substantively different” (p.1094). Here, O’Sullivan et al. point out that the disagreements are caused by misunderstandings between the two versions of the Treaty and are related to the political authority the Treaty of Waitangi grants to both Māori and the Crown. O’Sullivan et al. maintain “the Waitangi Tribunal has found that persistent breaches by the Crown contribute to pervasive social disparities well into the 21st century” (p.1094). These issues are explored in further detail in Chapter Three of this thesis.

Regarding Kaupapa Māori research methodology, the principle ‘Te Tiriti o Waitangi’ was identified by Pihama (2001), who recognises the significance of the Treaty of Waitangi as the founding document of Aotearoa. Here, the Treaty of Waitangi aims to ensure Māori rights as tangata whenua in Aotearoa and has been, in recent times, an integral influence

on the education system concerning the application of culturally appropriate practice and guidelines.

More specifically, regarding this research project, this principle aligns with the requirement for English medium education settings to accommodate Māori cultural values, beliefs, and aspirations under the mandated authority of the Treaty of Waitangi. It also requires that the New Zealand Government and kaiako in English medium education settings to honor the values set out in the Treaty of Waitangi regarding Māori aspirations for their tamariki. This is confirmed by the Ministry of Education (2017), who claims:

The Treaty provides a context for the relationship between the Crown, iwi and Māori. Ensuring Māori students enjoy and achieve education success as Māori is a joint responsibility of the Crown (represented by the Ministry of Education and other education sector agencies/departments) and iwi, hapū and whānau (p.14).

Here, catering GIE to the needs of tāne ākonga Māori provides English medium education settings with a creative alternative for enhancing the motivation, engagement, and, consequently, achievement of their ākonga Māori. Furthermore, this is applied to align with Māori cultural values, beliefs, and aspirations. Hence, honouring the principle of the Treaty of Waitangi and providing Māori and non-Māori kaiako guidance on how to ensure they are meeting the needs of their ākonga Māori.

Āta – the principle of growing respectful relationships

The principle Āta, of growing respectful relationships, was identified by Pohatu (2005) and refers to the need for building respectful, productive, and nurturing relationships. Relationships are an integral part of Kaupapa Māori, especially for education. Without first trying to care for and develop nurturing, meaningful relationships with their ākonga, a kaiako is less likely to: gain their respect, create an environment where ākonga feel a strong sense of belonging, feel safe to ask questions and develop relationships with extended whānau to learn more about their aspirations and cultural needs. Here, the concept of having productive partnerships with the whānau and wider iwi of ākonga is essential and is also recognised by the Ministry of Education (2017), who state:

A productive partnership starts with the understanding that

Māori children and students are connected to whānau and should not be viewed or treated as separate, isolated or disconnected. Parents and whānau must be involved in conversations about their children and their learning. They need accessible, evidence-based information on how to support their children's learning and success (p.18).

All participants in this research project needed to be treated with respect, honesty, and integrity. Therefore, reinforcing that Āta was especially important, as whānau were trusting that their tamariki would be: looked after, their mana (status, influence) protected, treated fairly, nurtured, cared for, and treated with respect. Additionally, participants from the Pakeke Kōrero trusted that their responses would be respected and valued. Furthermore, the participating kaiako needed to trust me and the research and not be unfairly treated or judged.

Tika - purposefulness

Tika means to be right, true, and appropriate (Moorfield, 2023). For research ethics, tika relates to the purposefulness of the research design and ensures that the rights and interests of Māori are considered, especially regarding how the research project might impact Māori. Moreover, Massey University (2017) inquires: *“Can the research achieve its aims? In what ways will it impact on Māori? Will the research protect the rights and interests of Māori and contribute to building Māori capacity and welfare across the research stages and roles?”* (p.4). Therefore, tika acknowledges the Treaty of Waitangi principle of participation and the active protection of the interests and rights of Māori.

Regarding this PhD research, tika refers to the validity of the research, including how the research was designed to support a Māori kaupapa, how successful the proposed outcomes were, and if they brought about a positive change for those involved. In short, this approach to Māori kaupapa research was evident throughout the project and was made clear to all participants. The overarching aim is to understand how tāne ākonga Māori in English medium primary school education settings might benefit from enhanced levels of motivation and engagement in their learning spaces. Overall, as this proposed research is targeted directly towards the needs of tāne ākonga Māori, it was essential to

ensure that Kaupapa Māori values were embraced. Hence, this was successfully achieved through Kaupapa Māori research methodology.

Manaakitanga - cultural and social responsibility

Manakitanga refers to hospitality (Mika, 2017). Regarding manaakitanga in research ethics, Massey University (2017) questions: *“Does the research treat people with cultural sensitivity? In what ways will the research ensure that the dignity and respect of all parties is upheld?”* (p. 4). Given this, it was imperative to demonstrate manaakitanga to all participants to maintain their dignity, cultural values, and tikanga. Also, the principle of manaakitanga aligns with the Treaty of Waitangi principle of partnership.

Manaakitanga has been achieved in several ways throughout this research project. First of all, ensuring cultural practices such as the sharing of kai were practiced was imperative. Additionally, observing whakawhanaungatanga at the beginning of each interview process/hui (meeting) was crucial for developing relationships with the participants and ensuring they felt comfortable. Furthermore, it was essential that I listened with an open mind to all participants’ responses and took on their feedback without judgment. Ultimately, showing manaakitanga ensured that all participants were treated with the dignity and respect they deserved.

Mana - justice and equity

Mana refers to status, presence, and power, as confirmed by Hoskins and Jones (2017), who states, *“Within a Māori ontological frame, all beings and objects are experienced as having mana, a form of presence and authority”* (p.51). Concerning research ethics, mana acknowledges participants’ cultural backgrounds, values, beliefs, and rights, which have been observed throughout this research. Massey University (2017) recognises that, for research ethics, the principle of *mana* must answer the following questions: *“Who will benefit from the research, and how will this benefit be manifested? In what ways will the research strengthen and protect Māori culture, values, practices and language?”* (p.4). *Mana*, therefore, also relates to the Treaty of Waitangi principle of protection.

Throughout the data collection process, I have ensured that relationships with participants

have been nurtured in a manner where they have felt open to sharing their experiences and opinions, which were respectfully received by myself without judgment. Then, I worked hard to ensure that participants' contributions were heard, treated with dignity, and critically reflected on. Hence, their mana and intentions for participating have been upheld and will ultimately benefit future generations of tāne ākongā Māori.

The order of events

This PhD research involved two phases of data gathering and, consequently, two ethics applications. Phase One of the data gathering process, Pakeke Kōrero, involved discussion groups with pakeke. Phase Two was the Gamification Implementation, where action research was conducted in a local English medium primary school. The order of events that happened throughout this research project are listed below. Then, the rationale for each is further discussed.

- Step 1: Preliminary research/development of the research question
- Step 2: Phase One ethics
- Step 3: Iwi consultations
- Step 4: Phase One – Pakeke Kōrero
- Step 5: Analysis of data from Phase One
- Step 6: Development of the gamified teaching unit
- Step 7: Phase Two ethics
- Step 8: Phase Two – Gamification Implementation
- Step 9: Analysis of the data collected from Phase Two
- Step 10: Final iwi consultations and findings hui for all participants and their whānau

Step 1: Preliminary research/development of the research question

As outlined in Chapter One, the kaupapa of this PhD research originated from the urgency to provide tāne ākongā Māori with more support in English medium education settings.

To begin the preliminary research, I reflected on how engaged tamariki become while playing games, especially observing their high level of persistence and engagement, even throughout complex gaming content. Then, this idea sparked the initial concept for investigating the science behind the ‘how’ and ‘why’ games are engaging and motivating. Accordingly, preliminary research (for the literature review) was conducted in game-based learning (GBL). Essentially, this led to the concept of gamification. Next, deeper research into gamification further led to catering GIE to the different needs of ākonga. Thus, the considerable potential that GIE has, and especially the notion of catering GIE to the needs of tāne ākonga Māori in English medium education settings, led to the research question: *How can tāne ākonga Māori be engaged through a Māori model of gamification in their learning spaces?*

Step 2: Phase One ethics

Following the acceptance of the confirmation in March 2020, an application was made to the Massey University Human Ethics Committee (MUHEC) for Phase One. In May 2020, Phase One ethics was approved, and consultations commenced (iwi consultations).

Step 3: Iwi consultations

Two iwi reside in the area where Phase One and Two were conducted. Therefore, iwi consultation was conducted with both and was of high priority for this PhD research. This is not only because the study is embraced by Kaupapa Māori research methodology but also due to the kaupapa of the research. More specifically, I needed to ensure that both iwi in the area were informed about the research project and had the opportunity to provide feedback and raise any concerns *before* data collection commenced.

It is important to note that I am affiliated with one of the iwi through marriage. Also, the second iwi has whanaunga (familial) connections to our whānau. Furthermore, I have worked closely over the past 14 years in education settings in the rohe, where I have taught ākonga from both iwi. As a result, I am a familiar face to members of both iwi, who were already aware of my work ethic, skills, and role in the community. These connections allowed the ease of developing relationships, trust, and tautoko for this PhD research to be conducted. Additionally, having background knowledge of pakeke and

ākonga allowed a deeper understanding of the kōrero shared and aided in the development of the gamified teaching unit.

Both iwi consultations were positive and supportive toward the kaupapa; however, ensuring that gamification was clearly defined was important. This is because of a common misconception regarding *gamification*, which is assumed to be solely technology-based. There was resistance to using too much technology, especially in educational contexts. For example, it was pointed out that whānau members preferred a healthy balance of technology in the learning space, with a mixture of written (‘old-school’), hands-on, and physical learning, with little being technology-based. Therefore, it was essential to highlight the misconceptions about the various EOGL (Electronic or Game-based Learning) initiatives, a prominent point of discussion throughout this thesis. Another point raised by the iwi concerned the importance for tāne ākonga Māori to have access to plenty of outdoor time and to keep physically active. This led to my focus on the potential of GIE for enhancing the motivation and engagement of ākonga in their learning, which can be achieved *without* technology.

Step 4: Phase One – Pakeke Kōrero

Interviewing pakeke and the Year 7 and 8 Māori boy participants introduced an intergenerational element into this PhD research aligning with Kaupapa Māori research methodology. Investigating the experiences and knowledge of pakeke and comparing similar experiences with Year 7 and 8 tāne ākonga Māori is one way of acknowledging the wisdom that pakeke have to share while also showing respect and appreciation regarding their status as tuakana (being older/more experienced). Additionally, this study has recognised and upheld the opinions of pakeke and their role in supporting rangatahi (youth). During the Pakeke Kōrero, pakeke had the opportunity to share their stories, wisdom, and suggestions for how we can best support the next generation of tāne ākonga Māori who attend English medium education settings.

The Pakeke Kōrero involved four discussion groups of five pakeke each (grouped according to age) who were identified by:

- age

- gender
- culture
- profession (ensuring there was a mixture of different work experience)
- considering the viability of the group (i.e. if the five in the discussion group would work together well)

The recruitment process was carefully conducted to ensure pakeke did not feel uncomfortable. First, each pakeke and their whānau were contacted or approached in person and provided with an information pack regarding the research. Approaching whānau members of pakeke ensured that whānau were aware of what the participant was getting themselves into. Aftercare and support, if required by the participant, was via tikanga whānau. All pakeke in each discussion group were part of the same iwi/hapū, which provided further aroha (care), whanaungatanga, and support. After two weeks, each pakeke was contacted by phone or in person and asked if they had any questions or concerns and, if not, to confirm if they would like to participate in the research. If they agreed, the appropriate consent forms were signed.

Finally, the consent forms were collected and kept in a locked filing cabinet to protect confidentiality. A date and place for the Pakeke Kōrero was then decided and based on the most convenient time for pakeke (i.e. weekend, not during sports). All Pakeke Kōrero were held in December 2020. Even though great care was taken to ensure pakeke were suitable and available, six pakeke did not show up on the day. In total, 14 of the 20 pakeke attended.

Pakeke were interviewed with others of similar ages: 17 - 25, 26 - 39, 40 - 50, and 50+. The rationale was to ensure that they felt as comfortable as possible. Participating in a discussion group with others currently going through similar life experiences, who experienced the education system around the same time, helped to promote and develop stronger relationships among pakeke and allowed them to feel safe and more open to sharing. This was especially important due to the short time frame that pakeke had between meeting each other and participating in the discussion group. Additionally, it was anticipated that comparing the feedback between the various age ranges would be an

interesting research point.

During the Pakeke Kōrero, all pakeke were asked in-depth semi-structured questions. These questions were also given to pakeke during the recruitment phase (see Appendix 3). The age range of 17 and above was chosen strategically. For example, having a range of pakeke from recent school leavers (17/18 years old) to older tāne Māori meant that pakeke would have more life experience, wisdom, and knowledge to share.

The Pakeke Kōrero provided essential information for this PhD research and, most importantly, from the perspectives of tāne Māori.

Step 5: Analysis of data from the Pakeke Kōrero

After completing the Pakeke Kōrero, the kōrero was analysed using thematic analysis. The rationale for this analysis is discussed later in this chapter.

Step 6: Development of the gamified teaching unit

Once the data from Phase One was analysed, draft gamification elements were derived from the kōrero for the development of the gamified lesson plans.⁹ Here, the preliminary research conducted for the literature review in Step 1 aided in informing me *how* to apply the gamification elements to an actual lesson plan. First of all, I noted that multiple gamification elements need to be implemented into the learning space to ensure that GIE was being used effectively.¹⁰ Then, I needed to ensure that I was not simply integrating curriculum standards into a gamified learning activity, as this takes away from the extensive benefits that game-based initiatives provide (Ge & Ifenthaler, 2018). Also, I needed to be cautious of the adverse effects of implementing certain gamification elements, especially when they are not used effectively, such as the competition element or the overuse of the reward element. Hence, there needed to be an optimum level of flow (Fiş Erümit & Karakuş Yılmaz, 2022). Finally, I needed to ensure that all of the tasks

⁹ These are identified throughout Chapter's Six and Seven

¹⁰ See Chapter Five for more details

involved in the gamification of the activities were well-matched with the current knowledge base of ākonga. Essentially, from these origins, a gamified teaching unit was developed (Appendix 21 & 22).

Step 7: Phase Two ethics

While the gamified teaching unit was in development, an application was made to the Massey University Human Ethics Committee (MUHEC) for Phase Two of this PhD research: Gamification Implementation. Ultimately, in June 2021, the application was approved, and the consultations required for Phase Two commenced.

Step 8: Phase Two – Gamification Implementation

The Gamification Implementation involved conducting action research in a local English medium primary school. Action research is often used in educational settings as it allows educators to investigate areas of concern in classrooms. According to Glanz (2014), its “benefits are enormous for the professional development of the educational leaders who use action research and for the school as a whole” (p.29). Action research suited this PhD research because it allowed gamification to be tested in the learning space, analysed, re-adjusted as needed, and then tested again.

More specifically, action research allowed for an evaluation of the influence of the ‘traditional’ (normal) teaching and learning environments compared to the ‘gamified’ ones. In addition, critical comparisons were made regarding how tāne ākonga Māori responded to both learning environments and whether or not either environment specifically improved their engagement and motivation more than the other. This is discussed in-depth in Chapters Six and Seven.

During action research, eight in-class observations (in a senior primary school classroom) were made; four traditional observations and four gamified ones. One kaiako participant and 17 ākonga participants were recruited, including 11 tāne ākonga Māori. After completing the four traditional observations, all participants were interviewed once. Then, they were interviewed again after the second and fourth gamified observation. Therefore, participants were interviewed three times each. Throughout the in-class

observations, various data were gathered, including videos, photographs, written observations, and voice recordings from the interviews.

Ākonga participated in three focus group interviews, consisting of four participants each. The rationale was to ensure they felt as comfortable as possible rather than being expected to participate in one-on-one interviews, which can be intimidating for young people. Another reason was to help the ākonga participants feel safe to share, open up, and nurture the researcher-ākonga relationship. Brinkmann (2020) notes that focus groups “[allow] participants to take over or own the interview space, which can result in richer, deeper understandings of whatever is being studied” (p.494).

The kaiako participated in three one-on-one semi-structured interviews. This facilitated a flexible, open-ended method of providing feedback, where she could add her thoughts, contributions, and beliefs to avoid restricting her responses. Brinkmann (2020) states that “semi-structured interviews can make better use of the knowledge-producing potentials of dialogues by allowing much more leeway for following up on whatever angles are deemed important by the interviewee” (p.438).

For this research, the kaiako and the ākonga were interviewed at the commencement of the four traditional observations, and after the second and final gamified observations, which allowed action research to occur. Then, feedback could be analysed before the following observation. Also, any adjustments needed for the following gamified observation could be made according to participants’ feedback to improve the method. The rationale for the various data-gathering methods is discussed further below.

The kaiako participant was not shown the gamified lesson plans or discussed how the gamified sessions would take place until the completion of the four traditional observations. This ensured that the plans for the gamified lessons did not affect the traditional observations. In short, the traditional observations needed to be as 'normal' as possible without being influenced by the kaupapa of this research.

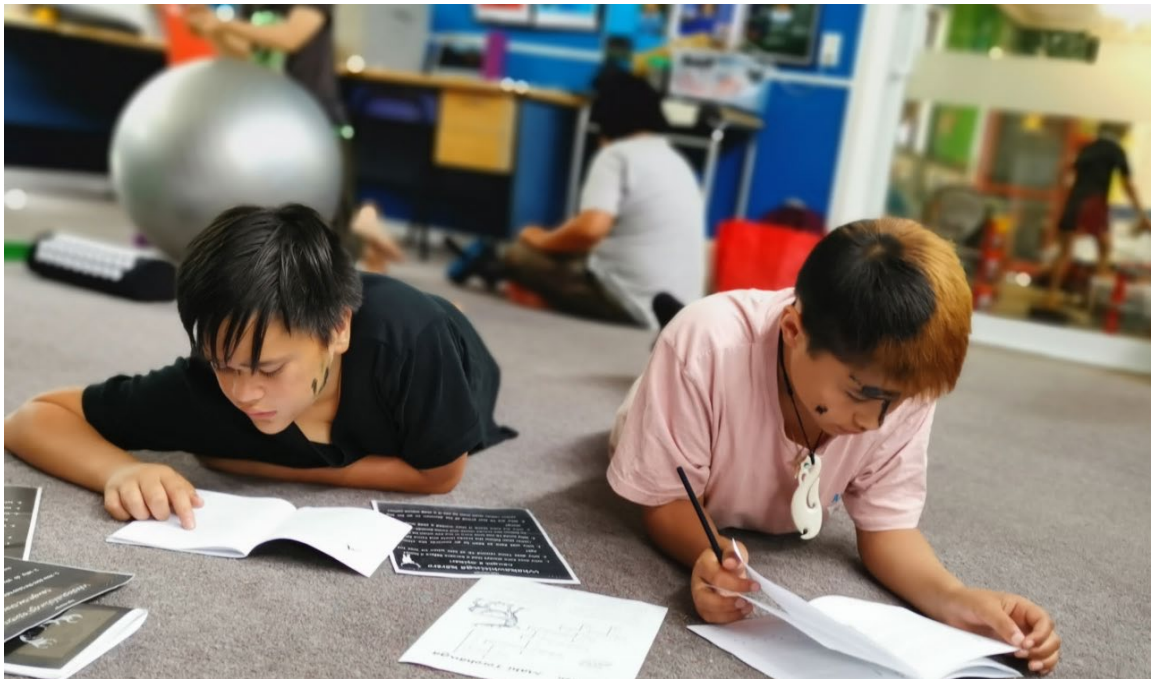
Throughout the classroom observations, the ākonga participants included *all* ākonga (who had been accepted into the study) from the class. Thus, non-Māori ākonga and Māori girls

were also present. This helped simulate as much of a ‘normal’ learning environment as possible and provided essential observation data regarding the social element of GIE. The classroom observations provided essential data, especially concerning how effective gamification is in a learning space. O’Leary (2020) validate the importance of classroom observations, noting how the method of classroom observation has become a pivotal tool for improving, measuring, and assuring educators’ professional development knowledge and skills within educational settings.

The purpose of the observations in the classroom was to investigate if there were differences between the traditional and gamified teaching and learning spaces, especially regarding: the interactions between the ākonga and their kaiako, and the ākonga and their peers, the level of motivation and engagement of the tāne ākonga Māori; and to ascertain a genuine feel for the atmosphere of the classroom. An observation grid was used to record the various observations (Appendix 23).

During the classroom observations, video footage was taken to aid the write-up. The footage helped to view what may have been missed during the observation at the write-up stage, as it took much work to capture everything in the short timeframe. The video footage directly compared the traditional and gamified teaching and learning environments. This provided visual evidence of the reactions and responses tāne ākonga Māori had to the gamified learning environment and activities, where any differences regarding their motivation and engagement could be clearly observed. Ocak and Baran (2019) recognise the benefits of video footage because it enables repeated analysis, thereby making it easier to analyse situations and events that happened in the classroom that the kaiako/researcher cannot remember.

Figure 2 - Ākonga working in the gamified learning space



In addition to videos, photographs were taken throughout the classroom observations, such as the photograph above in Figure 2. Here, it is worth noting that full permission from the ākonga participants and their whānau has been gained for using the images relating to this research project. The photographs play a similar role to the videos' and provide the first glimpses into what a gamified teaching and learning environment catered to the needs of tāne ākonga Māori could look like. This emphasises the importance of the contribution to the field that this PhD research is making and the vital contribution to this study of the images and videos captured throughout the observations.

Step 9: Analysis of the data collected from the Gamification Implementation

Like Phase One, the data collected from the Gamification Implementation was analysed via thematic analysis. The rationale for this method of analysis and a discussion regarding the process will be further investigated later in this chapter. A deeper examination and analysis of the findings are discussed throughout Chapter Seven.

Step 10: Final iwi consultation, and findings hui for participants and their whānau

The process for iwi consultations was discussed earlier in this section. In addition, a findings hui was held for both iwi and all participants involved after the data analysis to complete the process. In July of 2023, both iwi were consulted one final time to thank them and to share the findings. This is especially important, considering that all participants in this study reside in the rohe of both iwi. Also, all male ākonga Māori participants and all but one pakeke are members of one of the iwi who was consulted. Furthermore, one final consultation will facilitate a natural conclusion, aligning with Kaupapa Māori research methodology. During Phase Two, *all* ākonga (Māori and non-Māori) participants were observed; however, only male ākonga Māori participants were interviewed (discussed in more detail above). Conclusively, all participants in this study have a right to be the first to know the findings.

Analysis of data

The qualitative data collected throughout this PhD research was analysed using thematic analysis. The rationale for selecting these methods will now be justified and further discussed.

Qualitative research

Using qualitative interview questions ensured that the participants were not restricted in their answers. Qualitative questions allow open-ended kōrero to flow in directions that it may not have if the participants were asked yes or no type questions through quantitative data methods. Saldana (2011) maintains that “the (qualitative) data collection method is an effective way of soliciting and documenting, in their own words, an individual’s or group’s perspectives, feelings, opinions, values, attitudes, and beliefs about their personal experiences” (p.31). Allowing participants to share in the form of open-ended questions promoted a deeper insight into their experiences. Also, it provided opportunities for them to contribute kōrero/ideas which were unexpected.

Observation analysis

Written observations in the classroom captured in the form of qualitative data allowed for complex and unpredicted behaviours to be recorded that the participants experienced. Furthermore, any differences in the classroom atmosphere and changes in motivation and engagement of the ākonga between the traditional and gamified learning environments could also be documented in detail. Detailed classroom observations allowed for deeper analysis and insight into each learning space's benefits or drawbacks. It was important to be critically reflective and consider the feedback from the kaiako and ākonga, and the written observations. O'Leary (2020) suggests that when analysing classroom observations, it is essential that a sense of political, social, and critical self-awareness underpins the analysis.

Thematic analysis

Thematic analysis "is a method for identifying, analysing, and reporting patterns (themes) within data" (Braun & Clarke, 2006, p.6). This process allows for a broader range of opinions, feedback, and experiences collected from the various interviews to be closely analysed for reoccurring themes/patterns among the participants. Thematic analysis promotes the abundance of data to be organised, categorised, and narrowed down to similar themes for easy analysis.

For Phase One, the thematic analysis allowed the data to be categorised into 'themes,' making it easier to identify the teaching and learning methods pakeke felt were the most and least effective throughout their schooling experiences. During the analysis of Phase Two, the thematic analysis helped to quickly identify and categorise both the kaiako and ākonga responses to the gamified teaching and learning environment. Furthermore, participants' feedback throughout the interviewing process was easily analysed by identifying the different codes the thematic analysis generated.

Complications

This PhD research faced two considerable complications. These included the withdrawal of a key participant and obstacles caused by the Covid-19 pandemic.

Participant withdrawal

Only one participant chose to withdraw from this study, the first kaiako recruited, due to workload issues during week five of term four, four days before the first observation was planned to commence. As a repercussion of this, her kaiāwhina (teacher's aide), who was in the process of being recruited, was also not able to participate in the study. Furthermore, due to the small size of the school, there were no other senior classrooms to carry out observations. A new school had to be promptly recruited to complete the Gamification Implementation before the end of the school year. Initially, the plan was to conduct observations spread over two terms, creating less stress on the kaiako and ākonga participants. However, this late change involved additional consultations with a new principal and school Board of Trustees and recruiting new participants, all within a short time frame. Once completed, there was only a three-week window to conduct the eight observations. Fortunately, aside from the 'time crunch,' this was achieved without too much difficulty.

Additionally, a few last-minute changes had to be made to the gamified activities due to the location change. It is essential to acknowledge the dedication and commitment of the second kaiako participant, their schools' principal, and the Board of Trustees, who did not hesitate to accommodate this research project being conducted under such hasty circumstances. Had this not occurred, the Gamification Implementation would have been significantly delayed by a possible six or more months due to the global pandemic caused by Covid-19.

The disruption of Covid-19

The Covid-19 pandemic began in Aotearoa in March 2020, when Phase One of this PhD research was finalised. The emergence of Covid-19 caused the need for added precautions, especially during the ethics process. These precautions included: limiting the

number of gatherings to ten people or less, wearing masks, social distancing, providing hand sanitizer, a well-ventilated space, and greeting each other while maintaining social distance. It was always intended that the Pakeke Kōrero would have four to five pakeke each. As such, the Pakeke Kōrero were not too badly affected and could go ahead in December of 2020.

Phase Two, however, was significantly more affected by the pandemic. The ethics process required additional precautions (in line with social distancing requirements). This included developing a backup plan in case another Covid lockdown happened, simply to ‘cancel the Gamification Implementation.’ During this time, the whole country fluctuated between different ‘alert levels,’ some of which included various stages of lockdown (Appendix 26).

As a repercussion of the lockdowns, the school principal and Board of Trustees agreed for the Gamification Implementation to be conducted under either alert level one or two, meaning that recruiting the ākonga participants became a very long and drawn-out process. The information hui held for the whānau during the ākonga recruitment process attracted only two parents. At the time, limited numbers of visitors were allowed onto the school grounds, and if visiting, parents and whānau had to wear masks and maintain social distancing. Thus, many parents and whānau members decided to stay home.

Once the alert levels began decreasing and schools started returning to ‘normal,’ many parents and whānau chose to continue home-schooling their tamariki for fear of them being exposed to Covid-19. Full permission was eventually gained by most ākonga and their whānau. However, this occurred around the same time as the withdrawal of the kaiako participant, which required the re-recruitment process to happen all over again at a new school.

A further complication that arose from the Covid-19 pandemic was the repercussion of the mandate on the tāne Māori role model. Initially, a tāne Māori ‘role model’ was planned to come in during the gamified sessions to observe the effect of a Māori tāne (Māori man) presence in the learning space. Unfortunately, the tāne Māori role model could no longer participate in the Gamification Implementation due to not being

vaccinated (the mandate required all adults in educational settings to be vaccinated). Consequently, finding a replacement at such short notice was impossible. Data collection from this particular method was, therefore, not possible.

Ethics

This PhD research required two separate ethics applications; one for Phase One and another for Phase Two. Due to the nature of human ethics and the requirement for Phase Two to observe, photograph, video, and interview tamariki under sixteen, the ethics process took some time and had to be very thorough. As such, this section will now identify and discuss the various factors that needed to be considered throughout both stages of ethics.

Iwi consultation

Iwi consultation was paramount to this PhD research (iwi consultation was also discussed earlier in this chapter under *The order of events: Step 3*). Both iwi from the rohe were consulted as the project was being developed prior to the commencement of data collection. Furthermore, both iwi (and all participants and their whānau) were consulted after the data analysis.

Consultation for the Gamification Implementation

After iwi consultations, preparing for the Gamification Implementation involved consultation with multiple people in the following order: the principal, the school Board of Trustees, the kaiako, and the ākonga and their whānau. This process was conducted for both schools involved.

The schools

Two English medium primary schools were involved in this PhD research. The first school was in a small community of about 1,100 people. At the time, the school had a roll of 137 ākonga. Due to the size of the school, there was only one senior classroom. Hence, following the withdrawal of the first kaiako participant, considering this research project

required the observation of senior primary school ākonga, a second school had to be recruited.

The second school where the Gamification Implementation was conducted during Phase Two was in a smaller populated rural area on the outskirts of the town of the first school. The school was located in a valley surrounded by farms and native bush. During the time, the school had a roll of 46 ākonga.

The principal

Tautoko from the principal was gained by requesting a meeting and having a kōrero regarding the intentions of the research, including a brief overview of the order of events. The principal was very supportive and immediately provided her tautoko for the research to be conducted in her school.

The school Board of Trustees

Consulting the Board of Trustees of the first school involved me presenting my research proposal at one of their meetings to gain their permission to conduct the research at their school. At the original school, there were no time constraints. Following the withdrawal of the first kaiako participant, there were very tight time constraints for recruiting the second school. Hence, due to my position and role at the second school, members of the Board of Trustees were invited to approach me and raise any concerns or questions. Few questions or concerns were raised. Like the iwi consultations, all members of the Board of Trustees were happy, and written tautoko was immediately gained to conduct the research in the school.

The kaiako participants

Two kaiako participants were involved in Phase Two of this research project. As mentioned earlier in this chapter, the first kaiako participant withdrew and was a female who had previously taught overseas for twelve years. At the time of recruitment, she was in her second-year teaching in Aotearoa.

The second kaiako participant who took part in the Gamification Implementation, Whaea,

was known by me and, upon hearing of the first kaiako participant withdrawing, offered to become a participant. Whaea is an experienced female kaiako who has taught in primary English medium education settings for over twenty years.

Once the principal of the school and the school Board of Trustee approval was gained, Whaea could be recruited. We arranged to meet after school to discuss the PhD research and how I would carry out the data-gathering process in her classroom. Whaea was then given an information pack where she immediately signed the kaiako participant consent form (Appendix 10) and a confidentiality agreement (Appendix 17). Following this, Whaea was provided with ākonga information packs for her class.¹¹

Throughout the research process, it was essential for Whaea to be open to trying a different approach to teaching and learning than she was used to, which she did throughout the Gamification Implementation with no hesitation. Also, Whaea gave meaningful feedback during the semi-structured one-on-one interviews. My relationship with her had to be nurtured to achieve this, especially as she would be involved in sharing her personal thoughts and ideas. Furthermore, I needed to ensure that her feedback was highly valued and respected; both positive and negative feedback needed to be received with equal understanding. I ensured that Whaea could make any adjustments within the design of the gamified lessons she saw fit to suit her class. Seeing her creativity and how much she adapted the lessons was amazing, mainly because it was raining, and we had to make last-minute changes to adjust to the weather. Overall, Whaea made excellent contributions to the Gamification Implementation. As a result, the data collected has provided some great insights into the positives and negatives regarding the planning, designing, and implementing of a gamified learning space.

¹¹ The ākonga information packs for the Māori boy participants can be seen in Appendix 7, 12, 14, 16, 17, and 18. Similarly, the contents for the non-Māori boy participants can be seen in Appendix 8, 13, 15, and 17

Ākonga and their whānau

Two steps were taken to recruit the ākonga participants. Firstly, a whānau hui with the first school was held in the classroom at 6 pm. The day and location of the hui was planned for the most suitable time for working parents and whānau. However, only two parents could attend due to complications with Covid lockdowns. Secondly, due to complications of the first kaiako withdrawing, another kaiako had to be sought, which left very little time to conduct the research. It was decided that the whānau hui for the second school would be omitted. However, all participants and whānau were provided with my contact details and encouraged to make contact at any time.

Secondly, information packs were left with the kaiako participant to hand out to ākonga to take home. As the packs were returned, I collected them. An essential part of consulting with the ākonga and their whānau was to ensure they understood the process whereby if their child participated, they would be: observed, photographed, videoed, and interviewed via focus groups. It was important for the parents to understand that the confidentiality of all participants would be protected, why the data was being collected, and how it would be used.

The importance of consulting both ākonga and their whānau is a process that values tikanga Māori and is also recognised by researchers such as Bourke et al. (2017). Their study suggests that engaging with whānau, especially kanohi ki te kanohi (face-to-face), is imperative, especially for recruiting ākonga Māori. Additionally, the researchers recognise the importance of upholding tikanga Māori throughout the research process, such as following protocols like sharing kai, karakia (prayer), and whakawhanaungatanga. These were practiced throughout the recruitment process, including the Pakeke Kōrero, the Gamification Implementation, both iwi consultations, and the whānau hui for ākonga recruitment mentioned above. Sharing kai, whakawhanaungatanga, and tikanga Māori was maintained throughout the gamified teaching and learning sessions. Bourke et al. (2017) maintain these particular practices are Kaupapa Māori related rather than requirements from the ethics committee: “From an ethics committee perspective, this is not considered mandatory, but from a bicultural perspective ... it is considered both appropriate and necessary” (p.8).

Autonomy

According to Massey University (2017),¹² autonomy refers to one's ability to enact his or her interests and values. More specifically, regarding research ethics, autonomy questions "To what extent will doing/allowing this research enable others to freely decide to participate in light of their own beliefs and values?" (p.6). The numerous data-gathering methods (interviews, photographs, videos, and written observations) were made very clear to the participants and their whānau prior to the commencement of the research to avoid unnecessary deception.

A fundamental element regarding autonomy for this PhD research is *Information*. Phase One, primarily, refers to ensuring that pakeke and their whānau were aware of the nature of the questions they would be asked in the discussion groups. This is because some of the questions could have been considered personal, as pakeke were asked to open up in a manner that could spark negative memories of their experiences in school. The questions were included in the information pack to help mitigate this. Potential pakeke had the opportunity to read the questions (with their whānau if they wished) prior to agreeing to participate (Appendix 3).

For the Year 7 and 8 Māori boy participants, this research project required in-class observations, the gathering of photographs, videos, and the participation of three focus group interviews that were voice recorded. It was considered essential for the participants and their whānau to be aware of these data collection methods beforehand to freely choose whether to participate. There was an attempt to run an information hui for ākonga and their whānau (as mentioned earlier). An information sheet was provided that identified the various methods of data collection. Full written parental consent and consent from the ākonga participants was gained.

For the kaiako participant, this research required video footage of her teaching, photographs, written observations, and participation in three one-on-one semi-structured

¹² Massey University's *Code of Ethical Conduct for Research, Teaching, and Evaluations Involving Human Participants*

interviews. Like the other participants, full written consent was obtained before conducting the research. More importantly, it was essential for the kaiako to feel from pressure to agree to participate, especially if she did not feel comfortable doing so.

Overall, every attempt was made to enable autonomy for participants, and no pressure was put on them to participate. Participants who disagreed with being videoed or photographed were not accepted into the study. Most importantly, individual autonomy for each participant and their whānau was valued and respected throughout this study.

Avoidance of harm and confidentiality

The following steps ensured that no participants experienced psychological harm or damage to their reputation, dignity, and relationships with others.

While participants from Phase Two freely consented to have their photos illustrated in this thesis, pseudonyms were used for all 33 participants¹³ (including Phase One participants) to protect their confidentiality. This includes using pseudonyms for all future presentations and publications where the findings from this study are discussed or published. Confidentiality was maintained via pseudonyms in place of actual names, regional and geographical area information (especially regarding both iwi), the names of both iwi, school, or where the Pakeke Kōrero and Gamification Implementation occurred. Some participants chose their pseudonyms, and some were chosen randomly by myself.

Additionally, tikanga for the Pakeke Kōrero were set at the beginning of each discussion group to ensure that all participants understood how the Pakeke Kōrero would run and the need to respect other participants' kōrero. Essentially, this was to establish a safe space. Furthermore, the Pakeke Kōrero were also voice recorded for transcribing purposes, so ensuring that pakeke were aware of this was imperative. Hence, written consent was obtained from each pakeke, and pakeke who did not agree to all of the requirements were not accepted into the study. In particular, throughout the Pakeke

¹³ The 33 participants consist of 14 pakeke from Phase One, 17 ākonga participants, and two kaiako participants from Phase Two

Kōrero, pakeke were put into small groups of similar ages to protect their vulnerability. This helped to create a safe environment where pakeke could share.

I have worked in both primary schools involved in Phase Two. Therefore, I knew most of ākonga and their whānau. I am also related to some of the Phase One and Two participants. Conflict of interest between myself and the participants was carefully considered, ensuring all of the opinions and feedback of the participants were valued, respected, and not influenced by any pre-determined judgments regarding ākonga or the kaupapa. Overall, having an open mind was essential, ensuring that I did not try to influence my participants or attempt to modify any of the results.

During the traditional observations, I needed to sit quietly and not interrupt or interfere with the teaching or learning. The kaiako participant needed to feel like they were not being judged, and ākonga needed to feel as comfortable as possible throughout the process.

Ākonga were interviewed in small focus groups after the classroom observations to help them feel comfortable. Furthermore, their thoughts, opinions, and feedback were respected and received positively. It was essential for the participants' viewpoints to be recorded in a manner that valued their contribution, maintained their integrity, and protected their confidentiality. Furthermore, the ākonga participants needed to feel like they were not being forced to share or give more information than they were willing to. The same care was taken when interviewing the kaiako during the Gamification Implementation, and pakeke throughout the Pakeke Kōrero.

An issue Massey's Human Ethics Committee raised, was that this research, if conducted with only participants, might be perceived by other ākonga as unfair due to being left out (i.e. missing out on the fun). They suggested I run an additional gamified session for those ākonga, which would not be recorded or involve any interviews. This was offered to the three ākonga who chose not to participate. However, they politely declined this invitation. Therefore, there was no need to conduct an extra gamified session.

Data

There was a substantial amount of data collected throughout this study. This data needed to be handled carefully, and all of the raw data stored on a password-protected external hard drive in a locked drawer, which will be deleted after seven years. The recordings from the various interviews and videos were used purely for transcribing purposes and to help finalise the write-up for the in-class observations only. The photographs are being used throughout this thesis to help paint a picture of what GIE catered to the needs of tāne ākonga Māori might look like. Because this is one of the first PhD research projects to tailor gamification to the needs of tāne ākonga Māori (and to not use technology as the main gamified component), the images captured are necessary and highly influential to the field.

To show appreciation and respect for the local iwi/hapū, each participant and their wider whānau were invited to a hui at the commencement of this PhD research to share the findings. Participants are entitled to the first glimpse into the research outcomes, ultimately aimed at supporting their tamariki in English medium education settings.

In conclusion, this chapter has identified the Kaupapa Māori research methodology that underpins this study. Ultimately, this ensured that this study's research method, data collection, analysis, and findings align with the values inherent in te ao Māori. The following chapter provides an in-depth discussion regarding the two most significant elements for catering GIE to the needs of tāne ākonga Māori; their cultural needs, and their needs as male learners.

Chapter Three: Tāne ākonga Māori

This chapter begins with a brief discussion regarding my position as a wāhine Māori kaiako and my positionality regarding working with tāne ākonga Māori. Then, background that highlights the rationale behind my choice of tāne ākonga Māori as the focus for this PhD research will be explored. Then, an analysis of what I propose to be the two main factors that need to be considered to tailor gamification to the needs of tāne ākonga Māori will be identified and discussed; their cultural needs, and their needs as male learners. The literature throughout this chapter sets up the foundation of this research concerning how gamification could align with the needs of tāne ākonga Māori in English medium education settings.

My positionality as a wāhine Māori kaiako

Due to the kaupapa of this research project, it is appropriate to point out the fact that I (the primary researcher) am a *wahine* Māori kaiako, and the discussions, ideas, and opinions throughout this thesis largely pertain to *tāne* Māori and their experiences in English medium education settings. This emphasises the importance for conducting Phase One of this research project, where pakeke were involved in discussion groups. Here, the experiences, voices, and wisdom was gained from tāne Māori (pakeke), for tāne ākonga Māori, rather than solely from my own perspective as a wahine Māori. Furthermore, I am a māmā (mother) to three Māori boys, and am married to a tāne Māori. Also, I am Māori, and my culture, whānau lifestyle, and sixteen years teaching in English medium education settings has provided me with knowledge and experiences where I have worked with many Māori (ākonga and kaiako) and seen, felt, and heard what works best regarding how tāne ākonga Māori learn. As I state later in this thesis, I hope to see future research in this field expanded on by tāne Māori to see where their positionality as tāne Maōri can take this kaupapa even further.

Background: Tāne ākonga Māori in English medium primary settings in Aotearoa

Literature that discusses the experiences and outcomes for ākonga Māori in English medium education settings in Aotearoa identifies that their cultural values, beliefs, and needs are not being catered to or valued to the extent they should be (Auditor-General, 2012). Consequently, much documentation supports that the unique needs of ākonga Māori are suppressed in English medium education settings, so they are not achieving their full potential. Highfield and Webber (2021) confirm: “Disparities in student achievement between Māori and non-Māori in New Zealand schools have been recorded since the 1960s” (p.146). Also, “Despite educational reforms over the last 50 years that have sought to address these disparities, for most Māori there has been very little change in these inequities” (p.146). Given this, it is unsurprising that underachievement in English medium education settings has a ripple effect on ākonga Māori as they enter mainstream society (Auditor-General, 2012).

The literature also highlights several other obstacles ākonga Māori face in English medium education settings. For instance, 89% of ākonga Māori attend English medium education settings, and only 12% of educators in English medium education settings are Māori (Ministry of Education, 2022a). Therefore, ākonga Māori experience a teaching and learning environment where the learning content and delivery are primarily influenced and taught from a non-Māori perspective. As a result, consistent evidence shows that English medium education settings do not cater to the needs of ākonga Māori, which negatively affects their potential to achieve success. Macfarlane (2015) affirms the benefits of ākonga Māori learning in a culturally responsive environment, stating that “Māori students are more likely to achieve when they see themselves, their whānau, hapū (subtribe) and iwi (tribe) reflected in the teaching environment, and are able to ‘be Māori’ in all learning contexts” (p.186).

Another concern identified is that ākonga Māori are not achieving as well as their non-Māori peers. For instance, Rubie-Davies and Peterson (2016) state: “Compared to their Pākehā counterparts, Māori student achievement levels are low, and they are overrepresented in lower track and in special education programs for behavioural issues”

(p.73). Furthermore, the Education Hub (2018) identifies that Māori underachievement is a “critical concern for education” (p.3) and argues that the underachievement of ākonga Māori stems from the lack of cultural responsiveness in English medium education settings. Here, it is critical *not* to maintain a deficit view of Māori success, where the accountability for poor outcomes for ākonga Māori achievement reflects their lack of effort or ability. Instead, the effectiveness of the education setting, the kaiako, and the learning content and delivery significantly affect their progress when not culturally aligned.

The above discussion confirms the rationale for choosing *ākonga Māori* as the focus of this PhD research. To further validate my focus on *tāne ākonga Māori* (Māori boy students) as opposed to *all ākonga Māori* (i.e. *wāhine* [girls] ākonga Māori girls included), it is critical to point out the severe lack of male – especially *tāne Māori* (Māori men) – educators in English medium education settings, at just 1.9% (Ministry of Education, 2022a). This lack of male educators is not just relevant to Aotearoa. Burusic et al. (2012) maintain that there is an “overwhelming dominance of female teachers in elementary and secondary schools in most educational systems worldwide” (p.524). This should be considered a crucial missing element for *tāne ākonga Māori* because, as a result, they experience a teaching and learning environment primarily delivered from a *wāhine* (female) kaiako perspective. Furthermore, there is a severe lack of *tāne Māori kaiako* to support *tāne ākonga Māori* or be positive role models in and outside of the learning space. Similarly, Burusic et al. (2012) argue that the lack of male role models for boys in primary school education settings is a trend that has continued to persist and has had a devastating effect on the education of boys.

Another important consideration regarding my focus on *tāne ākonga Māori* is the achievement rates of primary and secondary education ākonga, which has highlighted that boys are not performing as well as girls academically. Pinkett and Roberts (2019) identify, “Boys underperform at all key stages of primary and secondary education compared to girls [and] Boys are more likely to be excluded from school” (p.2). Additionally, Pinkett and Roberts identify that boys, compared to girls, are less likely to attend university, embark on apprenticeships, and become employed with paid work between the ages of 22 to 29. Similarly, Burusic et al. (2012) state that “nowadays, girls

tend to be more successful than their boys during elementary and early secondary education, even in math and science that are traditionally considered to be “masculine subjects”” (p.524).

Finally, the Ministry of Education (2022b) produced a report regarding boys’ academic achievement and found that both international and national data identified a gender gap, where girls are performing higher in reading both in Aotearoa and worldwide. Evidence indicates that boys are not doing as well in writing. Other critical areas of the report claimed that “There is converging evidence that girls perform better than boys, across all ethnic groupings, on all measures of reading and writing at all levels of schooling,” and “Females tend to stay at school longer and leave school with higher attainment levels than males” (Ministry of Education, 2022b, para.6). In contrast, the report also noted that “In other areas, such as mathematics and science, the results for boys and girls are similar and, in some cases, boys out-perform girls overall” (para.2). Here, boys are not underperforming across the board; in some areas, boys are out-performing girls. The report also found that some boys are reading and writing at a high level. However, the trend that is most concerning for boys is their overall underperformance in literacy, affirmed by the Ministry of Education (2022b), who argues that the continued underperformance of boys in literacy is concerning, especially considering the importance of literacy in mainstream society.

This discussion has made a strong argument for justifying the rationale for my focus on tāne ākonga Māori for this PhD research. The points discussed above are highly relevant to this study and emphasize that tāne ākonga Māori face additional challenges in English medium education settings concerning their cultural needs that greatly influence their academic performance. The following section of this chapter will now examine these challenges.

The cultural needs of tāne ākonga Māori

The cultural needs of tāne ākonga Māori have been identified in this thesis as significant for tailoring gamification to their needs. Literature in Aotearoa has widely recognised the

importance of embracing the cultural needs of ākonga Māori in English medium educational settings, especially for enhancing their motivation and engagement in learning. Webber and Macfarlane (2020) note, “Little will be done to improve Māori students’ academic engagement and social emotional well-being until educators focus on the development of students’ connectedness to their ethnic identity and their sense of mana tangata (cultural status and pride)” (p.26). Additionally, in Aotearoa, English medium schools strive to create equitable learning environments. However, the reality is that ākonga Māori are still underserved and disengaged. Webber and Macfarlane refer to social psychology when identifying the importance of optimal conditions for the success of ākonga Māori and note that social psychology “is the study of how and why people think, feel, and do the things they do depending on the context they are in” (p.27). Here, the researchers identify that the disengagement of ākonga Māori in their learning is associated with several social-psychological factors, including deficit theorizing about ākonga Māori potential, low kaiako expectations, culturally unfamiliar contexts and learning content, whānau involvement, and a loss of cultural identity and efficiency.

The factors above are critical for educators to know to become more effective educators of ākonga Māori. The Ministry of Education (2013a) argues that “Students do better in education when what and how they learn reflects and positively reinforces where they come from, what they value and what they already know. Learning needs to connect with students’ existing knowledge” (p.17). Hence, when kaiako have high expectations of ākonga Māori, build productive partnerships with their wider whānau, and embrace their cultural values, beliefs, and aspirations, ākonga Māori are more likely to experience success.

When considering *what* cultural values would be significant for developing a culturally responsive teaching and learning environment for ākonga Māori, it is essential to acknowledge a Māori educational strategy in Aotearoa developed to support ākonga Māori in English medium educational settings: *Ka Hikitia*. The Ministry of Education (2008) identifies that “Māori students’ educational success is critical to Aotearoa New Zealand’s success” (p.11). Therefore, in conjunction with Māori, the Ministry of Education developed Ka Hikitia as a “collective call to action,” (p.11), stating that “The strategy requires everyone in the education system to take responsibility for Māori

education success alongside whānau and iwi” (p.11).

Ka Hikitia is a living document and is updated following ongoing engagement between the Ministry of Education, whānau, hapū, and iwi, Māori, and numerous agencies.¹⁴ The Ministry of Education’s (2013a) goal aims to ensure that “all Māori students, their parents and their whānau participate in and contribute to an engaging and enjoyable educational journey that recognises and celebrates their unique identity, language and culture” (p.13). Considering this, it is crucial to acknowledge Ka Hikitia as having the most relevant strategies for supporting ākonga Māori in English medium education that Māori have essentially identified for Māori. Accordingly, Māori cultural values derived from the most updated and earlier versions of Ka Hikitia will now be identified and discussed, including Māori potential; productive partnerships with whānau and iwi; te reo Māori; identity, language, and culture; and Ako. This list will begin by identifying the Treaty of Waitangi and its significance in Aotearoa, Ka Hikitia, and English medium educational settings.

The Treaty of Waitangi

As mentioned earlier in this thesis, the Treaty of Waitangi is considered Aotearoa’s founding document, written in English and te reo Māori. It is essential to address a significant concern regarding the Treaty briefly identified earlier. That is the difference between the Treaty of Waitangi, and Te Tiriti o Waitangi, where translating from English words to Māori kupu (words) convey significantly different meanings (see Appendix 27). This is widely identified in literature across Aotearoa, including Orange (2021), who states: “What we do know is that the Māori translation was not an exact rendering of the English draft treaty” (p.35). Also, Tomlins-Jahnke and Warren (2011) affirms: “Since 1840 the Treaty of Waitangi has been the subject of contentious debate” (p.28). As a result of the different meanings between the Māori and English versions of the Treaty, disagreements occur between Māori and the Crown because, as identified by O’Sullivan et al. (2021), the political authority the Treaty grants to Māori on the one hand, and to the

¹⁴ These agencies include the Ministry of Education, Te Aho o Te Kura Pounamu, Education New Zealand, Education Review Office, New Zealand Qualifications Authority, The Teaching Council Aotearoa New Zealand, Tertiary Education Commission, and the New Zealand School Trustees Association

Crown on the other are substantively different to each other.

For instance, Article 1 of the Treaty of Waitangi states that Māori gave the Queen complete sovereignty over their lands. In contrast, Article 1 of Te Tiriti o Waitangi declares that Māori gave the Queen ‘te kawanatanga katoa o rātou whenua’ – the governance of their lands. Here, it is critical to note that the English word ‘sovereignty’ has no direct translation to te reo Māori. At the time of translation, the word ‘kawanatanga’ was used to transliterate the word ‘governance.’ In short, sovereignty means a supreme authority or power, and kawanatanga refers to governance. Therefore, in Article 1 of the Te Tiriti o Waitangi, Māori believed they were still retaining their rights to manage their own affairs; however, according to the Treaty of Waitangi, Māori ceded sovereignty to the British. Here, Orange (2021) points out: “The differences between the two texts were crucial to a full Māori understanding – or the lack of it” (p.53). Only 39 Māori chiefs signed the Treaty of Waitangi, whereas approximately 500 Māori chiefs signed Te Tiriti o Waitangi. Māori chiefs who signed Te Tiriti o Waitangi did so without viewing the English version (Orange, 2021). Hence, considering the difference in translations between the Treaty and Te Tiriti discussed above, it could be argued that the intent of the partnership between Māori and the British Crown stemmed from controversial beginnings. Consequently, disagreements continue to occur between Māori and the Crown in Aotearoa today, especially regarding Māori calling for the terms of the Treaty to be honoured.

Tomlins-Jahnke and Warren (2011) states that the Treaty of Waitangi has been rarely honoured by the courts of law or governments in Aotearoa until fairly recently. Also, the Treaty has and continues to remain “a critical reference for Māori” (p.33). Furthermore, the researchers also note that although iwi sees Māori-medium schooling as the preferred model of quality education for their tamariki, most ākonga Māori attend English medium schools, and it is within this context where ākonga Māori are at most risk. Here, the Treaty supports Māori whānau to advocate for their rights in English medium education and ensure their aspirations, cultural values, and beliefs are acknowledged and respected. More specifically, the *intent* of the Treaty calls for schools to ensure that the principles of the Treaty are honoured in all decision-making and actions. This includes the need for a bicultural foundation to be evident throughout all school policies, learning spaces,

whānau and community engagement, and classroom planning and assessment. For instance, the Treaty of Waitangi is one of eight principles in the New Zealand Curriculum that provides a foundation for schools' decision-making.

According to the Education Review Office (2011), “The curriculum acknowledges the principles of the Treaty of Waitangi and the bicultural foundations of Aotearoa New Zealand. All students have the opportunity to acquire knowledge of te reo Māori me ōna tikanga” (as cited in the Ministry of Education, 2012, p.1).¹⁵ In effect, this principle calls for all ākonga in Aotearoa to learn and understand their bicultural heritage, have opportunities to learn te reo Māori and, according to the Ministry of Education (2012): “gain knowledge and experience of important Māori concepts and customs, considering them in relation to those of other cultures. Language and culture are intertwined, so this learning provides insights into te ao Māori and Māori world views” (p.3). The Treaty, therefore, has played a significant role in advocating for the rights of ākonga Māori in English medium educational settings.

The extent to which the Treaty of Waitangi is adhered to depends primarily on the dedication, knowledge, and virtue of the school leaders, the principal, and, essentially, kaiako. Berryman et al. (2016) discuss the influence school leaders have on addressing cultural disparities in their schools and identify that “How leadership is undertaken and evolves in schools can accelerate or hinder the social change required to address these disparities” (p.12). This is further confirmed by the Ministry of Education (2013a), which identifies that the Treaty ensures joint responsibility on behalf of many parties for ensuring the success of ākonga Māori. Furthermore, Hynds et al. (2016) claim, “Study results indicated impediments to the development of culturally responsive school leadership that would productively engage Māori students and their families in creating a shared vision of change” (p.552). Therefore, to be an effective educator in Aotearoa, there is an expectation to ensure that the Treaty of Waitangi is honoured. This requires an awareness regarding how to ensure the needs of ākonga Māori are respected and valued

¹⁵ *The New Zealand Curriculum Update*

in the learning space. Here, GIE catered to the needs of tāne ākonga Māori has significant potential for supporting educators to achieve in fun and engaging ways, which aligns with the intent of the Treaty of Waitangi and Ka Hikitia.

Ka Hikitia

From its inception, Ka Hikitia (Ministry of Education, 2008; 2013a; 2020) presents a Māori educational strategy in Aotearoa developed to ensure the principles of the Treaty of Waitangi are met in English medium educational settings, ensuring that Māori; have equitable outcomes; enjoy success as Māori; and have more involvement and authority in English medium education. The Ministry of Education (2022c) identified three primary goals for their first Māori educational strategy launched in 1999, including: “1. To raise the quality of mainstream education for Māori, 2. To support the growth of high-quality Kaupapa Māori education, [and] 3. To support greater Māori involvement and authority in education” (para.2). Here, it is acknowledged that English medium (mainstream) schools are required to implement Ka Hikitia to support their ākonga Māori in Aotearoa, affirmed by the Ministry of Education (2008), who state that “Ka Hikitia – Managing for Success gives us the opportunity to transform the system’s performance for and with Māori, so that Māori are able to enjoy education success as Māori” (p.4). Similarly, Berryman et al. (2016) state that “Under the Treaty of Waitangi, school leaders, whether Māori, Pākehā or Tauīwi (more recent immigrants to New Zealand), have the responsibility and the mandated authority under Ka Hikitia to make more of a difference for marginalized learners, especially Māori learners” (p.12).

Ka Hikitia was launched in 1999 and has been updated three times following ongoing engagement with whānau, hapū, iwi, Māori, and education services. The first version was titled Ka Hikitia – Managing for Success 2008 – 2012, which aimed to set “the direction for improving education outcomes for and with Māori learners” (Ministry of Education, 2008, p.10). The second version was called Ka Hikitia – Accelerating Success 2013 – 2017 and aimed to “support Māori students to achieve the skills, knowledge and qualifications they need to achieve success in te ao Māori, New Zealand and in the wider world” (Ministry of Education, 2013a, p.13). The most recent version of Ka Hikitia, Ka Hikitia – Ka Hāpaitia, was updated in 2020 and referred to as a ‘cross-agency strategy’ for the education sector. Ka Hikitia – Ka Hāpaitia sets out how the Ministry of Education

will “work with education services to achieve system shifts in education and support Māori learners and their whānau, hapū and iwi to achieve excellent and equitable outcomes and provides an organising framework for the actions we will take” (2022d, para.3).

Ka Hikitia – Ka Hāpaitia (Ministry of Education, 2020) is linked to another strategy developed with Māori and the Ministry of Education, called Tau Mai Te Reo. Tau Mai Te Reo is a Māori language in education strategy for all¹⁶ learners. Ka Hikitia and Tau Mai Te Reo are companion strategies that should be read together. According to the Ministry of Education (2013b), Tau Mai Te Reo “has been developed to ensure there is a connected and cohesive approach to education contributions that support and strengthen the Māori language” (p.2). Considering this, educators in Aotearoa must understand the principles of Ka Hikitia – Ka Hāpaitia, Tau Mai te Reo, and their significance in English medium education. Consequently, given the distinctive principles outlined in Ka Hikitia - Ka Hāpaitia and Tau Mai Te Reo, it would be pertinent to consider in alignment with gamification elements, which would be appropriate and effective for creating a fun, engaging, and culturally responsive learning space for all ākonga.

Māori potential

The Māori potential approach identifies that all ākonga Māori have the potential to make significant contributions to their whānau, iwi, and wider communities (Ministry of Education, 2013a). For ākonga Māori to achieve this, it is critical for educators and other members of their lives, including organisations and school leaders, to have high (but not unrealistic) expectations of them. The Ministry of Education (2013a) affirms that any negative stereotypes or prejudice toward ākonga Māori need to be abolished by kaiako, and claims: “Sometimes this means challenging longstanding beliefs and stereotypes” (p.15).

Essentially, when kaiako have low expectations of ākonga Māori due to succumbing to

¹⁶ ‘All’ learners refers to non-Māori and non-Māori learners of te reo Māori

negative stereotypes or beliefs relating to Māori, this has detrimental effects on ākonga Māori and their learning. A study by Berryman and Eley (2017) interviewed ākonga Māori, who fed back that being an ākonga Māori in secondary school was a negative experience:

students ... spoke of enduring negative stereotypes about being Māori within schools that impacted repeatedly on their daily lives. They talked openly (and heart breakingly) about the low expectations for both academic success and positive behaviour from teachers. They talked about having to live with disrespectful and dismissive attitudes towards their language and their culture (p.104).

As a consequence of kaiako stereotyping against Māori, ākonga Māori experience:

- a lower level of motivation due to an awareness of their kaiako having lower expectations of them
- negative attitudes toward their learning
- a breakdown of the ākonga-kaiako relationship.

In later research by Berryman and Eley (2019), they emphasise that the kaiako-ākonga relationship is the most influential factor in the ability for ākonga Māori to achieve in the classroom, arguing that ākonga need to know: “that their teachers care for them; have high expectations for them to achieve; know what they need to learn; know how to lead students to this learning; and, how to manage classrooms in ways to support their learning” (p.991).

Similarly, Rubie-Davies and Peterson (2016) found, “There have been consistently strong links shown between teacher expectations and student achievement, between student self-efficacy and achievement and between student motivation and achievement” (p.73). In contrast, when a kaiako truly believes in their ākonga Māori and has high expectations of them, ākonga Māori become empowered and are more likely to engage in their learning. Bishop et al. (2014) argue that kaiako need to be supported to understand the impact that negative, deficit theorizing on ākonga Māori has regarding their relationships with their ākonga Māori and to (re)theorize their teaching and learning pedagogy in a more

culturally responsive manner. Then, as a result, “teachers would have higher expectations of their students, which would lead to greater engagement by students with learning” (p.191). With this in mind, a strong case for the utilisation of GIE within learning spaces could be made, dependent upon the ability to cater to the needs of tāne ākonga Māori in a manner that acknowledges the potential of ākonga Māori and aims to unlock that potential, so tāne ākonga Māori are valued and able to thrive as Māori.

Productive partnerships with whānau and iwi

When the education provider embraces the whānau and iwi of ākonga Māori, they can work collectively towards a common goal that promotes collaboration, and ākonga Māori thrive. Therefore, a kaiako who can develop and maintain a collaborative relationship with their ākonga, whānau, and iwi can create a learning environment that gives ākonga Māori a stronger sense of belonging. Furthermore, the kaiako will have more insight into the goals, dreams, and wider whānau and iwi aspirations of their ākonga (Hutchings et al., 2012). Also, the Ministry of Education (2013a) identifies these relationships between kaiako, whānau, and wider iwi as productive partnerships, stating that:

A productive partnership starts with the understanding that Māori children and students are connected to whānau and should not be viewed or treated as separate, isolated or disconnected. Parents and whānau must be involved in conversations about their children and their learning. They need accessible, evidence-based information on how to support their children’s learning and success (p.18).

Many researchers have also identified productive partnerships between kaiako, ākonga Māori whānau, and iwi as essential best practices for educating ākonga Māori. That is, key stakeholders who influence English medium educational settings must develop and maintain strong relationships with whānau and wider iwi, ultimately for the benefit of ākonga. Highfield and Webber (2021) argue, “Culturally sustaining practice should be integrated within the curriculum and pedagogies of teachers and leaders in all schools, throughout all levels of the school, and in partnership with Māori” (p.148). Furthermore, the Ministry of Education’s (2017) Māori Education Strategy, *Ka Hikitia*, stipulates that: “schools should provide Māori students with opportunities to achieve educational success

“as Māori” through quality educational provision and strong engagement with communities” (p.148).

Developing relationships with whānau and iwi also allows kaiako to understand the cultural needs of their ākonga better, allowing them to incorporate important aspects of the lives of their ākonga into learning experiences, making learning more meaningful for them. Furthermore, whānau members and iwi could have opportunities to support the school in meeting the needs of ākonga Māori, such as offering their knowledge, skills, or resources. Hutchings et al. (2012) state, “Positive and affirming relationships on all levels of schooling is considered to be necessary for Māori tamariki, mokopuna (grandchildren) and the wider whānau. This is so a sense of common purpose and belonging among the school and whānau can develop” (p.39). Hence, GIE catered to the needs of tāne ākonga Māori can also be tailored to the specific needs of ākonga Māori and, therefore, can fulfill the aspirations of local iwi and whānau.

Te reo Māori

Te reo Māori is an integral element of te ao Māori, and in an educational context, has been identified by researchers as being “At the heart of Māori education” (Hutchings et al., 2012, p.24). Also, Durie (2006a) notes that for Māori, educational institutions have contributed largely to the revitalisation of the Māori culture and te reo Māori, which continues to be a significant issue in Aotearoa. Simmonds et al. (2020) confirms “the revitalisation of Te Reo Māori emerged during the 1970’s” (p.9). Furthermore, the Treaty of Waitangi, and consequently, Ka Hikitia, highly prioritises the revitalisation of te reo Māori and expects English medium educational settings to value, promote, speak, teach, and encourage the use of te reo Māori. The Ministry of Education (2013a) affirms: “Māori language in education is critical in enabling the Crown to meet its Treaty obligations to strengthen and protect the Māori language. Education is a key vehicle to revitalise and sustain the Māori language” (p.28).

English medium educational settings in Aotearoa face several challenges when attempting to incorporate te reo Māori primarily due to the critically low percentage of educators who can kōrero Māori (speak te reo Māori fluently). According to Statistics New Zealand, 23% of people in Aotearoa said they spoke te reo Māori as one of their first

languages. Furthermore: “Since 2018, the proportion of people able to speak more than a few words or phrases of te reo Māori rose from 24 percent to 30 percent” (Statistics New Zealand, 2022, p.1). Consequently, the number of educators in English medium educational settings who have the confidence, knowledge, and ability to kōrero Māori (and correspondingly, have a high level of knowledge of te ao Māori) is very limited. The Ministry of Education (2013b) states “Demand for Māori and Māori language education professionals in both Māori and English medium outweighs supply. A shortage of quality language education professionals is a key barrier to providing better Māori language learning opportunities for all learners” (p.27).

Hutchings et al. (2012) found that in English medium educational settings in Aotearoa, “tamariki were confronted with schooling experiences that did not recognise their Māori cultural backgrounds and heritage. Examples included teacher practices that demonstrated a low level of awareness of Māori world-views” (p.40). Furthermore, “low recognition and understanding of Māori world-views limited the provision of Māori language and culture” (Hutchings et al., 2012, p.41). Hence, further validating the importance of productive partnerships between schools, educators, whānau, and iwi. The Ministry of Education (2013a) states:

Education professionals, including teachers and leaders, have the greatest influence in an education setting. Productive partnerships among education professionals, iwi, whānau and communities are critical to achieving high quality outcomes for students of Māori language in education. Iwi and Māori uphold a critical role as kaitiaki [guardian] of Māori language in all Māori language in education options (p.30).

Considering the above, normalising te reo Māori in English medium educational settings is integral for providing ākonga Māori with a culturally responsive learning environment where they feel a strong sense of belonging. Also, advocating for te reo Māori in English medium educational settings is critical for the revitalisation of te reo Māori, which is highlighted by the Ministry of Education (2013b) in the following quote:

Māori language in education is a defining feature of Aotearoa New Zealand’s education system... Every Māori learner should

be able to access high quality Māori language in education. In addition, for the Māori language to flourish the language needs to be supported and revitalised both within education and in communities (p.7).

Learning te reo Māori goes beyond speaking the language. Te reo Māori unlocks essential elements of te ao Māori, allowing more profound insight into Māori concepts and worldview. More specifically, Lourie (2013) identifies that "Te reo Maori and tikanga Maori are intertwined... learning te reo Maori gives students access to te ao Maori (the Maori world) and to Maori world views" (p.11). Similarly, Suaalii-Sauni (2017) identifies how Māori kupu have deeper meanings that educators must be open to when speaking, teaching, and encouraging te reo Māori. Suaalii-Sauni state, "This means not just being open to learning Māori words, but also being open to knowing how these words reflect Māori knowledge systems, histories, and sensibilities; how they define Māori relationships with their lands, their peoples, and with others" (p.157). Through gamifying a learning space, the gamification elements can integrate te reo Māori and encourage productive partnerships with whānau and iwi. Therefore, promoting a learning space that nurtures, encourages, and normalises te reo Māori.

Identity, language, and culture

Language is fundamental to cultural identity. Additionally, ākonga Māori need to feel a strong sense of belonging to feel safe in their learning space, be open to learning, take risks, share what they know, and ask questions. The Ministry of Education (2013a) clarifies, "There is a strong link between well-being and achievement. Students' well-being is strongly influenced by a clear sense of identity, and access and exposure to their own language and culture" (p.17). Also, acknowledgment, validity, and awareness of cultural identity in the learning space are integral for the success of ākonga Māori. Research has identified that ākonga Māori positively respond when they experience an environment where they feel valued in a way that acknowledges their cultural identity. The Ministry of Education (2008) claim:

Culture and education are inextricably interwoven, in the education system as well as in the learning setting. Māori children and students are more likely to achieve when they see themselves, their

whānau, hapū and iwi reflected in the teaching content and environment, and are able to be ‘Māori’ in all learning contexts (p.22).

Additionally, educators who value the identity of their ākonga will develop stronger relationships with them, their whānau, and wider iwi.

Literature regarding ākonga Māori in English medium primary schools has also found that ākonga Māori are losing their cultural identity as they seek an academic education. For instance, Berryman et al. (2017) note that successful revitalization and restoration of kaupapa Māori schooling has resulted in the development of Māori-medium educational initiatives in Aotearoa, such as kōhnga reo (pre-school), kura kaupapa Māori (primary-school), wharekura (secondary school), and wānanga (tertiary institutions). In these schools, Berryman et al. identify that ākonga Māori enjoy educational success as Māori without compromising their cultural identity. However, the researchers also state: “By far the majority of Māori students (90.3% in 2015) are in English-medium schools. Currently, in these schools, success for many students continues to be through assimilation into the English-medium agenda” (p.527).

Cultural identity is critical to nurture for the success of ākonga Māori. Māori culture is Indigenous to Aotearoa. Therefore, it is crucial to protect the identity of ākonga Māori in English medium education and promote and encourage the survival of Māori language and culture (Highfield & Webber, 2021). Accordingly, ākonga Māori should not have to give up their cultural values and beliefs while seeking education through English medium schools. Instead, school leaders and kaiako should create a culturally responsive education setting where the cultural values of their ākonga are promoted and encouraged. Highfield and Webber (2021) validate that: “When Māori students feel confident and competent in both their own culture and in the culture of the school, they know that learning can occur without forsaking their Māori identity to attain an academic one” (p.158). The process of gamifying a learning space in a manner that caters to the needs of tāne ākonga Māori sets up a strong culturally responsive learning space. Hence, throughout a gamifying process, educators should be guided to value and promote the identity, language, and culture of ākonga Māori.

Ako

Ako is a Māori concept where there is a non-hierarchical relationship between the kaiako and ākonga, acknowledging that both the kaiako and their ākonga have meaningful previous knowledge and experience to contribute, creating a shared learning experience. Napan et al. (2020) state, “Ako is more than teaching and learning. It describes a meaningful relationship characterized by mutuality, respect, and the notion of integrative, whole people learning” (p.63). More importantly, Ako is one of the guiding principles of Ka Hikitia and recognises that the significance of the kaiako-ākonga relationship is paramount for the kaiako to engage and motivate their ākonga Māori. Furthermore, Ako recognises that ākonga and their whānau are interconnected and influence their child’s learning and well-being. The Ministry of Education (2013a) confirms, “Ako describes a teaching and learning relationship where the educator is also learning from the student in a two-way process ... Ako is grounded in the principle of reciprocity and also recognises that students and their whānau cannot be separated” (p.16). In their research, Napan et al. (2020) also identify the importance of the connection between ākonga and their whānau, pointing out that Ako in the context of learning transcends individualistic notions as it involves recognition of the interrelated nature of learning outcomes for ākonga, which are not separate from their culture, environment, whānau, belief system, and the group they affiliate.

The principle of Ako also considers the relationship between the Government and Māori whānau and iwi, recognising the importance of ensuring their aspirations and perspectives are identified and valued within essential decision-making processes. The Ministry of Education (2013a) states: “ako is about seeking the perspectives of Māori students, parents, whānau, hapū, iwi and Māori organisations. This is an important way to ensure policies and activities take account of identity, language, culture, and what Māori know and value” (p.16). Essentially, Ako promotes relationships, collaboration, co-construction, and power sharing, especially concerning ākonga Māori, their whānau, and wider iwi in the English medium education system. Here, when reflecting on the aim of GIE, the concept of Ako through gamification elements can assist with acknowledging the strengths, interests, the importance of the kaiako-ākonga relationship for tāne ākonga Māori, and the concept that kaiako can learn from their ākonga just as ākonga can learn from them.

Male learners

Researchers such as Burusic et al. (2012) have sought to identify why girls perform better than boys in education and found that personality traits between girls and boys could be a factor. They state that girls are “more organized, better self-learners, more confident and articulate, more able to conform, and more likely to ask for help” (p.530). Also, the Ministry of Education (2022b) recognised, ““As a first step to improve boys’ achievement we need to ensure that they are engaged in, and excited by, their learning, and able to achieve to their full potential” (para.8). This quote speaks to the potential for gamification to support kaiako in enhancing the motivation and engagement of ākonga by tailoring the learning environment to their needs.

Regardless of the differences between girls and boys, researchers such as Pinkett and Roberts (2019) have established that the best way to teach boys is to treat them the same as girls. They claim, “Teach boys in exactly the same way that you teach girls. High challenge. High expectations. No gimmicks. No shortcuts” (p.21). Millard (2020) maintains that instead of adopting ‘boy friendly’ activities in an attempt to motivate and engage boys in their learning, kaiako “should instead take steps that research shows benefit all pupils, including boys” (p.16). Accordingly, the Ministry of Education (2022b) found that “International and national student achievement studies indicate that the achievement difference within a given gender is greater than the difference between genders” (para.3). In other words, overall data shows there are more differences between the same gender than there is between different genders. Conclusively, the Ministry of Education (2022b) recognises that rather than focusing on ‘boys needs’ and ‘girls needs’ separately, it is more applicable to direct focus on a set of beneficial outcomes that validates the diversity of all learners rather than focusing on one specific group.

Similarly, Keddie and Mills (2020) initially reject researchers’ theories that boys require different pedagogical approaches than girls, claiming that they “remain unconvinced by arguments about boys’ innate differences from girls” (p.8). However, it will be highly beneficial for educators to know the literature identifying boys’ learning needs. It will

give them more profound insights into why boys may engage, disengage, and react negatively or positively toward specific learning experiences or teaching strategies. For educators, understanding these insights could significantly improve their knowledge and abilities to best cater to the needs of their male ākonga. Keddie and Mills (2020) also identify the importance of recognising how educators are teaching boys. They note: “The ways in which gender is constructed and policed in various schools, and broader contexts, makes considering a pedagogy for boys important” (p.8). Essentially, literature on boys’ learning needs is highly appropriate to this PhD research. This is primarily due to the focus on tailoring GIE to the learning needs of tāne ākonga Māori. Additionally, these arguments confirm that a tailoring approach to GIE supports earlier statements concerning the highly beneficial outcomes for all ākonga, not just tāne ākonga Māori.

Considering the above arguments, the male learning needs of tāne ākonga Māori (and what this looks like) are crucial to recognise and are interrelated with cultural needs and how this affects any attempt to tailor gamification. Finally, having a deeper awareness of boys’ learning needs could provide kaiako, and therefore, tāne ākonga Māori, with critical support to help boost their motivation and engagement in English medium education. Overall, this section refers to **all** young boys rather than solely focusing on *tāne ākonga Māori*. The rationale for this approach is due to the aim of this research, which is to provide a discussion beneficial for all kaiako in Aotearoa. Accordingly, the following section will identify and briefly discuss the primary factors influencing **all boys** in their educational setting, including masculinity; peer pressure; emotions; kaiako expectations; learning styles; competition; and male kaiako/role models.

The burden to be ‘masculine’

In a general sense, researchers have found that boys face external pressures in mainstream society and the education system that girls do not, which are dictated by social conventions of ‘being masculine.’ These pressures include but are not limited to; being ‘macho’ (strong); being good at sports; being courageous; being emotionally strong by not expressing or talking about emotions (as this is considered ‘weak’); being a provider; pursuing status; and showing dominance. Pinkett and Roberts’ (2019) research on gender conformity and boys’ education state that “In gender conformity terms, boys appear to feel a heavier burden of expectation” (p.52). In an educational context, Pinkett and

Roberts classify these social conventions as a “‘hidden curriculum’ of social views on gender stereotypes” (p.122). Pinkett and Roberts further argue how this hidden curriculum puts a ‘burden on boys’ and, consequently, can become detrimental to boys learning as they attempt to live up to such expectations.

Additionally, this hidden curriculum is also found throughout literature, where male and female characters are given different gender roles that are notably gender specific. For example, Pinkett and Roberts (2019) maintain that “educational resources contribute towards the “hidden curriculum” and therefore teach children as much about attitudes towards gender, ethnicity, and social class as they do about fractions, commas, and volcanoes” (p.122). Educators must be aware of how boys are affected by this hidden curriculum, as it brings a more in-depth understanding of boys’ behaviours, actions, and reactions in the learning space. This is also acknowledged by James (2015), who states, “Just because the beliefs are based on stereotypes does not make them any less real or any less of a problem in the classroom” (p.5). James suggests acknowledging these beliefs allows both the kaiako and the ākonga opportunities to address the repercussions of this ‘hidden curriculum to be masculine.’ Hence, these arguments lend themselves to reaffirming the importance of knowing boys’ needs as male learners to help educators guide their male ākonga and become highly effective educators of boys.

Peer pressure

For boys, an unfortunate consequence of not conforming to the social conventions (for mainstream society) of being masculine is the repercussion of not being accepted into their peer group. This is also identified by Pinkett and Roberts (2019), who claim “young people who see themselves as being typical of their gender are much more likely to gain acceptance and popularity in the often-harsh dynamics of school” (p.51). Furthermore, Pinkett and Roberts also argue that “On the other hand, young people who view themselves as gender atypical – i.e. don’t think they fit the stereotypical mould of “teenage boy or girl” – are far more likely to be bullied or teased by their peers” (Pinkett & Roberts, 2019, p.51). If boys do not conform to social conventions of being masculine, they could face possible bullying or teasing. Therefore, this pressure, or ‘burden,’ becomes a considerable distraction from boys learning, and external pressures to be

accepted into the social group could become more important for boys than their academic achievement (Pinkett & Roberts, 2019). James (2015) suggests one reason why boys underachieve in school is that “there is peer pressure to do so. The message is that education is not the proper venue for men, and so boys don’t have to work. Boys also stop when they notice that their friends are not working” (p.145). Consequently, this could result in academically bright boys purposely not performing to their full potential to avoid the possible negative repercussions from their peers.

Ultimately, this is a problematic space for educators to help guide their male ākonga. In his later work, Roberts (2022) recognises this and offers suggestions to help kaiako support their male ākonga, identifying that “because of the powerful impact of peer pressure in the classroom boys prefer discreet praise, as opposed to public praise, given loudly by a well-meaning teacher” (p.86). Roberts further describes how discreet praise, compared to public praise, affects peer pressure, pointing out that “Boys often find public praise embarrassing. They would prefer not to be singled out in front of their peers. They worry that public praise and feedback might lead to ‘negative social consequences including bullying, teasing and belittlement’” (p.87). The above discussion and scenarios illustrate how knowledge of the effects of peer pressure on boys in the learning space can help kaiako to support their male ākonga better.

Emotions

Another consequence of living up to the social convention of being masculine is that boys and men do not express or talk about their emotions. The rationale is based on the belief that talking about emotions is considered feminine or weak. Pinkett and Roberts (2019) maintain that for boys, “to talk about feelings is to talk about weakness, helplessness, and vulnerability, things which in the masculine world are stigmatised” (p.64). A repercussion of this is boys growing into men who have an ingrained belief or pattern that they have to suppress their feelings. Sadly, this can have a snowball effect that builds into anger, and some men are not seeking support because this means asking for help and talking about their emotions. According to Pinkett and Roberts (2019) men typically experience and express their anger and other adverse emotions more so than women. This is due to an upbringing where society has made these expressions acceptable based on gender and

notions of masculinity.

For males who cannot express their emotions healthily, this can lead to more severe repercussions, such as suicide and mental health problems (Pinkett & Roberts, 2019). The tendency to use violence to express emotions can also have a snowball effect that develops from a very young age. Here, kaiako often play a crucial role in identifying these issues and working to aid in the development of young ākonga. Therefore, kaiako must be aware of how boys can become informed about their ability to acknowledge emotions positively and healthily that does not seek to position emotions as weaknesses. Overall, kaiako (and parents and whānau especially) must help boys overcome these social stigmas by doing their best to normalise emotions and feelings and asking for help, reframing these concepts as a gender-neutral aspect of life and growth.

Kaiako expectations

Researchers have identified concerns that kaiako have lower expectations of boys than of girls. Gentrup and Rjosk (2018) point out that “Many studies indicate that teacher expectations of student performance differ by student gender, regardless of their actual achievement” (p.296). Hence, gender stereotypes may influence kaiako expectations of boys. For example, Millard (2020) found that “Teachers’ expectations of boys and girls look different in different subject areas. Teachers tend to believe boys are better at maths and physics than girls and ‘hands-on’ subjects such as Design and Technology” (p.15). Consequently, kaiako having lower expectations of boys in particular subject areas lead to boys’ typically performing lower in those subjects (Millard, 2020). This highlights how influential kaiako expectations can be regarding the outcomes of ākonga, and the possible ramifications.

Gentrup and Rjosk (2018) also identify how kaiako expectations of boys could be related to their observations of boys’ work and study habits compared to girls, recognising that girls are more motivated, hardworking, and compliant than boys. According to Pinkett and Roberts (2019), by attempting to implement teaching strategies that are considered ‘boy-friendly,’ kaiako are implying lower expectations of boys, stating that “Boy-friendly schemes of learning often lack high expectations of what boys can achieve; disadvantaged pupils need more challenge not less” (p.16). Boys need more challenges in their learning

experiences. Also, kaiako must have equally high expectations of boys and girls. This phenomenon is similar to lower kaiako expectations of ākonga Māori due to kaiako succumbing to negative stereotypes that cause detrimental effects on their learning. Accordingly, educators must be aware of their expectations of their male ākonga and ensure they do not succumb to stereotypical or gender stereotypes. Kaiako must acknowledge that every ākonga is competent and should have equally high expectations, regardless of gender or cultural background. More specifically, what needs to be understood is that ākonga often require different approaches or teaching strategies to help unlock their full potential. Here, a gamified pedagogy for teaching and learning would be highly influential.

Learning styles?

A controversial assumption influenced by gender stereotypes is that boys learn via different ‘learning styles’ that predominantly consist of kinaesthetic, movement, and hands-on approaches to teaching and learning. Pinkett and Roberts (2019) argue that very little evidence supports the theory that ākonga – boys or girls – have different learning styles. Despite this, learning styles have been highly influential in education for many years (Rivers & Barnett, 2015). Rivers and Barnett suggest no factual basis for claims that ākonga have different ‘learning styles,’ and that “separating boys and girls based on alleged learning-style differences is unscientific” (p.11). Additionally, the widespread use of learning-style-based tests and resources is a “wasteful allocation of limited educational resources” (Rivers & Barnett, 2015, p.11). Learning styles based on gender, therefore, have been proven to be an invalid theory of learning.

Earlier in this section, a suggestion is that the best way to teach boys is to teach them the same as girls (Pinkett & Roberts, 2019). Similarly, James (2015) confirms that “boys and girls do not always learn in the same way, and different approaches to teaching benefit both” (p.3). James identifies the notion of ‘learning modalities.’ These learning modalities relate to the various sources of sensory information presented in the classroom, including auditory, kinesthetic, and visual senses. Additionally, James claims there are two different kinds of visual information, and therefore there are four different learning modalities: visual/iconic, visual/verbal, auditory, and kinesthetic. James also claims that learning modalities differ between genders; however, she further recognises that some

girls prefer to learn ‘the way boys do,’ stating: “Don’t forget, some girls learn more like boys” (p.9). Interestingly, James also states: “It is important to approach teaching from a gendered perspective, as not all students learn the same way and teaching them as if they did will not change that fact” (p.9). Given this, one might argue that the author contradicts her earlier statement. Ultimately, rather than assuming that ākonga have different ‘learning styles’ (numerous researchers have proved that to be inaccurate), Rivers and Barnett (2015) suggest that it is more effective for educators to identify, recognise, and encourage each of the unique range of talents, strengths, and interests exhibited by their ākonga.

Considering the above arguments, it is viable to accept that learning styles (especially if they claim to be gender specific) are unreliable. This is partly because girls and boys can have preferred learning methods that suit both. James (2015) recognises that although there are ‘gender specific’ apparent learning preferences between girls and boys, some girls still prefer to learn ‘like boys,’ and vice versa. Furthermore, it has not been addressed that ākonga of different cultures have different learning preferences. Throughout the gamifying process, by carefully selecting various relevant gamification elements, a range of learning methods can be offered to ākonga that can be tailored toward their interests, strengths, and cultural aspirations. Furthermore, the tailoring of GIE to the needs of tāne ākonga Māori ensures that their cultural values and their needs as male learners are not forsaken in English medium educational settings.

Competition

The assumption that boys like competition is another widely accepted belief influenced by gender stereotypes. Consequently, competition has been used to boost boys’ engagement and motivation in education settings for many years. Pinkett and Roberts (2019) identify competition as a “boy-friendly strategy,” stating that people assume “boys like competition, therefore, making activities competitive will make them more motivated to learn” (p.10). Although implementing competition into the learning space appears harmless, researchers such as Roberts (2022) later recognised that “efforts to introduce competition into the classroom have proved to be counterproductive and have damaged the self-efficacy of boys who are already lagging behind” (p.17). Pinkett and Roberts (2019) also argue that boys liking competition is an engagement myth. Their rationale for

this is partly due to their view that male self-worth, pride, and confidence are at stake.

Pinkett and Roberts (2019) argue that the education system as a whole is inherently competitive. This competitiveness, in turn, can trigger boys to ‘self-handicap’ and instantly lose their confidence when faced with competitive realities such as pass or fail examinations; being academically judged against their peers; and being analysed against numerous signposts that dictate where each ākonga ‘should be’ (regardless of their gender or culture) at certain ages. Pinketts and Roberts (2019) propose: “Why then, would you want to increase the competitive content by introducing further competition into the classroom?” (p.11). Compared to girls, boys are more concerned with the outcome of the competition, if they belong to the ‘high ability’ group, and if they are outperforming their peers.

On the surface, competition in the classroom may initially look like ākonga are excited and engaged in their learning; however, there is cause for concern if ākonga get caught up in the competition. When this occurs, they often experience feeling pressured to perform and can be required to think fast in front of their peers. Ultimately, this pressure takes away from ākonga engaging with the content and understanding the learning material, and instead, taking guesses at quick answers without thinking about them. In turn, peer pressure becomes a factor as well. Hence, a competitive strategy in the learning space could likely “activate the defence mechanism in many boys” (Pinkett & Roberts, 2019, p.11). Considering the above arguments, the element of competition must be used carefully and thoughtfully in the learning space. Roberts (2022) provides a solution for this, suggesting that “If you want to channel boys’ competitive natures, use the idea of competing against our previous self (mastery) rather than our peers (performance)” (p.17). Here, rewarding and acknowledging ākonga for personal effort rather than academic achievement would be a more practical approach to using competition to motivate boys’ learning. This is essential to acknowledge if attempting to incorporate competition into the learning space via gamification.

Male kaiako/role models

The urgency for boys to have a male kaiako or ‘male role model’ in their learning space has been and continues to be, a subject for debate. Brownhill (2014) characterises the

phenomenon as “‘more–male–teachers–will–solve–the–problem with boys’ hypothesis” (p.248). One reason for this debate is the numerous studies that found no evidence to support the theory that boys perform better academically with a male kaiako than a female kaiako (Roberts, 2022). A study of nearly 5,000 ākonga by Lam et al. (2010) found no evidence to support the notion that boys’ reading improved when men taught them. Carrington et al. (2008) and Marsh et al. (2008) also found no effect on ākonga achievement due to the gender of their kaiako. However, it is important to note that the above research solely acknowledges academic achievement. When contemplating what ‘achievement’ is, it is essential to consider other factors that could ultimately improve boys’ academic achievement. These factors include the happiness of ākonga, motivation, learning engagement, and genuine willingness (i.e. intrinsic motivation) to participate in activities. It could be argued that due to the ‘male role model’ debate, male kaiako are more effective at achieving a deeper level of engagement in learning with boys than female kaiako.

Another controversy surrounding the need for male role models stems from the growing number of tamariki (specifically, boys) raised in fatherless homes. Brownhill (2014) states that: “In recent years a popular view has developed that male practitioners/teachers are of benefit to boys because they are considered to be at a disadvantage due to a dearth of male presence in their lives” (p.247). People who are in educational leadership roles assume that a male role model in the learning space could help to ‘fill the gap’ in boys’ lives. Brownhill (2014) claims that “head teachers ... see male role models mainly as a way of meeting the needs of children from single parent families through their modelling of perceived ‘father figure’ qualities” (p.249). However, this is not validated by all researchers, such as Ashley (2003), who argues that ākonga do not build ‘parent substitute attachments’ with their kaiako and “by extension, do not subconsciously identify with their values, attitudes or goals” (cited in Brownhill, 2014, p.250). Rather than focusing on the need to ‘fill a gap’ in boys’ lives through a male kaiako or role model, it would be more valid to consider why a male role model has been suggested in the first place. For instance, boys may respond favourably to an older male, whom they look up to as a positive influence, and who can understand and support them on a level that a female kaiako would never be able to. Similarly, male kaiako would have the same effect on female ākonga. This is also comparable to cultural values discussed in the previous

section of this chapter, where a kaiako of the same cultural background as their ākonga was identified to understand better their learning needs, values, and aspirations.

Literature has identified that ākonga do not care about the gender of their kaiako and do not view them as ‘role models.’ Bricheno and Thornton (2007), for example, found that “Compared to 32% of young people who looked up to a parent as a role model, only a paltry 2.4% of pupils in their study identified a teacher as a role model” (cited in Roberts, 2022, p.44). Roberts (2022) also found that ākonga often like their kaiako and even feel grateful for their guidance and support. However, this often does not result in ākonga viewing their kaiako as role models. Regarding delicate situations such as personal matters or having deeper discussions about sensitive issues, Pinkett and Roberts (2019) point out that ākonga prefer to talk to someone of their gender. However, throughout the school day, there is no telling how often these situations may occur. Therefore, it is crucial to consider the non-academic benefits a male role model could provide for boys. Ultimately, these could improve boys’ confidence, compliance, motivation, and engagement in their learning space.

Brownhill (2014) identified characteristics people such as school leaders, kaiako, parents, and whānau would consider desirable in a male role model for an educational setting. Some of these characteristics include “competitiveness ... being active and adventurous ... having fun, supported through a heightened sense of humour ... doing ‘male’ things (e.g. building and making things) ... being emotionally neutral and ‘not soft’ ... [which] all constitute as ‘classic’ ‘masculine’ attributes” (Brownhill, 2014, p.249). Remarkably, Brownhill’s research identified over 65 different characteristics - an impossible number of characteristics for one man to fulfill. Overall, Brownhill concluded that people do not know what they want in a male role model. The researchers identified an issue with boys in educational settings that a possible male role model could fix. However, how to solve the issue and whether a male role model is the answer remains unclear.

Considering the above arguments, the terminology ‘male role model’ is not a helpful definition when considering male kaiako or the role of men in educational settings. This does not mean discouraging more men from English medium education. Instead, it suggests that the role of the male kaiako as more of a navigator or facilitator needs to be

re-considered. Similarly, Brownhill et al. (2021) recommend “abandoning the term altogether: It’s time for those working in education to move away from the term ‘role model’. Instead, we should use the term ‘facilitator’” (p.45). As suggested earlier, there are many advantages to having an older male in the learning space that extends beyond academic achievement. That is their role in guiding boys where a female kaiako will never be as effective, such as their pastoral care and improving their overall motivation and engagement in their learning.

This chapter began by providing an overview of the justifications for the focus of tāne ākonga Māori in this PhD research. Their cultural and needs as male learners have been examined. Many crucial issues have been highlighted, especially for improving their engagement and motivation within English medium educational settings. Ultimately, the literature within this chapter provides a deeper understanding of the factors that are significant for tailoring gamification to the needs of tāne ākonga Māori.

Chapter Four: Literature on gamification in education

Gamification and the use of gamification in educational settings has been a topic of great interest for many researchers as it represents an exciting, innovative teaching methodology with great potential for improving the motivation and engagement of ākonga. This has also been recognised by Majuri et al. (2018), who state that gamification “has continued to be a popular topic within both industry and academia since its popularization in the early 2010s. Gamification has gained significant attention, especially in educational contexts” (p.11). Also, Ofosu-Ampong (2020) claims that “more studies have sought to integrate game design elements into education as well as identifying the consequences and antecedents of technology-enhanced learning and game-based learning” (p.114). Furthermore, Rabah et al. (2018) affirm that “Gamification of learning—the application of game design elements to learning activities—is currently a hot, if controversial, trend in education” (p.489). Studies in the field of GIE began in 2011 (Oliveira et al., 2022a & Ofosu-Ampong, 2020); therefore, GIE is relatively new, so there is plenty of room for growth and, additionally, creativity and innovation regarding its development.

In order to tailor gamification for use in education settings, there needs to be a deeper understanding of how gamification works and, more specifically, the positive and negative effects of gamification on the learning of ākonga. Accordingly, this chapter provides an overview of relevant literature. I begin by answering questions posed in Chapter One of this thesis relating to why tamariki persist and stay motivated for long periods, even throughout challenging gaming content. A discussion regarding how technology, GBL, and play-based learning often face resistance regarding their use in English medium educational settings is outlined, and how this relates to GIE. The importance of ensuring gamified learning spaces are well-designed is emphasised, especially regarding successful outcomes for ākonga. The important role the kaiako contributes to the gamified design is discussed. Then, the concept of tailoring GIE to the specific needs of ākonga is identified, and the benefits researchers have discovered for tailoring GIE to their needs is examined.

The power of games

In Chapter One, the following questions were raised: *What motivates learners to play the game, persist and stick with problem-solving for so long? What is the science behind it; is this something that can be utilised to motivate ākonga in their learning space?* The answers to these questions have been identified through research, including intrinsic motivation, extrinsic motivation, and intrinsic reinforcement (Bénabou & Tirole, 2003, Huo, 2018, & Chou, 2022). These terms will now be discussed concerning how playing games can help ākonga become more engaged and motivated in their learning in an educational context and how flow theory can assist in effectively designing a gamified learning space to ensure a healthy balance of (intrinsic and extrinsic) motivators are utilized. Furthermore, intrinsic and extrinsic motivation will be analysed regarding the most effective motivator for tāne ākonga Māori learning and how this can be accomplished through GIE.

Intrinsic and extrinsic motivation

Intrinsic motivation is internal motivation driven by our needs, wants, and desires. Bénabou and Tirole (2003) state that intrinsic motivation refers to “the individual’s desire to perform the task for its own sake” (p.490). An example of intrinsic motivation is when a person participates in something for the love of doing it and finding it satisfying. Playing netball with your friends for fun rather than for a competition or reading a book because you are interested in the content and enjoy reading are examples. Extrinsic motivation refers to behaviours driven by external factors, like having to do a task for reasons such as: avoiding punishment, passing a test, receiving a reward, or peer pressure. Bénabou and Tirole (2003) define extrinsic motivation as “contingent rewards” (p.490). An example of extrinsic motivation in education is when an ākonga has to study for a test, do homework to avoid punishment for not doing it, or compete in sports to gain an award. With this in mind, it could be that intrinsic motivation is ideal for encouraging ākonga to become more motivated and independent learners. Hanus and Cruz (2016) state that:

Individuals who are intrinsically motivated to do a task stick with it longer and care about it more. If we can get students to be intrinsically motivated to learn, then they will be more motivated

to study, engage with the material, and be more likely to stay interested for longer periods of time than someone extrinsically motivated (p.587).

Research has proven that extrinsically motivated ākonga are only engaged on a short-term basis, and over time, this can ultimately hinder their will to learn. For instance, Bénabou and Tirole (2003) state that extrinsic motivation has “a limited impact on current performance, and reduce[s] the agent’s motivation to undertake similar tasks in the future” (p.492). However, extrinsic motivation also has positive influences on the learning of ākonga, as identified by Huo (2018), who states that “extrinsic motivation may be used by educators to increase competition among students because students motivated by competition have the desire to learn and feel responsible for their learning process” (p.10). Huo further identifies that extrinsic motivation can motivate ākonga to create and set goals, increasing their confidence and allowing them to “learn from the mistakes of others and have a chance to interact freely with others when learning” (p.12). Therefore, extrinsic and intrinsic motivators have a dual effect (positive and negative) on learning. More specifically, Hanus and Fox (2015) state that “gamification in the classroom may be a double-edged sword” (p.160). Their justification is that rewards and incentives could increase intrinsic motivation for bored ākonga who have no desire to be there; however, for ākonga who are genuinely interested and are already motivated to participate, the efforts to gamify the learning space may sabotage their intrinsic motivation. Overall, this emphasises the importance of being aware of these effects to take advantage of the positive benefits of both intrinsic and extrinsic motivation.

GIE has great potential to motivate ākonga extrinsically, especially if there is an emphasis on the points and reward elements. A Taiwanese-American entrepreneur, Chou (2022), began his research on gamification in 2002 and is regarded as one of the earliest pioneers in the gamification industry. In his gamification framework, Chou organised the gaming elements into ‘left brain’ (extrinsic) and ‘right brain’ (intrinsic) motivators. Chou emphasises the importance of this and recommends that businesses use more right-brain core drives (intrinsic motivators) when using his gamification framework, stating that:

many studies have shown that once you stop offering the extrinsic motivator, user motivation will often decrease to much lower than

before the extrinsic motivator was first introduced. It's much better for companies to design experiences that motivate the Right Brain Core Drives, making something in of itself fun and rewarding, so users continuously engage in the activity (para.25).

Considering Chou's knowledge in the field of gamification and his extensive research for his gamification framework, employing his recommendation to use more intrinsic (right brain) motivators would be credible. However, it is crucial to highlight that Chou's gamification framework has been specifically developed for gaming and behavioural design, not specifically for education. Thus, further investigation for educational purposes is required.

A study conducted by Vecchione et al. (2014) identified that, across all levels of education, females tend to be more intrinsically motivated than males. Furthermore, the researchers found that males are more driven by extrinsic motivators, stating, "Males, on the contrary, are more control-oriented than females, and thus more inclined to regulate their behavior based on reward contingencies and social controls" (p.130). Roberts (2022) also identifies that "as well as lacking intrinsic motivation, boys were much more likely to set performance goals¹⁷ than mastery goals¹⁸" (p.9). According to Roberts, ākongā who adopt performance goals are extrinsically motivated by good grades and outperforming their peers. Furthermore, ākongā who set performance goals prefer feedback that makes them feel good and tasks where they can excel. However, Roberts argues that they are also less able to take on critical feedback and take failure as a huge setback.

Roberts (2022) further identifies that ākongā who set mastery goals are intrinsically motivated. Therefore, ākongā are more self-motivated to learn new skills and knowledge and typically improve on a subject over extended periods. Roberts states, "Research has shown that performance goals are less likely to lead to high-achievement outcomes than

¹⁷ Performance goals are focused on specific outcomes that are measurable absolutes. An example of a performance goal: *I will read 20 books by the end of term one*

¹⁸ Mastery goals provide a desire to be the best you can be in a particular subject. Mastery goals are never finished and are not limited to a specific time frame. An example of a mastery goal could be: *I want to be the best reader that I can be*

mastery goals” (p.9). Considering the above arguments, intrinsic motivation has been recognised as being the most effective for the learning of ākonga. Given this, it is essential to recognise that GIE can also harness the benefits of extrinsic motivation, such as boosting boys’ confidence and providing the initial motivation and engagement for learning. Then, a mixture of other carefully chosen gamification elements through the gamifying process could help balance out the harmful effects of too much extrinsic motivation, such as encouraging the setting of mastery goals.

Conclusively, it could be plausible that the best recommendation for GIE regarding intrinsic and extrinsic motivators would be to ensure a balance of motivators used to achieve harmony. This has also been identified by researchers in the field of GIE Fiş Erümit and Karakuş Yılmaz (2022), who state that “In order to reach an optimal level of flow in the gamification process, a balance of both extrinsic and intrinsic motivational elements should be provided” (p.3). They have identified this need for balance as ‘flow theory’ and that “To effectively provide a sense of play, gamification should be designed to maintain an adequate level of psychological flow for individuals to experience satisfaction in their performance” (Fiş Erümit & Karakuş Yılmaz, 2022, p.3). Additionally, Huang and Hew (2018) discuss how “Flow is a state of full involvement, complete absorption, and intrinsic enjoyment when performing an activity” (p.256). Huang and Hew discuss how a ‘flow state’ needs to have the following conditions; clear goals; immediate feedback regarding progress and performance; a suitable level of challenges; and recognised value of the challenges regarding building existing knowledge and skills. Therefore, these factors must be carefully considered when designing a gamification framework for education. Then, the framework could guide educators to ensure that the intrinsic and extrinsic motivators are the most effective for their learners. Ultimately, this would achieve a flow state for ākonga in a gamified learning space. Furthermore, this would prevent any adverse effects of using too many extrinsic motivators through the gaming elements.

Intrinsic reinforcement

Another reason why games are so powerful is due to a concept called intrinsic reinforcement. Zichermann (2014), a Canadian-American author and advocate for gamification, explains how intrinsic reinforcement keeps people hooked on playing

games for long periods. Zichermann states: “anytime you challenge yourself to something, anything at all – it doesn’t matter how big or how small – and then you achieve that thing, your brain secretes a magical little bit of dopamine, which is a pleasurable chemical” (unpaginated). Zichermann also references a concept that Professor Robertson (2012a), a psychologist and neuroscientist, has identified in his research as the ‘winner effect.’ The winner effect refers to a challenge-achievement-pleasure cycle, where the more you participate in the cycle, the more dopamine and testosterone are released in your brain. As a consequence, the more you want to do it. In other words, the more you succeed, the more you want to succeed. Consequently, people who engage in gaming experience challenge, achievement, and pleasure loop repeatedly want to keep doing it more and more. Considering this, it is plausible that this concept could be used effectively to enhance the engagement and motivation of ākongā through gamification.

The winner effect

Robertson (2012a) has identified that dopamine and testosterone change our brain’s structure. In his research, he investigates how hormones such as testosterone and dopamine affect us, specifically how hormones affect our brain when we experience a win. Robertson states that “Dopamine is a key element in motivation” (p.89) and discusses how it helps us to become more goal-oriented and motivated. Robertson points out that the more we win, the more dopamine and testosterone are secreted into our brains, and the more we want to win; hence increasing our motivation and drive to do more. Robertson claims, “Winning changes how we feel and think by racking up testosterone and the dopamine-sensitive brain systems responsible for an action-oriented approach” (p.89). Robertson also identifies that “we need leaders who are motivated and goal-focused in this way – these are the essential qualities of leadership,” and additionally identifies that “leaders constantly experience further boosts in testosterone, giving rise to the powerful success spiral of the winner effect” (p.89). Given the points raised by Robertson, it could be argued that when planned effectively for an educational context, the winner effect could help support ākongā in their learning by giving them a motivational and confidence boost every time they experience success. Similarly, Zichermann (2014) states that to take advantage of the power of games, we need to:

put the power of games to work. To inspire creativity and innovation. And that concept is called gamification. That’s when

we take deliberately the ideas of games, and apply them to changing peoples' behaviour and making the world a more interesting, more dynamic and more creative place (unpaginated).

GBL, learning through games, and GIE, therefore, have significant potential for enhancing the motivation and engagement of ākonga in their learning space. However, this potential is not always recognised by whānau and members of the general public, who often do not agree with their use in education settings. This will now be further discussed.

Resistance against the use of technology, game-based learning, and play-based learning in educational settings

The use of technology, GBL, and play-based learning initiatives have often faced resistance from families and the general public regarding their use in educational settings, even though an abundance of research proves these initiatives are highly beneficial for ākonga and their learning (Bénabou & Tirole, 2003; Blucher, 2017; Bolstad & McDowall, 2019; Ge & Ifenthaler, 2018; Granic et al., 2014; Hitchens & Tulloch, 2018; Huo, 2018; Chou, 2022; Kim et al., 2018; McLeod, 2018; Piaget, 2018, & Robertson, 2012b). Some concerns are related to ākonga having too much screen time or being too reliant on technology to succeed. It is important to note that GIE can include elements of technology, GBL, and play-based learning. As such, it is relevant to acknowledge and address any concerns against using these initiatives in educational settings to ensure that GIE does not face similar doubts. This is especially important considering confusion exists between the terms GIE and GBL. It is, therefore, fundamental to educate people on the benefits of GIE to ensure its potential is not hindered by skepticism related to GBL, technology, or play-based learning-based initiatives.

The education system is centuries old, and since its conception, it and society have significantly changed and advanced. This is also identified by James (2015), who points out that during this time, “the process of teaching has changed a great deal. Our attitudes

about appropriate classroom activities have changed and continue to change” (p.5). The educational landscape keeps changing and advancing concerning many factors, including the learning needs of ākonga. Therefore, educators must keep up with advancements in teaching and learning to ensure their ākonga are provided with relevant learning experiences which cater to their everchanging needs. This is further affirmed by James (2015), who claims that “Part of the reason for the changes is that educational research shows that different teaching methods and approaches produce better results” (p.5).

Hitchens and Tulloch (2018) investigated the attitudes of ākonga toward gamification. They identified, “The problem does not lie with individual teachers nor even in specific syllabuses but is a systemic reflection of cultural and generational changes in how people learn” (p.29). Teaching and learning initiatives such as play-based learning, technology, and GBL are becoming more commonly used in primary school education settings for engaging and motivating ākonga. However, their use is often met with resistance from members of society who are still unconvinced regarding their legibility in an educational context. Considering the abundance of research that confirms the benefits of learning through games, play-based learning, and technology initiatives, it could be argued that as education moves forward into 21st Century learning, we *need* to maintain an open mind, embrace these initiatives and use them to our advantage to ultimately benefit the next generation of ākonga. For instance, Hitchens and Tulloch (2018) state:

Many of today’s students have spent their formative years learning through mediated experiences, such video games, online environments and social networks. Rather than dismissing the significance of this, or trying to train students out of their “bad habits”, there is the opportunity to embrace the pedagogic potential of these systems (p.29).

With this in mind, GIE has the flexibility to give educators a choice between different gamification elements that can tailor its approach to different contexts, learning needs, and groups of ākonga. Gamification elements could therefore integrate the beneficial parts of current initiatives such as GBL, play-based learning, and technology to increase the motivation and engagement of ākonga. However, the benefits of GIE need to be made clear so that any attempts to implement it are not negatively judged before they have had

a chance to succeed.

The use of play-based learning in educational settings

The integration of play-based learning initiatives into primary school education settings has faced resistance from whānau and the general public. Additionally, the pressure put on primary school kaiako to comply with curriculum requirements can affect their ability to implement play-based learning in their teaching practices successfully. This has been identified by Blucher (2017) in her research that explores key stakeholders' perspectives on a play-based learning approach in the first year of primary school. Blucher identifies that kaiako highlighted a “pressure to help students achieve academic success that is predetermined by a national curriculum... Consequently, a play-based approach is replaced by teacher directed activities to teach specific academic skills and knowledge in order to meet required student outcomes” (p.25). Furthermore, this research also identified that even though parents understand the value of play for their tamariki, their perceptions change in favour of academic achievement once their tamariki begin primary school. Blucher points out, “Once children enter school parent perspectives appear to shift from the value of play to a focus on academic achievement. The literature identifies the phenomenon of the hurried child in the cross-cultural decline of free play” (p.25). In later research by Blucher et al. (2018), the influence of higher stakeholders was also identified regarding the successfulness of play-based learning, stating that “support from the principal, parent–teacher association (PTA), board of trustees, and Year 1 team was vital for the successful implementation of a Pb-L approach” (p.57). Blucher et al. continue to claim that “the school leadership team’s support permitted teacher agency to develop Pb-L and mitigated the tensions that may exist if school leaders focus on academic achievement at the expense of using more child-centred teaching practices” (p.57). Considering the above arguments, educating parents, whānau, and the general public on the value of play-based learning in education is crucial.

Piaget, a theorist mentioned in Chapter One known for his theory of child development, identified that tamariki gain a much deeper understanding of the subject while learning through play (as cited in McLeod, 2018). Piaget also claims that tamariki need to be active learners who make their own discoveries. While discussing Piaget’s work, McLeod, (2018) noted that Piaget’s theory “was seen as central to the transformation of the primary

school curriculum” (para.85). Additionally, McLeod discusses that “Within the classroom learning should be student-centered and accomplished through active discovery learning. The role of the teacher is to facilitate learning, rather than direct tuition” (para.89). Furthermore, Blucher (2017) also identifies that play-based learning (Pb-L) promotes deeper learning and understanding for tamariki, maintaining that “An important consideration is the difference between parental knowledge of child development and the characteristics of Pb-L that emphasises creativity, problem-solving, critical thinking, self-regulation, and social competence as important qualities in 21st century learners” (p.26). Play-based learning is argued to be highly effective in supporting the learning of ākonga. For example, *when designed well*, elements of play-based learning in GIE could also provide successful outcomes for older ākonga.

The use of technology in educational settings

Parents, whānau, and the general public have identified several concerns regarding the use of technology in education settings (Bolstad & McDowall, 2019). These concerns include; the amount of screen time; lack of critical thinking; too much reward-based learning; lack of self-control or addiction; traditional ‘paper and pen’ learning being outdated; and the worry that ākonga may miss out on the basics such as handwriting, spelling, and writing if too much technology is used. Education Central (2018) identified some of the pros and cons of using technology in schools, stating that “there are negative correlations between health and gaming, and other families might see this as time not so well spent, or as not fitting in with their family values” (p.1). These concerns could indicate a lack of resources or funds to purchase adequate technology. Bolstad and McDowall (2019) identified a need for more appropriate resources for GBL teaching and learning environments. They claim that “other common challenges are knowing where to look for ‘good’ games, having time to evaluate their fit for purpose, and planning how they will fit into a teaching and learning strategy” (p.35). GIE is often confused with various EOGL initiatives. Therefore, it is essential to establish the differences between the initiatives to help minimize the misconceptions about GIE and instead emphasise the potential benefits GIE has for teaching and learning.¹⁹

¹⁹ Further clarification between the various EOGL were clarified in Chapter One

The use of game-based learning in educational settings

This chapter has identified that using game-based initiatives in educational settings such as GBL has often faced resistance. Some of these reasons have been identified by Bolstad and McDowall (2019), who claims “Games have a complex, and sometimes troubled, relationship with modern systems of formal education. Games may be viewed as a “natural” partner to learning, or as a distraction from learning” (p.1). Bolstad and McDowall also describe some of the negative aspects of gaming, which can put whānau and members of the public off supporting GBL in education settings. For example, they point out that “Sometimes, games are even considered to provide a dangerous kind of learning, generating concerns about violence or other unsavoury content, or fears about players’ attention span, ability to socialise, or “addiction” to gaming” (p.1). Suppose whānau have continued negative experiences at home related to their tamariki involved in gaming (e.g. addiction, problems with screen time, or their child growing frustrated when asked to stop gaming). In that case, whānau may be more likely to show resistance against the use of GBL in schools.

Educators must know how to use games to their full potential in the learning space. This is imperative to the success of GBL and GBL initiatives. Bolstad and McDowall (2019) maintain that “educators who take the time to dig deeper into games will discover a wealth of ideas and possibilities to enrich their practice” (p.1). Here, GIE allows the selection of the most effective gamification elements, enabling educators to take advantage of the best parts of games and tailor them to benefit their ākonga. Ofosu-Ampong (2020) highlights how achieving this result can often take a lot of practice and building of knowledge regarding how to be innovative and creative with teaching and learning experiences, especially regarding the effective use of GIE. Ofosu-Ampong (2020) maintains: “For the effectiveness of gamification, game elements should be added when there is a clear understanding of how gamification works in the educational context” (p.5). The researcher goes on to quote Folmar (2015), who affirms that “gamification is not just ‘making a game, which imparts a lesson; it is applying game thinking to how we impart that lesson and continuing to develop it based on the feedback from the players’” (p.5). More importantly, points such as these highlight the effectiveness of GIE, which largely depends on the gamified learning space to be well thought out and planned to produce

positive results. This again emphasises the need for a well-designed gamified learning space, which will now be further discussed.

The importance of a well-designed gamified learning space

This section examines how gamification can enhance the motivation and engagement of ākonga in educational settings when used effectively. The importance of a gamified learning space being well-designed has been identified in this thesis as fundamental to the success of GIE. As mentioned earlier, gamification is often misunderstood and, in an educational context, can be mistaken for simply incorporating apps or games into the classroom. However, gamification offers a much more comprehensive teaching and learning approach that traditional teaching and learning methods do not necessarily encourage. Therefore, it needs to be well executed to make the most of the benefits that gamification cultivates. This section identifies and discusses the disadvantages of using game-based initiatives in educational contexts. A discussion is also had regarding how when not well-designed, integrating curriculum standards into game-based initiatives can hinder the learning of ākonga as it typically distracts them from their learning goals. Furthermore, the role of the kaiako in planning and delivering the gamified design will be discussed. The wealth of benefits stemming from game-based initiatives such as GIE has already been identified and discussed throughout this thesis. Ultimately, the following critical discussion of negative impacts clearly shows how a well-designed gamified learning space can benefit ākonga and their learning.

GIE encourages educators to be innovative, creative, and thoughtful regarding the design and set-up of their learning space. The disadvantages and concerns identified in this section are not solely related to GIE but to *all* EOGL initiatives. The examples have been identified because the misconceptions between the terms can further mislead people and create unrelated concerns regarding GIE. Additionally, GIE integrates gamification elements, so it is highly relevant to mention disadvantages and concerns to emphasise the importance of well-designed gamified learning environments in the hope that any disadvantages or adverse effects are minimised. Such disadvantages and concerns can

put educators off implementing game-based initiatives into their learning spaces, as identified by Bolstad and McDowall (2019), who state, “assumptions about games and play—that they are at best childish and frivolous, or at worst, distracting and dangerous—have led many educators to overlook the theoretical, philosophical, and practical gifts that a game-based view of learning can offer” (p.2). Conclusively, when well-designed, the full potential of EOGL initiatives can be realised.

Disadvantages of not using games productively in an educational context

Integrating games or game-based initiatives (such as gamification) in educational contexts, when not executed productively or well-designed, can adversely affect the learning of ākonga. Past research has confirmed that one of the main reasons game design can be so effective for learning is that it is a complex and involved process that is genuinely difficult to do (Bolstad & McDowall, 2019). These researchers go on to state that “while there are many ways to “fail” as a player... there are vastly more ways to fail as a game designer” (p.22). Earlier in this chapter, it was identified that there is some resistance against using game-based initiatives in an educational context from people who are still unconvinced regarding their effectiveness for student’s learning. The most prominent concerns are linked to amounts of screen time usage; the underdevelopment of critical thinking skills; an overuse of reward-based learning; and self-control and addiction issues. These are relevant concerns that will be addressed in this section.

A psychologist and neuroscientist, Robertson, was mentioned earlier in this chapter regarding his research on dopamine²⁰ and testosterone’s²¹ effect on our brain when we experience a win. According to Robertson (2012b), “Dopamine is the juice of reward, which tells us what to learn and do more of and what to unlearn and do less of” (p.2).

²⁰ Dopamine is a hormone and neurotransmitter (chemical messengers that carry signals from one neuron to the next target cell). Dopamine plays a role in many body functions, including pleasure, motivation, and learning

²¹ Testosterone is a hormone that males have in more significant amounts than females. Testosterone affects many things in our bodies, including sex drive, sperm production, bone and muscle mass, fat distribution, strength, and red blood cell production

Robertson (2012b) states that “Testosterone is a hormone which boosts men's and women's sex drive and makes them more aggressive, and it does so by changing the chemistry of their brains” (p.2). In his research, Robertson identifies a phenomenon called ‘the winner effect,’ where the more we win, the more dopamine and testosterone is secreted into our brains. As a result, the more we want to win. Ultimately, this increases our motivation to keep doing more. Robertson (2012a) identifies how people who experience the winner effect escalate into a spiral where they keep experiencing more success, stating that “such successes mean that leaders constantly experience further boosts in testosterone, giving rise to the powerful success spiral of the winner effect” (p.90). Moreover, dopamine influxes such as this are a normal part of living and happen daily as we have experiences such as recreational activities, successes, and spending time with loved ones.

However, there is a concern that abusing influxes of dopamine could have negative implications, including addiction. For example, Kim et al. (2018) identify how overusing certain games can cause ‘over-engagement’ or addiction. The researchers affirm that playing games can have many positive impacts but also state that “game addictions can have a negative effect on their lives. They must be careful of how they use the game. The game should not be the top priority of their life. It should exist for enhancing the life” (p.13). With this in mind, if the phenomenon of the winner effect is over-abused in game-based learning initiatives in educational contexts, ākonga could become addicted to the dopamine rush, causing addiction to game-based or gamified products. Here, it is essential to remember the difference between GBL and GIE. The integration of gamification elements through gamification can ensure the most effective elements of the game are used, expectantly avoiding the risk of addiction. Therefore, when designed well, the winner effect through gamification could work in favour of ākonga to boost their motivation and drive to do more. For educators, this will take some practice and background knowledge to ensure that the gamifying of their learning space minimises these risks as much as possible. Hence, the use of a gamification framework for education can guide educators to help avoid such adverse effects of a gamified learning space that

is not well-designed.²²

Concerns regarding integrating curriculum standards into game-based learning initiatives

When implementing games or game-based initiatives in educational settings, there is a concern that the pressure for educators to integrate curriculum standards can detract from the extensive benefits that game-based initiatives provide. Ge and Ifenthaler (2018) agree that “there are concerns about educational games. Some researchers noticed that as soon as educational components are embedded in a game, the fun is taken out” (p.2). The researchers note that when learning tasks in game-based initiatives are academically aligned to satisfy the standards, this can take away from the complex systems that game-based initiatives offer, such as the strategy and problem-solving elements of the game. This is specifically applicable if the tasks are not well-designed. For example, when considering the notion that curriculum standards impede game-based learning initiatives, Ge and Ifenthaler (2018) argue that “Instead of finding themselves solving problems in a complex system, ākonga were given tasks which were didactic and discrete in order to be aligned with the standards” (p.2). Ultimately, this can result in ākonga being disappointed by the original promise of a fun learning task through a game-based learning initiative or activity and, therefore, disengaging from the learning task altogether.

Other researchers who have examined the use of games for educational purposes recognise that there is a fine line between ensuring the fun element of the game is still intact and ensuring that the game satisfies the desired educational outcomes. For instance, Granic et al. (2014) suggested the metaphor “chocolate-covered broccoli,” which came about to describe the researchers’ frustration regarding educational games, stating that “the games look great, they are good for you, but they ultimately fail to work because the creative game dynamics that induce transportation and immersion are missing, making them simply not fun” (p.74). Consequently, if not well-designed, the use of EOGL initiatives in educational settings could ultimately distract ākonga from the point of their

²² This is discussed more in-depth in Chapter Eight of this thesis

learning. These discussions emphasise that gamified learning spaces must be well-designed to produce the best results. Similarly, Kalogiannakis et al. (2021) point out that gamified learning settings need to be designed in a manner that is carefully thought out, especially concerning the various gaming elements that will be utilized and contains clear and explicit instructions. Failing to do so typically distracts ākonga from their designated learning goals.

The Auditor-General (2012) also identified concerns regarding the need for initiatives to be well-designed to ensure their full potential is reached. However, the initiatives the Auditor-General refers to are not specifically gamification related; they are related to Māori educational strategies developed to support ākonga Māori who attend English medium education settings. These initiatives were acknowledged and discussed earlier in this chapter. According to The Auditor-General, “Under the M0E Ka Hikitia Māori Educational Strategy, many initiatives and programmes lift Māori participation, engagement, and achievement. It is important that these initiatives and programmes are well designed, are implemented effectively, and achieve the intended results” (p.5). Hence, it has been highlighted that initiatives intending to lift the achievement, motivation, and engagement of ākonga Māori are only effective if well-designed and delivered with good intentions. Implementing GIE catered to the needs of tāne ākonga Māori, especially in English medium educational settings, is no exception.

Pointification

Another concern regarding using gamification in educational settings is the assumption that gamification is **not** primarily a reward-based pedagogy. The term ‘pointification’ has been used to describe this phenomenon due to this common misconception. For instance, Fiş Erümit and Karakuş Yılmaz (2022) claim that gamification is often criticised for being limited to extrinsic motivators (such as ‘pointification’) without the use of intrinsically²³ motivating elements. Many researchers in gamification also confirm the overuse of reward elements when gamification is used in educational settings, including the overuse of elements such as points, leaderboards, and badges. However, when used effectively,

²³ Intrinsic and extrinsic motivation is discussed more in-depth in Chapter Four.

these elements can be motivating for ākonga. As discussed earlier in this chapter, intrinsic and extrinsic motivators have a dual effect and must be implemented thoughtfully. For instance, Ferro et al. (2013) note that while gamified systems can help to make ordinary tasks more engaging and enjoyable, they could also fall into the trap of being considered as behaviour modification, where ākonga can become so fixated on gaining a reward, that their intrinsic motivation decreases. Furthermore, Huang et al. (2020) claim that gamification in educational settings has significant potential yet to be examined in the literature. What has been highlighted here is that there are advantages and disadvantages to using reward elements in gamification; however, they must be used thoughtfully and in conjunction with intrinsic motivators to achieve a flow state (Barata et al., 2013; Fiş Erümit & Karakuş Yılmaz, 2022; Huang & Hew, 2018; Nadi-Ravandi & Batooli, 2022; Ofosu-Ampong, 2020; Oliveira et al., 2020a).

The importance of the contribution of the kaiako to the gamified design

This section has made a clear point regarding the need for gamified learning spaces to be well-designed to harness the benefits of GIE. Saggah et al. (2020) investigate the role of the kaiako in gamified learning spaces and identify that kaiako play a significant role in ensuring the success of GIE. They state, “Teachers’ roles are essential to adopt gamification as a teaching and learning tool to harness its benefits” (p.5). Therefore, kaiako must believe in the potential of GIE and genuinely try their best to plan and adopt it as a teaching pedagogy. This requires kaiako to know how to effectively plan, implement, and use gamification elements in their teaching practice. Ofosu-Ampong (2020) affirms that “generalizing game elements for learners without understanding the context of the educational institutions or user background is a recipe for gamification failure” (p.130). Saggah et al. (2020) argue “merging games into education without consolidating learning theories would lead to a poor experience and will not achieve learning goals” (p.1). Kaiako require support to integrate gamification successfully as a teaching tool. The latter point reinforces the need for an education-specific gamification framework that provides positive outcomes for ākonga and guides kaiako who embark on the gamifying process of planning and design.

Gamification is a broad field of expertise encompassing many specialists. As Mora et al. (2015) state, “Gamification as a concept brings together many disciplines and professionals including game designers, UX/UI designers, psychologists, sociologists, computer engineers and others” (p.3). Similarly, Saggah et al. (2020) note that gamification design is complex and recognise that game developers do not necessarily have the knowledge and skills to develop suitable games for tamariki; however, kaiako do. They argue, “There is a need to identify both teachers’ and game developers’ roles to have a coherent design to serve the purpose of improved learning outcomes” (Saggah et al., 2020, p.5). Both kaiako and game developers have essential roles in designing a gamified programme. However, neither needs to worry about being an expert in the others’ fields to accomplish collaboration in the design process, pointing out that “game design terminology could be challenging to some teachers. There is a need to find common ground where both parties can express their design decisions and communicate efficiently” (p.5). It is essential to acknowledge that these suggestions are for gamified programmes that are solely based on using technology for the gamified design.

This PhD research attempts to push the boundaries of GIE, focusing on using no or minimal technology to gamify a learning space (additional to catering to the needs of tāne ākonga Māori). This will encourage the kaiako to be more innovative and creative with their gamified design. Even though the advice above targets gamification using technology, it is still highly relevant for considering a practical gamification framework for education. This is due to the importance of the role of the kaiako and ensuring that they understand the gamified framework and can effectively deliver the gamified programme.

Tailoring gamification

Researchers have identified concerns that GIE adopts a ‘one size fits all’ approach without considering the individual needs or preferences of ākonga (Harteveld & Sutherland, 2017; Lavoué et al., 2018; Oliveira et al., 2020a; Santos et al., 2022). Oliveira et al. (2020a) point out this “may be harmful to the students, who ... [then have] to interact with specific gamification elements that are not on their preference” (p.1227). Hence,

GIE could negatively impact the learning of ākonga. In addition, Rabah et al. (2018) also maintain that “gamification derails learning with aimless distractions, adds unnecessary competition stress, and fails to take into account certain learners’ pedagogical needs. The value of gamification in education remains controversial” (p.489). Rodrigues et al. (2020) stated that “Personalized gamification emerged as a means to improve the effectiveness of one size fits all gamification” (p.704). This discussion refers to GIE which is solely technology-based.

The origin of tailored gamification

One of the very first studies that identified the potential of gamification to be personalized (or tailoring) was conducted by Ferro et al. (2013), who found that more meaningful and appropriate choices of gaming mechanics could be chosen for players when there is a deeper understanding of the players’ personality types and traits. They also state, “it seems reasonable to focus on the choice of game elements and mechanics in relation to the personality types and traits of the users that these gamified systems are targeted towards” (p.4). According to Oliveira et al. (2022a), tailoring gamification derived from the idea that teaching and learning methods must be tailored to suit the different characteristics of ākonga. The gamification design could then be tailored to help improve gamification experiences for ākonga, arguing that “in recent years, many studies have highlighted the challenges from tailoring gamification based on students’ individual characteristics” (Oliveira et al., 2022a, p.24). Overall, these examples demonstrate how having a deeper understanding of ākonga could help to inform and focus various gamification elements on their specific needs.

The effects of tailored gamification

It has been identified earlier in this thesis that GIE is an emerging, complex field that requires more research and experimentation to better understand its effects on the learning of ākonga. Similarly, Knutas et al. (2018) identify that there has been little research on the effects of tailored gamification. The researchers maintained that the tailoring of gamification is a steadily growing trend in the field of GIE, with several recognising its potential (Monterrat et al., 2017, & Denden et al., 2017). Additionally, Fadhill and Villafiorita (2017) acknowledge the trend of tailoring gamification and affirm that

although there is increasing research regarding tailoring gameful interactions and serious and persuasive games, the true potential of the initiatives is yet to be understood. Considering the above discussion, the personalization or tailoring of GIE requires more research and experimentation. Then, more understanding will be gained regarding how to safely and effectively tailor GIE to the specific needs of ākonga.

The effects of intrinsic and extrinsic motivators on tailored gamification

According to Ferro et al. (2013), selecting gaming elements that relate to an individual's personal attributes, types, and traits can assist in intrinsically motivating the player rather than extrinsically motivating them. The concept of intrinsic and extrinsic motivation and its relevance to GIE was mentioned earlier in this chapter regarding whether too many intrinsic or extrinsic motivators through GIE would negatively affect ākonga. A concern is that when ākonga are extrinsically motivated, their motivation and engagement tend to decrease over time. Also, when ākonga are forced to do something, it can decrease intrinsic motivation (Hanus & Fox, 2015). Boys especially tend to be more extrinsically motivated than girls (Roberts, 2022), which is highly relevant to this PhD research that focuses on tāne ākonga Māori. The value of intrinsic and extrinsic motivation, their influence on gamification, and the importance of using the motivators carefully “This is an area to step carefully; proper use of rewards can increase intrinsic motivation, while improper use can result in a drop of intrinsic motivation all together” (Hanus & Cruz, 2016, p.201). Overall, a healthy balance of intrinsic and extrinsic motivators would achieve a flow state and be beneficial for a gamified learning space that aims to cater to the needs of boys. However, more experimental research would be beneficial for informing others on how to achieve this best.

Research on gamified systems is still not clear concerning how gamification influences motivation and that, “Most critical studies have put in evidence that shows how their methodology increases extrinsic motivation and reduces the intrinsic, which is fundamental for meaningful learning” (Ofosu-Ampong, 2020, p.128). To achieve a flow state through GIE, more information is needed to ensure a healthy balance of intrinsic and extrinsic motivators is being used. Then, concerns regarding too many extrinsic

motivators or not enough intrinsic motivators can be minimised. For example, Hanus and Fox (2015) found that “There is significant evidence that giving rewards for already interesting tasks (i.e. ones where an individual is already intrinsically motivated to do) decreases intrinsic motivation” (p.159). Their evidence shows that incentives linked to tedious tasks could increase intrinsic motivation. Interestingly, this example demonstrates how the knowledge of giving rewards for tasks ākonga already find interesting can decrease their intrinsic motivation. Hence, it is critical to clarify how to use rewards and incentives more effectively (i.e. giving incentives for tedious/boring tasks) to increase intrinsic motivation. Also, this is essential knowledge for planning a well-designed gamified learning space.

A method for tailoring gamification

When considering a method for tailoring gamification, a common solution (for technology-based gamified initiatives) is to develop an algorithm that automatically predicts the users preferred learning styles or preferences. For example, Khoshkangini et al. (2017) developed a gamification framework that is “able to automatically generate and recommend personalised challenges tailored to the players’ preferences and history” (p.366). Also, Knutas et al. (2018) recognised that planning and setting up a good gamified design tends to be effort intensive and adds to the workload if educators have to tailor the gamified system for each ākonga. They created a “machine learning algorithm-based personalized content selection to address a part of this problem and present a process for creating personalized designs that allows automating a part of the implementation” (Knutas et al., 2018, p.1). Additionally, Oliveira et al. (2020a) utilised an automated personalization approach to gamification in their experiment, describing it as an “algorithm [that] adapts gamification, selecting the most suitable elements (available in the system) for each gamer type considered in the approach” (p.1229). In later research, Oliveira et al. (2022a) discussed numerous studies that had adapted an automated approach to tailoring gamification. It was found that out of the 19 selected studies, 13 utilised a computational approach to tailor their gamified educational environments. Also, six different approaches to the automated systems were identified, including “(i) tool (e.g. mobile app or high-quality prototype), (ii) framework, (iii) process, (iv) architecture, (v) ontology, and (vi) computational model” (p.17).

These findings confirm that the most common method for tailoring gamification includes using an automated system (for technology-based gamified systems). An alternative approach to tailoring gamification will be considered for this PhD research that aims to use minimal or no technology to gamify the learning space. However, a critical factor to acknowledge (identified above) is for the tailoring process to avoid being too labour intensive for educators because it is essential to “discover how to systematically create algorithm-based personalized gamification systems that can save system designers or operators from repetitive personalization work, and to help base the personalization strategies on established design principles” (Knutas et al., 2018, p.17). Streamlining the personalization process for gamification is imperative so that educators are not put off the idea of GIE due to a more complicated or extensive workload. Hence, a practical gamification framework for education to guide educators through the gamifying process could solve this issue.

In relation to my research, such a framework would support educators to ensure their gamified learning space aligns with the cultural and learning needs of tāne ākonga Māori. Research conducted by Ofosu-Ampong (2020) maintains the importance of understanding the learning needs of ākonga for tailoring gamification and that “understanding the learners and the classroom environment is considered a vital recommendation for educational institutions planning on adopting gamification” (p.130). Thus, the cultural background, values, beliefs, aspirations of tāne ākonga Māori, and needs as male learners must be acknowledged when tailoring gamification to their needs. This is highly relevant, as it maintains that a deeper understanding of the needs of tāne ākonga Māori is crucial.

Tailoring gamification elements to personalise gamification in education

According to Oliveira et al. (2022a), the process of personalising gamification has so far included tailoring gamification elements to factors such as predicting gamer/player types, gender, personality traits, demographics, user preferences, age, learning style, motivational stage, and goal orientation. To provide more clarity, there are generally four main player types: Achiever, Explorer, Killer, and Socializer. The Achiever is mainly

interested in doing things in the game, i.e. acting on the world. The Explorer is interested in having the game surprise them, i.e. interacts within the world. The Killer is interested in doing things to people, i.e. acting on other players, and the Socializer is mainly interested in interacting with other players. There is a neglect of tailoring important human aspects, many cultural elements were dismissed or overlooked across the selected studies and that “most studies addressed only gamer type, in detriment to other important human aspects” (Oliveira et al., 2022a, p.24).

Other research conducted by Denden et al. (2017) categorized their participants into introverts and extroverts, finding that “most introvert learners (85.7%) prefer using the badges game element... [and] most balanced and extrovert personality (over 95% of them) prefer using this element” (p.1402). Roosta et al. (2016) also suggest that players could choose their gamification elements according to their interests. However, they also recognised the lack of cultural factors identified in tailored gamification, stating that “Considering the cultural gap in response to the questionnaire and the lack of self-knowledge, finding new ways to automatically detect the type of motivation could be another interesting direction for future research” (p.641). Additionally, Zaric and Scepanovic (2018) identify the influence of learning styles on tailoring gamification, noting that “In order for gamification to be successful, those diversities need to be considered i.e. the fact that students have different learning styles (LS) and behavior implies that they’ll have different reactions and attitudes toward gamification” (p.1). Overall, the previous studies confirm that tailoring gamification elements requires a deeper knowledge and understanding of the users’ (or ākongā) personal characteristics, interests, learning needs, and backgrounds.

A lack of tailoring gamification to the cultural needs of ākongā

A significant point to note in relation to my study is the fact that tailoring GIE to the cultural values, beliefs, and aspirations of ākongā has not been a focus of any past studies. Nevertheless, some argue that cultural aspects are essential for tailoring gamification. In particular, it has been identified that “cultural aspects can also change human preferences for the design of the system” (Oliveira et al., 2022a, p.24). Rodrigues et al. (2020) indicated a lack of approaches that personalise gamification according to contextual characteristics, such as culture, stating, “Several researchers agree that gamification’s

success depends not only on user characteristics but also on contextual factors” (p.703). They also further acknowledge that “few approaches explore those characteristics,” and suggest that “future research ... [should] expand beyond the use of user characteristics as personalization criteria, exploring contextual factors as well (e.g. culture)” (p.703).

The concept of tailoring gamification to the particular needs of ākonga is imperative to the success of gamification in educational settings. For example, Knutas et al. (2018) claim that “research has shown that different users interpret, functionalise and evaluate the same game elements in highly different ways” (p.3). They also conclude, “In sum, it can be reasoned that gamified systems should be specifically tailored to its different users in order for gamification to live up to its full potential” (p.3). Overall, tailoring GIE to the specific needs of tāne ākonga Māori for this PhD research is credible and possibly a first regarding the focus on their cultural needs, but on their needs as male learners.

Chapter Five: Studies on gamification

In this chapter, I begin by identifying and discussing theories that form the basis of the design of gamified learning environments and their relevance to GIE. Then, studies of GIE are analysed concerning the misconceptions between the various EOGL²⁴ initiatives. Here, an additional confusion between the terms gamification and GIE is highlighted, as it is especially evident in most past studies. Hence, the few studies I identified as using GIE are compared with the other studies to help clarify the difference between the two. Finally, limitations that researchers have highlighted in their studies and recommendations for further research in the field of GIE are discussed.

Theories associated with gamification in education

Research conducted for this review has identified (but is not limited to) 46 different theories that form the basis for the design of gamified learning environments (Table 1). However, two theories that are the most widely used in gamified learning environments have been chosen for discussion due to their high importance, and include flow theory and self-determination theory (Nadi-Ravandi & Batooli, 2022). Here, it was important to identify the other theories, as it indicates the vast theoretical background of GIE and the complexities of game-based learning initiatives.

Table 1 - Theories that form the basis of the design of gamified learning environments

46 theories that form the basis of the design of gamified learning environments	
Achievement goal theory	Self-efficacy theory
Activity theory	Situated learning theory
Andragogy theory of adult learning	Social capital theory
Behaviour reinforcement theory	Social cognitive theory
Cognitive evaluation theory	Social comparison theory
Cognitive load theory	Social development theory
Constructivist learning theory	Social determination theory

²⁴ 'EOGL' represents Electronic or game-based learning initiatives, including e-learning, online learning, GBL, serious games, and GIE.

Constructivist theories of learning Deliberate Practice Theory Eisenkraft's 7E instructional Model Experiential learning theory Felder-Silverman learning style model Flow theory Fogg's behavior model Grounded theory Goal-setting theory Information systems success model/information systems theory Landers' theory of gamified learning Merrill's first principles of instruction design theory Motivation theory to learn Presence pedagogy model Rational choice theory Reinforcement Learning Theory Self-determination theory Self-Directed Learning	Social exchange theory Taxation theory Technology-enhanced training effectiveness model The frame model The goal-setting theory The organismic integration theory (OIT) The SNAP: model of motivation The theory of gamified learning Theory of reasoned action Theory-driven gamification design model: goal, access, feedback, challenge and collaboration Trans-theoretical model of behavior change (TTM) Unified Modelling Language Uses and gratifications theory Zone of proximal development and scaffolding
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Flow theory

Flow theory is imperative for a successful gamified learning environment, sometimes referred to as a 'state of flow,' 'flow state,' 'flow experience,' or 'level of flow' (Barata et al., 2013; Fiş Erümit & Karakuş Yılmaz, 2022; Huang & Hew, 2018; Nadi-Ravandi & Batooli, 2022; Ofosu-Ampong, 2020; Oliveira et al., 2020a). According to Oliveira et al. (2020a), the concept of "flow state" was introduced by Csikszentmihalyi (1997) as a technical term to describe a good feeling, or 'optimal experience' that people have as a motivating factor in their daily activities, such as at work, sports, and artistic performance" (p.4). Barata et al. (2013) recognises how flow theory pertains to effective game design (and subsequently, gamification), stating that "Successful games are designed to be challenging enough to prevent players from becoming either bored or frustrated, thus allowing them to experience flow" (p.1).

Flow theory and its significance to gamified learning environments was discussed in Chapter Four of this thesis, specifically regarding ensuring ākonga experience a healthy balance of intrinsic and extrinsic motivators, which is required to ensure the gamified learning space is well-designed (Oliveira et al., 2020a). Thus, a framework is required to support educators in achieving a flow state. Here, further research is needed regarding *what* gamification elements designers should use and *how many* are recommended to achieve an effective flow state. This PhD research seeks to identify gamification elements

for tailoring GIE to the needs of tāne ākonga Māori, the first step in developing a gamification framework for education. Then, educators can be guided in a manner that embraces the needs of tāne ākonga Māori and achieves a flow state in the gamified learning space.

Self-determination theory

Self-determination theory (SDT) is related to motivation. It proposes that people can become increasingly more self-determined and self-motivated when three innate and psychological needs are met: “(1) Autonomy: a sense of internal assent of one’s behaviours; (2) Competence: controlling the outcome and experience mastery; and (3) Relatedness: a sense of connection and interaction with others within a community” (Shi & Cristea, 2016, p.295). Hanus and Cruz (2016) recognise that “Successful fulfilment of these needs results in positive outcomes, such as increases in self-esteem, intrinsic motivation, and enjoyment” (p.200). The researchers note that SDT provides a good lens for analysing the benefits of GIE, as it identifies concrete concepts to target throughout the designing of the gamified space and offers robust research that demonstrates many positive outcomes for fulfilling those needs. Saggah et al. (2020) note that SDT “focuses on an individual’s motivation” and that GIE could implement the concepts of SDT through gamification elements. Ofosu-Ampong (2020) confirms the importance of both flow theory and self-determination theory, concluding that the levels of motivation of ākonga (through SDT) and their ability to experience a state of flow in the gamified learning space is fundamental. Further examination of these two theories provides a deeper insight into the ‘why’ that sits behind ‘how’ GIE works to motivate and engage ākonga in their learning. Hence, the more that is known regarding how GIE works, the more effectively a well-designed gamified learning space can be planned and implemented.

In summary, this section has identified 46 theories that form the basis for the design of gamified learning environments. For this PhD research, an analysis of the two most relevant and commonly used theories has been provided as they are highly influential for considering when identifying gamification elements for developing a framework. Acknowledging the other theories (in the table earlier in this chapter) illustrates the wide

scope of gamification and GIE and the magnitude of theories, science, knowledge, and philosophies behind game-based learning initiatives. As mentioned in this thesis, the potential of GIE is boundless; much more is yet to be understood regarding its full capacity (Oliveira et al., 2022b; Hanus and Fox, 2015). Overall, the theories identified above are highly influential and can provide a lot more knowledge regarding how GIE works to motivate and engage ākonga. Furthermore, insight into the full potential of GIE can ensure we take advantage of the full benefits of gamification and confirm that the gamified learning space is effectively designed.

Studies on gamification and gamification in education

A concern highlighted in Chapter One was evident throughout the analysis of the studies on gamification; the confusion between the different EOGL initiatives. An example of this is by Marinho et al. (2019), who claims that “Khan Academy is an example of the use of gamification in an educational setting. It is a free online service that allows users to learn about various subjects such as history, math, or economics” (p.42). However, Khan Academy is an example of online learning, not gamification or GIE. There are notable differences between the different game and technology-based initiatives; knowing which initiative is being used is essential to ensure the initiative is well designed so its full potential is reached. Accordingly, to demonstrate these misconceptions and provide more clarity, a table of studies for gamification and GIE is presented in Appendix 28. Here, a good starting point to provide further understanding is to analyse the definition of gamification compared to the definition of GIE.

The definition of gamification

According to Nadi-Ravandi and Batooli (2022), the word ‘gamification’ came about in 2002, “became popular in the scientific literature in the second half of 2010, and gained popularity among researchers in 2011” (p.2). One of the first definitions of gamification was by Pelling (2002), who claimed that gamification is “the application of game-like accelerated user interface design to make electronic transactions both enjoyable and fast” (cited in Mora et al., 2015, p.1). More recently, researchers have recognised that the definition of gamification is inconsistent (Mora et al., 2017). The most widely used

definition of gamification has been cited by Deterding et al. (2011), who claim that gamification is “the use of game-design elements in non-game contexts” (cited in Hanus & Fox, 2015; Huang and Hew, 2018; Marinho et al., 2019; Monterrat et al., 2017; Mora et al., 2017; Rabah et al., 2018; Sailer et al., 2017; Santos et al., 2022; & Werbach, 2014).

Other definitions of gamification are similar, such as Oliveira et al. (2022a), who describe GIE as the transformation of educational systems to embrace the similar motivational benefits of games. Finally, the definition of gamification identified in Chapter One is when gaming elements are used in a non-gaming contexts to enhance the motivation and engagement of its users. When considering the definition of gamification, it is essential to note the specific terminology ‘used in non-gaming contexts.’ Here, (considering that ‘gaming’ is most recently linked to technology), it is strongly indicated that the fun elements usually implemented into games can also be used in completely non-gaming contexts without technology. Thus, debunking the assumption or misconceptions that gamification, or GIE, is solely related to technology.

The definition of gamification in education

There are numerous definitions of GIE. Prensky (2003) claims, “Gamification relies on game design elements embedded in a learning environment to foster student motivation” (cited in Marinho et al., 2019, p.41). Similarly, Lavoué et al. (2018) state, “gamification is based on the use of game design elements integrated in learning environments without turning the activity into a game” (p.16). Likewise, the definition of GIE identified in this thesis is the integration of gamification elements into teaching and learning practices with the goal of enhancing the engagement and motivation of ākonga. In particular, when practicing GIE, it is imperative to note the difference between gamification and GIE. For instance, gamification can enhance a game or technology-based initiative such as online learning (suggested above). Also, GIE is when **a set of** gamification elements are integrated into a teaching and learning space in a manner that enhances the motivation and engagement of ākonga. In other words, not turning the whole process into a game; instead, making the learning experience more fun and engaging. As mentioned above, deciphering between the various terms is critical for their success.

Gamification as a process

Werbach (2014) identifies that gamification is a process, and it would not be feasible to consider that everything that uses game elements is gamification. For instance, Werbach points out, “Examinations in schools, for example, give out points and are non-game contexts. If virtually every test were an example of gamification, the term would lose all meaning” (p.267). Sailer et al. (2017) claim that “gamification is defined as *“the use of design (rather than game-based technology or other game-related practices) elements (rather than fully developed games) characteristic for games (rather than play or playfulness) in non-game contexts (regardless of specific usage intentions, contexts, or implementation media)”* (p.372). Here, it is clear that the gaming elements (or gamification elements for GIE) are essential for gamification, not simply integrating fully developed games into a non-gaming context (as that would be considered GBL²⁵). Therefore, the drive to provide and clarify guidelines for GIE is a prominent argument in this thesis. Werbach (2014) claims that the boundaries of gamification need to be better understood for the field to mature. Thus, further emphasizing the urgency for a framework.

Gamification in education practice

The discussions in this chapter emphasise that it is essential to tell the difference between gamification and GIE for successful implementation. The studies in the table in Appendix 28 will be further discussed to provide clarity and examples in practice. In short, out of 19 studies, six involved ākonga from university (Barata et al., 2013; Denden et al., 2017; Fiş Erümit & Karakuş Yılmaz, 2022; Hanus & Fox, 2015; Huang & Hew, 2018, & Marinho et al., 2019), five did not have any participants (instead, the studies focus on developing a gamified framework or resource) (Baldeón et al., 2016; Chalco et al., 2014; Hartevelde & Sutherland, 2017; Khoshkangini et al., 2017, & Knutas et al., 2018), three involved primary school ākonga (Fadhil & Villafiorita, 2017; Halloluwa et al., 2016; Oliveira et al., 2022b), two included age-specific participants (Lavoué et al., 2018, &

²⁵ GBL – game-based learning

Sailer et al., 2017), one involved college/middle school ākonga participants (Monterrat et al., 2017), and two included high school and undergraduate participants (Roosta et al., 2016, & Santos et al., 2022).

After analysing the studies identified in the table, it has been highlighted that all but two used gamification to enhance a game or technology-based initiative in an educational context. As mentioned earlier, it is essential to note that this is *not* GIE. Rather, it is simply the gamification of a technology-based initiative. Hence, only two of the studies utilised GIE (Karakuş Yılmaz, 2022, & Hanus & Fox, 2015). This highlights that there are very few examples of studies that utilise GIE. Therefore, the significant difference between gamification and GIE (even when both are used in an educational context) will now be discussed using examples from the studies. Overall, analysing the differences between these studies provides a deeper understanding of how gamification and GIE are practiced differently.

How gamification has been used in the studies

In the studies classified as gamification, gamification has been used for several reasons, including tailoring the game or technology-based initiative to the specific needs of ākonga. For example, Knutas et al. (2018) developed an automated algorithm for tailoring gamified systems. Their rationale for their algorithm is that developing a good, gamified design is already labour-intensive, and further personalising the gamified system to each user would increase the workload even more, often requiring repetitive work. Therefore, they developed an algorithm to help streamline the tailoring process. Knutas et al. highlight the vital contribution this has made to the field of tailoring gamification, as its main aim is to help minimise the level of personalisation work for the designers and operators of technology-based gamified systems.

Fadhil and Villafiorita (2017) also focused on tailoring gamification. They aimed to promote a healthy diet and lifestyle for primary school ākonga and increase the awareness of ākonga regarding food waste reduction and management. Fadhil and Villafiorita identified that teaching young tamariki about these issues is often challenging and aimed to do so through a personalised chatbot. This online software application conducts social networking/chat conversations via text or text-to-speech. It was recognised that current

technologies posed limitations regarding user engagement and the ability to personalise to the needs of the user/ākonga, stating that there is a need to “find a balance between the game mechanics and chatbot AI intelligence. In all this new technology we must not forget the most important factor in this enterprise; that’s the human being who is expected to interact with the bot” (Fadhil and Villafiorita, 2017, p.409). Therefore, the researchers developed a game to test their chatbot, where ākonga can purchase and gift food items.

In the game, ākonga must ensure they have a healthy balance of food. Ultimately, the player with the healthiest balance of food and the least waste wins. During the game, the chatbot interacts with ākonga and provides them with quizzes and hints. Throughout their research, Fadhil and Villafiorita (2017) identified how to personalise the chatbots to ākonga, finding that the tailoring process includes the need to; style the messages from the chatbots clearly and label them in a way that communicates that they are not from a human; and personalise the bot to reflect the context of the game and its domain. Also, to engage ākonga long term, the conversations must be bounded to particular subjects and follow clear conversation routes. Overall, the method of the gamified element in this research is the gamification of e-learning.

These examples illustrate that in the studies analysed so far, gamification has been used in two ways: One, developing an algorithm that can personalise gamified systems, and two, tailoring e-learning to the particular needs of eight-year-old ākonga through gamification.

Barata et al. (2013) also utilised gamification, applying gaming elements to enhance Moodle’s online learning platform with 77 masters level university ākonga. Hence, the gamified element in this study is the gamification of online learning. Barata et al. (2013) identified a need to enhance the motivation and engagement of ākonga in the course, stating that “we found room to improve student engagement in the course, as shown by their low online participation on Moodle, low attendance rates and lack of interest in the reference material (low number of downloads)” (p.2). Therefore, the gaming elements of scoring, levels, challenges, leader boards, badges, and challenges were implemented to gamify the course.

Next, Barata et al. (2013) compared the gamified platform with a non-gamified version of the same class (subject) from a previous year. This comparison included assessing ākonga satisfaction compared to other courses in the same academic context. They experienced many successes in this approach that resulted in an increased number of downloads (despite having fewer ākonga than the previous year); a dramatic increase in ākonga posts (suggesting higher participation in the online component); an increase in participation of lectures; and positive feedback from ākonga. One of the prominent findings showed that even though the gamified course involved more work for ākonga, it was more motivating for them and the process encouraged a higher level of participation.

Studies of gamification in education

Amongst the studies analysed, only two were found that could be classified as GIE; a study conducted by Hanus and Fox (2015) and Fiş Erümit and Karakuş Yılmaz (2022). Throughout their studies, GIE was used rather than gamification because **multiple** gaming elements were implemented into the learning space to enhance the motivation and engagement of the ākonga, rather than just the implementation of another EOGL initiative. However, GIE can incorporate technology as part of its gamified component but the significant difference (between gamification and GIE) is that the gaming elements are also implemented throughout other learning activities (i.e. in non-gaming contexts), and will now be discussed to provide further clarity using the two studies by Hanus and Fox (2015) and Fiş Erümit and Karakuş Yılmaz (2022).

Examples of gamification in education practice

In their study, Hanus and Fox (2015) wanted to test what effects gamification would have over time in a real-world setting. Eighty ākonga were recruited over two separate classes within the same subject. Over a 16-week semester, data was gathered at four separate times. In the study, one class experienced a non-gamified learning space, and the other class was gamified using the following gaming elements: participation, badges, and engagement with an online leaderboard. According to the researchers, “Aside from the gamification elements, both courses featured the same material, assignments, exams, and lectures. We measured motivational and psychological variables as well as behavioral variables” (Hanus & Fox, 2015, p.155). In the gamified class, 22 badges were developed

that required ākongā to complete certain tasks to obtain them as part of their grade (i.e. the badges were mandatory to pass). An example of the badges included a *Critical Hit badge*, where ākongā had to write a critical review after playing a video game, then share it with the class. Another badge, called *The Twice the Power badge*, required ākongā to study at the library together, and a badge called the *Bookworm badge* was rewarded to ākongā for exceeding the minimum required sources for a paper.

Other tasks required for badge completion included: participating well in class, handing in assignments early, having minimal grammatical mistakes in a paper, and even fun challenges such as coming to class dressed as a video game character. Additional to the badges in the gamified class, ākongā could also earn ‘coins.’ These coins required less work than the badges and could be earned in various ways, such as by making meaningful contributions to the class discussion or sharing interesting links or articles with the class. Unlike the badges, the coins were optional and could be spent for benefits such as gaining an extension on a paper. These examples demonstrate a variety of gamified activities that utilise gaming elements such as badges and rewards; however, they are not solely technology based. Here, an excellent example of GIE in practice has been provided.

One of the most prominent findings Hanus and Fox (2015) identified was that some gamification elements may cause harm:

Holistically, the results suggest that some common mechanics used in classroom gamification (i.e. competitive context, badges, and leaderboards) may harm some educational outcomes. We found that though students from each course started at the same levels of intrinsic motivation, satisfaction, effort, social comparison, and empowerment, over time students in the gamified course tended to decrease in motivation, satisfaction, and empowerment relative to the non-gamified course (p.159).

In other words, the results identify that some commonly used gaming mechanics, including competition, badges, and leader boards, can negatively affect specific educational outcomes, especially when used together. This highlights a concern discussed earlier in this thesis; that certain combinations of gaming mechanics, especially when not well-designed, can cause harm to ākongā. For instance, in their study, the researchers

collected data throughout the 16-week semester at four different times. In particular, they measured the motivation, effort, satisfaction, social comparison, academic performance, and learner empowerment of ākonga. Their findings showed that ākonga from the gamified class demonstrated less satisfaction, motivation, and empowerment over time than those in the non-gamified class. Ultimately, this prompted the researchers to warn that care needs to be taken when implementing certain gamification mechanics into the learning space.

Here, Hanus and Fox (2015) admitted that the combination of gamification elements they used was part of the issue, and that the “combination of leader boards, badges, and competition mechanics do not improve educational outcomes and at worst can harm motivation, satisfaction, and empowerment” (p.159). Furthermore, they recognised that giving too many rewards, especially in a gamified system, negatively affects the motivation of ākonga, which is especially evident from longitudinal studies (Cameron et al., 2001, & Deci et al., 2001). Here, it is noted that reward systems can feel constraining or forced when imposed on top of a subject area that ākonga already finds interesting. By contrast, the reward system can increase the intrinsic motivation of ākonga if it is utilised in a subject area they consider boring.

A deeper analysis of their findings reveals that Hanus and Fox (2015) noted that all their gaming elements were aligned with learning objectives. Ultimately, this affected their effectiveness over time. The notion that integrating curriculum standards into a gamified learning activity takes away from the extensive benefits that game-based initiatives provide was also discussed earlier in this thesis. Hence, this highlights the importance of not solely aligning gaming elements to learning standards. Additionally, various researchers have recognised that the benefits of gamification are short-lived, which could be due to the novelty factor (Koivisto & Hamari, 2014; Mollick & Rothbard, 2014). Conclusively, this study has provided a good example of how GIE compares to gamification in educational settings and demonstrates how integrating curriculum standards with an inadequate combination of gaming elements can affect the success of GIE.

A more recent study identified as GIE, was conducted by Fiş Erümit and Karakuş Yılmaz

(2022) who used significantly more technology-based activities to gamify their learning space than Hanus and Fox (2015). However, their study is still classified as GIE because they incorporated numerous gaming elements into the learning space to enhance various learning activities, including in-class, out-of-class, and virtual activities (i.e. they had not simply gamified a game or technology-based initiative *solely* using technology). The study proposed game design elements in educational contexts to motivate and engage ākonga. Their study also investigated which elements in the gamified approach facilitated the learning of ākonga.

Fiş Erümit and Karakuş Yılmaz (2022) emphasised the importance of providing a sense of play throughout learning, stating, “Considering the cognitive work that learning often requires, researchers have found that introducing the element of play can make tasks more enjoyable and, therefore, facilitate in-depth learning” (p.2). Examples of gamified activities from their study can be seen in Appendix 29, along with their purposes. The point of providing this table is to illustrate the various activities they used and how the gamified activities link to their selected gaming elements.

The table (Appendix 29) demonstrates the various elements of gamification that were integrated into learning activities, including achievement, reward, progression, constraints, altruism, self-expression, and competition. The table also describes the purposes of the learning activities, including *To increase motivation and participation and support the learning activity* for the Level-up activity. In the table, *Imp I* (Imp 1) and *Imp II* (Imp 2) represent the study’s two different implementations, where two different graduate courses were designed using gamification. Imp 1 of the study was conducted within a graduate-level course titled *Using games, virtual worlds, and simulations in education*. Imp 2 was conducted after the data was collected and analysed from the Imp 1. The rationale for this was so that design-based research methodology could be used and where issues that arose from Imp 1 could be revised for better use in Imp 2. This is maintained by the researchers, who state that:

As a result of the first implementation with a group of 15 participants, the entire process was evaluated, feedback was received from the participants, problems about the gamification process were identified. Following a reflection on the experience,

the design was revised, and the necessary corrections were made for the second implementation with a group of seven participants (p.4).

Imp 2 was also conducted in a graduate-level *Computer-based cognitive environments and research* course. In both implementations, the out-of-class gamification activities were carried out through social networking sites such as Edmodo and Facebook. Here, ākongā communicated, commented, discussed, shared, documented, provided information, and shared videos with other ākongā and faculty members. In doing so, ākongā could earn trophies for participation on these platforms. Furthermore, Edmodo was where ākongā could gain feedback from their assignments and view the class leaderboard.

A second table by Fiş Erümit and Karakuş Yılmaz (2022) (Appendix 30) provides detailed descriptions of each gamified activity from their study. These clearly show how the gaming elements were utilised and how there is either minimal or no use of technology throughout the activities. For instance, the table identifies ‘Collaborative learning activities’ and includes “Four paper,” “Four materials,” and “Drama” activities. The description of the activities demonstrates creativity, elements of fun, and integrates learning. An example includes the Four paper activity, where, during four rounds, students had to tell the game’s history. Each student had five minutes to share their part via painting, story writing, newspaper news or poetry. They had to pass their paper to the next person when their time was up. During the Four materials activity, ākongā were posed with two glasses, two paper clips, one ping pong ball, and rope. They then had a limited time frame to invent a new game with the materials. The rationale was so ākongā could experience (in a short time) the game design process and identify difficulties. The Drama activity saw ākongā performing the meaning of words (relating to cognitive learning theories and cognitive psychology) posed by their lecturer. These activities, similar to the first study classified as GIE by Hanus and Fox (2015), provide further examples of how gamification elements can be integrated into learning activities to enhance the fun, motivation, and engagement of ākongā.

A problem identified during the study stemmed from ākongā not being informed regarding the gamification or nature of the lessons at the beginning of Imp 1. As a result,

a decrease in motivation was observed. Fiş Erümit and Karakuş Yılmaz (2022) state, “It is fair to assume that a teacher’s failure to explain his/her methods and techniques, especially novel approaches, and what is expected of students are likely to cause students to have anxiety, feelings of inefficacy, and resistance” (p.18). Accordingly, for Imp 2, they prepared a detailed weekly schedule for ākongā, including how ākongā could earn rewards. Then, it was made clear to ākongā how they were expected to contribute to the virtual tasks and express themselves.

It was also recognised that place and time constraints put pressure on ākongā during Imp 1. Hence, more time was allowed for the activities and design performances for Imp 2. Another issue during Imp 1 was how the trophies were rewarded. The researchers found that ākongā who were rewarded with fewer trophies decreased in motivation. It was also noted that these ākongā ultimately withdrew from the competition because they had given up on pursuing the upper levels. Accordingly, new affordances were made for Imp 2 to help ākongā move to the upper levels.

In their findings, Fiş Erümit and Karakuş Yılmaz (2022) found several benefits and adverse effects of their gamified courses. For example, the gamified activities did not necessarily cause negative effects. Instead, some of the harmful effects appear to have stemmed from either a poor introduction or implementation of the gamified activities by the kaiako. Any “negative experiences in the gamification process were caused not by the activities themselves, but by difficulties related to the implementation process or a mismatch between the student’s background knowledge and the knowledge needed to carry out the relatively sophisticated tasks” (Fiş Erümit & Karakuş Yılmaz, 2022, p.17). This example emphasises the importance of having the gamified learning space well designed *and* delivered.

Other adverse effects included the element of competition. The researchers found that although ākongā were initially motivated, their feedback suggested they felt increased pressure caused by the highly competitive environment. Consequently, this pressure was further intensified by the constant burden of increasing their sharing volume via social networking elements to win trophies. Ākongā found too much over-emphasising of the gaming elements as stated in one of their feedback:

There are no activities I do not like, but sometimes competitive activities [took] over the course. For example, videos, information, or file sharing on the internet is sometimes used for sharing purposes only, not for understanding the lesson; just getting the trophy seems to be the point (Fiş Erümit & Karakuş Yılmaz, 2022, p.16).

Additionally, ākonga sometimes felt discouraged if they were not doing well on the leader board which decreased their motivation. Another unfavourable effect is that some gamified activities were inappropriate for their age and course level, and some tasks included abstract concepts ākonga were unfamiliar with. For example, one ākonga participant commented on an activity about poetry, painting, and story writing. The ākonga said most participants disliked it because it took more time to learn new concepts beyond the introductory level quickly enough to complete the activities effectively. This is another example confirming the importance of well-designed gamified activities. Also, it highlights the need to ensure that all tasks involved in the gamification of the activities are well-matched with the current knowledge base of ākonga.

Finally, Fiş Erümit and Karakuş Yılmaz (2022) identified a similar finding that was also observed in the study by Hanus and Fox (2015); adverse effects relating to the reward system. They claim, “Despite their immediate benefits for motivation and engagement to the course, extrinsic rewards in gamification activities, such as badges and trophies, might result in undesired consequences” (Fiş Erümit & Karakuş Yılmaz, 2022, p.19). For example, the motivation of ākonga decreased when they saw themselves being left behind on the leader board, ultimately leading to them dropping out of the race for the trophies. Other researchers have also identified this notion of decreased motivation due to extrinsic rewards (Huang et al., 2020). They suggest that reducing the use of leader boards and extrinsic motivators in gamification could help to solve the issue.

For Imp 2 of the study by Fiş Erümit and Karakuş Yılmaz (2022), leveling activities that were solely based on entertainment (such as painting the trophy) were planned. However, following this strategy, ākonga did not see the tangible effects of these rewards, reducing their incentive to perform the tasks. Therefore, to rectify the issue, the number of trophies

each ākonga won was added to their grade at the end of the semester. This solved the problem and ākonga received rewards accordingly. “In this way, two outcomes were obtained. First, the students showed more motivation to engage in the activities and, second, they did not experience a shift away from traditional evaluation processes” (Fiş Erümit & Karakuş Yılmaz, 2022, p.19). This outcome suggests that rewards can be effective and motivating for ākonga when they are thoughtfully integrated into the learning space. This includes ensuring that tasks such as the ones suggested above that were based on entertainment still have a meaningful purpose rather than just filling in time.

Ultimately, due to the use of design-based research methodology, harmful effects identified from the gamified activities discussed above allowed the researchers to revise their gamified design to make improvements for Imp 2 of their study. Thus, allowing advancements in the field of GIE and further highlighting issues that can be avoided in future research.

Overall, this section has provided some examples of what GIE looks like in practice and how the confusion often experienced due to the various EOGL initiatives can be mitigated when people have clear examples to draw on. Furthermore, emphasizing these differences provides a deeper understanding of GIE and ultimately aids in its successful implementation. Very few studies have been conducted in an educational context that can be classified as GIE. Therefore, further research is required to ensure that GIE is genuinely being used. Additionally, further advancements in the field of GIE can be achieved through the ongoing identification of prior research limitations and recommendations for future research. Accordingly, these will now be discussed.

Limitations and recommendations for future research from the 19 studies

Studies on gamification and GIE have identified that this is an emerging field that requires further investigation (Oliveira et al., 2022a). They specifically identify that more research is needed to better understand the impact of gamification regarding the achievement of

ākonga. This notion is also supported by Barata et al. (2013) and Fiş Erümit and Karakuş Yılmaz (2022). Hence, limitations researchers have recognised as a result of their studies provide more insight into how GIE can be improved, ensuring that unsuccessful attempts are not repeated. Additionally, recommendations for future research can support later studies and make more progress in the field.

This chapter has identified 19 studies of gamification and GIE and provided a close analysis of two (Hanus & Fox, & Fiş Erümit and Karakuş Yılmaz, 2022). However, in this section, it is highly relevant to this study to identify the limitations and recommendations noted by *all* studies in the table, as they are gamification related and (even though they may not specifically be *GIE*) provide considerations that can greatly benefit the development of future well-designed gamified learning spaces. Accordingly, this section will now identify and discuss the various limitations and recommendations made by the researchers from the 19 studies highlighted in Appendix 28.

Limitations identified across the 19 studies

This section identifies limitations identified by the researchers in the 19 studies in Appendix 28.

The number of participants

Numerous researchers identified a limitation of their study was the low number of participants (Denden et al., 2017). Marinho et al. (2019) note that “As our sample for each class was small, all of our tests may have been compromised” (p.58). Furthermore, Monterrat et al. (2017) claimed that their findings could not be generalized because of the low number of participants. Hence, they recommended that future studies have more participants to validate their findings. This statement is also supported by Fiş Erümit and Karakuş Yılmaz (2022), Huang and Hew (2018), Marinho et al. (2019), Monterrat et al. (2017), Oliveira et al. (2022b), and Roosta et al. (2016). Overall, the researchers concluded that because gamification and GIE is such an emerging field, their findings are still valid despite the fewer number of participants.

The ākongā participants

Another factor recognised as a limitation is the nature of working with human participants. For instance, Marinho et al. (2019) recognised that internal threats (such as what the person was going through at the time of the test) may have affected the results. Also, the researchers reflected that their participants may have grown bored over the 50 minute questionnaire and been influenced by positive bias, stating that “as DFS-2 questionnaire has answers based on the Likert scale, participants may tend to choose more positive options” (p.58). Furthermore, it was noted that participants only represented ākongā in higher education. Therefore, their results were limited to representing a smaller demographic of ākongā.

Other limitations caused by using human participants were recognised by Oliverira et al. (2022), who acknowledged that the participants in their study had used the gamified system for 30 minutes before the questionnaire and may have been tired by the time of questioning. Also, the elementary school participants in their study could have felt anxious in the test-like environment, which would have affected their responses. Overall, the researchers identified that it is highly likely that the participants did not have a sufficient basis for comparison due to their limited exposure to gamified learning environments.

Santos et al. (2022) identified that they did not organise their participants into age groups or education levels. Consequently, they could not comment on their results accordingly. Santos et al. also noted that the results of their study could have been affected by the participants’ experience before and during the test in relation to a stressful or emotional event. Consequently, affecting the participants’ responses to the questionnaire.

Furthermore, Santos et al. (2022) mentioned that the COVID-19 pandemic could have influenced how their participants responded to their tests because the pandemic was a period that caused people a lot of heightened stress levels, psychological suffering, depression, and possible aggressiveness. This is especially relevant to their study, considering that they were investigating whether gender stereotypes affected the level of aggressiveness, flow, and learning in gamified environments. Hence, highlighting the importance of external factors that needed to be considered, especially when conducting

studies with human participants.

The novelty factor

Halloluwa et al. (2016) conducted their study in Sri Lanka, a developing country where ākongā rarely experience opportunities to use technology. As a result, the researchers identified that the novelty factor of using the tablets in their study could have largely influenced their findings. This highlights the importance of designing non-technology-based gamified activities, especially for places that do not usually integrate technology into their learning space. Although none of the other researchers identified the novelty factor as a limitation of their study, it could be argued that this influenced the gamified learning space. This is especially if gamification is being tested or experienced by ākongā for the first time.

The length of the study

Another limitation Roosta et al. (2016) identified was the length of their study. They stated, “the limitation of experiment time and the number of participants were among the reasons we were not able to achieve other learning outcomes such as students’ learning” (p.641). Similarly, Halloluwa et al. (2016) also recognised that the length of their study could have meant that the novelty factor of the gamified mobile application affected their results (as mentioned above). Therefore, all researchers noted that a longitudinal study would be beneficial to ensure that the novelty of the gamified resource does not affect how ākongā respond to the resource or nature of the gamified learning space.

Of the 19 studies, 14 had participants involved in a case study. The other five studies were either developing a framework or an algorithm for tailored gamification that had not yet been tested in a real-life scenario (Knutas et al., 2018; Khoshkangini et al., 2017; Harteveld & Sutherland, 2017; Chalco et al., 2014; and Baldeón et al., 2016). Overall, the most common length for a study with participants was very short term, including either a one-off session, three 45 minute sessions, or five hours on a tablet (Denden et al., 2017; Fadhil and Villafiorita, 2017; Halloluwa et al., 2016; Marinho et al., 2019; Monterrat et al., 2017; Oliveira et al., 2022b; Sailer et al., 2017; & Santos et al., 2022). The second most common length for a study was one semester (15 weeks). These studies were conducted by Barata et al. (2013), Fiş Erümit and Karakuş Yılmaz (2022), Hanus

and Fox (2015). Here, it is interesting to note that the two studies by Fiş Erümit and Karakuş Yılmaz (2022) and Hanus and Fox (2015), which were classified as GIE and discussed in-depth in this chapter, were both longer studies. Considering the positive results from these two studies discussed earlier and the suggestion from Roosta et al. (2016) and Halloluwa et al. (2016) above regarding the length of their studies, it could be safe to assume that a longitudinal study for GIE would aid in providing more in-depth insights and understanding compared to a short-term study.

Frustration levels

Santos et al. (2022) examined the effect of gender stereotypes on levels of aggressiveness, learning, and state of flow in gamified learning environments. As such, the researchers reflected on elements of their game that may have increased the aggressiveness of their participants, such as the lights or sound effects initiated by an incorrect answer. They concluded that “the fact that participants always lose points when they miss a question may have been considered as an irritability factor” (p.22). Hence, this highlights their conclusions regarding the importance of well-designed gamified activities.

None of the other studies specifically identified or discussed the frustration levels of their participants as a limitation of their study. However, frustration levels are linked to the state of flow in a gamified learning space. A state of flow happens when there is a healthy balance of elements, so ākonga experience increased intrinsic motivation, better emotional regulation, and elevated happiness, thus, resulting in lesser frustration levels. The importance of this was also identified in the studies conducted by Barata et al. (2013), Fiş Erümit and Karakuş Yılmaz (2022), Huang and Hew (2018), Lavoué et al. (2018), Marinho et al. (2019), Oliveira et al. (2022b), and Santos et al. (2022). Other researchers, such as Chalco et al. (2014), suggested that future studies might benefit from further consideration and implementation of optimal flow theory. Therefore, the importance of flow theory in a gamified learning space has been highlighted, especially when there is a possibility that ākonga may experience frustration.

More work in a gamified learning environment

An interesting finding was identified by Barata et al. (2013) when their ākonga participants commented that the gamified learning environment was more work for them.

However, their motivation and engagement still increased despite the increased workload. Thus, it is important to reflect on how impactful the gamified elements of the learning space can be, especially considering this feedback. Here, it is arguable whether this is a limitation or a positive outcome for the study. For instance, these researchers do not mention whether the increased workload extends to the educator since they must ensure the gamified learning space is well-designed and implemented for its success. Hence, creating more workload for the educators and ākonga. What is particularly evident is that this issue was not identified or discussed in any of the other studies.

Mandatory fun

The study by Hanus and Fox (2015) was recognised as one of the only two studies classified as GIE. In their study, the researchers designed 22 badges that could be earned by completing various tasks. Here, it is essential to note that these tasks were largely non-technology based, and the badges were compulsory to earn to pass the course. However, Hanus and Fox (2015) later identified that the mandatory element of the badges was a limitation of their study, stating that “Being forced to do something can decrease intrinsic motivation; gamification may be more effective for individuals who have the option to engage with badges and leaderboards. Individuals tend to be aversive to “mandatory fun” (p.160). Accordingly, the researchers recommended investigating voluntary participation in gamified learning spaces for future studies (Hanus & Fox, 2015). Given this, it is crucial to recognise that involuntary participation in GIE should be avoided. The concept of mandatory fun was not mentioned by any other researchers from the 19 studies; however, Knutas et al. (2018) and Roosta et al. (2016) acknowledged the notion of voluntary participation.

Gaming features

Significantly, 17 of the 19 studies were classified as the gamification of a game or technology-based initiative. Therefore, several limitations researchers identified from these initiatives were technology-based and included; not having enough gaming mechanics (Monterrat et al., 2017), the lack of personalisation of the gaming features to ākonga (Monterrat et al., 2017); the player model utilised (BrainHex) could be unreliable (Oliveira et al., 2022b); and the technology-based initiative can only represent limited aspects of reality (Sailer et al., 2017). Overall, these limitations highlight that although

there are many benefits to implementing technology-based initiatives, they can also cause many unexpected complications or implications for practice. In turn, this could put extra stress and pressure on educators. Similarly, Knutas et al. (2018) recognised that gamifying a learning space creates more work for educators., which again emphasises the need for a more streamlined process, especially for tailoring gamification.

Limitations for tailored gamification studies

Of the 19 studies, six were focused on tailoring gamification. Four of these six studies had participants who took part in a case study. These included the studies conducted by Knutas et al. (2018), Lavoué et al. (2018), Oliveira et al. (2022b), and Roosta et al. (2016). The researchers identified several limitations regarding the personalization of gamified technology-based initiatives. These include the need for an IT expert to gamify the design (Knutas et al., 2018); the system needing to be verified empirically (Knutas et al., 2018); users filling in an extensive questionnaire regarding their game preferences at the start in order to personalise their experience (Lavoué et al., 2018); and the system only tailored based on the player type, which fails to consider users who do not want to play (Lavoué et al., 2018). In addition to the questionnaire limitations identified above by Lavoué et al. (2018), the researchers claim that this limitation highlights a significant problem with the personalisation of gamification. They state that “our findings suggest that learners’ choices would not match the features that motivate them for a given learning activity. This appears to be a major issue in the personalization of gamification” (p.26).

Furthermore, Roosta et al. (2016) identified that their research was limited by the length of their study and the number of participants. Similarly, Oliveira et al. (2022b) also recognised the importance of the length of the study and highlighted the need for longitudinal studies, especially for gamified learning environments. Oliveira et al. (2022b) recognised a lack of design solutions for tailored gamification educational environments. More specifically, more guidance should be provided regarding designing effective, tailored gamified learning spaces. Here, it is essential to note that this limitation only relates to technology-based initiatives. Therefore, it could be assumed that gamifying the learning space using minimal or no technology could be more effective.

Recommendations for future research identified across the 19 studies

This section identifies recommendations for future research suggested by the researchers in the 19 studies from Appendix 28.

Ākonga participants

Numerous recommendations for future research were made throughout the studies that specifically related to the ākonga participants. For instance, it was noted that there was a need to use a range of different ākonga rather than limiting the study to one age group or year level (Fiş Erümit & Karakuş Yılmaz, 2022). Similarly, Oliveira et al. (2022b) recommend expanding future research into other academic settings to achieve more generic results. It was also suggested that future research could conduct the same study, however, with more participants for better statistical power (Denden et al., 2017; Huang & Hew, 2018; Marinho et al., 2019; Monterrat et al., 2017; and Roosta et al., 2016).

Furthermore, Huang and Hew (2018) suggested that participants should be randomly selected (as opposed to using the participants who choose to enrol in the course). The researchers also identified the need for future studies to refine the gamified model to meet the needs of different aged ākonga, stating that “this model mainly targeted learners in a higher education setting. Future studies may explore how this model could be refined to meet the needs of K-12 students” (p.270). Overall, these recommendations confirm that studies of gamification and GIE are still in their infancy, with plenty of room for experimentation, especially regarding the ākonga participants.

Possible harm to ākonga

Besides the numerous benefits of gamified learning spaces, Hanus and Fox (2015) identified that gamification can cause harm to ākonga. For example, they noted that ākonga with performance anxiety might feel pressured by certain gamification methods or benefit from the distraction. Furthermore, ākonga who experience a gamified learning environment in a subject area they are confident in could either enjoy the approach or feel that it detracts from their learning. Hence, the researchers recommend that future studies investigate how to identify which ākonga would benefit from a gamified learning

environment and which would not. Overall, Hanus and Fox (2015) reflected that it is unreliable to presume that all ākonga will benefit from gamification.

Other researchers who identified that GIE could cause harm include Marinho et al. (2019), who claim that some gamification elements could cause the opposite effects from the designers' original intention. Due to this, the researchers recognise that new studies have attempted to connect known gamer types to the gamification elements to produce better results. For instance, an ākonga who enjoys the competition element would be more likely to prefer completing missions rather than collaborating with peers.

In the study conducted by Monterrat et al. (2017), the researchers proposed a list of six rules (R) for gaming features to follow to help reduce any adverse effects of adaptive (tailored) gamification:

- R1. They should implement at least one game dynamic corresponding to a player type;
- R2. They should be based on information related to the learner or the learning content;
- R3. They should not affect the consistency of the learning activity when enabled;
- R4. They should not affect the consistency of the learning activity when disabled;
- R5. The user should be provided with a way to disable them;
- R6. They should emit an event attesting to an interest by the user (traceability) (p.632).

These rules are solely for technology-based tailored gamification. Other researchers who recognised in their discussions that GIE can cause harm or have negative effects for ākonga include Denden et al. (2017), Knutas et al. (2018), Lavoué et al. (2018), Oliveira et al. (2022b), Roosta et al. (2016), Sailer et al. (2017), and Santos et al. (2022). Finally, the study conducted by Fiş Erümit and Karakuş Yılmaz (2022) also identified adverse effects, which were discussed in-depth earlier in this chapter.

Measure ākongā achievements/outcomes

Another recommendation for future research made by Barata et al. (2013) and Fiş Erümit and Karakuş Yılmaz (2022) is to measure the achievement or ākongā outcomes of the gamified learning space. The researchers acknowledged that the motivation and engagement of the ākongā participants increased in the gamified learning spaces. However, Barata et al. (2013) identified that there is not yet quantitative data *measuring* their achievement. They state, “we are yet to find a correlation between gamification and student grades” (p.7). Here, it would be advantageous to see if the achievement of ākongā increased simultaneously with their motivation and engagement. Furthermore, it is interesting to note that no other studies from the 19 (in the table) either mentioned or discussed measuring ākongā achievement or outcomes or suggested doing so for future research.

Comparing the gamified learning environments against traditional learning environments

Of the 19 studies identified, two stood out, with a recommendation from Fiş Erümit and Karakuş Yılmaz (2022) and Oliveira et al. (2022b) regarding the need to compare a gamified learning approach with traditional and other teaching and learning approaches. In particular, it is relevant to note that Phase Two of the research conducted for this thesis was designed in 2019 and does exactly what the researchers recommend above; compares a gamified learning space to a non-gamified (traditional) learning space. In addition, this PhD research also conducted Pakeke Kōrero to gain feedback from pakeke regarding *how* to tailor gamification to the needs of tāne ākongā Māori. Thus, validating the significance of the contribution to the field of GIE.

Theories that form the basis of the design of gamified learning environments

Earlier in this chapter, 46 theories that form the basis of the design of gamified learning environments were identified. Examining how these theories affect a gamified learning space has been recommended as the focus for future research (see Chalco et al., 2014; Harteveld & Sutherland, 2017; and Santos et al., 2022). For example, Chalco et al. (2014) and Santos et al. (2022) suggested that future research could investigate if gamified designs influenced the activities and the flow state of ākongā. Furthermore, Harteveld and

Sutherland (2017) recommended that future research consider motivational theories and evaluate their effectiveness in tailoring playful experiences. Overall, the theories of motivation were identified and discussed throughout 10 of the studies, especially Flow theory and self-determination theory (Barata et al., 2013; Fiş Erümit & Karakuş Yılmaz, 2022; Huang & Hew, 2018; Knutas et al., 2018; Lavoué et al., 2018; Marinho et al., 2019; Oliveira et al., 2022b; and Sailer et al., 2017). In short, this confirms the influence of the theories in gamified learning environments. As such, it is highly relevant to point out the lack of theories related to the cultural needs of ākonga. No cultural-based theories are currently being utilised in gamified learning environments. This further highlights the impact of this PhD research in the field due to its focus on tailoring GIE to the cultural and learning needs of tāne ākonga Māori.

Testing of the gamified models on various disciplines

Of the 19 studies, a recommendation for future research suggested by Huang and Hew (2018) is to test the gamified model in various disciplines (i.e. different subject areas). Their study only tested the gamified model in information management and basic statistics. Therefore, it is unclear if the gamified model would also be effective in other disciplines. Additionally, the study by Sailer et al. (2017) was conducted in an online stimulated environment where players had to pick out customers' orders from a storage depot and fulfil five different orders. According to the researchers, utilising the same game design elements within a real working/learning context would be the next logical step. Similarly, Monterrat et al. (2017) recommended that future studies could be conducted in different contexts; for example, distance or blended learning, at different levels of learning and learning environments. Likewise, Oliveira et al. (2022b) also recommended that to obtain more generic results; studies should expand into other academic settings. These recommendations provide numerous next steps for future research in gamification and GIE.

Kaiako participation in gamified activities

The study by Huang and Hew (2018) required ākonga participants to complete activities in an online learning platform called Moodle. In their findings, the researchers reflected that the course instructor did not participate in the online activities with their ākonga, which may have affected levels of motivation and engagement. They note, "it is uncertain

if teachers' involvement with the online activities would better enhance students' engagement. It would be meaningful to explore the level of teacher involvement in gamified activities, and its impact on students' motivation and engagement" (p.270). While none of the other studies discussed kaiako participation in gamified activities, this suggestion provides an interesting recommendation for future research. Here, it would also be noteworthy to consider the role of the kaiako in a gamified learning space that does not solely use technology. The potential for ākonga to experience more face-to-face (as opposed to online) interactions with their kaiako, especially in gamified scenarios where fun is encouraged, has huge potential for fostering learning in ākonga and maintaining positive ākonga-kaiako relationships.

Future recommendations for tailored gamification studies

Six of the studies that were classified as the gamification of a game or technology-based initiative specifically focused on the personalization of the gamified elements to the needs of ākonga (Challco et al., 2014; Khoshkangini et al., 2017; Knutas et al., 2018; Lavoué et al., 2018; Oliveira et al., 2022b; & Roosta et al., 2016). Furthermore, researchers from several other studies also made suggestions in their future recommendations for tailored gamification, even though their study did not specifically focus on it. Therefore, this is the most extensive section for recommendations for future research.

One recommendation, for example, came from Khoshkangini et al. (2017), who suggested that future research focus on the players' typology (i.e. the 'type' of player) to better understand how to tailor the gamified resource to the needs of ākonga. According to Marinho et al. (2019), there are four different types of players, and each type has its preference for how they interact within the game, which are categorised across four player types (Achiever, Explorer, Killer, and Socialiser²⁶). The researchers note that once you identify the type of player the user (or ākonga) is, you can tailor the gamified resource from there. This is confirmed by Khoshkangini et al. (2017), who states that "Once we recognize the player's type/style in the gamification scenario, we can further customize the game to the player" (p.366).

²⁶ See Chapter Four for detailed definitions of these player types

Another recommendation by Chalco et al. (2014) proposed the personalisation of rewards in game mechanics. Furthermore, Fadhil and Villafiorita (2017) advocate more on analysing and recognising emotions (related explicitly to chatbots). Also, Monterrat et al. (2017) suggest that the impact of tailored gamification should be validated using dedicated questionnaires. Knutas et al. (2018) also recommended that future design teams consider machine-based algorithms' suitability in gamified systems. Although these recommendations are primarily for technology-based gamified resources, they are still relatable for non-technology-based gamification because they provide various options for considering tailoring gamification that has already been identified through research.

The study conducted by Roosta et al. (2016) recommends that future research could involve studying aspects of the users' (i.e. ākonga) personalities and how they relate to the various gamification elements. The researchers also note a cultural gap in the questionnaire responses and a lack of self-knowledge amongst ākonga regarding what motivates them. Finally, the researchers even suggest the possibility of the users choosing their gamification elements based on their interests. This provides various possibilities for future research in tailored gamification.

This chapter has identified that there is confusion regarding what studies of gamification look like compared to studies of GIE. These confusions are additional to the misconceptions regarding the various EOGL initiatives. Therefore, numerous examples of studies have been examined and discussed to help clarify and highlight the differences between when, in an educational context, gamification is being used to enhance a game or technology-based initiative, or, when GIE is being effectively integrated into the learning space. Ultimately, providing this clarity aims to establish a deeper understanding of GIE and ensure its successful implementation.

A deeper understanding of GIE will also help tailor it to the specific needs of tāne ākonga Māori. This can be achieved through an awareness of their culture and needs as male learners. Essentially, for this PhD research, this knowledge is primarily influenced by the Pakeke Kōrero conducted during Phase One. As such, the findings from Phase One will now be identified in the following two chapters.

Chapter Six: Pakeke Kōrero – tuatahi

This PhD research sought to gather the theory and background research required to identify and develop gamification elements for tailoring GIE to the needs of tāne ākonga Māori. I examined two significant factors: the cultural needs of tāne ākonga Māori and their needs as male learners. To achieve this, during Phase One, Pakeke Kōrero were held with pakeke to gain their perspective regarding how to best support the next generation of tāne ākonga Māori. Then, in preparation for Phase Two, I derived gamification elements from the kōrero.

The process of deriving gamification elements from Pakeke Kōrero required fusing kōrero from pakeke with knowledge of te ao Māori, gamification, and male learning needs. Hence, the discussions are comprehensive and are discussed across two chapters: Chapter Six – tuatahi, and Chapter Seven – tuarua. Both chapters are organised into two sections. Chapter Six discusses wairua and culturally responsive pedagogy, and Chapter Seven discusses the influence of the kaiako, and meaningful learning. At each section's conclusion, I identify the gamification elements that were derived from the kōrero. Then, at the end of Chapter Seven is a summary of all the derived gamification elements. The discussions across Chapter Six and Seven aim to illustrate the origin of the derived gamification elements and justify their importance for tailoring GIE to the needs of Māori boys.

Wairua

Wairua relates to spirituality and, according to Valentine et al. (2017), has always been fundamental to the overall health and well-being of Māori. Valentine et al. identify that wairua knows no boundaries and encompasses a wide range of aspects, including an interconnectedness between the land and all living things, a link to one's ancestors, and acknowledges a connection to the wider universe. Essentially, wairua manifests through cultural values, beliefs, and ways of being. Hence, wairua is a crucial element of Māori identity. Valentine et al. (2017) state:

Wairua is not static, it exists on a continuum with many facets.

For some, wairua comes in a small subtle voice. For some, a

persistent overwhelming thought, impression or feeling that needs to be acted on. For some, wairua can be seen, heard or felt, and for others wairua is exemplified in their environment and their interactions. Dreaming is also an aspect of te ao wairua; the list is endless (p.69).

Durie's (1982) Indigenous model of well-being, Te Whare Tapa Whā (Appendix 31), is well-known throughout Aotearoa and confirms that *Taha Wairua* (the spiritual side) is a fundamental element for the holistic health of Māori. However, in the context of English medium educational settings, wairua is an element that needs to be treated with caution. For example, Valentine et al. (2017) claim that although wairua is significant for Māori, "this does not suggest Western psychology should be the lens through which a notion such as wairua must be examined and understood" (p.65). Accordingly, some elements of wairua must be left to the whānau of ākonga to teach and pass down. Webber and Macfarlane (2018) maintain that: "Whanau [play] the most important role in terms of socializing their children into Maori the world and helping them to develop cultural efficacy" (p.11). Here, the importance of the kaiako and education setting developing productive partnerships (discussed earlier in this thesis) with ākonga, their whānau and wider iwi is emphasised. Once a productive partnership is established, kaiako can have whānau support regarding how to nurture the wairua of their ākonga (mental health and well-being).

This section identifies aspects of wairua that kaiako in English medium educational settings could adopt to nurture the overall well being of their ākonga Māori. For instance, pakeke recognised that the mental health of their ākonga is critical to acknowledge before formal learning can begin. This can be achieved by helping ākonga understand their emotions (i.e. their inner being, their wairua) and how to cope with emotions when they arise. More specifically, if ākonga face challenges at home (or school), this would affect their ability to concentrate on their learning. This highlights the importance of teaching tāne ākonga Māori *how* to handle their emotions so they can learn to self-regulate and be ready for their learning.

Another concern pakeke noted was that they often felt they could not ask their kaiako for

help when needed. As a result, they would give up trying to complete the learning task and pass the time until the session was finished (often by disrupting peers). This affirms how crucial it is for tāne ākonga Māori to be taught how and encouraged to ask for help. Accordingly, these will now be discussed in more detail with feedback from pakeke.

Emotions

Pakeke emphasised the importance for future generations of tāne ākonga Māori to learn how to: deal with their emotions in the ‘heat of the moment,’ understand where emotions come from, and know that emotions only last for a short time. For example, Paerangi considered it essential for tāne ākonga Māori to understand:

“the internal realities of your [their] own mind ... how you can go through emotions and kind of be angry one point and totally happy five minutes later. So, emotions don’t stay ... it’s trying to find those safe ways to kind of navigate people ... off those times of anger, times of frustration and everything else ... How you can kind of not be so down in yourself and kick yourself and everything else, and just look at the great things that you are, and be a bit more empowered”

A contrasting view was provided by older pakeke, who pointed out that back in the day, emotional stability was learned and dealt with due to various life experiences, especially from home. For example, Blackie said:

“It’s a pretty sad state of affairs when you’ve got to teach people how to deal with emotions I think, um, especially kids ... because, our kids got a different world to what we had ... I know I wasn’t taught how to deal with emotions, so, I don’t - I can’t really answer ... Kids can get disappointed really easily now aye. You know um, any little thing can deflate them really quickly”

Similarly, Hemi, claimed:

“it’s an experience thing – you know, time. Like confrontation, um, long before you learn it’s better to walk away than it is to – it, it only comes from

... *experience*”

Likewise, Mata Hari said:

“we weren’t taught how to relate with different people. It’s our parents taught us that mostly; nothing got taught like that at school – you were just put there and expected to know how to relate with people. So that’s something you learnt”

A younger generation pakeke, Wī, said he learned a lot about how to deal with his emotions from his Nan (grandmother):

“[Nan taught me to] manage my emotions and teaching me like, the right way to act in situations. And, um, yeah she filled that void for me”

In this kōrero, a comparison between older and younger pakeke is evident. More specifically, older pakeke reflected on how they were simply expected to learn about their emotions and how to deal with them from various life experiences and home gradually. In contrast, younger pakeke pointed out that tāne ākonga Māori need to be explicitly taught about their emotions and how to deal with them when they arise.

Asking for help

In addition to learning about emotions, pakeke felt tāne ākonga Māori need to learn how and be encouraged to: open up, talk more (especially about their emotions and feelings), and ask questions. Here, the younger pakeke especially shared that they found it hard to ask for help if they needed it in school. For example, Ihaka stated that:

“yeah when I struggle, I ... tend to like, zone out ... I find it quite hard to just ask for help in a way”

Anaru noted:

“For my kids ... what I want them to come out to be able to control their

emotions, understand their emotions, be able to problem solve. Be able to think for themselves, and also how to ask for help. Like where to go to ask for help, how to ask for help, um, how to – and how to adult”

Additionally, Paerangi reaffirmed the importance of learning about emotions and how this extends to asking for help:

“in what can be taught I suppose your inner self; your inner kōrero; your inner who you are/what you are – all those deeper questions and start from there. Because I think those are some of the critical points, rather than just knowing how to spell or count numbers – it’s like, how do I deal with my emotions, I’m angry. Um, I’m shy and I’m, I’m falling and, and I feel like I’m getting behind and I feel dumb. Miss, how do I put my hand up? Or how do I indicate to you, can I get some more time?”

Also, Te Ariki confirmed:

“if I found it too hard, then I’d ask the teacher and she’d sort of show me how to do it. Um, I’d be fine, and then if I still didn’t know how to do it, I’d just leave it at that, and I was just happy not knowing how to do it ... even when it came to the time to take the test ... I’d just go through all the bits that I knew, and then I’d just leave the rest. I’d have another go at them but then I’m like nah, that’s all that I know, and so then that’s it ... I was just trying to get through the hour. Then yes! Out of here”

Mata Hari acknowledged a similar issue identified earlier regarding not being taught about emotions at school (back in the day) and also acknowledged that it is vital, affirming:

“you don’t get, you know, advised on how to deal with stuff like that when it pops out. You know ... I think that’s a life skill that should be put in early so you can learn how to deal with things without, without it escalating. Which is – could probably help the kids you know, to understand more maybe”

In summary, according to pakeke, tāne ākonga Māori tend to be reluctant to ask for help because they feel that if they did, they would look dumb in front of their peers. This aligns with discussions in Chapter Three of this thesis, where Pinkett and Roberts (2019) identified pressures on male ākonga to live up to social conventions of being masculine, where men do not express or talk about their emotions because it is considered feminine or weak (Pinkett & Roberts, 2019). Furthermore, pakeke confirmed a lack of being taught (or encouraged) *how* to openly talk about feelings and emotions in English medium education settings. Teaching these skills would require the kaiako to be knowledgeable on the topic. Here, kaiako training or professional development is necessary. Then, as suggested by Pinkett and Roberts, kaiako would know the importance of normalising talking about emotions and model this for their ākonga, including learning to pause and breathe before reacting, especially during times of frustration or stress (this is reflected in the āhua of the kaiako, and relates to the uplifting of the mana of ākonga, which is discussed later in this chapter). Over time, this will aid in eliminating the premise that talking about your emotions is weak. Ultimately, pakeke recognised that focusing on these skills would have helped their engagement and motivation in their learning and their ability to deal with frustrating situations more easily.

Gamification elements derived from this kōrero that align with wairua

This section has examined kōrero from pakeke that relates to wairua. The two most significant points of discussion have included the importance of encouraging and normalising tāne ākonga Māori to talk about their emotions openly, and having the courage to ask for help when needed. Both of these require tāne ākonga Māori to push through the stigma of social conventions of masculinity, which, as discussed earlier in this thesis, significantly affect boys in English medium educational settings (Roberts 2022). A summary of the gamification elements derived from this section includes:

- | | |
|---------------------|-------------------------------------|
| • <i>kōrero</i> | • <i>mana</i> |
| • <i>hā</i> | • <i>relationships</i> |
| • <i>āhua</i> | • <i>ngā whatumanawa (emotions)</i> |
| • <i>connection</i> | • <i>whānau</i> |

- *collaboration*
- *mauri*

Some elements identified throughout this chapter are already familiar in teaching and learning practices throughout English medium education. Other elements may be utilised currently; however, pakeke have identified as needing strengthening for the effective teaching of tāne ākonga Māori. Also, some elements pakeke have pointed out as being absent or lacking in English medium education. The purpose of acknowledging *all* of these as gamification elements is to collate a ‘set’ of gamification elements for a potential gamification framework that form a comprehensive set to promote the effective teaching of tāne ākonga Māori.

For instance, elements identified above that may be already familiar in English medium educational settings include *relationships*, *whānau*, and *collaboration*. Identifying these elements highlights that their current use in English medium educational settings needs to be strengthened. Furthermore, pakeke identified some elements that are either inconsistent or absent, including *kōrero*, *hā*, *āhua*, *mana*, and *connection*.

Culturally responsive pedagogy

When the kaiako acknowledges, respects, and values the cultural needs of their ākonga within the learning space, culturally responsive pedagogy occurs. Researchers such as Lawrence (2011) identify an assumption that ākonga Māori need more kaiako Māori to achieve. However, Richards (2017) has confirmed that when kaiako (Māori and non-Māori) adopt a culturally responsive teaching pedagogy, their ākonga Māori experience more success, stating that: “[teaching] pedagogy that is culturally responsive can close the achievement gap and can improve academic achievement for diverse students” (p.26). Richards notes, “For this reason, utilizing a culturally responsive pedagogy of relations is vital to improve Māori educational achievement” (p.26). In this PhD research, pakeke identified that they did not experience a teaching and learning environment reflecting a culturally responsive pedagogy in school. That is, pakeke noted that their experiences in English medium educational settings lacked: te reo Māori, connection to the taiao, culturally relevant learning content (such as learning about Māori stories, history, and

learning about Māori leaders/people of significance), a learning space that reflects te ao Māori (i.e. where tikanga is practiced, te reo Māori is spoken, and Māori values such as whanaungatanga are exercised), a positive relationship with their kaiako where they were respected as Māori, an education setting that developed and maintained productive partnerships with their whānau and wider iwi, and a kaiako who embraced their cultural values, beliefs, and aspirations.

Pakeke reflected that they would have been much more engaged and motivated in their learning had their education setting (and kaiako) acknowledged, respected, and catered to the factors recognised above. Hence, pakeke maintained an urgency to ensure that future generations of tāne ākonga Māori do not continue to experience the same detrimental effects that they had regarding the suppression of their cultural values and beliefs throughout their education.

This part of the chapter will now identify and discuss aspects of culturally responsive pedagogy pakeke noted as being imperative to nurture for future generations of tāne ākonga Māori in English medium education: a learning space that embraces te ao Māori, meaningful relationships, the upholding of mana (treating ākonga with dignity, respect, and not make pre-determined or stereotypical judgments), more learning that connects ākonga to the taiao, a learning space that embraces te reo Māori, and their names pronounced correctly.

At the conclusion of this section is a summary of the gamification elements derived that align with culturally responsive pedagogy, followed by a brief description of their origins from the feedback of pakeke. These gamification elements include *identity*, *learning space*, *tikanga*, *relationships*, *collaboration*, *taiao*, *play*, *te reo Māori*, and *mana*. Later in this thesis, these elements will be explained in-depth throughout Chapter Seven, the Discussion chapter.

A learning space that embraces te ao Māori

As mentioned above, pakeke felt their unique needs as Māori were forsaken throughout their experiences in English medium educational settings, and that to gain an education, they had to sacrifice their cultural values, beliefs, and spirituality as Mata Hari, a pakeke,

described his experience:

“in doing that [going to college], I lost a lot of my kaupapa, my reo. I sacrificed that to become better educated than some ... there’s a price to pay for knowledge and for comfort in our current world which is ... spirituality suffers”

According to Mata Hari, there needs to be a balance created for future generations of tāne ākonga Māori, so they do not have to sacrifice their cultural values, beliefs, or spirituality in order to obtain formal academic learning:

“it’s finding a balance to not lose that spirituality but stay current to move forward ... our kids need to be supported in their kaupapa and in their reo and Māoritanga [Māori culture]. But, they need to be pushed forward in this world because it’s the only way we’re going to progress”

Another pakeke, Blackie, reflected on the repercussions that are still happening now as a result of the history of colonisation in Aotearoa, stating:

“we are a product of colonisation ... and we were put into an education system that was ... more for probably the Pākehā world, and we had to adapt if we could. So, I’m probably one of the ones who didn’t adapt so good”

Pakeke challenged the significant influence of the kaiako on Māori learners and the importance for kaiako to learn and know more about the iwi, including their local stories, knowledge, and places of significance. Haimona suggests that kaiako really need to be asked:

“do you really want to teach our kids? And are you willing to change your style – it’s getting back to that environment, into the surroundings of our community? ... also, to attend all cultural inductions, cultural knowledge – history. Learning more about who these kids – where these kids come from”

Haimona points out that kaiako must take ownership of their own learning and development, and genuinely try to get to know their ākonga Māori, their local environment, and their community to develop an in-depth understanding of who their ākonga Māori are and where they come from. Then, adjust their teaching practices to cater to the needs of their ākonga Māori. Alternatively, not teach them if they are not willing to. This aligns with researchers such as Bishop et al. (2010), who note that kaiako must take an agentic stance and reject any deficit views on the success of ākonga Māori or negative stereotyping or views of Māori. Also, Richards (2017) claims that “To enable this [culturally responsive] pedagogy to transpire, teachers must also take responsibility and be accountable for their actions and not be part of the “bystanderism” that often happens in schools” (p.26).

Conclusively, a way forward that embraces the cultural values, beliefs, tikanga, and spirituality of tāne ākonga Māori is fundamental for the future development of learning spaces that reflect culturally responsive pedagogy.

Relationships

The significance of ākonga-kaiako relationship was widely recognised among pakeke as crucial to the success of ākonga Māori. They pointed out that non-Māori kaiako especially need to make a genuine effort to develop good relationships with their ākonga Māori. Then, they have a much higher chance of getting to know their ākonga and how to better support them, especially regarding their cultural needs, aspirations, interests, and dreams. Wī pointed out how it is important not to “*shut the interests of ākonga off,*” claiming that kaiako should:

“just take a step back, learn the interests of their ākonga and show genuine reciprocal interests as well. And ... try and cultivate that into something bigger”

Here, Wī’s comment points out that once the interests of ākonga are identified, kaiako must genuinely encourage and build on them. Similarly, when reflecting on kaiako who are still memorable, pakeke shared that kaiako who made a genuine effort to go that extra mile to cater to the needs or interests of their ākonga stood out and were fondly

remembered. For example, Paerangi remembered a kaiako who:

“showed me respect, and at a level. It was like, there’s this type of relationship rather than the, I’m the teacher, and there’s all these rules you’ve got to sharpen to”

Likewise, Blackie shared that:

“if you just treated ākonga exactly how you wanted to be treated, then that comes back to you ... from the kids. You just got to ... form a relationship with them, and not be the boss”

Blackie said forming good relationships is how kaiako can keep tāne ākonga Māori engaged with them. Another pakeke, Ihaka, also confirmed the importance of maintaining good relationships with ākonga *outside* of the classroom, commenting:

“I probably had quite a good relationship with [my teachers] because when we would talk outside of classes ... you would talk to, like a friend in a way ... you felt like they cared about you in a sense”

However, Ihaka experienced negative occurrences that multiple pakeke also faced regarding their peer group being targeted by the kaiako:

“There was a particular teacher that focused his attention on my kind of friend group ... we were always sitting together in class ... And, during each class ... he would bring his attention to us unnecessarily ... I felt like we were targeted”

Ihaka’s kōrero aligns with discussions in Chapter Three, where it was pointed out that kaiako need to have high expectations of tāne ākonga Māori and not succumb to negative stereotypes. Also, this issue is examined further in the Discussion Chapter, where deeper understandings of ākonga and whānau aspirations and educational relationships are reflected upon.

Connection to the taiao

Pakeke considered that being outside the classroom, especially in the taiao, where ākonga connect with the maunga, awa, ngahere, or kararehe (animals), is highly motivating and engaging for tāne ākonga Māori and their learning. This is especially relevant when ākonga learn about and go to places of significance to their local iwi that hold special meanings or history. Pakeke acknowledged how they felt a natural draw to the taiao. For instance, Anaru stated:

“I love being outdoors. I hate being inside; I love being out skiing, swimming, done horse riding, done tramping, mountain biking, um anything outside”

Anaru noted the importance of balancing technology: inside and outside learning time. This is especially relevant when the weather is enticing them outside when ākonga find it harder to focus on their learning:

“we can’t expect them to sit there for hours on end with something they’re not even interested in. Especially when it’s sunny outside and they can see, you know ... I would want my children to be more engaged by doing like physically being outside doing it. Because they can sit at home and do things with technology at home. Um, it needs to be a really fine balance”

Haimona recognised the importance of learning about the local environment and reflected on how it could be included in learning for ākonga:

“I think it’s important we need to understand and learn more about our surroundings and our environment and how that can be implemented into the curriculum ... We need to learn more about our history. Who we are ... Getting out of the classroom, I think outside/out of the classroom education is important. Like, you know I heard shearing earlier, um, docking, hunting, all that kind of stuff. How can we implement that into the curriculum to support the development?”

Paerangi claims that:

“Sports, outdoors, being in the taiao, being in our rivers, being out – doors. That is the space that I was connected to”

Te Ariki acknowledged that not all ākonga learn the same way, and more flexibility is needed in the classroom, such as learning through play or being outside, and that there is a need for:

“a bit more learning through play. Whether it be out - learning things outside or in the classroom, because not every – one is the same – they all learn in different ways”

The comments from pakeke demonstrate that connecting to the taiao is highly motivating and engaging for the learning of tāne ākonga Māori. Belonging and connection to ancestral lands are critical to successful Māori education and well-being (Barnes et al., 2019). Thus, ongoing development of culturally responsive pedagogy should ideally include consideration of the outdoors, including maunga, awa, ngahere, and other places that hold special meaning.

Te reo Māori

It has been identified in this thesis that there is a significant lack of te reo Māori speakers in Aotearoa. Furthermore, the percentage of Māori educators in English medium educational settings is critically low. As such, the repercussions for ākonga Māori are immensely detrimental.²⁷ This is confirmed in the feedback from pakeke, most of whom cannot fluently kōrero Māori. As a consequence, they feel a severe disconnect from their culture. This further leads to anger and sadness, especially regarding eradicating a fundamental element of their culture throughout their education. This was primarily evident with pakeke aged 40 and above, who shared that they did not ‘find’ their reo until much later in life.

²⁷ See Chapter Three for a more in-depth discussion

Haimona was the only pakeke from the Pakeke Kōrero who could kōrero Māori fluently. He fondly remembers the Māori kaiako who inspired him to learn te reo Māori:

“He was probably the one who planted the seed around te reo Māori, to appreciate te reo Māori”

Similarly, Paerangi also reflected on a kaiako he appreciated who encouraged te reo Māori:

“Mr. ..., he was the man ... because he felt like he cared. He was Māori, he had Reo, um, he was encouraging us in te reo Māori”

Jimmy Jam shared an experience where, in a shop he used to own, foreign tourists were shocked to hear that he could not speak his native tongue:

“all the tourists that come in ... they’d always ask me, I’m Māori, you know. ... they said so do you know how to speak? Because they always wanted to hear it. And I’d go, no I don’t. And they couldn’t believe that I didn’t know it, cuz I was Māori. They just couldn’t fathom that I didn’t know my own language. It was like, - I just can’t believe it; you’re Māori and you don’t know it ... you look at all those tourists that come up – they all know their language, you know ... most of us ... we probably only understand bits and pieces. Do waiata, and, you know, kapahaka [Māori performing arts] and stuff”

Similarly, Mata Hari did not even have the opportunity to learn te reo Māori at school:

“our reo wasn’t taught ... So, I missed it. I’ve been trying to get it back ... I’ve been fighting to get it back slowly and that’s a cool journey, but, I shouldn’t have to – it should’ve been with me all the time”

What was evident in this discussion with Mata Hari was the level of passion that came

across in his kōrero, where even now, many years after his experiences in English medium educational settings, he is still deeply affected by the lifelong effects of the eradication of te reo Māori, an integral element of his culture.

Likewise, several other pakeke also emotionally responded to te reo Māori being forsaken throughout their education. Essentially, this highlights the impact of not having one's cultural values and beliefs valued, respected, and taught throughout their education. Moreover, it reflects the urgent need for a culturally responsive pedagogy for future generations of tāne ākonga Māori that embraces te reo Māori.

Pronouncing names correctly

Another significant concern pakeke identified was that some kaiako did not care enough to pronounce the names correctly of their ākonga Māori. Sometimes, pakeke felt that their kaiako did not even *want* to try, leading tāne ākonga Māori to assume that their kaiako did not care about them. This further leads to tāne ākonga Māori developing a negative attitude toward their kaiako. For example, Wī felt a disconnection from his favourite subject because the kaiako did not show care or even try to pronounce his name:

“when they go through the roll and, I corrected my name, then pronounced it correctly and I go Sir, it’s ..., and they go ‘Oh, doesn’t really matter anyway.’ So, right there and then I completely switched off and it was Drama and that’s my passion, I don’t really care - if you aren’t gonna care then why should I? So, right from the start ... I just switched off entirely from a subject I really liked and enjoyed”

Another repercussion of a kaiako mispronouncing the names of ākonga is the formation of an undesirable nickname or name-calling by peers. An example of this is provided by Paerangi, who noted:

“[It’s even] how they pronounce your name. Um, it’s an embarrassing reality because all your mates heard it, and now all your mates are ... calling you that name now ... and that becomes your name ... until someone forgets it ... just that kind of name is kind of a disconnect to that teacher. So, whatever

that teacher's now kind of giving or trying to offer, it's judged. Like, there's now in me [the belief that] you can't even say my name properly so I'll kind of switch off from whatever information [you have to share]"

There was consensus across most Pakeke Kōrero regarding how kaiako attitudes were essential. For example, if the kaiako genuinely tries to pronounce their name correctly and shows care, this helps alleviate any adverse effects (even if they still mispronounce their name). Ihaka confirms:

"if that's the first kind of, like moment I had with [the teacher] and he'd mend it straight away I'd, like, I'd come back from it"

Ngāpō (2013) argues that Māori respond more positively to kaiako who attempt to pronounce their names correctly than those who read names out with little or no regard for pronunciation correctness. Hence, this highlights the importance that kaiako make a genuine effort to correctly pronounce the names of ākonga Māori, demonstrating a culturally responsive pedagogy built on respect and improving the development of a positive ākonga-kaiako relationship.

Gamification elements derived from this kōrero that align with culturally responsive pedagogy

The findings in this section highlight the importance of the kaiako acknowledging, respecting, and valuing the cultural needs of their ākonga. As identified by pakeke, this includes; setting up the learning space in a manner that respects and values the cultural beliefs of ākonga, developing and maintaining positive relationships with no preconceived judgments, recognising the importance of the taiao for Māori, respecting the significance of te reo Māori and integrating it into the learning space, and making a genuine effort to pronounce the names of ākonga correctly. Essentially, the gamification elements derived include:

- *identity*
- *learning space*
- *tikanga*
- *taiao*
- *play*
- *te reo Māori*

- *relationships*
- *mana*
- *collaboration*

For this section, familiar elements identified above include *relationships*, *te reo Māori*, *play*, and *collaboration*. These familiar elements, as well as the other element above, represent aspects that pakeke believe are lacking in English medium educational settings, and when promoted in the learning space, can significantly enhance the motivation and engagement of tāne ākonga Māori.

This chapter has discussed findings from Pakeke Kōrero relating to wairua and culturally responsive pedagogy. The following chapter examines the influence of the kaiako and meaningful learning. Then, the chapter concludes by summarising all of the gamification elements derived.

Chapter Seven: Pakeke Kōrero – tuarua

This is the second chapter of the findings from Pakeke Kōrero. Within this chapter is kōrero from pakeke relating to the influence of the kaiako, and meaningful learning. At the end of each section, the derived gamification elements are identified. Then, this chapter will conclude by summarising all gamification elements derived from Pakeke Kōrero.

Kaiako influence

Female kaiako dominate the education system. This was highlighted in Chapter One of this thesis, where statistics confirming the number of female educators in the education system identified that 85% are female and only 14.8% are male (with 0.2% ‘unknown,’ p.1). Furthermore, of the male kaiako, only 1.9% are tāne Māori (Māori men) (Ministry of Education, 2022a). Given this, it is justifiable to consider that tāne ākonga Māori may encounter additional challenges in their educational setting due to the lack of male presence, let alone Māori tāne, in their learning space. Therefore, this section will examine kōrero from pakeke that explores how a lack of Māori tāne presence in the education setting can influence the motivation and engagement of tāne ākonga Māori in their learning.

Pakeke acknowledged that a tāne in the learning space significantly increased their motivation and engagement at school. They highlighted that, in their experiences, male kaiako tend to understand them better, not be offended by their humour as female kaiako are, and understand them on levels that female kaiako do not. Similarly, Dueck (2017) claims that male and female ākonga perform better with same-sex kaiako. Pakeke further noted that tāne ākonga Māori could be sensitive toward how kaiako (especially females) communicate with them. This influences the motivation of tāne ākonga Māori to participate in the learning task, their ability to listen to the kaiako, and their relationship with their kaiako. Finally, pakeke pointed out that recognising boys’ effort in their mahi (work) is crucial. If the kaiako does not acknowledge effort, this significantly decreases their motivation and sometimes ‘shuts them off’ from their learning. Respectively, these issues will be further analysed throughout this section to understand how tāne ākonga

Māori can be better supported in their learning space.

At the end of this section, a summary of the gamification elements derived that align with the influence of a male or female kaiako in the learning space is provided, followed by a description of its origin from the kōrero of pakeke. These gamification elements include *kōrero*, *mātauranga*, *hā*, *reward system*, *āhua*, *achievable goals*, *mana*, *tāne presence*, and *relationships*. These elements will be further examined in-depth throughout Chapter Seven of this thesis.

Presence

Āhua

It was evident that non-verbal communication significantly affects Māori boy's engagement, motivation, and relationship with their kaiako. More specifically, pakeke pointed out that non-verbal communication cues from kaiako, including body language, facial expressions, and the tone of their voice, can either positively or negatively influence *how* tāne ākonga Māori respond to their kaiako and engage with the learning content. In te ao Māori, this concept is referred to as *āhua*, which relates to the characteristics and traits of the personality of the kaiako. Hence, *āhua* reflects the internal make-up of a kaiako and is emulated throughout the learning space/environment they create for their ākonga and the resulting 'vibe' in the classroom.

Paerangi suggested that kaiako do professional development around the concept of *āhua* and the importance of creating a safe space for ākonga:

“[maybe teachers need] some understandings around how people are and just, there are ways that people show language or be of, I’m, I’m stuck, or I, I need some help. Because again, the shyness –just putting your hand up is not the easiest thing to do at times. So, it’s just trying to make the classroom feel like it’s a supportive space – which it is – but it like, kind of comes from the teacher – their vibe – their information.”

Here, Paerangi points out that tāne ākonga Māori tend to find it hard to ask for help when

needed. If kaiako know this, they can be more open to picking up on non-verbal cues ākonga may demonstrate and realise that they need help. Blackie noted:

“Just form a good relationship with them. Um, don’t be the boss. Be, be their team. Yeah. Form a relationship and – really important. It’s really important.”

Similarly, Wī said:

“It’s about learning your learners, um, avoiding the whole one shoe fits all and stuff like that.”

Therefore, the presence of the kaiako has a powerful impact on the classroom and ākonga. Also, Roberts (2022) identifies that the mental health, stress, and burnout of the kaiako can significantly impact the boys in their classrooms. Furthermore, Ware (2009) recognises that the environment youth are in significantly affects their development. This includes the positive affirmation of Māori social and cultural values, such as āhukatanga.

Tāne presence

It was widely agreed amongst pakeke that tāne ākonga Māori tend to behave differently with male kaiako than with female kaiako. For instance, Ihaka said:

“I had quite a few ... male teachers ... it changed how I was in class. I suppose I just, respected them more in a way. I’m not saying I didn’t respect female teachers, but it was just more of that element of ... they’d kind of say it how it is a bit more. Especially with an all-boys class ... that worked for me”

Wī also considered the perspective of the male kaiako, saying:

“they [male teachers] may seem to relate more to their [male ākonga] learning needs because perhaps male teachers ... see themselves in their male ākonga as well. Think of how they were as boys learning, and maybe being able to relate a bit more perhaps”

Also, Paerangi said:

“male presence sets a ... different flow. Males are males, so we understand each other. Um, and we do do the reflection of when we were young and we pass information – and we can be straight up and – I don’t know, just, comes to us, when it comes from a male, a male will get it”

Additionally, Haimona suggested that tāne ākonga Māori need tāne as role models who do not have to be the kaiako, claiming:

“it’s more role modeling for our boys ... we don’t have any good male role models. And I think we need more of that – and even if they’re not teachers – we need to engage more of our own parents – our Dad’s, our Father’s, just to be some sort of aspiration and to motivate them”

This kōrero highlights the significant influence of male kaiako or adults in educational settings on some tāne ākonga Māori. Also, an interesting contrast to the discussion in Chapter Three has been provided, where the concept of a male role model in the learning space was identified as a subject that continues to be debated.

Communication

The power of words

The presence of the kaiako was discussed earlier regarding how hostile intentions can adversely affect ākonga. Additionally, pakeke identified that words have power, and tāne ākonga Māori can be sensitive to the intention and energy behind words. Hence, pakeke affirmed that it is vital for kaiako to consider *how* they communicate with tāne ākonga Māori; if negative communication is received, it is more likely to be responded to negatively, and vice versa with positive communication. Hence, how kaiako communicate with ākonga can either increase or decrease their engagement and motivation and significantly affect their relationship with their kaiako. As Wī suggests:

“the teacher [needs] to really understand that their words have power, both positive and negative”

Wī also pointed out that kaiako need to word their feedback and advice carefully so messages are not misinterpreted, as he has experienced with his music kaiako:

“I sang a bit and I felt pretty happy with it ... but the teacher said I needed lessons ... and I was ... accused of someone that knows better than all of the class and made an example of ... the argument just escalated and I had to leave the class ... apparently [it was the] teachers clever little way of saying ... you could be great, but the way it was worded came off as rather insulting ... in front of everybody else ... [instead, the teacher should have] just pulled me aside [and] had a talk about it, and go hey you know, you’ve got something here ... there’s a guy I know, and if you take lessons from him you can turn your singing around, so, be more careful with the words that we use and how people will interpret them quite differently”

Similarly, Jimmy Jam identified a need to teach kids how to take constructive criticism:

“sometimes ... kids take what is said to them wrong ... you know, a light switching moment in their life ... sometimes what the teachers say comes out the wrong way, and they’ll [boys will] take it the wrong way, rather than take it and use whatever they’re trying to do, however that’s good and use that as our positive outcome. Just teaching kids how to take constructive criticism ... because a lot of them take it to heart as a downer, and sometimes even for me when we growl our kids ... But we’re actually trying to help them”

According to Paerangi, sometimes communication may end up coming out in a way that was initially unintended by the kaiako, noting:

“my remembrance of teachers is that ... they’ll constantly be ... a flow in their minds and they’re ... in the task, in the lesson, and there’s no ... pausing at times ... I suppose it’s trying to know what words do, how emotions kind of

can flare up so easy just by a slight of word, or a look or an attitude or the tone”

Likewise, Jimmy Jam also acknowledged that stress could affect how kaiako communicated and pointed out that kaiako may need more support:

“maybe even just more support for the teacher ... because of my wife being a teacher I know the pressures that are on teachers ... even just as a teacher aide, the pressures on her as a teacher aide – let alone what’s on the teacher. You know, all these expectations on where you have to be. Just more support for them ... help that stress in the class, you know”

Overall, pakeke noted that tāne ākonga Māori tend to be susceptible to how their kaiako communicates with them, which can affect their motivation and engagement. Hence, kaiako needs to be aware of the power that words have and how the stress of teaching and the dynamic nature of the classroom can also negatively affect their communication.

Encourage ākonga to question, or challenge what is being taught

Another suggestion pakeke made to enhance the engagement in the learning of tāne ākonga Māori was to encourage them to question or even challenge what is being taught. All Pakeke agreed that tāne ākonga Māori tend to be naturally curious, and understanding *why* they had to learn the learning content was crucial for them to know, especially to keep them engaged and motivated. This aligns with research by Dueck (2020), who identifies that male ākonga tend to exhibit skepticism about the learning content, challenge their instruction more than female ākonga, and need to know *why* they are learning something. However, pakeke felt that when they were in school and questioned (or challenged) the learning content, including why they had to learn it, this was often seen as ‘misbehaving’ by the kaiako, resulting in disciplinary action.

Research has identified that ākonga questioning – and especially challenging – the learning content demonstrates a higher level of engagement, especially if the question is highly relevant to the kaupapa of the learning. For instance, Johnson (2021) claims ākonga become more inquisitive when actively engaging and asking questions. Johnson

further notes that learning should not be simply watching and listening to the kaiako, but ākonga participating and engaging. Hence, if the kaiako asks all the questions, the kaiako is doing the work. Given this, it is justifiable to assume that ākonga who appear to be ‘challenging instruction’ and questioning the learning content demonstrate that they are highly engaged in learning and attempting to make real-world connections.

Anaru, a pakeke from this study, pointed out that kaiako should:

“be flexible and more engaging and open minded that you [the teacher] are going to be challenged but it’s not challenged out of – ... you don’t know this, but, should we learn together kind of thing. Be a facilitator, be open to learning together as opposed to - this is one way, this is how we’re going to do it ... [teachers] should be open to be asked questions. To ... understand kids can ... find the answers to anything now. Like there is nothing that they can’t find out”

Paerangi commented that ākonga can access all sorts of information at their fingertips. If they could sense that the kaiako had no or little new knowledge to offer, including the point of the exercise, tāne ākonga Māori tend to switch off, stating:

“I suppose that they [the teacher] aren’t the only source of information, and whatever they’re delivering is not the only way ... [tāne ākonga Māori should] have the ability to challenge, and not challenge in a smart way, but we’re asking – How do, How do you know that Miss? Or what is that – why – what – What do you know, what are you trying to get to me? And don’t feel offended that I’m challenging you, I’m just trying to enquire like, do you really know?”

Te Ariki noted that teaching tāne ākonga Māori to challenge and question can help to build their confidence, claiming:

“I think that could be a good thing that should be taught at school, where, you can actually challenge someone. And ... if the teacher has a question,

and someone answers it, and they ... get it right, you should be able to still challenge them and ask, why, why is it like that then? Can you explain it to me? You should be able to challenge each other within the class ... I think there needs to be a lot more of that, because it takes confidence to be able to challenge people ... you find a lot of, especially young tāne ākonga Māori in classrooms that just won't speak up because they're shy ... or they've been getting talked to all the time instead of involved in the conversation or something like that"

This kōrero provide important considerations for kaiako, such as teaching and encouraging tāne ākonga Māori to question and challenge what is being taught, which can boost their confidence and give them skills they can use later in life. Furthermore, ākonga have access to a wealth of knowledge, including what is on the internet that was unavailable to pakeke 'back in the day.' Therefore, kaiako should be prepared to be questioned or even challenged on the learning content and recognise that this is not misbehaving but rather a method of seeking a deeper inquiry into the kaupapa, where ākonga are seeking the 'why' that sits behind the learning.

The significance of Mana

Mana

It was clear that pakeke felt their mana²⁸ was not always upheld, nurtured, or respected in English medium educational settings. For instance, pakeke strongly felt they were often negatively judged, especially by their kaiako. This further led to feeling degraded or disrespected – the degrading of their mana. Pakeke shared that when kaiako degrade the mana of tāne ākonga Māori, it ultimately drives them to retaliate. Some of these situations appeared to stem from negative stereotypes regarding tāne ākonga Māori. For instance, Jimmy Jam sometimes felt instantly judged when he entered a classroom. Consequently, he would regularly end up having confrontations with his kaiako, and had to plead his

²⁸ Mana refers to the status, presence, and power in who ākonga Māori are; their identity. To acknowledge one's mana is to show and treat them with respect, dignity, and aroha

innocence when he was accused by his kaiako of doing wrong:

“Sometimes I’d just walk in, and because of how she perceived me, that’s how she’d react. And straight away when I walked in – all I’d say was hello to the boys ... and straight away she’d kick me out ... I’d react, and it’d just go back and forth, and by then it was too far gone ... I’d be in the principal’s Office”

Jimmy Jam liked the class and genuinely wanted to be there; however, he felt the kaiako did not give him a chance. Ropata shared similar experiences to Jimmy Jam:

“I had a terrible teacher that – same issue – yeah, I just hated my last year of primary school; didn’t learn anything”

Haimona pointed out that sometimes a family’s reputation can influence how kaiako respond to tāne ākonga Māori before getting to know them. Concerning his kaiako, Haimona maintained:

“she used to pick on the Māori kids ... you know because she knew their families. And in her mind, they were all losers. Drinking, alcohol, on a benny ... and that perception was engraved in – that’s what they’re going to be when they get older”

Haimona posed a question he thinks all kaiako should be asked, especially before teaching in a community where ākonga struggle with various family dynamics or wider community influences, namely:

“do they really want to teach? ... can [they] accept the family dynamics ... when you look at our kids, they have a big problem with alcohol and drugs ... [can the teacher] actually really understand what that means, and not having assumptions on what it is. And not looking at the negatives of the alcohol and drug problem but looking at solutions more. And where does the teacher fit in that?”

On a more positive note, Wī said that when non-Māori kaiako make a genuine effort to show their ākonga Māori that they are willing to work alongside and learn with them, it is motivating for tāne ākonga Māori and, ultimately, uplifting to their mana. According to Wī:

“we have Pākehā female teachers that are teaching te reo to ākonga, and that’s an – I imagine that’s an incredibly difficult sort of context to be in. So, for them to come in and say ‘Hey, you know, I’m willing to learn alongside you, and to know more about you,’ I think that would help to motivate ākonga”

Te Ariki pointed out that tāne ākonga Māori are not purposely naughty or ‘bad’ kids; they are misunderstood, especially by their kaiako.

“especially some Māori boys, boys that – they’re, they’re not bad kids – but they just, they’re not understood, [teachers] don’t know how to get things across to them”

Ultimately, kōrero from pakeke revealed that negative stereotyping, judging, or perceptions of ākonga Māori resulted in degrading their mana. In turn, this can result in tāne ākonga Māori ‘switching-off’ from that kaiako, causing severe disengagement in their learning.

The importance of upholding mana

There was consensus across all Pakeke Kōrero regarding the critical role of the kaiako in upholding the mana of their ākonga. Kaiako can achieve this by treating their ākonga with dignity and respect and by *protecting* the mana of their ākonga, especially in front of their peers. Ware (2009) recognises the significance of mana, particularly for Māori, stating that “Mana affects interpersonal and inter-group relationships and must be maintained to ensure balance. Actions that diminish mana will have negative effects” (p.28). For instance, Pakeke agreed it is essential for kaiako to make sure that if they need to talk to ākonga for any disciplinary matter, they should pull them aside instead of calling them out or making an example of them in front of the whole class. On the other hand, Ware

further maintains that mana is, when nurtured, a dynamic force that motivates individuals to try their hardest. According to Wī:

“just trying to retain the dignity and integrity of ākonga, you know if they do something that you feel is wrong ... take the time to pull them aside and let them know what’s going on ... be careful about how we use our words. And our intentions – like our intentions may be good but they may steer in the wrong direction ... it may make the kid feel embarrassed. So, it’s about pulling them aside and learning about the learners needs ... having that word with them away from the group”

Also, Ihaka stated:

“don’t shame them out because that’s, you know just going to make the situation much worse. Yeah just, pick, pick your moments I suppose”

Paerangi suggested:

“what she could have may have done better was taken me aside and ... given me her understanding, not in the space of all the boys because ... they were listening intently and waiting to kind of jump on and make up a joke out of it. Which ... I got the joke of it, but, it was in the moment of everybody watching and everybody going, hahaha. It was like ... rats ... I was already feeling stink, and then you make me feel stinker”

An interesting contrast was seen in feedback from Blackie, who said:

“back in the old days aye, you know you’d be called out in front of the whole class”

Paerangi recalled moments where the behavior of ākonga did need correcting and that the kaiako does not always have to react most aggressively or dominantly, which could ultimately escalate the situation:

“if the teacher’s needs to discipline a situation, being quite firm but at a level – not to escalate their own energy and their own – like “RAAAAA!” in that dominating way. Though sometimes it’s needed, but in general if there’s levels of discipline ... it doesn’t need to go straight to the harshest point to get the kid their ... correction across ... and just breathing – them breathing, as teachers ... and being a teacher myself in scenario’s, if I’m not taking time to think and just reacting in a quick, responsive way, um, I’m escalating the scenario rather than balancing it out and getting a win-win out of the situation”

Finally, Ropata reflected on a scenario involving a sports coach as an example, noting:

“you don’t get a positive outcome by blasting in front of a big crowd of people ... the best coaches I’ve seen have actually pulled them [ākonga] aside for doing something wrong, just talked to them quietly and just, had moments ... The minute you blast those kids in front of people they just go into their shell or, aye, or just, just go off the beaten track really”

This kōrero aligns with earlier discussions regarding the power of words and further highlights the importance for kaiako to ensure that they do not call tāne ākonga Māori out or make examples out of them in front of their peers. Pinkett and Roberts (2019) also confirm that non-verbal instructions are the most powerful, and public reprimands are counterproductive, especially for boys. Pinkett and Roberts affirm that, ultimately, boys are less likely to improve their behavior if the kaiako has used public embarrassment. There are more efficient methods of correcting classroom behavior that serves to uphold the mana of their ākonga, such as the suggestions from pakeke above.

Recognition of effort

Pakeke identified it is critical for kaiako to acknowledge when tāne ākonga Māori have tried hard, even if they have not achieved the learning task to a high standard. Hence, this may not refer to the *amount* of work; but the *effort* ākonga has put in, which will look different for every one. For instance, this could include recognising when ākonga

significantly improve from what they usually achieve in a session (i.e. complete more work than usual); or when ākonga make a breakthrough with a personal learning goal. Ultimately, pakeke noted that if the effort that ākonga put into their work is not acknowledged by their kaiako (i.e. if the kaiako appeared to not care about what ākonga *have* achieved in the time frame, even if they had not completed the task), this causes a big disconnect for the motivation and engagement of ākonga, and relationship with their kaiako.

For instance, Haimona stated:

“not getting any acknowledgement too – when you think you’ve done a really good job, and you don’t get that acknowledgement and it’s always the same ones getting the acknowledgement, that disconnects me”

Ropata also noted an issue that, as parents, we need to recognise and acknowledge when our tamariki put in a lot of effort:

“my wife and I are quite army aye, because what we criticize a bit more for the wrongings they do in life, but you know, probably as parents we don’t praise them for the good things enough. Because it does give them a boost, and that would happen for any kid”

This kōrero emphasises the importance of ensuring that Māori boy’s efforts toward their mahi are recognised and acknowledged. This not only keeps them motivated and engaged in their learning but also aids in upholding their mana.

Reward systems

There was an interesting range of feedback from pakeke regarding using a reward system in educational settings. The pakeke from the two younger Pakeke Kōrero agreed that a reward system could motivate ākonga if the kaiako uses them consistently and offers good prizes; however, pakeke from the two older Pakeke Kōrero noted that they never needed the enticement of a reward system to motivate themselves.

Wī, a younger participant, pointed out that the allure of a reward system depends on the prize. Also, he noted that a reward system could lose its effect if the kaiako is inconsistent with handing out points or only notice *some* ākonga and keep rewarding them, and others miss out:

“I think it did help to motivate do my work at first because of the curiosity of the reward – if it a was prize based ... like the felt tip pen or the chocolate bar, then you felt like you wanted to work hard to get it ... at the other end of the spectrum is that, once you realise what the prize is or the motif is of the teacher – so for example, um everyone gets a turn at it despite if you get the most amount of stars for behaving well or doing good work you get it, or if the teachers inconsistent with the points towards rewarding. So, if – there’s no follow on from the warning you’ll have your star removed for being silly, or, if you’re sitting up straight and they don’t give you the star for that, then it can lose its effect.”

Paerangi also agreed that:

“[rewards] would not work unless they were money, food, lollies or other kind of things that we actually – yeah like we wanted. Green card – no!”

Ihaka identified that reward systems are effective for primary school ākonga, stating:

“Probably not so much in Secondary School but um, yeah Primary School, like, cuz incentives such as like lollies, you know they’re – they’re like gold.”

Te Ariki pointed out that:

“[rewards] have to be achievable for everyone ... if they’re unachievable or they’re going to take a long time to get to them, then you don’t really want to do them ... if it’s the behavioural reward system then the good kids will always get the reward, if it’s the performance one then all the brainy kids will get it all the time.”

Jimmy Jam disagreed that reward systems were effective for him:

“probably for me, no ... at the time when things were happening I was never thinking of a reward. I’ve never needed a reward to do something, never. Just myself, I felt, do as best as I could. I didn’t need a congratulations or a something to do it.”

Similarly, Ropata said:

“Yeah, I’m the same. I didn’t need a reward to motivate myself. You just, you get into trouble if you didn’t do it so you just did it, so, yeah. Teacher and parents.”

Hemi shared:

“From my experience it’s never worried me. It’s never been an incentive too. Um, I guess achieving something is more of an incentive than getting a reward for doing it.”

Finally, Mata Hari affirmed:

“Yeah, nah, I used to see it all the time at school and it’s dumb – it’s shit. And then what happens is you see someone with a book full of stars, and it just turns you off you know. Because, you’ll get someone whose driven by that – will go for it just to prove something and then everyone else just gets hōhā.”

This kōrero has highlighted two different perspectives regarding using reward systems in school. More specifically, an interesting division between the older and younger pakeke is evident. Conclusively, older pakeke identified that they just got on with work because otherwise, they would get into trouble. Younger pakeke made suggestions for making a reward system more effective. Conclusively, their responses align with discussions in chapters three and four of this thesis, where it was identified that reward systems,

especially in gamification, need to be used thoughtfully and with care to not cause harm to ākonga. (Fiş Erümit & Karakuş Yılmaz, 2022, and Pinkett & Roberts, 2019).

Gamification elements derived from this kōrero that align with kaiako influence

This section has identified kōrero from pakeke that correlates explicitly to the influence of the kaiako in the learning space. Ultimately, these findings have highlighted how the presence of the kaiako, communication, and the significance of mana considerably influences Māori boy's motivation and engagement in their learning. Overall, a summary of the gamification elements derived from this section includes:

- | | |
|------------------------|---------------------------|
| • <i>kōrero</i> | • <i>mātauranga</i> |
| • <i>hā</i> | • <i>reward system</i> |
| • <i>āhua</i> | • <i>achievable goals</i> |
| • <i>mana</i> | • <i>tāne presence</i> |
| • <i>relationships</i> | • <i>learning space</i> |

A number of these elements are already practiced in education, such as *reward system*, *achievable goals*, *relationships*, and elements of *mātauranga*. However, pakeke identified that some elements, such as *kōrero*, *hā*, *āhua*, and *mana*, are either absent or inconsistent. Therefore, these elements would play a critical role as gamification elements in a potential framework to guide educators to consider their importance for tāne ākonga Māori and integrate them into the learning space to enhance fun, motivation, and engagement.

Meaningful learning

This section explores the significance of how the learning content affects the motivation and engagement of tāne ākonga Māori. In short, pakeke highlighted the importance of aligning the interests and cultural backgrounds of ākonga to the learning content so they can connect to their learning (hence, the learning becomes meaningful). Achieving this requires the kaiako to develop and maintain positive relationships with ākonga and their

whānau. Then, kaiako can learn the interests of their ākonga and align them with learning content to ensure the learning is meaningful. Similarly, Berryman et al. (2023) affirm that kaiako must pay attention to the whānau aspirations of their ākonga, as it opens up opportunities for ākonga to share their prior knowledge, experiences, identities, connections, and concerns in the education setting.

Given this, considering gamification elements that ensure the learning content is meaningful, appropriate, and relevant is crucial for catering GIE to the needs of tāne ākonga Māori. Accordingly, this section explores kōrero from pakeke that relates to meaningful learning, including the importance of nurturing interests, ensuring ākonga can connect their learning to their lives, and integrating physical movement where possible.

Interests

Most pakeke felt that their interests were *not* nurtured, encouraged, or identified throughout their education. As Wī said:

“There was little questioning by teachers and staff about my aspirations and interests, as well as the future subjects that I would need to do in order to go down that path ... My interests, they were shunned and dismissed as being silly and not practical for when I became an adult eventually, that I needed to stop or get a more practical path since it wouldn’t lead anywhere. So, the creativity in a way was kind of stifled”

Also, Paerangi stated:

“in the fullness of it, no I wasn’t encouraged because I was inquisitive and curious; and the kind of approach I believe, I was getting told what the information was; or the knowledge was. Was feeling like we weren’t allowed to explore other options”

Furthermore, Anaru noted:

“I couldn’t even tell you if the teachers even knew what I enjoyed at School

... I would go skiing [during the winter], and I used to get told off all the time and said that I wasn't allowed to go. And that was my biggest passion"

When asked if his interests were nurtured in school, Haimona responded:

"No. Um, not at all. Back in, I'm going back 20 years plus – when I was at college ... everything that I learnt at School has no impact on what I'm doing now"

There was consensus among the older pakeke that their interests *were* nurtured and encouraged in school and encapsulated by Blackie:

"Yeah, I feel my interests were nurtured ... because I had a teacher that ... had a block of land down in the bottom of the ... Valley, and he used to take us in there occasionally during the School holidays and that, and we would do a bit of pig hunting and farm work and stuff like that, as kids ... Because he identified that I was one of those kids that wanted to be out there doing that sort of stuff"

Here, it is evident that the kaiako must have been a local who lived in the area, so was able to develop relationships with their ākonga outside of school. Furthermore, the nature of the out-of-school activity indicates the kaiako must have had a good relationship with the whānau of their ākonga.

Mata Hari recognised that back then, if there was something you really wanted to do and you were motivated, you would be supported, claiming that:

"as long as you're willing to do something, someone's always willing to help you"

Jimmy Jam suggested improving engagement through a creative lens such as music, dance and art would be effective:

“I think for Māori’s as well, are like, artistic and musical as well. You know for a lot of us, that’s a part of our life”

The kōrero highlights that there tends to be a concerning decrease in the identification, nurturing, and encouragement of the interests of ākonga in the past compared to recent times.

Connection

Building on the learning *content*, other feedback from pakeke identified that if ākonga can connect to their learning, new knowledge is more likely to ‘stick.’ More specifically, knowing the purpose behind the learning and having answers to questions such as; *Why are we learning this? How is this relevant to me? And How is this going to help me later in life?* helps ākonga to make meaningful connections to their learning.

Furthermore, pakeke also questioned *why* they had to learn some of the learning content that ākonga are still being made to learn, over fifty years later. For instance, Shakespeare was a typical example of subject content that pakeke felt could be more relevant to the lives of ākonga. Hence, learning content needs to be updated to ensure it remains relevant. For example, tāne ākonga Māori would greatly benefit from learning about Māori leaders who significantly contributed to Aotearoa. Thus, pakeke pointed out that relevant connections to the cultural backgrounds of ākonga are more engaging for tāne ākonga Māori. For instance, Te Ariki commented:

“Yeah just, just not being interested in content, that’s all. Um, and not being able to have anyone explain to me why I’m going to need it ... Um, yeah that’s pretty much – just not interested aye. It needs to be engaging; I need to be able to remember it even. Because if ... I’m not interested, I just won’t be able to remember anything – it just doesn’t lock in”

Paerangi suggested building on the interests of ākonga and physically taking them to places of high interest, especially places that relate to where they would like to work in the future. Then, ākonga can have a kōrero with people who are already specialised in the area and ask them questions such as what they need to learn, for example:

“why can’t we go up to the farmers and go ask them about what numeracy I need to get into a job, or into the Pulp Mill, or into those spaces – break it down for me of what actual – what is it – what part of Maths do I need to know? I don’t need to know all the Algebra? Oh, yep cool I won’t do that stuff – yay!”

Additionally, Ihaka suggested that learning life skills would provide an instant connection for tāne ākonga Māori, as they can see where the learning is relevant and where they can use it in their lives, claiming:

“how to manage money and stuff like that ... what really got me at school ... and why I probably couldn’t do as well at school was, when I look at stuff like English ... writing an essay about, you know, Shakespeare or something, where do I - when was I going to use that, out of school? So maybe ... making stuff more practical”

Similarly, Te Ariki pointed out that a lot of the content that was taught in school felt pointless, and he often found it hard to figure out *why* he had to learn it or make a connection to where he would possibly use it in his life, stating that:

“I was good at Maths. But I always looked at it, was like when am I ever going to use that part? ... Because, you know Maths is always broken down into sections. Transposition, Trigonometry, and all that sort of stuff. And, yeah, when I used to see like, $x + c$ must equal something – or - when am I ever going to use that? It’s never ever – I’m never ever going to have to try and work out what that c is or what the x was”

This kōrero emphasises that as long as tāne ākonga Māori can connect to the learning, their engagement and motivation should improve. This is especially relevant if ākonga understand the purpose behind the learning and can relate it to their lives.

Subjects pakeke found challenging to learn

There was consensus among most pakeke across the Pakeke Kōrero that literacy was the most challenging subject, and numeracy came in at a close second. More specifically, pakeke felt that the structure of the English language was something they found the hardest to learn. For example, Te Ariki noted:

“Even though we all speak English ... the structure of the English language was hard ... especially even at Secondary School. Trying to have English as a subject, it was, and, trying to learn all the different structures in our language ... there’s no meaning behind why that has, you know, a different thing – and that’s something that I struggled with”

Pakeke mentioned that subjects or learning content they needed help connecting with or understanding *why* they had to learn were more challenging. For example, Ropata claimed:

“I think as those [English and Maths] sorts of subjects went on, like, a lot of it goes over your head unless you’re, you know, Maths or English orientated. Um, you know I said to my wife before I came, you know, why do you need Maths for Stats or Maths for Calculus, well you never use it, so...”

Mata Hari admitted that:

“English was already hard for me. I could never understand, I still can’t – I still have to think about what things are sometimes and where they need to go and, which probably makes it difficult for me to ... they don’t stick in my head – all that stuff – and it never has”

Paerangi questioned why there tends to be a lot of remembering or rote learning required, and stated:

“my question was to myself, why do I gotta be a remembering machine? Um, be that, the question in numeracy was like, well you gotta learn this cuz you

might not have a calculator dah dah dah... My question to myself, well I'll go find a calculator"

Similarly, Haimona also said:

"I didn't engage myself. Education wasn't me back in the day. The rote learning wasn't me; didn't work"

Finally, Jimmy Jam found te reo Māori easier to learn because it required more hands-on activities while learning:

"I found when I did Māori, I could do it. Because it was a lot more you did and do; uh, you did and learned"

Important to note was Jimmy Jam's reflection that he found learning te reo Māori a lot easier due to the nature of the teaching and learning method (i.e. more hands-on activities).

Sports

A concerning issue that was identified is linked to how exclusionary practices used by kaiako regarding P.E., or games as a form of punishment. For instance, Rugby was Ihaka's favourite sport, and he loved playing it throughout his school years. He noted that kaiako would often use Rugby against him as a threat to exclude him from playing if he misbehaved. This was also the case with P.E. and was experienced by a number of other pakeke as well. Here, Ihaka claimed:

"sport was kind of used as like an incentive, so it was also used as a mechanism to discourage like bad behaviour. So, suppose if you were bad in class or stuff, you know they would withdraw you from sport or something like that ... Rugby was the main thing we did. So, to have that taken away from you ... would be a big thing. I'd be pretty bummed out"

Likewise, Blackie experienced similar situations when he was coaching rugby:

“I’ve experienced that as a coach at, at the college ... if guys played up teachers would use rugby to get back, you know, to - as punishment. And I thought it was unfair because Rugby was a weekend thing, wasn’t really a school thing ... at the same time kids have got to learn to behave – well I understand that, but I didn’t really agree with ... they used Rugby to try and make kids behave. I mean, to me that’s a failure on their behalf you know, that they didn’t have any other means – that they couldn’t do it any other way they just ran out of options”

Additionally, pakeke suggested that to engage tāne ākonga Māori, kaiako could use sports to their benefits by incorporating sports into curriculum subjects; then, the topic of sports would be the ‘drawcard,’ and ākonga could be learning literacy or mathematical skills in the process. For instance, Paerangi suggested:

“Basketball and all those other forms of sports, um, and games – if they can be formulized and, and really test and encourage and grow that strategic brain, the problem solving, the tactical thinking, um, I think it would be a helpful tool”

Jimmy Jam proposed:

“maybe even um like analyzing games – like Sport games that they’re interested in. Why, because you look at the last All Black game and we got beaten by Argentina ... you know just engage with the kids what changed that game, or why did – yeah why didn’t the All Blacks beat them – what changes in their attack? Just getting them thinking”

Pakeke maintained that by integrating sports into their learning tāne ākonga Māori are more likely to be motivated and engaged in sports that could then impact positively on the education and schooling. Finally, pakeke agreed that kaiako need to find another more effective form of punishment that does not take away an essential element of education

that, notably for boys, has a wealth of benefits for aiding in the physical and mental well-being of ākonga.

Gamification elements derived from this kōrero that align with meaningful learning

In this section, pakeke recognised the importance of identifying and encouraging the interests of ākonga and how this also promotes positive ākonga-kaiako relationships and engagement in learning. Furthermore, pakeke noted the value of ensuring that ākonga can make connections from the learning content to their real life and how these connections can also enhance motivation and engagement. Additionally, pakeke discussed the subject content they found the most challenging to learn, confirming that literacy is the hardest, followed by numeracy. Finally, pakeke emphasised the significance of sports, games, and physical movement for tāne ākonga Māori and how these could be integrated into learning experiences to enhance their engagement and motivation. Overall, a summary of the gamification elements derived from this section includes:

- | | |
|-----------------------------|------------------------------|
| • <i>hā</i> | • <i>connection</i> |
| • <i>time</i> | • <i>creativity</i> |
| • <i>kinaesthetic</i> | • <i>music</i> |
| • <i>competition</i> | • <i>dance</i> |
| • <i>options</i> | • <i>life skills</i> |
| • <i>meaningful content</i> | • <i>hands-on activities</i> |
| • <i>interests</i> | • <i>physical movement</i> |
| • <i>exposure</i> | • <i>sports</i> |

As mentioned earlier in this chapter, some of these elements are already recognised in education; however, pakeke have identified that they need strengthening to be more effective for enhancing the motivation and engagement of tāne ākonga Māori.

A summary of all gamification elements derived from Pakeke Kōrero

Throughout Chapter Six (tuatahi) and this chapter (tuarua), 35 gamification elements have been derived from the Pakeke Kōrero, seen in Table 2 below. For this PhD research, the gamification elements are categorised under *Matua Elements* (the ‘parental’ element), which are overarching pou that represent significant cultural elements for teaching tāne ākonga Māori. Thus, with their corresponding gamification elements (or sub-elements), the Matua Elements integrate the cultural needs of tāne ākonga Māori and their needs as male learners.

Table 2 - Gamification elements derived from the Pakeke Kōrero

Matua (parental) element	Gamification (sub) elements
<i>Mauri</i>	<i>Hā, tāne presence, āhua, te kupu tō te mana, ngā whatumanawa</i>
<i>Mātauranga Māori</i>	<i>Te reo Māori, identity, mana, taiao, kōrero</i>
<i>Whanaungatanga</i>	<i>Relationships, collaboration, whānau, awhi</i>
<i>Te Ao</i>	<i>Life skills, interests, meaningful content, exposure, options, connection, competition</i>
<i>Tikanga</i>	<i>Hands-on activities, achievable goals, learning space, time, pākikitia, reward system</i>
<i>Tinana</i>	<i>Physical movement, ngā taonga tākaro, sports, kinaesthetic, play</i>
<i>Auahatanga</i>	<i>Creativity, music, dance</i>

This chapter (tuarua) and Chapter Six (tuatahi) has explored the key findings that illustrate the main points of discussion with pakeke during Phase One of this PhD research. The main objective of this kōrero was to understand how and why tāne ākonga Māori engage or disengage with their learning in English medium educational settings. Throughout the kōrero, many issues have been raised, and suggestions made from pakeke regarding enhancing the motivation and engagement of future generations of tāne ākonga Māori attending English medium education settings. To build on this, 35 gamification elements and seven corresponding Matua Elements have been identified throughout the kōrero. Here, it is worth noting that these elements were sometimes identified more than once, as they often relate to more than one discussion point. For instance, the element *mana* is recognised at the end of several sections, as it relates to more than one discussion

point identified by pakeke, including (but not limited to) a learning space that embraces te ao Māori, relationships, connection to the taiao, and te reo Māori.

Ultimately, deriving gamification elements from the kōrero of pakeke demonstrates how their feedback has been considered, valued, and acknowledged to tailor gamification in a way that caters to the needs of tāne ākonga Māori. Thus, pakeke have contributed substantially to developing a method of teaching and learning that better caters to the needs of tāne ākonga Māori currently being used in English medium education. Accordingly, the following chapter (Chapter Eight) will now identify the findings from Phase Two of this PhD research, where some of the gamification elements derived from this chapter were trialled via action research during the Gamification Implementation.

Chapter Eight: Gamification Implementation

Phase Two of this PhD research was the Gamification Implementation, where action research was conducted in an English medium primary school senior classroom.²⁹ The gamification elements derived from the findings of Phase One were trialled and reflected on using the written observations and feedback from participants. In this chapter, I provide a breakdown of two main factors investigated; observations of the kaiako (Whaea), ākonga participants (ākonga), and the learning space. The gamified activities are also identified and linked with gamification elements. More than one gamification element can be linked to one activity, as illustrated throughout this chapter.

Observations of the kaiako and ākonga participants

The following photographs, observations, and feedback from Whaea and ākonga provide insight into how they responded in the different learning environments, and helps to paint a picture for what a gamified learning space looks like compared to a traditional learning space. I begin by providing the context for the gamified activities, then highlight several areas of observations, including: communication skills, focus, leadership opportunities, whanaungatanga, physical movement, and the gamified book.

Context for the gamified teaching and learning sessions

Whaea was provided with a gamified unit that included all resources for the four gamified observations.³⁰ The first and fourth observations focused on communication skills, and the second and third on literacy. The importance of teaching communication skills to tāne ākonga Māori was highlighted in Chapter Three of this thesis and reaffirmed by pakeke during Phase One. Additionally, communication skills support literacy learning, as ākonga are expected to converse more in-depth about what they read at the senior primary school level (Ministry of Education,³¹ 2007b).

²⁹ The methodology is discussed further in Chapter Two

³⁰ The gamified lesson plans can be found in Appendix 21 and 22

³¹ *The New Zealand Curriculum for English-medium teaching and learning in years 1 - 13*

Literacy was also identified by pakeke as the subject they needed the most support. Accordingly, the traditional (non-gamified) observations were conducted during the normal literacy time for the class to help provide a more comparable learning environment between the traditional and gamified learning spaces. The following section reflects on communication skills, and where appropriate, throughout the findings in this chapter, the gamified activity is identified at the beginning of the section. Then, the gamification elements trialled which align with the activity are listed underneath.

Communication skills

Gamified activities: The Fishbowl, Journal writing, and Communication exercises

Gamification elements: *taiao, connection, meaningful content, interests, life skills, options, creativity, time, kōrero, mātauranga, relationships, tikanga, collaboration, mauri, and learning space.*

Gamified observations

I observed an increase in the level of deeper sharing/kōrero amongst ākonga (verbal and non-verbal). Ākonga were quick to share their thoughts, emotions, and opinions, suggesting they felt safe engaging in the session. Observations and feedback gained during the gamified sessions that specifically taught ākonga communication skills will now be identified, including the following gamified activities: The Fishbowl, Journal writing, and Communication exercises.

The Fishbowl

Two 'Fishbowls' were conducted in the first and fourth gamified sessions. The rationale was to observe if there were any changes in the participation, engagement, and motivation of ākonga from the first Fishbowl to the second, particularly if ākonga demonstrated any development or changes in their communication skills.

During the Fishbowl, half of the ākonga sat in a small circle, and the other half in a larger circle outside the small circle. The point was to create a safe space where ākonga on the outside circle had an important role in keeping ākonga on the inside safe by actively

listening (quietly) without judgment. Then, ākonga were invited to answer a question. For the first Fishbowl, the question was *What is something you would like to achieve in your life?* (Figure 3). Then, using the two minute timer, ākonga (and Whaea) took turns to answer the question (Figures 4 and 5).

Figure 3 - The first question posed in the Fishbowl

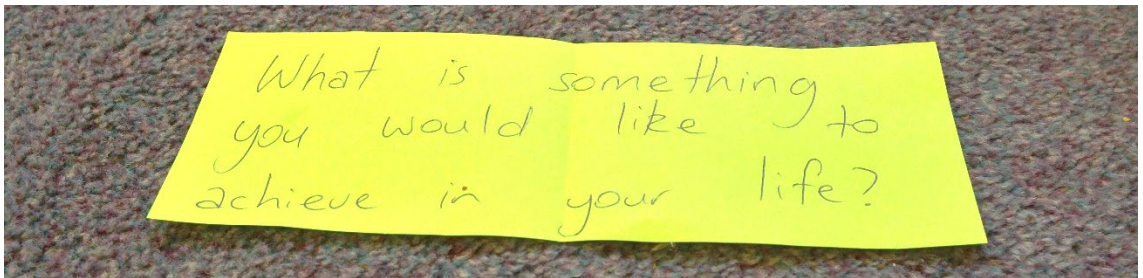


Figure 4 - The first Fishbowl



Note. Photo credit: Liz Broker

Figure 5 - The first Fishbowl



Note. Photo credit: Liz Broker

Most ākonga sensed the seriousness of the Fishbowls and were respectful of each other's kōrero. It was not compulsory for ākonga to share; however, only five ākonga chose *not* to share in the first Fishbowl. Originally, the Fishbowl was meant to be conducted outside in the ngahere by the awa. Then, the element of the taiao would have aided in developing a safe space. However, due to poor weather, last-minute arrangements had to be made. Consequently, the Fishbowl was conducted inside (Figure 6 & 7).

Figure 6 - The first Fishbowl



Figure 7 - The first Fishbowl



Note. Photo credit: Liz Broker

The repercussions of this change in location meant that external factors, such as noise from the neighbouring class and people walking through the classroom, created interruptions that sometimes put ākonga off sharing. Also, it made it harder for ākonga on the outside circle to hear those sharing on the inside circle. Hence, this emphasised the importance of setting up an appropriately organised learning space, especially for an activity like the Fishbowl, to be successful. Whaea confirmed:

"We also had lots and lots of people, because it was the day before Prizegiving, to-ing and fro-ing, so the classroom felt like Grand Central Station ... so that's also challenging, because usually we – we honestly don't have that ... for the whole time it seemed – a little bit unusual, and for me possibly a little bit frustrating"

Whaea pointed out that external factors, especially the weather and other people and classes, are often out of our control and is something that kaiako need to learn to adapt to and deal with:

"you've got no way to kind of calm that, because that's external to the

immediate environment. So, given what we had ... I think we did ok. If the weather had been fine, it would have been a completely different outcome"

The following feedback from ākonga demonstrates how they felt:

[What did you like about the Fishbowl?]

Iraia: "That you could tell stuff without people judging you"

Nikau: "You got to share your feelings"

Rawiri: "It's challenging. I liked that the Fishbowl was challenging"

[Can you tell us why you didn't share?]

Ikaroa: "Because people will make fun of us or something"

[What is challenging about the Fishbowl?]

Rawiri: "Just how you had to -"

Ari: " - think about something that you're gonna tell other people"

Ākonga also commented on how they felt with half the class sitting on the outside of the Fishbowl, such as Ari, who said that he felt *"safe,"* or Iraia, who said he felt *"normal."*

During the second Fishbowl, ākonga were very motivated to participate. This was evident in their excitement and how keen they were to have a turn. Some ākonga had come to school already knowing what they wanted to share because they knew from the first gamified session we would be running the Fishbowl again. What was pleasing to observe was how deep some ākonga shared this time, especially compared to the first.

[Did you guys enjoy doing the Fishbowl again?]

Iraia: "Yeah"

Hau: "Yep"

Ikaroa: "Yeah"

[How did you feel sharing this time?]

"Hau: "Oh, nervous – nervous – cool – shy"

Ikaroa: "Yeah, nervous"

Iraia: "Were you nervous – oh, I wasn't. I was just – I was just normal"

Hau: "I was too scared to share"

Due to the weather, the second Fishbowl also had to be conducted inside. However, Whaea was prepared this time. Unlike the first Fishbowl, where the question was provided in the gamified unit, the second Fishbowl saw Whaea coming to the lesson with her own prepared question: *If you could change one thing in your life, what would it be, and why would you change it?* Additionally, Whaea set up a cosy and safe space (Figure 8) with a hoochie (military tent) hanging above and a fake fire underneath. Ākonga sat under the hoochie, around the 'fire,' and army face paint and a hunting torch added extra elements of fun, and aligned with the gamified reading book. When it was their turn, ākonga wore the hunting torch. Once they had shared, they were invited to apply authentic camouflage face paint (Figure 9).

Figure 8 - The second Fishbowl



Figure 9 - The second Fishbowl



During the third one-on-one semi-structured interview, Whaea said she felt much happier about the second Fishbowl because she was more prepared. Particularly because she had a hunch it was going to rain, she had organised an inside fun alternative for her ākongā. Her feedback reflects how she felt about the developments of the level of sharing amongst her ākongā:

“the most enjoyable was the engagement. I thought the talking tent round the campfire thing, um, [REDACTED], [REDACTED] ... they shared some really deep stuff. And so, the space could have been bigger – if we were in the bush it could have been. But yeah, I couldn’t make it any physically bigger than it was. So, I thought that was quite a really – it was quite a wow to start off with.”

Overall, the Fishbowl had positive results, and ākongā were highly motivated, engaged, and demonstrated promising potential for developing communication skills through an activity such as the Fishbowl.

Journals

The Fishbowl allowed ākonga to express themselves verbally. Additionally, ākonga were provided with the option to share non-verbally via journal writing. Each ākonga received their own journal (a small hardcover book with lined pages) as part of the gamified unit. Following the conclusion of the final observation, ākonga were then invited to keep them. Throughout the observations, ākonga were given opportunities to write or draw in their journals. Afterward, ākonga were asked to put their journals in one of two piles; one signified they would like Whaea to read their journal, and the other signified that they did not. Providing this option demonstrated to ākonga that Whaea respected their journals and, therefore, personal thoughts, feelings, or opinions, and their privacy was valued. Throughout the third and fourth gamified observations, there was an increase in the number of ākonga who chose to share their journal with Whaea. This was a positive development that would be interesting to see if it continued via a longitudinal study.

Journal writing was set up as quiet or down times, with a 15 minute timer, and ākonga found their own space to reflect and either draw or write in their journals (Figures 10, 11, and 12). Ākonga appeared to enjoy journal writing:

[What did you enjoy the most?]

Rawiri: “I like the Journals, it was fun ... I like writing ... It was funner than normal writing ... because you get to write about anything you want”

Hone: “Oh, yeah – free writing and the Gym”

Tipene: “Just free writing”

[Did you guys do more writing or more drawing in your Journals?]

Ari: “Um...”

Rawiri: “Writing”

Ari: “Both”

R: “Cool”

Rawiri: “Oh, yeah – I did both, pretty much”

Ari: “First time I um, drew the compass. The compass ... And then I wrote about my Dad”

Figure 10 - Journal writing



Figure 11 - Journal writing



Figure 12 - Journal writing



It was clear that ākonga enjoyed the contrast of having both noisy and quiet/down times throughout the gamified sessions:

[Can you tell me what the atmosphere/environment of your classroom was like during the learning session today? (noise level, energy etc.) Is this normal for your class?]

Iraia: "It wasn't that noisy"

Ikaroa: "Quiet"

Hau: "Yeah, sort of"

Iraia: "It was like, a normal talk – an inside talk"

Rawiri: "Better than it usually is"

Nikau: "Yeah, better"

[How was it better?]

Ari: "Um..."

Rawiri: "Uh..."

Nikau: "Just INAUDIBLE"

Rawiri: "Yeah, like nobody's yelling over each other"

Ari: "Games"

Nikau: "Yeah"

Rawiri: "- we were just learning ... Noisy level INAUDIBLE energy"

Ari: "Sort of both"

Henare: "Mmm"

Nikau: "Yeah"

Rawiri: "Sometimes noisy, and then, like quiet"

In addition to ākonga, Whaea reflected positively on the contrast between the noisier and quieter times. Furthermore, Whaea also noted that the comments shared by an ākonga from her journal was quite significant (especially considering that she chose to share this journal with Whaea):

"I thought things flowed quite well. You know, there were times of intense work – I was really impressed with the way that they hooked into the Journal writing, or the – you know – some - and some of them just drew pictures and that's fine – that's the down time for your brain. Um, you know, [REDACTED] comment, um, was quite profound. You know."

Figure 13 - Journal writing



The Communication exercises

So far, regarding communication skills, ākonga practiced verbal communication via the Fishbowl and non-verbal communication via their Journals (Figure 13). The communication exercises saw ākonga practicing their verbal and listening skills through fun games and activities. Ākonga participated in the drawing challenge during the first gamified observation where they worked with a partner and sat back-to-back. One partner was given a blank piece of paper and pencil, and the other a random picture which they kept hidden and had to explain to their partner how to draw. In the end, ākonga could check to see how close or different their picture was to the original. After that, ākonga switched roles and had a go at being the drawer/instructor (Figures 14, 15, and 16).

Figure 14 - The drawing challenge



Throughout this activity, ākonga enjoyed the challenge of trying to make the picture as similar to the original as possible. They commented on the difficulty of giving clear instructions, listening carefully, and following instructions.

[What did you learn about communication?]

Iraia: “... it’s hard”

Ari: “Um, always listen ... Try and give them better instructions ... I

gave Ikaroa some"

Nikau: "It's hard for me"

Rawiri: "When you're doing instructions, um, like, make them clear like Whaea said ... like, so they're nice and clear"

Figure 15 - The drawing challenge

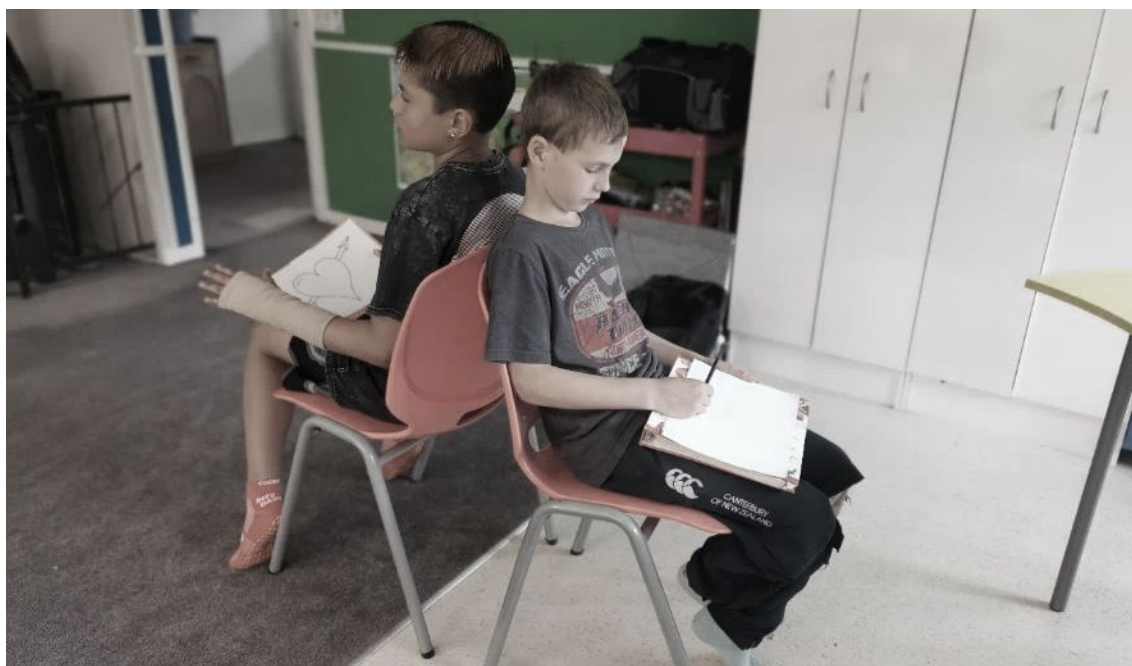


Figure 16 - The drawing challenge



During the fourth gamified observation, the second communication exercise involved ākonga working in pairs, one blindfolded. Their partner verbally instructed them to find a hidden object in the classroom (Figures 17 and 18).

Figure 17 - The pair communication exercise



Figure 18 - The pair communication exercise



Ākonga enjoyed this activity, evidenced by their laughter, smiles, and high energy. Overall, the Fishbowl, Journals, and Communication exercises provided ākonga multiple opportunities to practice verbal, non-verbal, and listening skills. Observations of ākonga

and their feedback show that many lessons were learnt, especially regarding their realisation of the importance of clear, concise communication.

Traditional observations

Communication skills, in particular, were not observed as being explicitly taught to ākongā throughout the traditional observations. However, feedback from Whaea is highly worth noting: the importance of telling peoples' stories. Whaea pointed out that ensuring ākongā understood the history of particular people and places is important to gain a deeper comprehension of the learning content. This is especially relevant for local people and places that ākongā can connect with or relate to, particularly Māori. Hence, the kōrero from Whaea below shows how she emphasises to her ākongā that places especially have kōrero, history, and special meaning.

“I want you to remember what we’ve talked about. I want you to remember the stories. I want you to remember that people lived down there for seven years and fought really hard to keep that land and not lose it.” You know, don’t just think – oh that’s a cute place to stay”

This comment highlights importance of understanding history and context. Here, Whaea was preparing her ākongā for a trip down a local awa they would do the following week. To Whaea, it was essential for her ākongā to learn about the history of the place and the local kōrero. Then, the trip will solidify the learning for ākongā and be more meaningful.

Focus

Gamified activity: Mindfulness

Gamification elements: *connection, meaningful content, life skills, exposure, hā, time, mātauranga, tikanga, and mauri.*

Gamified observations

Throughout the gamified observations, mindfulness (i.e. meditation) was scheduled at least once per session. The rationale was to help ākongā prepare their mind, body, and

thoughts for their next learning session. More specifically, to calm and help centre ākonga before they were expected to concentrate on a learning task. This is highly effective for ākonga if they have just completed a high-energy activity or break time (Figures 19 & 20).

Figure 19 - Mindfulness



Mindfulness is a practice that has recently been normalised and regularly exercised in the school. Following mindfulness, an immediate lowering of energy was observed, where ākonga were visibly quieter, calmer, and therefore, more focused on Whaea and listening for their next learning task.

Traditional observations

Mindfulness was not observed throughout the traditional observations, however it is a common practice used within the whole school.

Figure 20 - Mindfulness



Leadership opportunities

Gamified activity: problem solving/navigating the hand-written letters from Koro (grandfather)

Gamification elements: *physical movement, connection, meaningful content, hands-on activities, life skills, creativity, kōrero, mātauranga, mana, relationships, te reo Māori, identity, tikanga, play, collaboration, mauri, and learning space.*

Gamified observations

During the second gamified observation, Whaea set up the learning space so that when ākonga entered the classroom, they were guided by handwritten 'letters from Koro' (Figures 21, 22, & 23). Each ākonga had their own addressed letter that instructed them to do a particular task as a small leadership role.

Figure 21 - Whaea organising the letters from Koro

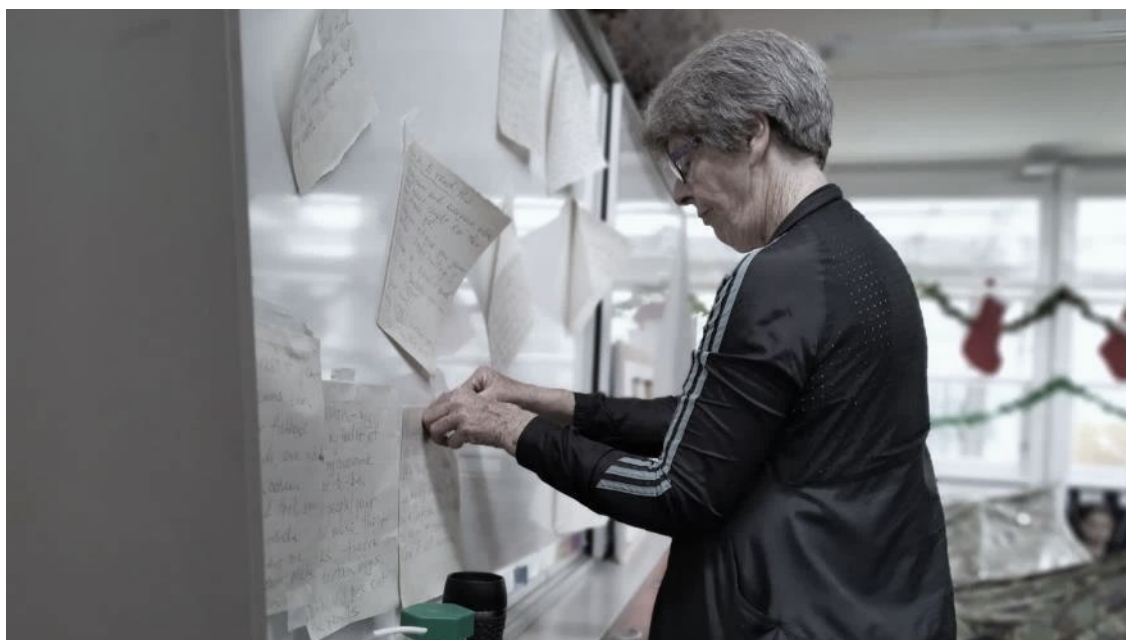


Figure 22 - Letters from Koro

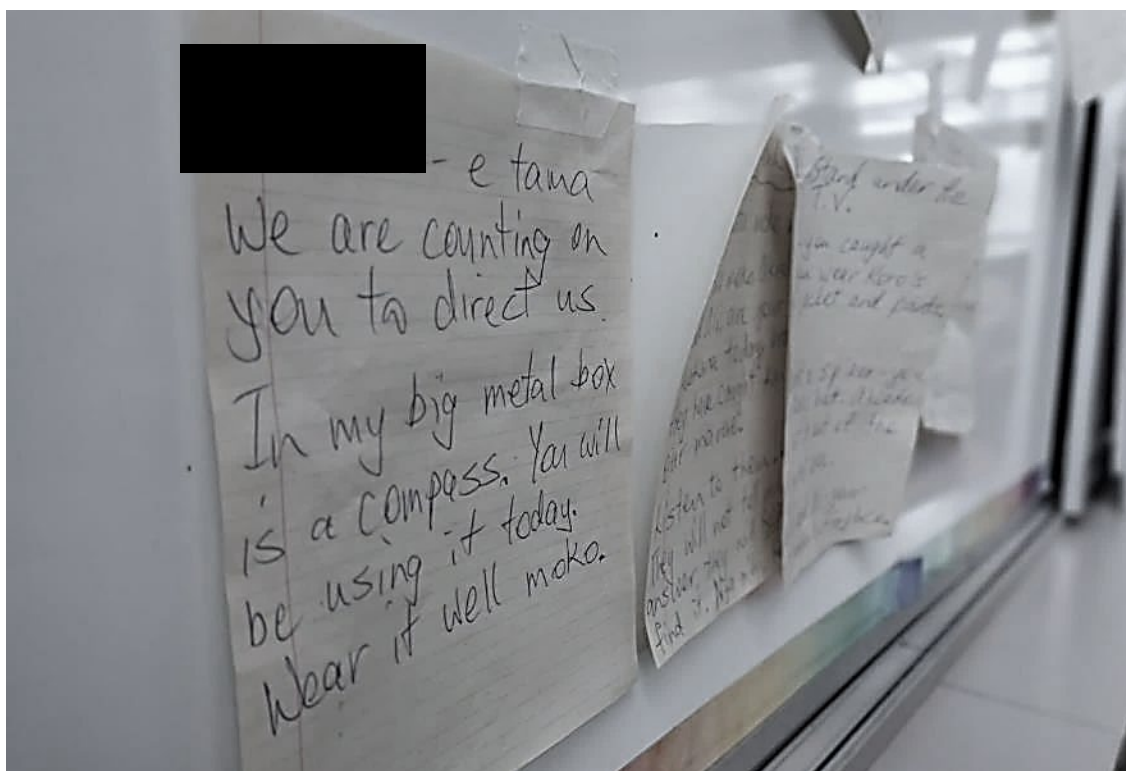
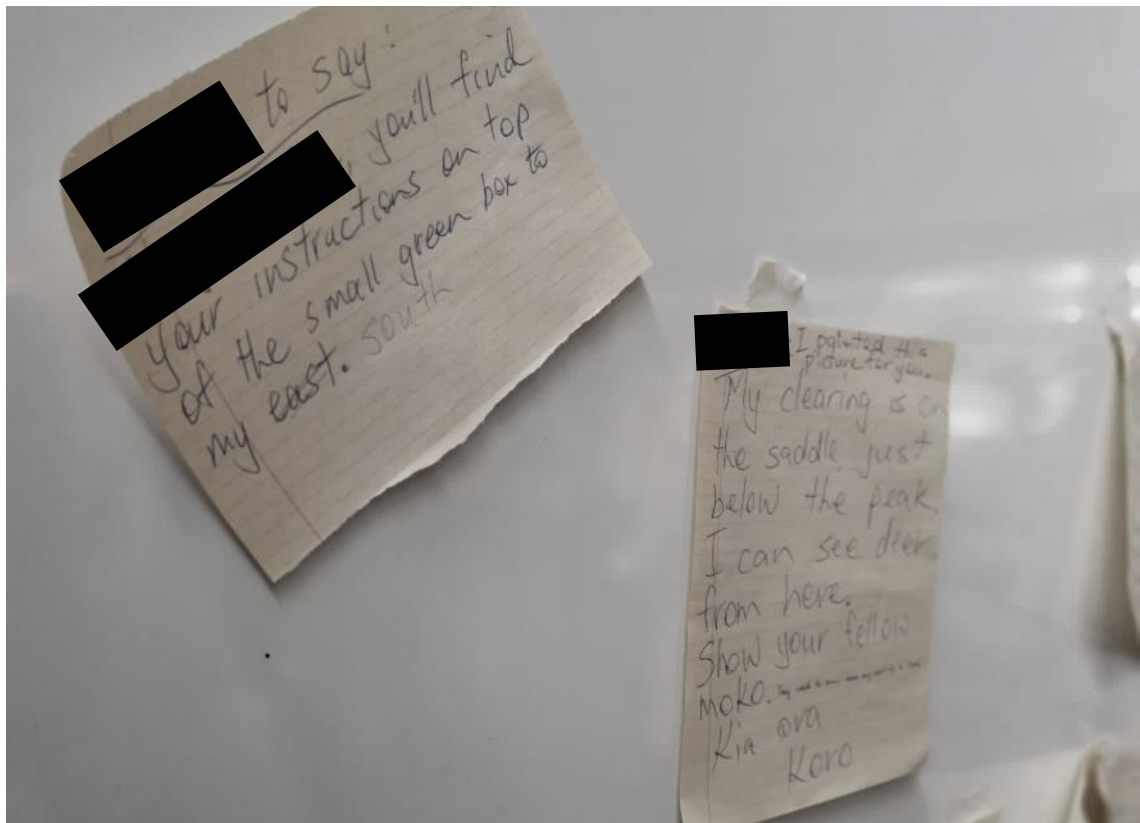


Figure 23 - Letters from Koro

During this session, I observed that the role of Whaea became that of a facilitator as she guided her ākonga around the various letters that led to different learning tasks. Ākonga demonstrated a high degree of motivation and enjoyment while completing their tasks. Their brief responses during the focus group interviews made it hard to capture the extent of their reactions, motivation, and excitement:

[What did you enjoy the most? Why?]

Iraia: “Oh, that [the letters from Koro] was, that was good – that was waay better”

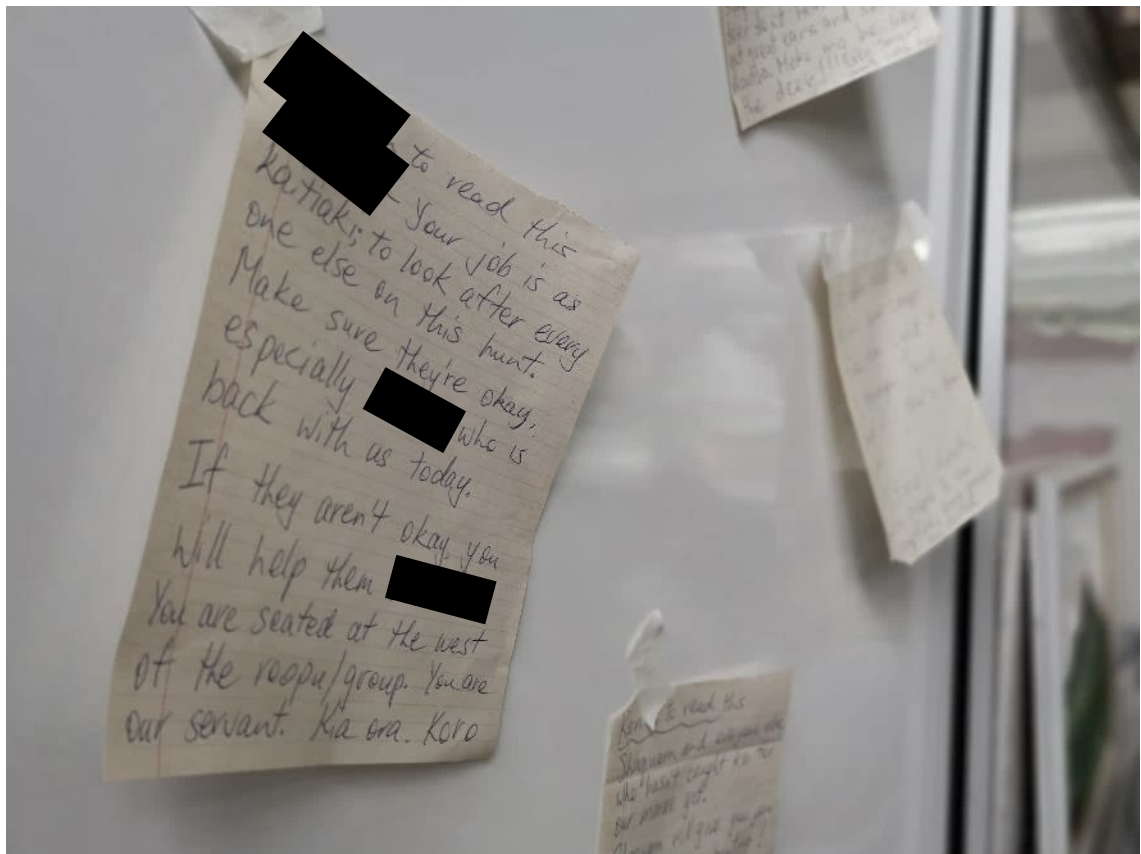
Hau: “I, I felt like we were going to do a fun activity”

Matiu: “Yeah, it’s fun”

Hau: “Because um, how like you read papers [letters from Koro] and that”

Iraia: “Yeah, history”

Figure 24 - Letters from Koro



Whaea participant had put much effort, time, and thought into the notes from Koro (Figure 24) and the set-up of the learning space. Some of her feedback included:

“I possibly wrote too many notes, but I was trying to be inclusive of everybody. And yeah, it’s not something you could do every day, but, um, I think generally it worked.”

Figure 25 - Ākonga taking leadership roles



Figures 25 and 26 illustrate how ākonga moved around the learning space, especially as they navigated the numerous letters from Koro and worked out the tasks they had to complete. A strong sense of whanaungatanga was present, as ākonga supported each other to solve problems and work out their responsibilities.

Figure 26 – Ākonga taking leadership roles



Traditional observations

It is difficult to compare the nature of the gamified activity described above with the traditional observations, especially regarding the inventiveness of the activity. Whaea demonstrated the hard work, creativity, and effort she put into the gamified session as an example of the potential of GIE. The kaupapa of this PhD research positively influenced the creativeness of Whaea and the activities she organised for her ākonga.

Whanaungatanga

Gamified activities: Observations of whanaungatanga through activities such as ngā taonga tākaro, and collaboration between ākonga during activities in the third and fourth gamified sessions.

Gamification elements: *physical movement, competition, sports, connection, meaningful content, hands-on activities, identity, life skills, options, kōrero, mātauranga, relationships, collaboration, and learning space.*

Gamified observations

Throughout the gamified sessions, a strong sense of whanaungatanga was building among ākonga. There was an increase in cooperative ākonga-ākonga interactions (social interactions/learning), kotahitanga, and the development of kinship/sense of family connection in the learning space between ākonga and Whaea. An example is seen throughout the leadership opportunities and in Figure 27, where ākonga are participating in ngā taonga tākaro, explained in more detail in the following section.

Figure 27 - Poi Rākau



In Figure 28, ākonga had to work together during gamified session four to navigate the various notes from Koro that Whaea had written. This activity further led to increased leadership opportunities, as identified above.

Figure 28 - Ākonga collaborating



In Figures 29 and 30 below, ākonga participated in the communication exercises. Whanaungatanga is also evident, practiced, and nurtured throughout the activity.

Figure 29 - Whaea role modelling the drawing challenge



Figure 30 – The drawing challenge



Traditional observations

During the second traditional observation, Whaea designed an activity largely influenced by the competition element. This activity required ākonga to work together as a team, which encouraged whanaungatanga and is described in further detail later in this chapter. Additionally, there were other elements of whanaungatanga nurtured throughout the traditional observations. For example, Whaea encouraged her ākonga to talk quietly or work with their 'elbow buddy' if they wanted to, especially during independent working times. Also, the connections and meaningful content of the learning allowed ākonga to make connections to familiar places and people they were learning about.

Physical movement

Gamified activities: Ngā taonga tākaro

Gamification elements: *physical movement, meaningful content, connection, competition, identity, relationships, tikanga, play, te reo Māori, taiao, learning space, mauri, and collaboration.*

Gamified observations

During the gamified sessions, ākonga could connect to their tupuna by integrating gamification elements that catered to their cultural values and beliefs. For example, when ākonga and Whaea played ngā taonga tākaro (Figures 31, 32 & 33), where tāne ākonga Māori are playing Manu Tī (a traditional Māori game using feathers). Ngā taonga tākaro

were effective for breaking up concentrated working times, giving ākonga a 'brain break,' and nurturing ākonga-kaiako relationships. Ākonga considered ngā taonga tākaro one of the highlights of the gamified sessions, as Tipene exclaimed: “*Yeah, that was fun aye!*”

Figure 31 – Rau (feathers) for Manu Tī



Note. Photo credits: Liz Broker

Figure 32 – Manu Tī



Note. Photo credits: Liz Broker

Figure 33 - Manu Tī



Note. Photo credit: Liz Broker

Another example of ngā taonga tākaro is Poi Rākau (Figures 34, 35, & 36). Poi Rākau was a favourite amongst ākonga, who regularly asked if they could play and reported how they enjoyed the competition and having opportunities to be the leader. Furthermore, Poi Rākau gave ākonga and Whaea a much-needed break from the classroom and a great way to cultivate whanaungatanga. Whaea stated:

"It was great to get outside for the Poi Rākau ... that was a nice little activity to do in the space that we had, because then it started raining again ... the kids really responded to the environmental changes"

Figure 34 - Poi Rākau



Figure 35 - Poi Rākau



The excitement ākonga exhibited playing Poi Rākau is reflected in their kōrero below:

Rawiri: “Rākau – oh, Poi Rākau!”

Henare: “Yeah, that was fun!”

Rawiri: “Yeah – you only won because you went my way, and I was distracted!”

Nikau: “Oh, yeah - and I won the other one”

Henare: “Yeah, that’s what happened to me the last time”

Nikau: “I won the first – yeah!”

Henare: “Did you do the same to him – he ran the wrong way? When he – when he changed sides?”

Nikau: “Yeah, I was like – [gestures that he is grabbing a rākau]”

Rawiri: “Yeah, that’s what you did, you were like – [also gestures that he is reaching for a rākau]”

Nikau: “That’s what you call a strategy, Henare!”

Figure 36 - Poi Rākau



Ākonga had other opportunities to be physically active throughout the gamified observations, especially during the rotations, including the tinana (body, physical) rotation, the communication exercises, and navigating the notes from Koro in the final gamified observation. These are identified in more detail throughout the rest of this chapter.

Traditional observations

Throughout the traditional observations, there were two instances where an activity was incorporated into the learning session with a similar purpose of ngā taonga tākaro (to help break up the learning/give ākonga a break). In Figure 37 below, ākonga were asked to stand, stretch, pat their heads, and rub their bellies. Following this brief activity, ākonga immediately resumed their work.

Figure 37 - Ākonga having a quick stretch in the traditional learning space



Another observation of a similar break was when Whaea asked ākonga to stand, and the whole class broke into pairs and played a game where they needed to mirror the other person's actions. Again, this provided ākonga with a quick break from formal learning and an opportunity to have a stretch/quick move around the classroom. Although brief compared to the ngā taonga tākaro played during the gamified sessions, ākonga responded well and settled relatively quickly back into work. Regarding physical movement, most traditional observations largely involved ākonga sitting at their desks, apart from the second traditional observation, explained in more detail below.

The gamified book

Gamified activity: '*Kai Mish*,' the gamified book. Written by Tamzyn Te Riaki (Appendix 24).

Gamification elements: *competition, connection, meaningful content, interests, life skills, options, exposure, hā, kōrero, mātauranga, reward system, mana, relationships, achievable goals, te reo Māori, identity, tikanga, and taiao.*

For the literacy sessions, I wrote a 'gamified' book, *Kai Mish* (Figures 38 & 39). The rationale for writing the book was so that the gamification elements derived from Phase One could be implemented (i.e. trialled) throughout the book. Hence, finding a published

book suitable for the gamified session was impossible as it needed to be developed specifically for this study.

Figure 38 - The gamified book, Kai Mish



Note. Photo credit: Liz Broker

Figure 39 - The gamified book, *Kai Mish*



Note. Photo credit: Liz Broker

I chose the kaupapa of *Kai Mish* based on my understanding that hunting, the outdoors, and spending time with Koro and Uncle in the bush would be highly motivating, engaging, and meaningful content for ākonga. The main characters were Koro, Uncle, and two mokopuna, who were helping to hunt deer for a big hui at their marae. Throughout the book, Koro shares kōrero regarding hunting, including tikanga to follow, the importance of staying downwind, not overhunting, only taking what you need, and which hunting spots are the best. Also, the book is a ‘choose your own path’ story, where ākonga had options throughout the book where they chose which path the story’s main character chose, each leading to one of eight different endings. However, only one end resulted in successfully shooting a stag. The other endings resulted in shooting a spiker, a pig, or unsuccessful hunts. To successfully shoot a stag, ākonga had to carefully listen to Koro’s advice: staying downwind, the best spots to go, and whether to wait in one spot or move to the next. In the story, Koro reinforces teachings such as why hunt in the first

place and tikanga regarding taking an animal's life. Here, teachings from Koro ensure that values regarding the care and rights of animals are considered to avoid gratuitous killing.

Figure 40 - The Whakawhitinga kōrero



Note. Photo credit: Liz Broker

As part of the gamified unit, *Whakawhitinga kōrero* (Appendix 25) were aligned with the book (Figure 41) and designed to be used during the activity rotation. The questions were intended to reinforce Koro's teachings and indicate to Whaea how much ākonga comprehended. I wrote the book for three reading levels to accommodate the various ākonga reading abilities. In regards to the book *Kai Mish*, Whaea shared the following:

"I enjoyed the kids being able to ... solve the Kai Mish – do the problem solving within the book, to be able to get the stag, or get the spiker or whichever it was, you know ... some of them really persevered with that. Others, um, and, and were rewarded accordingly. So, that was quite motivating for them. Others, um, in, in hindsight, uh, I probably should have introduced them – but I was very time poor – probably should have

introduced them to books that have multiple endings so that they were familiar that you choose the pathway. So, it's just not like a standard book. So that's probably the least enjoyable thing – that's me not having prepared them"

This is a similar observation noted by Whaea and examined in Chapter Five regarding the importance of *how* the gamified activity is introduced to ākonga, especially new elements such as the nature of the multiple endings/choices ākonga had to make throughout the story. Furthermore, the environmental elements Whaea set up in the learning space were largely inspired by *Kai Mish* because she wanted ākonga to experience a real sense of being in the ngahere and being 'in' the hunt, just like Koro, Uncle, and Koro's mokopuna were in the story. Overall, ākonga responded positively toward these environmental elements, described in more detail later in this chapter.

Figure 41 - The gamified book, Kai Mish



Note. Photo credit: Liz Broker

Ākonga were highly engaged in the book (Figure 40 & 42), and the novelty of choosing your own path, and the fact that as you were reading, you were 'hunting' really motivated

them, even if they had never been hunting before:

Rawiri: "Yep, the book was cool"

Ari: "Wait the book – oh yeah, the book was fun"

Nikau: "Yeah"

[Do you guys like hunting?]

Rawiri: "Mmm-hmm"

Ari: "I've never gone hunting before"

Rawiri: "Oh, yeah – I've never gone - gone to, though"

Ari: "I've never hunted"

Nikau: "Same. Never hunted"

Ari: "I have. But I haven't hunted"

Nikau: "I haven't even seen one"

Rawiri: "You haven't seen a gun?"

[You haven't seen one before?]

Ari: "I've only seen slug guns"

Nikau: "Never been hunting in my life"

Rawiri: "Oh, I - I've been hunting, but I had to stay in the truck. Boring."

Nikau: "So, I won't notice-"

[Stay in the truck?]

Rawiri: "Probably because I make heaps of noise, but I wanted to go"

[What did you enjoy the least about today's session, and why?]

Hone: "Um... the reading"

Ahika: "Yeah, same. Reading"

Tipene: "Yeah, Reading"

Iraia: "Mmm... the reading"

Ikaroa: "Yeah"

Figure 42 - The reading rotation

Note. Photo credit: Liz Broker

Ākonga participated in focus group interviews three times throughout the Gamification Implementation, once following the conclusion of the traditional observations, and twice during the four gamified observations. Thus, the feedback from the same ākonga during the second focus group interview changed from not enjoying the reading and activities for *Kai Mish* to enjoying it by the third (and final) interview. This is indicated in their comments from their second interview:

[What did you enjoy least about today's session, and why?]

Hau: "Nothing"

Ikaroa: "The reading"

Hau: "Nothing"

Iraia: "Nah, nothing, yeah. I actually found it really fun now"

Hau: "Yeah, because I'm getting ready for college"

Iraia: "Oh, aye"

Matiu: "Yeah, nothing"

Ari: "Um... nothing"

Nikau: "Hunting thing ... book"

Henare: "Nothing"

Ahika: “Yeah, I liked just reading and writing”

These comments possibly demonstrate that ākongā needed more time to read the book considering the book had eight different endings. More time would be beneficial, so ākongā could experience the various pathways of the story and experience the thrill of the hunt. Also, Hau was quite distracted because this was his second to last week in primary school, and he would be starting college the next year. This is reflected in a few of his comments and illustrates his excitement.

The following feedback is from the third (and final) focus group interview:

[What did you enjoy least about today's session, and why?]

Hone: “I just didn't like reading it”

[Didn't like reading it? Okay, what did you enjoy about it?]

Hone: “Um, like challenging trying to shoot the stag or the-”

Ahika: “Yeah”

Tipene: “Yeah”

Hone: “- thing”

Tipene: “or, the spiker and all that”

Hone: “Spiker, yeah – that's what it's called”

[Did you feel like you had enough time to do that, or you need maybe some more time with the book?]

Hone: “I had enough time”

Tipene: “More time with the book”

[Did you finish one of the stories?]

Tipene: “Oh, yeah - a little bit”

Ahika: “Yeah, I did ... I just didn't get time for the question – questioning”

Reflecting on the feedback, especially when considering gamified resources for reading, it was evident that not all ākongā liked or had even been hunting before. Therefore, it made comprehending the story and answering some questions more challenging for them. This was also recognised by Whaea, who suggested:

“Maybe instead of having six questions on say the spiker one, maybe there should just be three, or, or maybe they have to get four out of six rather than six out of six. Because [REDACTED] had ...five out of six, but he couldn’t answer one of them ... And he’d worked solidly, and he had kept going back over the text ... So, a bit like with running records – we ask them ten questions, if they get sixty percent right, then your honky dory and you’re at that level. So, it was maybe too much of an ask for some of those kids – not for the more able ones, but for some of those kids to be able to get the questions correct”

Subsequently, some comments from ākonga illustrate their lack of comprehension of the story:

Ari: “Oh, yeah, the questions were too hard. I read them but then I forgot”

Nikau: “Yeah”

Rawiri: “Um... the communicating one-”

Nikau: “The questions were the wrong ones for me. The questions were the wrong ones.”

Hau: “Yeah, the hunting book”

Iraia: “Too long, yeah. But it was a cool book”

[So maybe if - if it was a bit shorter, and you got to choose your path a bit more often, would that be better?]

Iraia: “Yeah”

Hau: “I think it’s good how it is”

Rawiri: “I just forgot what was in the book”

Nikau: “What you do when INAUDIBLE and all that”

[So, you don’t understand the clues, aye?]

Rawiri: “Yeah, the game”

Nikau: “Yeah, I didn’t understand the clues”

Here, concerns regarding the nature of the questions in the Whakawhitinga kōrero (Appendix 25) are highlighted. In particular, Whaea noted there were too many inferencing questions, which made it harder for some ākonga to answer all of them. This

could be partly because if ākongā had never been hunting, it would have been harder for them to know or infer the answers without prior or background knowledge. Furthermore, *all* the questions had to be completed to gain points in the competition. Thus, a few ākongā never completed, even though they tried hard. Hence, Whaea suggested that offering ākongā an option of questions to answer instead of having to complete all of them would be highly recommended:

“I think the modifications in terms of, there’s a reward for your effort. So, if you get – as I say – two right, twenty, twenty points, four rights forty points, six – you know – six correct is sixty points or whatever, and if you get the spiker then you get your hundred points or your fifty points, or something like that, so, so everybody then feels – even if they get one or two correct, they still been validated, because their points have gone up”

Whaea also suggested that including personal questions are important, where ākongā can connect to the text on a more intimate level:

“[you could ask questions such as] – what do you think you would have said? So, it gives kids the opportunity to engage with the text on a personal level, but also respond to it in terms of how they perceive the situation to be”

Another concern regarding the Whakawhitinga kōrero was how some ākongā found it hard to decipher between the different activities for each level of the book (i.e. ākongā with Level Two books ended up with Level Three questions, etc.). Also, only having one type of text for ākongā to read was not ideal, which I considered when writing the gamified book; however, there was not enough time to write multiple books to try and combat this (i.e. provide ākongā with options of books to read). In a more longitudinal study, this could be trialled. Hence, developing more gamified resources, such as gamified books, and aligning Whakawhitinga kōrero would allow options to be offered to ākongā so they do not all have to read the same story. Alternatively, the Whakawhitinga kōrero could be designed in a way where they could be used with any text ākongā choose themselves. Whaea proposed:

“I think it’s really important I choose what I want to read ... I’ve chosen what I want to read for a very long time. So, I think that it’s perfectly reasonable that as children get slightly older, that they have that freedom as well, because then they become engaged in what they want to read. So, I don’t have struggles of children dragging their heels to the table because it’s the end of the rotation”

The conclusions from the observations regarding the gamified book confirm that much experimentation, trialling, and reflection is needed to develop effective gamified teaching and learning resources. Overall, ākonga learned a lot from the experience, with plenty of opportunities and ideas for future improvements. This conclusion also aligns with similar findings from the studies of GIE discussed in Chapter Five, where studies of GIE are in their infancy and require a lot more trialling and experimentation – especially regarding gamified resources.

The learning space

During the gamified observations, it became evident that the design of the gamified learning space is integral, which is examined in further detail in this section.

The different areas of the learning space

Gamified activities: setting the learning space up with four different areas that ākonga rotated through; the tinana rotation, the kinesthetic rotation, the quiet rotation, and the activity rotation.

Gamification elements: *physical movement, connection, hands-on activities, life skills, options, exposure, creativity, music, time, kinesthetic, achievable goals, tikanga, play, mauri, and learning space.*

Gamified observations

The gamified learning space was purposely organised into four learning areas (the tinana rotation, the kinaesthetic rotation, the quiet rotation, and the activity rotation). The rationale was to create various spaces where ākonga could physically move around and participate in various learning tasks, each with its own atmosphere. For instance, the

tinana rotation was originally planned to be outside, with music playing to create an 'active/energetic' atmosphere. The kinaesthetic (clay) rotation was meant to be on the veranda with quiet music playing, where ākongā could be creative with the clay while listening to music. The quiet rotation was intended to be inside, next to the activity rotation, where ākongā could concentrate on reading or completing the Whakawhitinga kōrero in a quiet, calm space. Accordingly, these rotations will now be described in more detail.

The tinana rotation

The tinana rotation was set up with various exercise equipment, including a shakti mat, reflex ball, resistance bands, yoga mat, exercise ball, exercise rings, sensory ball, massage roller/balls, neck roller, skipping rope, basketball, and an AB roller (Figures 43 & 44). It was intended for ākongā to learn about the importance of looking after their body, muscles, and spend time using different equipment that gave them opportunities to; stretch, relax, exercise, and practice their reflex skills. It was clear throughout the observations and feedback that ākongā found the tinana and kinaesthetic rotations their favourite:

Ahika: "I liked the hunting and the exercise – exercising things and, um, you know the hunting and the exercise because it stretches out your body"

Hone: "I liked the Gym ... and the clay"

Ahika: "Yeah, same – clay"

Tipene: "The fitness"

Ahika: "Oh actually, no – yeah, um, fitness"

Henare: "Uh... I liked the..."

Hone: "Gym"

Henare: "Um... I liked the... um..."

Ari: "I liked the Gym"

Rawiri: "What's it called? Journal writing? Where you get to write in the thing"

Nikau: "Oh, yeah – free writing, and the Gym"

Figure 43 - The tinana rotation



Note. Photo credit: Liz Broker

Figure 44 - The tinana rotation



Note. Photo credit: Liz Broker

The importance of physical movement/exercise, especially for tāne ākonga Māori, was identified in Chapter Three of this thesis and emphasised by pakeke in Phase One. Hence,

the rationale for the tinana rotation was to provide ākonga with the time, resources, and opportunities to expel their energy. Additionally, ākonga learned about the importance of stretching their muscles, looking after their bodies, and how, if looked after well, their body can perform at maximum/higher capacity in other areas (such as reading and writing). Originally, the idea was that this would help ākonga focus more during concentrated learning times, so they would not sit for too long with pent-up energy. However, the tinana rotation (along with all of the other rotations) had to be moved inside due to the weather. Therefore, it had limited space and could not have its own music playing to create an energetic atmosphere. Also, the tinana rotation being right next to the quiet and activity rotation, provided some distraction for ākonga who were trying to work quietly. However, this was not the case for all ākonga, as indicated in the following feedback:

[Were you focused during the session today?]

Hone: “Not really”

Ahika: “INAUDIBLE not really”

Hone: “No – it was too noisy”

Ahika: “Yeah”

Iraia: “Oh – because I was getting distracted”

Ari: “Yes”

Rawiri: “Focused on my learning during the session? Yep”

Nikau: “Yeah”

Rawiri: “Most of them”

The kinaesthetic rotation

The kinaesthetic rotation was intended to be carried out on the veranda with music playing and using clay, however, it was moved inside due to poor weather. The clay allowed ākonga to represent the story they had just read visually; for example, *make* the stag/deer/create a hunting scene. Only one ākonga did not touch the clay because she did not want to get her hands dirty. Apart from this, all other ākonga appeared to enjoy playing with the clay, as seen in Figure 45 below, and from their feedback:

Hone: “I liked the rotations because I got to build stuff with the clay and exercise my body down by the gym”

[What would you like to do more of if there was a next time?]

Ahika: “Umm... some more clay”

Hone: “Clay”

Ahika: “Yeah, same – clay”

[Which was your favourite rotation?]

Ikaroa: “Clay and the gym”

Ari: “Gym and the, um, clay”

Figure 45 - The kinaesthetic rotation



Photo credit: Liz Broker

During the kinaesthetic rotation, ākongā enjoyed playing with the clay and were visibly more relaxed. It was a rotation that they were excited to participate in.

The quiet rotation

The original intention for this rotation was to create a quiet, calm space inside the classroom next to the activity rotation where ākongā had time to read their book. The two noisy rotations (tinana and kinaesthetic) were to be undertaken outside, with music

playing in the background. However, due to the poor weather, the kinaesthetic rotation was held behind the quiet rotation, and some ākonga from the activity rotation sat next to ākonga in the quiet rotation (Figure 46).

Figure 46 - The activity rotation



Overall, ākonga appeared to enjoy the quiet rotation and, in the end, just needed some more time to give *Kai Mish* more justice – especially regarding having time to read the book to each of the different endings.

The activity rotation

During the activity rotation, ākonga used Whakawhitinga kōrero (Appendix 25) to answer questions regarding *Kai Mish*. Ākonga were encouraged to *say/talk about* their answers rather than write them down. Therefore, ākonga signalled to Whaea when they were ready to answer the questions verbally. However, the option for ākonga to write their answers down was there if they wanted to, especially to prompt their discussions. In a normal classroom situation, setting up the Whakawhitinga kōrero like this could become a logistical nightmare for kaiako regarding having enough time to listen to each ākonga answer their questions. Here, because the learning session was set up as a rotation, there was only one group at a time (four-five ākonga per group) at each rotation, which made it manageable for Whaea to have more one-on-one time with her ākonga (Figure 47).

Figure 47 – An ākonga sharing his answers to the whakawhitinga kōrero with Whaea



Note. Photo credit: Liz Broker

Traditional observations

During the traditional observations, the learning space was set up as per Figures 48 and 49.

Figure 48 - The traditional learning space



Figure 49 - The traditional learning space



Whaea actively moved around the learning space. For instance, if an ākonga had a question, she would physically move to where her ākonga was sitting and kneel beside them (i.e. get down to their level) to have a kōrero. The desks were arranged into separate groups, and ākonga were allowed to choose where they wanted to sit.

Creativity of the learning space

Gamified activity: The set-up of the learning space

Gamification elements: *physical movement, competition, connection, meaningful content, hands-on activities, options, exposure, creativity, music, dance, hā, kinaesthetic, time, kōrero, tikanga, taiao, play, collaboration, mauri, and learning space.*

Gamified observations

It has been noted in this chapter that the weather during the gamified observations was poor. Therefore, some last-minute changes were required because the original set-up for the gamified sessions included outdoor elements that could not be achieved due to the

weather. Furthermore, due to the time constraints of the Gamification Implementation,³² the gamified sessions had to be compressed into a very short amount of time. Thus, the first and second gamified sessions were run on the same day, and the third and fourth on another.

Although the gamified unit was given to Whaea pre-planned, she was encouraged to make changes to suit her class. Hence, following the experience of the first and second gamified sessions held inside the classroom, Whaea made some significant additions to the gamified unit to accommodate the poor weather during the third and fourth sessions. Whaea outlined how she felt about the first two gamified sessions:

“I think it was, it was quite cramped – and that was nobody’s fault – it was, it was wet. So, um, on a good day – on a fine day, it would have been different. So, the gym kids would have been out there, and the clay kids would have been out there, and then you’ve just got children who are quietly going about the reading and the activities – perhaps chatting together about the activities or something like that, so, um, given, given the situation that we were in – it rained unexpectedly – and all day – and all week – we did the best we could with that”

By contrast, the feedback from Whaea regarding the second (i.e. third and fourth) gamified sessions indicated that she was a lot more confident and felt better about them than the first (first and second) gamified sessions, as evident below:

“Well, I was much happier about them. I was more prepared; the environment was also INAUDIBLE it was still raining ... the buzz from the kids was really good and sort of validated some of my decisions, because I made some decisions as I was driving home yesterday, going – oh yeah, I can do that, I can do that, I can do that – but still stay true to the purpose of what we were doing if that makes any sense. Um, so all I – or I feel all I did was

³² See Chapter Two

add some things to the environment that were novel and that caught the attention of, of boys predominantly. You know because there was only [REDACTED] and [REDACTED] who were girls there, but they were fine with it. So that's, yeah – so I thought that worked well, and the rest of the kids, I thought was pretty cool”

Whaea explained the importance of first impressions/and of setting the scene for ākonga from the beginning to capture their interest immediately and spark their imaginations and excitement for learning. An example of this was observed at the beginning of the second gamified session when, as ākonga entered the classroom, they were asked to crawl through a tunnel (Figure 50). As Whaea stated:

"you know when they came in – Oh! Wow! and That's great! And so, when children start with that attitude, it's easy because all you've got to do is keep them up there. Whereas if they start with – Oh this sux, this is boring – you've got to drag them up to the point when they can actually start learning, because mentally they're not going to"

Figure 50 - The entrance to the gamified learning space



Figure 51 - The campfire area in the gamified learning space



At the beginning of the day, Whaea locked the classroom and met her ākonga in the hallway at the start of class time. She briefed them before unlocking the door, where they entered through the tunnel before observing the set-up of the rest of the learning space, where they were directed by the letters from Koro (Figure 52 below). The first two letters are seen in Figure 51 above, which ākonga saw first as they emerged from the tunnel.

Figure 52 - Letters from Koro

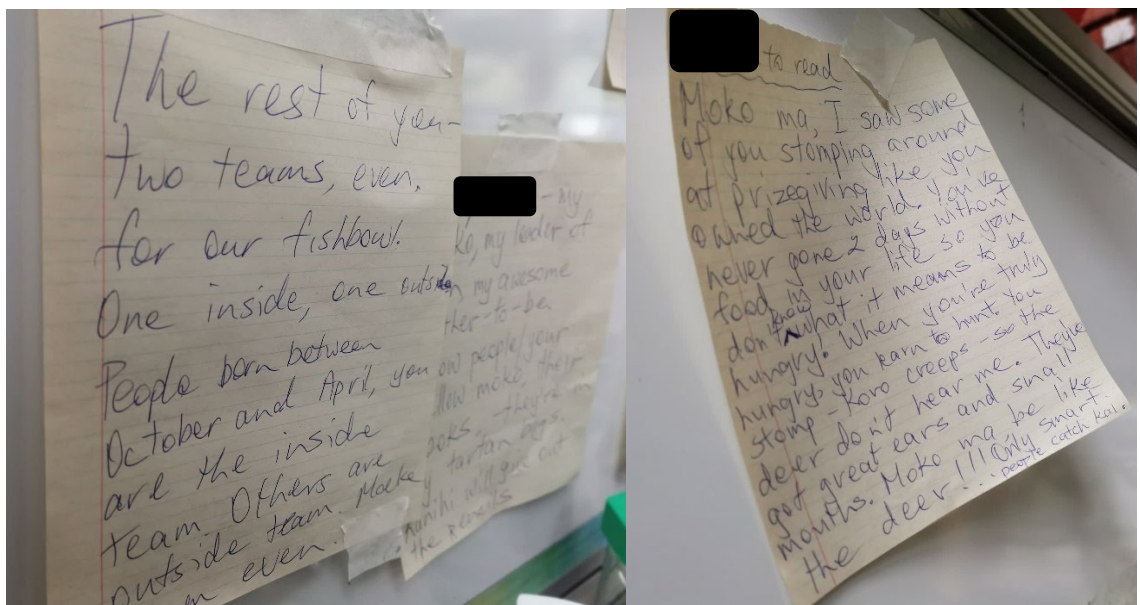
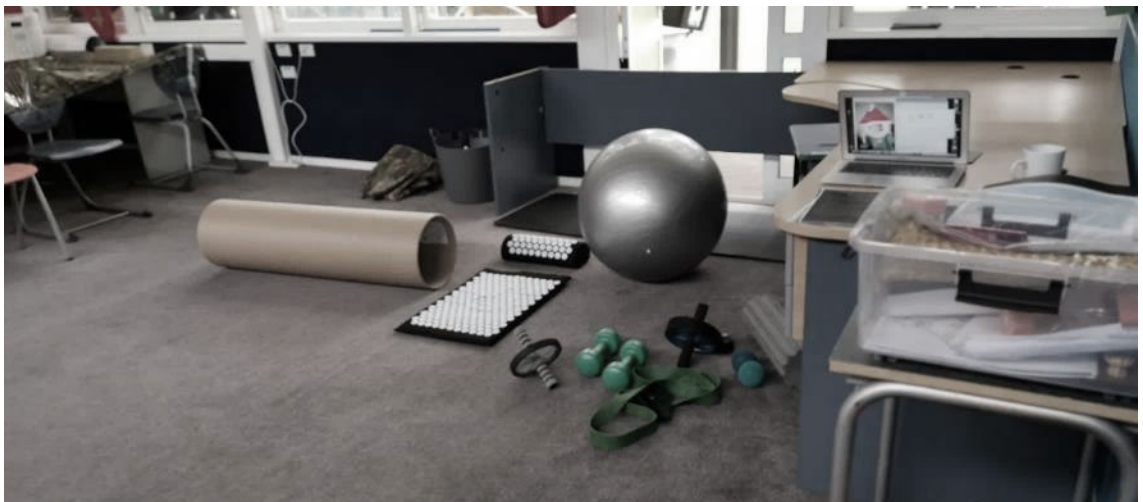


Figure 53 - The campfire



Figure 54 - The tinana rotation



The various areas of the gamified learning space were described above, including the tinana rotation (Figure 54), the kinaesthetic rotation, the quiet rotation (Figure 55), and the activity rotation. Overall, the set-up of the learning space was very creative and added a huge element of fun and imagination for ākonga (Figure 53 above). Hence, their motivation and engagement for learning tasks were enhanced, confirmed by the excitement in their voices, their willingness to participate, and their responses during the focus group interview:

[What did you like about your classroom today?]

Matiu: “Don’t have to do work”
Hau: “Everything!”
Iraia: “Everything!”
Ikaroa: “Everything, yeah”
Hau: “I, I felt like we were going to do a fun activity”

Figure 55 - The quiet rotation



Traditional observations

During the second traditional observation, Whaea organised a physically active session that required removing all the chairs from the classroom and separating the desks (see Figure 56, where ākonga are being briefed on the activity). The activity (Figure 57 & 58) was competitive and involved splitting the class into groups and competing to finish the activity first. Here, Whaea confirms:

"I had made it a competition, so, everyone was pretty much into that"

Figure 56 - Whaea briefing her ākonga



Figure 57 - Ākonga working in the traditional learning space



Figure 58 - Ākonga working in the traditional learning space



An important piece of feedback from Whaea was that the content of this activity and all of the traditional learning sessions were highly engaging for ākonga because it was local and relevant to them. For instance, ākonga recognised places and people throughout their learning, sometimes via videos, photographs, or written information. When this happened, it was observed that ākonga gasped, excitedly pointed, and said things such as *"Hey, I know him!"* or, *"I've been there! - That's just down the road from the river!"* Ākonga enjoyed learning about local places, stories, and people they know and recognise. This is observed in feedback from Hone:

"[I like it when we] Learn about history instead of just learning about nothing."

And, Ari:

"[The learning is easier] if it's a subject that we all want to learn about"

Also, Hau and Iraia stated:

Hau: "[What did you enjoy about your learning today?] Um, so I know a lot about the marae there – and that, so I can learn about the marae"

Iraia: "This area"

Hau: "Yeah, the area"

Throughout this observation, Whaea utilised several gamification elements from this research project: competition, connection, meaningful content, and identity. At this stage, Whaea was unaware of these gamification elements or lesson plans for the gamified sessions.³³ Therefore, this provides an example of how gamification elements (especially in the form of a gamification framework for education) could work to inspire kaiako to incorporate essential elements into their teaching and learning practices to better cater to the cultural needs of tāne ākonga Māori, and their needs as male learners.

Sensory elements

Gamified activity: Music playing in the background/kinaesthetic rotation

Gamification elements: *hands-on activities, creativity, music, kinaesthetic, play, mauri, and learning space.*

Gamified observations

The only technology used during the gamified sessions was the background music playing in the different learning areas. For instance, as explained throughout this chapter, the rotations in the gamified learning space were originally planned to each have an element of sound (although, due to the poor weather, this was not always possible to accomplish due to the limited space). The tinana and kinaesthetic rotations were planned with high-energy music and the quiet and activity rotations with soft background sounds of the New Zealand native bush. Ākonga responded especially well to the bush sounds:

³³ See Chapter Two

[Can you tell me what the atmosphere/environment of your classroom was like during the learning sessions?]

Tipene: “Calm”

Hone: “Um.... kind of calm-ish”

Ahika: “Yeah... calm-ish”

Hone: “Yeah, I liked it – I think it was calming because of the bird sound”

Tipene: “Yeah”

Ahika: “Yeah, calming because it was the bird sound and the way Whaea said we were on a hunt”

[Yeah, and was it – did you feel like you were on a hunt?]

Tipene: “Yeah”

Ahika: “Yeah”

Hone: “No, not really”

Originally the sound element planned for the quiet/activity rotations was a playlist. However, Whaea suggested bush sounds to add to the environmental elements designed to give ākonga a sense of being in the bush.

“just [having music] playing quietly in the background so you have a sense as you’re reading, you feel as though you’re there. You know how a book transports you mentally to places. So, that’s - it’s, it’s a sensory thing to have other things around you that look as though it’s in the ngahere, you know”

Another sensory element in the gamified learning space was the kinaesthetic rotation; the clay. This was described in more detail earlier in this chapter and is also pictured below in Figure 59. As mentioned earlier, ākonga especially enjoyed the opportunity for free play, to get their hands dirty by playing with the clay.

Figure 59 - The kinaesthetic rotation



Photo credit: Liz Broker

Traditional observations

The only sensory element used during the traditional observations was the television. Here, ākonga saw and heard information regarding their learning content. During the focus group interviews, ākonga shared the following regarding watching videos:

[Does watching video's help you understand the learning content?]

Hone: "Yep"

Tipene: "Yeah, sometimes"

Ahika: "Yeah"

Matiu: "Yep"

Iraia: "No"

Hau: "Videos give me-"

Matiu: "Yep. I like watching videos. It makes me not do work"

Hau: "Videos gives me heaps of ideas"

Matiu: "Yeah, and makes me write stuff"

Hau: "Um, videos do – but um, I can tell words from pictures – what video goes there"

[What would help you understand the learning content better?]

Ari: “Um... clearer words”

Henare: “Yeah, and what the place looks like and that”

[So, seeing pictures, seeing videos of it?]

Henare: “Yeah”

For Whaea, it was important to ensure ākonga could connect to their learning by giving them opportunities to physically see, touch, and especially, experience places they are learning about. She deemed it essential for their learning improving their engagement and motivation in the learning content.

“what fascinated me this morning when they saw the hill – “Oh that’s the hill!” And that’s those connections. I’m hoping that when they go on the awa next week, they will see that hill and go, “Oh it’s, it’s that hill – oh, it’s here.” You know? So, it’s not just some random place on, on the river. So, um, so yes – wonderings and questions are one of the things, and, and, the, sort of – the conversations – “Look here – look, this is the...” those sorts of things I think are, are an indicator for me that kids are motivated”

Additionally, while ākonga were watching a video, they were excited when they recognised a local marae and some local people they knew. This is evidence of increased engagement and motivation and emphasises the effectiveness of sensory elements such as visual (T.V.) for ākonga.

Environmental elements

Gamified activity: The set-up of the learning space

Gamification elements: *connection, meaningful content, hands-on activities, exposure, creativity, music, kinaesthetic, mātauranga, taiao, play, and learning space.*

Gamified observations

During the final two gamified observations, the poor weather continued to impact the teaching sessions. Hence, Whaea prepared and set up the interior learning space to imitate

a ngahere environment. The environmental elements she included (explained earlier in this chapter) significantly enhanced the engagement and motivation of ākonga in the learning activities. Ākonga were excited to reflect on these gamified sessions compared with their reflections on the first and second gamified sessions.

[What did you like about today's sessions?]

Hone: "Fun!"

Tipene: "Fun!"

Ahika: "Fun!"

Matiu: "Fun as!"

Ikaroa: "Fun"

Iraia: "Fun – f – f – fun!"

Hau: "Super fun!"

[What did you guys like about it?]

Ahika: "Um..."

Hone: "Everything"

Tipene: "Yeah"

Ahika: "I liked the way that the classroom was set up"

What is hard to capture in the feedback from ākonga is the excitement in their voices. They were full of energy and buzzing from their final gamified session. Some of the Year 8 ākonga (entering college the following year) even commented that they wanted to stay at primary school another year if they got to keep participating in learning sessions such as these. Overall, ākonga enjoyed participating in and interacting with the environmental elements, such as wearing the camouflage paint, playing by the fake fire under the hoochie, and wearing the army uniform (Figure 60).

Figure 60 - The environmental elements in the gamified learning space



Whaea pointed out that the novelty of the environmental elements certainly increased the motivation of her ākonga, and it was important for the environmental elements to make sense. However, the set-up of the learning space was also hard work. Therefore, it is not something that you would do regularly.

“I use novelty in all sorts of ways because that’s something that appeals to children. It may only be little things, but it’s just firing up kids by using something that’s a little bit different, so, um, I think when you have, if you like a theme day like we had today, where things were kind of like set up like a bit of a hunting camp, that kind of stuff, and, and, we were doing work around the Kai Mish text, then I think, um, it makes sense to change the environment to fit that ... I wouldn’t ordinarily bring sticks and rocks and little candle things for a fire, because you know it wouldn’t make any sense. So, um, but today it made sense. And ... the camouflage clothing – that kind of stuff, the ammo boxes for the army and those sorts of things, um, the kids really enjoyed

that. You know those, I think those aspects of it. So, that didn't necessarily enhance my teaching, but it certainly I think enhanced student engagement"

Traditional observations

Throughout the traditional observations, the set-up of the classroom was organised around desks and chairs as illustrated in Figures 61, 62, and 63.

Figure 61 - The traditional learning space



Figure 62 - The traditional learning space



Figure 63 - The traditional learning space



This chapter has provided a breakdown of two main factors investigated during Phase Two of this PhD research: observations of Whaea and her ākonga and comparing a gamified learning space to a traditional one. In this chapter, photographic evidence helps to paint a picture of what GIE looked like, catered to the needs of tāne ākonga Māori. Also, gamified activities that were designed for the Gamification Implementation were identified and linked to the gamification elements that were trialled.

The following two discussion chapters combine the findings from Phase One and Phase Two of this study, providing in-depth discussions of the Matua Elements identified from Phase One, and trialled (throughout this chapter) during Phase Two. Within the Matua Elements, feedback from both older and younger tāne Māori feedback is considered and reflected upon, ultimately, for the benefit of future generations of tāne ākonga Māori who attend English medium educational settings.

Chapter Nine: Matua Elements – tuatahi

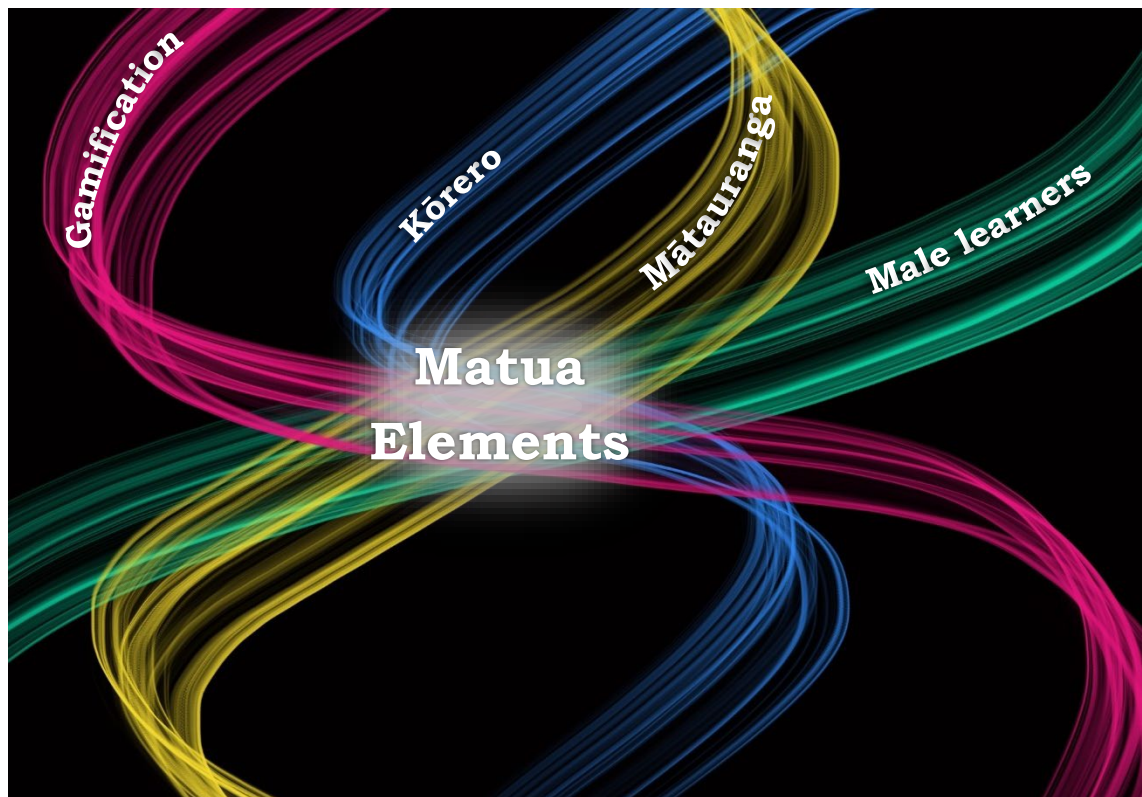
The rationale of this study responds to the challenge given by Huang et al. (2020), who encouraged future gamification researchers to go beyond what is currently represented in the literature. In that respect, this chapter is Part I of two chapters that discuss the key findings from both Phase One (Pakeke Kōrero) and Phase Two (Gamification Implementation) of this PhD research, and forms theories that respond to “going beyond what is currently represented” and answers the question: *How can tāne ākonga Māori be engaged through a Māori gamification model in their learning spaces?* The discussions in these chapters examine two significant components I propose are critical for tailoring GIE to the needs of tāne ākonga Māori (their cultural, and male learning needs), and provide in-depth examinations of each ‘Matua Element’ and their corresponding gamification elements that were identified in the findings of this study. Within these discussions, feedback from pakeke in Phase One and the kaiako and ākonga (Māori boy) participants from Phase Two have been considered collectively, providing an intergenerational perspective from tāne Māori.

In summary, after Phase One, a set of potential gamification elements were derived from pakeke kōrero. These gamification elements were trialled via action research during Phase Two, and feedback was gained from the kaiako and ākonga participants. Then, an analysis was conducted to ascertain the gamification elements’ effectiveness and their impact on the motivation and engagement of ākonga participants. Ultimately, I shifted the focus of this PhD research from developing a framework to gathering data to support the identification of gamification elements *for* a framework that represents culturally responsive practices for tailoring gamification to the needs of tāne ākonga Māori.

Essentially, using examples from the Gamification Implementation, I consolidate; knowledge and understanding of how to successfully integrate gamification into English medium educational settings, mātauranga Māori, male learning needs, and the findings from Pakeke Kōrero, to propose a set of Matua Elements that can cater GIE to the needs of tāne ākonga Māori. To provide clarity, this is illustrated below in Figure 59 using the concept of the model, He Awa Whiria: a braided rivers approach (Appendix 32) by

Macfarlane et al. (2015).

Figure 64 – He Awa Whiria: the origin of the Matua Elements



In short, Macfarlane and Macfarlane (2019) note that their model aims to maintain Māori data sovereignty, especially during the innovation process involving the collaboration of Indigenous and Western knowledge. They state:

it is inappropriate to seek solutions to Indigenous challenges solely from within Western knowledge streams and hold that a blending of Indigenous and Western bodies of knowledge creates an approach that is potentially more powerful than either knowledge stream is able to produce unilaterally (p.5).

Hence, for the context of this study, in the model above, the streams of colour symbolically represent how ideologies of Western knowledge (gamification & male learners) can align with te ao Māori (mātauranga & kōrero) to form Matua Elements for tailoring gamification to the needs of tāne ākonga Māori in English medium education.

The connection to gamification

It is worth reiterating that *some* Matua Elements and their corresponding gamification elements identified throughout this chapter are not ‘new’ or ‘original’ concepts to teaching and learning in education. Similarly, elements identified within gamification such as competition, reward, leaderboard, avatar, goals, challenges, and feedback are also familiar. However, their implementation within a gamified learning environment combines each element’s strength and enjoyable components in a manner that enhances the fun in a learning activity/space and the motivation and engagement of ākonga. In a like manner (and what makes this PhD research unique), the Matua Elements and their corresponding gamification elements aim to ensure both the cultural and learning needs of tāne ākonga Māori are catered for and enhance their motivation and engagement in their learning. Hence, throughout this chapter, pakeke have identified a mixture of familiar and unfamiliar elements, some of which require much more strengthening to be the most effective for teaching tāne ākonga Māori.

Finally, it is important to restate that tailored gamification is in its infancy, especially tailoring gamification to the cultural and learning needs of tāne ākonga Māori. Therefore, there is great potential for future identification and development of cultural elements that are not acknowledged in this chapter; the elements identified throughout this chapter are solely derived from Phase One and Phase Two of this research project.

This chapter – tuatahi, will discuss the first three Matua Elements: Mauri, Mātauranga Māori, and Whanaungatanga. Then, Chapter Ten – tuarua, will discuss the final four Matua Elements: Te Ao, Tikanga, Tinana, and Auahatanga.

The Matua Elements

The Matua Elements are to be considered ‘parental elements’ that represent a group of gamification elements for tailoring GIE to the needs of tāne ākonga Māori. This chapter explicates each Matua Element and their corresponding gamification elements (Table 3 below). The discussions are critical for providing kaiako with context for how and why each Matua Element and their corresponding gamification elements are effective for the

learning of tāne ākonga Māori. Durie (1998) maintains the importance of these discussions, who notes that cultural elements have a purpose, and understanding this purpose is as important as practising execution. Durie states, “it is the culture as a whole that affords meaning and provides a korowai that enables the particular element to flourish” (p.8).

Table 3 - Gamification elements identified from Phase One

Matua element	Gamification elements
<i>Mauri</i>	<i>Hā, tāne presence, āhua, te kupu tō te mana, ngā whatumanawa</i>
<i>Mātauranga Māori</i>	<i>Te reo Māori, identity, mana, taiao, kōrero</i>
<i>Whanaungatanga</i>	<i>Relationships, collaboration, whānau, awhi</i>
<i>Te Ao</i>	<i>Life skills, interests, meaningful content, exposure, options, connection, competition</i>
<i>Tikanga</i>	<i>Hands-on activities, achievable goals, learning space, time, pākikitia, reward system</i>
<i>Tinana</i>	<i>Physical movement, ngā taonga tākaro, sports, kinaesthetic, play</i>
<i>Auahatanga</i>	<i>Creativity, music, dance</i>

It is essential to consider the gamification elements as being reciprocal; they pertain to both the kaiako and the ākonga – a concept unique to this study. For example, the āhua of the kaiako and their ākonga are both highly relevant; how the kaiako communicates to their ākonga is as critical as teaching ākonga how to effectively communicate themselves, and establishing the reason *why* learning content has been selected is essential for both the kaiako to practice, and ākonga to know. These will be discussed in further detail, with links to current research and how they connect to the original aim of this PhD research.

In current studies of gamification and GIE, the gamification elements utilised are exclusively aimed at enhancing the engagement and motivation of ākonga without consideration of the kaiako. A concept unique to this PhD research is that the gamification elements are reciprocal. Meaning; they pertain to both the kaiako *and* their ākonga. More specifically, when fully embraced by the kaiako, the gamification elements can guide them to improve their teaching practice in a manner that will be received positively by tāne ākonga Māori rather than solely focusing on making the activity more engaging. Hence, the kaiako is guided by the elements to be more aware and reflective of their

energy in the learning space and how it affects their ākonga. Also, the activity and the learning space are further enhanced via other gamification elements, such as *kōrero*, *hā*, *āhua*, *mana*, and *connection*.

Successfully applying these elements goes beyond a ‘tick-box’ like scenario and requires the kaiako to put some effort into considering how they could effectively integrate them to enhance teaching and learning opportunities. This is illustrated throughout Chapter Eight, where various elements were tested during Phase Two, the Gamification Implementation. For instance, to focus on the importance of communication and encouraging talking about emotions, an activity was planned for Phase Two to encourage the element, *kōrero*, called The Fishbowl. In short, during this activity, a safe space was created, and ākonga were invited to answer a question posed. Ākonga were taught to listen to others’ responses. Throughout repeated sessions, it was anticipated that ākonga would slowly build their confidence to open up and share their thoughts, emotions, and past experiences.

Another benefit of The Fishbowl activity is that, through participation, it encouraged the kaiako to practice the elements herself, such as; practicing her sharing and listening skills as well (the *kōrero* element), encouraging her to create a safe space for her ākonga (promoting exhibiting a gentle *āhua*, protecting the *mana* of her ākonga, being calm/taking a breath – *hā*), and relationship building (the *relationship* element). Therefore, an example is provided where numerous elements can be integrated into one learning session. Furthermore, how the elements affect the kaiako (as well as ākonga) and what this could look like in practice has been illustrated. Throughout this process, the elements have guided and positively impacted the influence of the kaiako in the learning space.

Additional to The Fishbowl, the element *kōrero* also largely influenced the literacy component of the lesson. More specifically, ākonga had to answer questions from a *Whakawhitinga kōrero* (activity sheet) (Appendix 25) by talking to their kaiako rather than writing them in their books. Ākonga could write their answers down if they wished for reference; however, this was not compulsory. Instead, the kaiako was encouraged to gain the answers from her ākonga by having a *kōrero* with them. For the kaiako, this

provided instant feedback regarding how well ākonga did or did not comprehend the text and opened up numerous teaching opportunities to discuss misunderstandings. Also, the exercise provided numerous relationship-building opportunities for the kaiako and her ākonga.

Mauri

Table 4 – The Matua Element, Mauri

Matua element	Gamification elements
<i>Mauri</i>	<i>Hā, tāne presence, āhua, te kupu tō te mana, ngā whatumanawa</i>
<i>Mātauranga Māori</i>	<i>Te reo Māori, identity, mana, taiao, kōrero</i>
<i>Whanaungatanga</i>	<i>Relationships, collaboration, whānau, awhi</i>
<i>Te Ao</i>	<i>Life skills, interests, meaningful content, exposure, options, connection, competition</i>
<i>Tikanga</i>	<i>Hands-on activities, achievable goals, learning space, time, pākikitia, reward system</i>
<i>Tinana</i>	<i>Physical movement, ngā taonga tākaro, sports, kinaesthetic, play</i>
<i>Auahatanga</i>	<i>Creativity, music, dance</i>

Mauri refers to life force, energy, or essence and involves concepts such as vitality, integrity, and energy. According to Durie (2017), mauri translates as the “spark of life, the active component that indicates the person is alive” (p.41); an expression of the liveliness that makes up the whole person. Cram (2019) recognised that a person’s mauri must have vitality to thrive and contains three additional elements - ihi, wehi, and wana. Cram (2019) explains: “Ihi is a vital psychic choice, or a personal essence. Wehi is the awe, respect or wonder in children which they should never lose. Wana is the thrill, exhilaration, and excitement which describes the child’s love of life” (p.24). When nurtured, these represent elements of mauri in ākonga that can uplift, excite, and encourage them for their learning. On the contrary, when these elements are not cultivated, the spirit of ākonga and their motivation, and enthusiasm for learning can be diminished.

Lockhart et al. (2019) claim that mauri is found in everything, from inanimate structures

to living organisms. More specifically, all objects and elements in the taiao have mauri. Hence, mauri relates to the ‘unseen’ and spiritual (wairua) world that Māori connect to deeply. For example, Māori feel special connections to the taiao and places of significance. Here, Lockhart et al. (2019) state:

Mauri and whakapapa are the building blocks of the worldview of Māori and of Māori identity. This holistic worldview emphasises the kinship that Māori share with all facets of nature due to their shared ancestry that stretches back to creation itself. Thus, Māori spirituality is inextricably linked to the environment (p.3).

In this PhD research, *Mauri* is the Matua Element that encompasses the following gamification elements; *hā*, *tāne presence*, *āhua*, *te kupu tō te mana (the power of words)*, and *ngā whatumanawa (emotions)*. Moreover, the Matua Element *Mauri* brings awareness to the spiritual realm of both the ākonga and the kaiako, focusing on their inner thoughts, mind (hinengaro), and awareness of self.

Pakeke identified *mauri* as a missing element throughout their experiences in English medium education settings. This was especially apparent in feedback by Mata Hari (a pakeke from Phase One), who shared that for future generations of tāne ākonga Māori who attend English medium education, it is integral that their spiritual side is not sacrificed in favor of academic learning. Here, it is crucial to highlight the role of the whānau and wider iwi of ākonga; certain aspects of te ao Māori cannot be left to the full responsibility of English medium education settings to provide for ākonga Māori, especially elements of a spiritual nature. Durie (2017) recognises that for Māori, the significance of the spiritual realm to be nurtured is crucial to their success and well-being. More specifically, Durie identifies that for Māori to flourish, there must be “spiritual and cultural fulfilment, emotional and mental strength, physical aptitude and positive relationships within and beyond families” (p.42). Hence, Māori whānau, kaumātua, and wider iwi play a significant role in teaching and passing down such knowledge to their tamariki.

Nonetheless, there are some elements related to the spiritual nature of Māori tamariki,

such as *mauri*, that educators *can* integrate into their teaching practices. For instance, Durie's earlier research (1998) identified four 'cornerstones' of Māori health and well-being through a model called Te Whare Tapa Whā (Appendix 31), which is now being implemented throughout sectors of Aotearoa, including Health and Education. Te Whare Tapa Whā recognises four dimensions of Māori well-being which, when nurtured, provides Māori with an environment where their holistic sense of well-being requires a balance of wairua, tinana, hinengaro, and whānau.

In the context of an educational setting, *mauri* can be viewed as a form of non-verbal communication that significantly affects the way that ākonga: engage or disengage in their learning, respond to their kaiako, feel and react in different situations, and level of energy in the learning space. Also, considering the reciprocal nature of gamification elements, the *mauri* of the kaiako greatly influences the *mauri* of their ākonga. Hence, the *mauri* of the kaiako is powerful and influences their āhua, the āhua of their ākonga, and in turn, the ākonga-kaiako relationship. Essentially, *mauri* is seen in kaiako through their āhua; a sub-gamification element of the Matua Element, *Mauri*, discussed further below.

Āhua

Ware (2009) states that āhua relates to "human characteristics exercised by individuals" and, in essence, "refers to the features, attributes, characteristics, traits, aspects, and qualities that are exhibited by individuals" (p.22). In the context of this PhD research, an effective kaiako of tāne ākonga Māori will role model a calm, caring, positive, uplifting āhua in their classroom. Hence, āhua would be observed in the way that a kaiako will; carry themselves; speak and listen to their ākonga; react to their ākonga; treat their ākonga; and their overall demeanor and presence in the learning space (i.e. the 'vibe' that they give off). In teaching practice, āhua looks like: getting down to the level of ākonga, creating a welcoming vibe in the learning space, and the kaiako role modelling how s/he expects their ākonga to behave such as pausing before reacting or responding in various situations. Āhua sounds like: respectful tones, quiet to allow for thinking/response time while maintaining an authoritative presence where needed. Succinctly, effective kaiako of tāne ākonga Māori contain a sense of self-awareness to internally reflect the unique nature of their āhua, recognise how their āhua significantly influences boys in their learning space through actions that convey calm, positive attributes that meet the specific

needs of tāne ākongā Māori.

From the perspective of the kaiako, having a deeper awareness of *mauri* and its powerful effects in a learning space can be transformative for their *āhua* and their male ākongā Māori. For instance, pakeke from this study claimed that tāne ākongā Māori are sensitive to subtle non-verbal cues, such as facial expressions, tone of voice, body language, and other non-verbal (and verbal) signals. Here, research conducted by Lawrence (2017), who explored the effects of nonverbal communication, can help to provide some clarity. In short, Lawrence found that when communication is broken down, only 7% is verbal (spoken words), 38% is vocal (including the pitch and tone of your voice), and 55% is made up of non-verbal messages (facial gestures, touch, personal space, and vocal characteristics). Regarding this PhD research, these statistics can help to provide a deeper understanding concerning the effects of the *mauri* of the kaiako on their ākongā. More specifically, pakeke communicated that if they had negative experiences with a kaiako, they often found it hard to ‘come back’ from it. Furthermore, too many negative experiences with one kaiako ultimately led to tāne ākongā Māori switching off from them altogether. The relationship would then be broken down to the point where the ākongā did not care or want to connect with any learning content the kaiako had to share, even if it was a subject of high interest to them. This was illustrated in kōrero from Paerangi, who claimed that when he was in school and had a negative experience with a kaiako similar to what was mentioned above, he remembers thinking, “*If you don’t care – then why should I?*”

The narratives shared by pakeke identified several *āhua* characteristics of kaiako that negatively influenced their learning experience. These ranged from their kaiako appearing judgmental; general mistreatment and biased targeting based on stereotypical associated behaviors of tāne ākongā Māori. Pakeke commented that all they would do is walk in the classroom, sit next to their peers, and they would immediately get ‘negative vibes’, or ‘side glances from their kaiako before the lesson had even begun. Some pakeke even felt they were being watched by their kaiako, who appeared ready to snap at them at any wrong move, and failing to reflect a Māori perspective of pedagogy neglecting their cultural background and learning needs. This resulted in an increased likelihood where Pakeke ‘switched-off’ and disengaged from their learning regardless of content

and/or subject. Most importantly however, Pakeke reported that they felt that their mana had been degraded. Such experiences have been supported throughout the literature supplied in this thesis noting the deficit perceptions English medium kaiako have of tāne ākonga Māori such as expecting them to misbehave and therefore ‘side-glancing’ to observe for mischief (Berryman & Eley, 2017). Furthermore, Pakeke indicated that their kaiako used punitive and shameful strategies when punishing them such as yelling, growling, or threaten to take away sports.

Roberts (2022) also identifies the importance for kaiako to monitor their *āhua* and make sure that their frustrations or stress levels are not affecting their performance in the classroom or, primarily, how they treat their ākonga. Here, Roberts also recognises that kaiako must monitor their mental health and identifies that stress and kaiako burnout significantly impact boys in their classrooms. Furthermore, Roberts (2022) refers to research that found some kaiako regularly get angry, frustrated, and often conflict with certain ākonga, who manage to keep getting on the nerves of their kaiako for (sometimes) minor behavior that may not even appear problematic.

Te kupu tō te mana, hā

Kōrero from pakeke and observations of ākonga participants throughout this study has recognised that boys can be susceptible to how their kaiako speaks to them. More specifically, pakeke acknowledged that words have power. For example, suppose boys are spoken to by their kaiako disrespectfully, using harsh tones, or in a hostile manner. In that case, they can find it difficult to respond positively, connect with their kaiako, or focus on learning. This further leads to boys ultimately ‘switching off’ from that kaiako (i.e. the breakdown of the ākonga-kaiako relationship) or the subject content. Examples of this were evident in the narratives from pakeke in Phase One. They shared experiences where they completely disengaged from their favourite subject due to communicative misunderstandings regarding the wording of advice or feedback from their kaiako. Here, it is highly relevant to note that the classroom environment is sometimes hectic, and kaiako can often be under intense stress, especially if they have many ākonga. Consequently, this environment can make it harder for kaiako to communicate with their ākonga consistently, clearly, concisely, and calmly.

Te kupu tō te mana (the power of words) is an essential kaiako skill necessary for the effective teaching of tāne ākonga Māori. It is evident that tāne ākonga Māori thrive in a classroom built upon the appropriate āhua of their kaiako, and due to this role modelling, tāne ākonga Māori are more likely to emulate the behavior, tone, and communication style of their kaiako and adjust their behavior. Similarly, Roberts (2022) succinctly sums this up: “Put simply, misbehaving boys won’t change their behaviour if you are hostile, whether your attitude is expressed directly or indirectly. Nor ... will they modify their behaviour if you try to ignore behaviour and plough on through your teaching” (p.26).

Effective kaiako of tāne ākonga Māori consider their words carefully and their tone when communicating, especially when ākonga may need help or guidance during moments of stress or frustration. Hence, kaiako need to stop, pause, breathe (*hā*), and ask themselves: *What could be causing this behavior, and how can I best respond to not escalate the situation?* And: *Did my tone of voice affect how he reacted?* Also, *What is the best way for me to respond right now to help guide him to the best possible outcome?* This would create a teaching and learning environment where boys’ mana is upheld, they feel safe, their learning needs are met, and they can have fun while learning.

Tāne presence

Pakeke shared how they felt uncomfortable in their classrooms due to the lack of genuine *āhua* of the kaiako; consequently, they spoke of not genuinely opening up to their kaiako regarding their issues. It was also identified that if their kaiako was female, it added to their perception that their learning needs could not be met. They also highlighted that they would use humour as a strategy to mask or hide their nervousness, anxiety, or stress; consequently, female kaiako would be offended by this reaction. In contrast, when they spoke of male kaiako, they cherished the connection formed, saying they better understood them “on a deeper level” (*tāne presence*). These narratives highlight that English medium educational settings can be conducive to the expression of thoughts, feelings, and emotions if the classroom environment is built on a relationship of care and trust. This is especially applicable if they are experiencing frustration in their learning space or are finding it hard to focus on their learning because they are internally distressed by issues happening in their lives that may affect their ability to concentrate.

This study has identified a minimal number of Māori educators in English medium educational settings in Aotearoa, at just 1.9% (Ministry of Education, 2022a). Therefore, it is highly relevant to accept that tāne ākonga Māori could face extra challenges in their educational settings due to having a large percentage of female kaiako. For instance, James (2015) claims that when male ākonga are under stress, they are more likely than female ākonga to stand and defend themselves or flee the situation. As a result, James notes that how male ākonga respond to their kaiako in the classroom may escalate the situation in the heat of the moment, where a minor disagreement can become a major battle. Hence, to female kaiako, the male response may seem extreme. Therefore, James argues that female kaiako must become familiar with how their male ākonga are likely to react; then, they will be more equipped to appropriately navigate their male ākonga stress response to a positive outcome. This was evident during Phase Two, where Whaea demonstrated a high level of awareness regarding the needs of boys in her classroom and could quickly navigate potentially conflicting situations before they escalated too far. In particular, Whaea achieved this by knowing when to step back and give her ākonga space when they needed it and made sure that she returned to check in on them later once the ākonga had a chance to calm down.

Ngā whatumanawa

The element *Ngā whatumanawa* refers to encouraging tāne ākonga Māori to share their thoughts, feelings, and emotions. This is a critical skill for maintaining personal health and well being. Also, for men and their role in their future relationships, expressing emotions can help to resolve issues with their partner. Hence, this element is especially relevant for providing boys with essential skills that can significantly benefit them for the rest of their lives. Furthermore, it encompasses their holistic well-being and acknowledges that the wider parameters of ākonga are also essential to nurture in an educational setting, not just curriculum content. This was illustrated in the findings during Phase Two of this study, where an increase in the level of sharing from ākonga participants was observed. The importance of this is further affirmed by research conducted by Durie (2006a), who argues that not acknowledging a person's spiritual, physical, mental, and social parameters would be ignoring the several dimensions that affect Māori well-being. In turn, it is also highly justifiable to expect that the engagement and motivation in the learning of tāne ākonga Māori will improve if this element is

nurtured.

Phase Two presented many opportunities for tāne ākonga Māori to develop their communication skills, where they were encouraged to share their thoughts, emotions, and past experiences during the delivery of content of the gamified sessions.³⁴ It was anticipated that teaching ākonga communication skills would also aid in their literacy learning, as senior primary school ākonga are often expected to discuss and share their thoughts and feelings regarding texts they read. Also, incorporating thoughts, feelings, and emotions into writing is another skill encouraged in writing at the senior primary school level. Accordingly, an activity called *The Fishbowl* was conducted during action research, where ākonga were posed with a question and invited to share their responses in a safe space. Here, ākonga were taught essential skills regarding opening up (sharing past experiences and how they felt in those moments), sharing, and listening to others. The gamified observations showed increased boys' confidence, willingness to participate, and ability to listen to their peers. A strong sense of whanaungatanga and belonging was nurtured in the learning space, which further aided in relationship building and development. However, similar to previous elements of communication mentioned throughout this chapter (*āhua*, *awhi*, and *te kupu tō te mana*), *ngā whatumanawa* has not been considered a gamification element in past studies that have examined issues linked to the tailoring of GIE to the needs of ākonga. Also, Fadhil and Villafiorita (2017) note that gamification and the integration of game elements into non-gaming contexts are increasingly focused on encouraging positive attitudes or behavior change.

Communication skills and activities can be incorporated into learning sessions (such as the Fishbowl mentioned above during Phase Two), which promote, encourage, teach, and *normalise* the sharing and talking about feelings and emotions for ākonga, especially from a young age. Overall, kaiako who wish to be effective educators of male ākonga should ask themselves: *Am I here to push curriculum content, or do I genuinely care about my ākonga and want them to leave my classroom feeling valued, cared for, and having gained life skills that can benefit them for the rest of their lives?* In particular, this question would

³⁴ See Chapter Six for more details

encourage a kaiako to think more deeply about how they can enhance the motivation and engagement of ākonga in their learning, which is not solely about the learning content or the proficiency of the kaiako. As suggested throughout this kōrero, it also requires the encouragement, uplifting, and teaching of essential life skills for male learners. For example, this might include incorporating activities in the learning space that focus on deeper sharing, opening up, and talking about feelings, thoughts, emotions, and sharing experiences where ākonga may need advice or support. Then, with this deeper level of communication, relationships are more likely to flourish, and safety is nurtured within the ākonga-kaiako relationship within the learning space. Ideally, this would give boys a better understanding of how to direct their energy, focus, and concentration to their learning and feel safer to ask for help if needed.

Conclusively, the powerful presence of the kaiako in the classroom has been highlighted and emphasised as being influential to Māori boy's motivation and engagement in their learning and relationship with their kaiako. Thus, when considering an initiative such as tailoring GIE to the needs of tāne ākonga Māori, to neglect an element such as *mauri* would be ignoring an essential component of mātauranga Māori fundamental to the spiritual well being of ākonga Māori (Durie, 2017). Furthermore, pakeke identified that spiritual elements (such as *mauri*) have been missing in English medium education. Also, it is essential to reiterate the significant role the whānau of ākonga plays regarding the spiritual well-being of their tamariki discussed above. *Mauri* has been identified as an element that educators *can* cultivate in their learning space to benefit ākonga Māori. The awareness of *mauri* is integral for educators and their ākonga Māori, as it provides educators with a deeper insight into *how* to cater to the needs of ākonga Māori, how to influence ākonga Māori in their learning space positively, and, therefore, how to be more effective educators of tāne ākonga Māori. Given this, it could be concluded that kaiako training in Aotearoa must seriously consider *mauri* as a significant element to educate kaiako rather than solely focusing on curriculum content and neglecting to address the spiritual (and cultural) well-being of ākonga. Likewise, Koya Vaka'uta (2021) notes that:

you would not send a soldier to war without teaching him to use
a gun, nor would you employ the services of a mechanic to
perform surgery on your child. Why then would we assume that

anyone can teach knowing full well that the ability to make or break a child's critical and creative thinking lies in the hands of that person. What power teachers possess! (p.23).

Oforu-Ampong (2020) confirms that there is a need to align gamified systems to the various interactions of ākonga and behavioural intentions to identify how game elements could lead to more meaningful engagement. Hence, when considering how to intrinsically engage tāne ākonga Māori in English medium education, their holistic well-being must be nurtured, including an awareness of *mauri* and its powerful influence in the learning space. Thus, kaiako must be aware of the significant influence of *mauri* and how they have the power to either engage or disengage their ākonga Māori through keeping in control and maintaining an energetic vibe and genuine care for their ākonga and their learning.

Overall, this kōrero has provided background information and context regarding *why* the Matua Element, *Mauri*, and its corresponding gamification elements (*hā, tāne presence, āhua, te kupu tō te mana, and ngā whatumanawa*) are significant for the effective teaching of tāne ākonga Māori. In the context of gamification, it has also been pointed out that these elements have not yet been considered in current studies of tailored gamification, or GIE. Hence, these elements are unique to the concept of tailored gamification, and incorporate both cultural and learning needs of tāne ākonga Māori. Therefore, it is highly justifiable to consider that the use of these elements in a tailored gamified environment will fulfil the aim of this study; to enhance the motivation and engagement of tāne ākonga Māori in English medium education.

Mātauranga Māori

Table 5 - The Matua Element, Mātauranga Māori

Matua element	Gamification elements
<i>Mauri</i>	<i>Hā, tāne presence, āhua, te kupu tō te mana, ngā whatumanawa</i>
<i>Mātauranga Māori</i>	<i>Te reo Māori, identity, mana, taiao, kōrero</i>
<i>Whanaungatanga</i>	<i>Relationships, collaboration, whānau, awhi</i>
<i>Te Ao</i>	<i>Life skills, interests, meaningful content, exposure, options, connection, competition</i>

<i>Tikanga</i>	<i>Hands-on activities, achievable goals, learning space, time, pākikitia, reward system</i>
<i>Tinana</i>	<i>Physical movement, ngā taonga tākaro, sports, kinaesthetic, play</i>
<i>Auahatanga</i>	<i>Creativity, music, dance</i>

Mātauranga Māori refers to Māori knowledge, thinking, and ways of being. This is affirmed by Doherty (2019), who states that Mātauranga Māori places importance on Māori knowledge, histories, and language and relates to Māori ways of thinking and doing. In the context of this PhD research, *Mātauranga Māori* is the Matua Element which encompasses the following gamification elements: *Te reo Māori*, *identity*, *mana*, *taiao*, and *kōrero*. Hence, these gamification elements highlight crucial components of Mātauranga Māori, which, when embraced, were identified as having great potential to enhance the motivation and engagement of tāne ākonga Māori.

Kōrero

For instance, during Phase Two of this PhD research, it was observed that the motivation and engagement of ākonga increased when they could directly connect to learning content regarding kōrero from places they were connected to. Here, their engagement was enhanced even further when some kōrero was delivered by local Māori (via video), whom ākonga knew. Similarly, research conducted by Webber et al. (2020) found that when ākonga Māori could bring their familial and cultural knowledge into their learning and have it validated and integrated into the programme, their engagement with the learning increased. Moreover, Webber et al. confirmed that this increase in engagement could partly be due to their learning being associated with transmitting knowledge, activities, and culture important to their lives.

Te reo Māori

It has been identified throughout this thesis that English medium education in Aotearoa was not designed to meet the unique needs of ākonga Māori. Therefore, ākonga Māori typically face extra challenges in English medium educational settings that their non-Māori peers do not (see Chapter Three). This has been validated by many researchers, such as Pihama (2019), who argues that “The Pākehā education system in this country has never been based within an aspiration for the well-being for Māori” (p.7). Likewise,

there was consensus among all pakeke who participated in this PhD research who felt that their cultural needs were not nurtured throughout their schooling years. As a result, they felt a severe disconnection to their spiritual well-being. For instance, this is observed in their feedback, where pakeke maintained that they experienced a severe lack of te reo Māori at school. It is also relevant to note that only one tāne Māori pakeke from this research project can fluently kōrero Māori. This also aligns with the statistics highlighted in Chapter Three, where it was identified that there is an extremely low number of people in Aotearoa who can fluently kōrero Māori, especially kaiako in English medium education settings. Furthermore, during Stage One, Jimmy Jam shared that tourists visiting a shop he once owned were shocked to hear that he could not fluently speak his native tongue. Jimmy Jam also noted that Māori are often involved in and exposed to kapahaka more than te reo Māori.

Identity

Literature in Aotearoa has widely recognised that when ākonga Māori feel their cultural needs are embraced in their educational setting, they are more likely to: develop a sense of belonging, feel safe in their learning space so they can ask questions, make connections to the wider world which is highly relevant to them, and enjoy success as Māori (*identity*). This was seen throughout Phase Two, where male ākonga Māori enthusiastically participated in ngā taonga tākaro. Also, during Phase One, pakeke identified that for future generations of tāne ākonga Māori, English medium education settings must be more responsive to the cultural needs of ākonga Māori. This is also recognised by Cram (2019), who states that feeling a sense of cultural security is central to the well-being of Māori tamariki. Cram identifies that ākonga need to know where they come from to foster their sense of belonging and have a secure place to explore their wider world.

Additionally, Riley et al. (2017) note that “a school’s cultural environment can enhance, or constrain, Māori identities, which in turn can increase, or decrease, psychological well-being and engagement in learning” (p.2). Riley identifies other factors that can significantly impact ākonga Māori in English medium educational settings positively or negatively, such as their kaiako having low expectations of them and how well the educational institution values and understands te ao Māori. Riley et al. note that this is the most influential factor determining whether ākonga Māori will experience success in

English medium education settings. Likewise, Durie (2006a) claims that “Active participation in the Māori world is closely linked to a secure cultural identity” (p.9). An example was observed during Phase Two of this study, where tāne ākonga Māori showed increased motivation when reading the gamified book *Kai Mish* (Appendix 24). Hence, the notion of integrating mātauranga Māori into gamification elements to tailor GIE to Māori boy’s needs is highly justifiable and relevant for all ākonga Māori. Also, remembering that gamification elements have a reciprocal nature, they can support both the kaiako and their ākonga to embrace some aspects of mātauranga Māori in a fun and engaging manner.

Mana

Earlier in this chapter, the impact of the *āhua* of kaiako was identified and the effect their *āhua* has on their ākonga. Essentially, the repercussion of a kaiako exhibiting a negative *āhua* in the learning space can be degrading to Māori boy’s *mana*. How a kaiako speaks to and treats their ākonga can either uplift, encourage, degrade, weaken, or humiliate them. Ultimately, this affects the kaiako-ākonga relationship and how engaged or disengaged ākonga will be in the presence of the kaiako.

The importance of first developing and maintaining positive relationships with ākonga is also reaffirmed by Bishop et al. (2009), who identify a concern regarding kaiako in English medium educational settings, where it appears that, for many kaiako, “The main aim remains one of “getting through the syllabus” and controlling students’ resistant behavior, rather than engaging in positive learning relationships with them” (p.740). Bishop et al. claim that such interaction patterns ultimately deny ākonga Māori opportunities to integrate their prior cultural knowledge into the learning space. Furthermore, Bishop et al. notes that any problems which ākonga Māori have with their learning or any resistance they display in the classroom are seen by kaiako as a manifestation of the poor attitude of ākonga and low parental aspirations, as opposed to a manifestation of poor learning relationships between the kaiako and their ākonga. Here, a poor relationship would be one where the kaiako has not made the effort to get to know the interests, cultural background, or how to talk to their ākonga in an uplifting manner during times of frustration. Also, it has been pointed out that when positive relationships are not formed with ākonga Māori, problems that arise tend to be blamed on the ākonga

themselves; rather than kaiako reflecting on their possible contributions to the root cause of the behaviour.

A concern identified by pakeke is that deficit theorising of Māori sometimes influence kaiako in English medium educational settings in Aotearoa, affecting the kaiako-ākonga relationship and how kaiako (especially non-Māori kaiako) treat their ākonga Māori. This is evident throughout kōrero from pakeke, mentioned earlier, where they shared experiences they felt watched by their kaiako the second they walked into the classroom. A similar notion has been identified in research conducted by Berryman and Eley (2017), who found that ākonga Māori are aware of negative stereotypical beliefs about Māori and believed that many of their kaiako openly negatively stereotype ākonga Māori, with some being covertly racist. Ultimately, this results in the breakdown of the ākonga-kaiako relationship resulting in further disengagement of learning.

Pakeke from this PhD research felt that they were occasionally negatively and unfairly judged or treated by their kaiako, often caused by circumstances entirely out of their control, such as the reputation of their family name, the demographics of the community they came from, or their kaiako having low expectations of tāne ākonga Māori and presuming that they would not do well academically. As a result, pakeke felt that they sometimes did not even get a chance to prove themselves as competent or capable learners. Consequently, pakeke shared that this often led to situations where they defended themselves and had a snowball effect regarding how they responded to their kaiako, reacted during times of stress and frustration, and either engaged or disengaged with their learning. For example, one pakeke shared that he would often shut down and think – *If you don't care, then why should I?* More specifically, if he felt like his kaiako genuinely did not care if he succeeded, he would emulate the negative mindset and completely switch off from the kaiako and the learning content they presented.

In contrast to what was experienced by Pakeke, in Phase Two of this study, the kaiako participant, Whaea, demonstrated the criticality of mana enhancing āhua traits by displaying strategies that were responsive to the needs of ākonga while remaining cognizant and aware of their kaiako-presence and authority. For example, this was observed when Whaea was sitting next to an ākonga while he was sharing kōrero

regarding the gamified book *Kai Mish*. Their gentle demeanor and consistent role modelling of ‘calmness’ even in frustrating situations, “not only reduced [their] our own feelings of emotional exhaustion but also modelled more positive feelings for [ākonga] to emulate” (Roberts, 2022, p.31). Here, the critical influence of nurturing the *mana* of ākonga is emphasised; a concept that minimal attention is given to in current studies of gamification in educational settings. Thus, the adaptivity for gamification and a ‘one size fits all’ approach adds very little to the learning experience of tāne ākonga Māori (Denden et al., 2017).

Taiao

The significance of the element *mauri* was identified earlier in this chapter. In short, it was found that *mauri* is in everything, including living and inanimate structures. Lockhart et al. (2019) confirmed that all elements in the *taiao* have *mauri*, which Māori connect to deeply, especially places of significance such as the *ngahere*, *maunga*, and *awa*. Similarly, feedback from *pakeke* reaffirmed Lockhart’s notion that being outside, especially connecting with the *taiao* (even now), allowed them to be involved in and experience highly motivating learning experiences. Some *pakeke* shared that it does not matter what the learning task is – as long as it is outside, their level of engagement would increase. This was evident during Phase Two of this research, where the motivation and engagement of ākonga elevated when they could go outside and participate in Poi Rākau. It is also worth noting that due to the feedback from *pakeke* during Phase One that identified how motivating the *taiao* is for them, learning experiences for action research during Phase Two were originally planned to be outside. However, due to poor weather, last-minute arrangements had to be made, and learning sessions had to be conducted inside instead.³⁵ Hence, the element *taiao* can significantly enhance learning experiences for ākonga Māori, and will be a highly influential element for catering GIE to the needs of tāne ākonga Māori.

Throughout the literature for tailored GIE, there is a significant lack of gamification

³⁵ See Chapter Six for more details

elements that specifically relate to the cultural needs of ākonga, personality characteristics, demographic influences, and behavioural traits. Thus, researchers in gamification, such as Ofosu-Ampong (2020), identify that generalizing gaming elements for ākonga without first understanding the context of the educational setting or the backgrounds of ākonga is a recipe for gamification failure. Hence, considering *Mātauranga Māori* as a Matua Element for tailoring GIE to the needs of tāne ākonga Māori (and its corresponding gamification elements) is a plausible hypothesis. However, as noted by Styres et al. (2019), it is also essential that the initiative of tailored gamification is not used as a means of an educational toolbox or a list of best practices for educators to tick off. Instead, Styres et al. emphasise that catering to the needs of ākonga Māori in English medium educational settings is a process of active engagement, patience, activism, and unwavering persistence. Hence, educators of ākonga Māori need to have a genuine want and care for integrating the cultural needs of their ākonga so their efforts are practical, rather than simply going through the motions of appearing to be culturally sensitive just because there are ākonga Māori in their learning space.

This kōrero has provided context regarding *why* the Matua Element, *Mātauranga Māori*, and its corresponding gamification elements (*te reo Māori*, *identity*, *mana*, *taiao*, and *kōrero*) are highly influential to the engagement and motivation of tāne ākonga Māori in their learning space. Furthermore, it has been identified that these elements are not recognised in studies of tailored gamification or GIE and are unique to the field. Considering the above, these elements have huge potential for enhancing the motivation and engagement of tāne ākonga Māori, supporting kaiako to becoming more effective kaiako of male ākonga.

Whanaungatanga

Table 6 - The Matua Element, Whanaungatanga

Matua element	Gamification elements
<i>Mauri</i>	<i>Hā, tāne presence, āhua, te kupu tō te mana, ngā whatumanawa</i>
<i>Mātauranga Māori</i>	<i>Te reo Māori, identity, mana, taiao, kōrero</i>
<i>Whanaungatanga</i>	<i>Relationships, collaboration, whānau, awhi</i>
<i>Te Ao</i>	<i>Life skills, interests, meaningful content, exposure, options, connection, competition</i>

<i>Tikanga</i>	<i>Hands-on activities, achievable goals, learning space, time, pākikitia, reward system</i>
<i>Tinana</i>	<i>Physical movement, ngā taonga tākaro, sports, kinaesthetic, play</i>
<i>Auahatanga</i>	<i>Creativity, music, dance</i>

Whanaungatanga is about building and maintaining relationships. It refers to strengthening kinship and developing a sense of family-like connection. This is maintained by Greaves et al. (2021), who claim that for Māori, whanaungatanga is a critical concept that aligns with the values of te ao Māori and relates to relationship development and building a sense of kinship/connection. Furthermore, Greaves et al. note that whanaungatanga has been referred to as the “basic cement that holds things Māori together” (p.94). Additionally, they identify that, despite the significance of whanaungatanga for the well-being of Māori, there has not been enough genuine engagement by English medium educational settings to accommodate these needs. Whanaungatanga is maintained through shared experiences of working together, fostering a deeper sense of belonging. Hence, in the context of this PhD research, the Matua Element, *Whanaungatanga*, encompasses the following gamification elements: *relationships, collaboration, whānau*, and *awhi*. Some of the gamified activities for Phase Two of this study were planned to nurture the element *whanaungatanga*. More specifically, ākonga and their kaiako were given opportunities to participate in activities together, which included an element of fun and sometimes problem-solving, teamwork, and getting to know each other on a deeper level. For example, this was a noticeable observation when ākonga participants were playing ngā taonga tākaro (Poi Rākau and Manu Tī), when ākonga had to work together to navigate letters from Koro, and when they participated in the Fishbowl.³⁶

Collaboration

In the context of learning, *whanaungatanga* is about much more than simply group work or encouraging ākonga to collaborate or work in pairs. Rather, whanaungatanga is about providing both ākonga and their kaiako with opportunities where they can participate in activities such as what was observed during action research, including; having fun

³⁶ See Chapter Six for more details

together, building trust, working together to solve problems, competing against each other, sharing prior knowledge, and genuinely get to know each other better (*collaboration*). Throughout these activities, deeper relationships are maintained and nurtured, where ākonga strengthen their sense of belonging and trust in their peers and kaiako. Similarly, Berryman et al. (2017) claim that when ākonga can relate to others in a familial or whanaungatanga manner, they take strength from working together and build a better understanding of their learning. Additionally, Berryman et al. noted that by working together, ākonga would be more able to complete tasks independently. Furthermore, Greaves et al. (2021) identify growing evidence that for ākonga Māori, having a strong sense of cultural identity and whanaungatanga is essential for various health issues, including mental health. Once a teaching and learning environment such as this is established, other elements identified throughout this research project's findings will be more evident, especially *mauri*, *āhua*, *communication skills*, *relationships*, *connection*, and *tinana*. For instance, during Phase Two, ākonga were highly engaged in the learning content because it included local places ākonga were connected to, and they were encouraged to share their own previous experiences and knowledge.

Relationships, whānau

The importance of relationships with ākonga Māori in English medium education settings is already widely recognised. Additionally, *relationships* have been identified throughout the findings of this study as critical to the success of tāne ākonga Māori in English medium educational settings. Pakeke and ākonga participants reaffirmed that the ākonga-kaiako relationship's quality dramatically affected how they (dis)engaged in their learning. This is evident throughout the kōrero shared from pakeke, where they noted that boys will 'switch off' from either their kaiako and/or their learning if the relationship is poor. Here, a 'good' kaiako-ākonga relationship could be considered one which is respectful; where the cultural background, interests, and whānau aspirations of ākonga are identified, nurtured and upheld; where ākonga feel safe to ask questions and take risks; are not judged or stereotyped, where kaiako genuinely care for their ākonga and go the extra mile to keep them engaged in their learning, where kaiako maintain good relationships outside of the classroom; and when kaiako have high expectations and not succumb to negative stereotypes of ākonga Māori. Hence, a strong argument needs to be made for the deliberate tailoring of GIE to the needs of tāne ākonga Māori, with the

element of *relationships* at the forefront of any design.

A variety of relationships are discussed that involve an intricate web of interactions that occur between kaiako-ākonga; ākonga-ākonga; ākonga-whānau; whānau-kaiako relationship; many other relationships that influence and are fundamental to their success. (see Chapter Three). Succinctly, it was highlighted that ākonga Māori thrive when their education setting (especially their kaiako) develop and maintain productive partnerships with them, their *whānau* (including their wider whānau), and wider iwi. Then, productive partnerships can be nurtured where there is a shared understanding of the needs of the ākonga, including their cultural values, beliefs, and whānau aspirations, can be collectively achieved. This notion is also confirmed by Highfield and Webber (2021), who states that “Authentic relationships between school and whānau, focused on student learning, are a crucial lever enabling Māori student success” (p.159). Also, the significance of the inclusion of wider whānau and iwi of ākonga is reaffirmed by Cram (2019), who claims that “The well-being of tamariki Māori extends from their whānau out to their marae, hapū, iwi and waka [boat]” (p.25).

Pakeke emphasised that if kaiako genuinely try to get to know their male ākonga Māori and develop a good relationship, they would be more likely to learn *how* to best support, engage, and encourage them in their learning. For example, a pakeke from Phase One, Blackie, shared that he fondly remembers a kaiako from his primary school years because he used to take him and his peers out hunting outside of school hours, as he knew that hunting was a passion of theirs. As a result, Blackie identified that his motivation and engagement with his kaiako significantly increased in school, and he still appreciates this kaiako even now, many years later. Another benefit of positive relationships identified by pakeke is that through a deeper relationship, kaiako can learn *how* each of their ākonga respond in certain situations and, therefore, be more aware of how to respond to their ākonga during times of stress or frustration.

Awhi

The gamification element, *awhi*, directly correlates to the need for kaiako to support and encourage tāne ākonga Māori to ask for help when needed. This transpired from kōrero the majority of pakeke under 50 shared; they were often reluctant to ask their kaiako for

help, resulting in not completing learning tasks and simply passing the time until the bell rang. An example from Phase Two also supported these instances where a particular ākonga was reluctant to ask his kaiako for help, resorting instead to asking himself and his peers questions out loud that never got responded to, as his questions were never directed toward anyone. Ultimately, this ended in him doodling on his work and disengaging from learning. Whaea also commented on this and noted that she has often observed her male ākonga doing this in class, where they ask a question; however, their question is not directed at anybody in particular and typically ends in a ‘no answer.’ Hence, ākonga are attempting to ask for help, but need more effective strategies for asking. Additionally, Pinkett and Roberts (2019) note that for boys to ask for help, especially in front of their peers, they are burdened by the stigma of social conventions of masculinity, as highlighted in Chapter Three of this thesis. Here, the importance of kaiako being aware of this reluctance to ask for help openly has been emphasised. Kaiako should watch out for subtle clues that indicate the ākonga needs support (such as the above example), and teach their ākonga effective strategies for seeking help.

The notion that male ākonga face challenges in their learning spaces regarding the social conventions of masculinity was discussed in depth throughout Chapter Three of this thesis. More specifically, Pinketts and Roberts (2019) pointed out that tāne ākonga Māori feel social pressures to live up to masculine ‘gender role norms,’ such as the demand for males to: be macho (strong); courageous; good at sports; be a provider; show dominance; pursuit status; be emotionally tough, and not express or talk about emotions (as this is considered to be ‘weak’). Likewise, researchers such as O’Neil and Crapser (2011) identify that males struggle with failure - especially admitting to failure. Thus, it has been highlighted that asking for help (especially for male ākonga) exposes weaknesses, threatens status, and is risky for boys as it can make them vulnerable to social ridicule by displaying femininity, especially amongst their peers. This was confirmed by participants in Phases One and Two of this study, where both pakeke and ākonga participants admitted that they often found it hard to ask for help and would prefer not to ask if they could get away with it.

Conclusively, this kōrero has verified that *awhi* is a critical element for enhancing Māori boy’s motivation and engagement in their learning, and addresses a gap in the literature

that makes this PhD research unique. Current studies of gamification that investigate adapting GIE to the needs of ākonga unfortunately exclude communication skills (such as *awhi*) as a gamification element. However, researchers such as Nadi-Ravandi and Batooli (2022) encourage elements such as *awhi* that capitalise the potential gamification has to promote positive behavior change.

Considering the kōrero above, it is highly justifiable to consider the Matua Element *Whanaungatanga* and its corresponding gamification elements a crucial for catering gamification to the needs of tāne ākonga Māori. This section has re-emphasised kōrero from pakeke concerning relationships' role in engaging and motivating tāne ākonga Māori in their learning space. Also, examples of the positive impact *whanaungatanga* had during Phase Two were discussed, where ākonga were observed strengthening their relationships through fun activities (e.g. ngā taonga tākaro and navigating letters from Koro). Like the other gamification elements identified, the element *whanaungatanga* has not been recognised in current gamification studies. For instance, researchers in gamification, such as Majuri et al. (2018), found that in almost all studies of GIE, the most commonly studied behavioural outcomes included participation, grades, and the speed of conducting assignments and tasks. Here, Majuri et al. note that it seems logical in educational settings to study such outcomes; however, they also state that social interactions have rarely been the behavioural goal of gamified solutions.

Additionally, Majuri et al. claim that this finding aligns with a general trend of gamification initiatives, which are often poorly designed and do not support collaboration or cooperation. Likewise, Ofosu-Ampong (2020) notes a need for a more complex model of gamification, which involves exploring different gaming elements. Thus, this PhD research has identified *whanaungatanga* as a fundamental element for tāne ākonga Māori, recognising the importance of nurturing ākonga holistically rather than solely focusing on curriculum content. Then, the positive effects of *whanaungatanga*, relationships, and collaboration will benefit Māori boy's motivation and engagement in their learning.

This section has justified the reasoning *why* the Matua Element, *Whanaungatanga*, and its corresponding gamification elements (*relationships*, *collaboration*, *whānau*, and *awhi*) are significant for the effective teaching of tāne ākonga Māori. Additionally, these

elements are unique to the concept of tailored gamification, and have not yet been considered in current studies. Hence, highlighting the gap in the field this PhD research is addressing, especially regarding its potential for enhancing the motivation and engagement of tāne ākonga Māori in English medium education.

This chapter has discussed the first three Matua Elements: Mauri, Mātauranga Māori, and Whanaungatanga. The following chapter will discuss the final four Matua Elements: Te Ao, Tikanga, Tinana, and Auahatanga.

Chapter Ten: Matua Elements – tuarua

This is the second discussion chapter to discuss the key findings from Phase One (Pakeke Kōrero) and Phase Two (Gamification Implementation) of this PhD research project. In the previous chapter, I examined the first three Matua Elements: Mauri, Mātauranga Māori, and Whanaungatanga. In this chapter, I will discuss the final four Matua Elements: Te Ao, Tikanga, Tinana, and Auahatanga.

Te Ao

Table 7- The Matua Element, Te Ao

Matua element	Gamification elements
<i>Mauri</i>	<i>Hā, tāne presence, āhua, te kupu tō te mana, ngā whatumanawa</i>
<i>Mātauranga Māori</i>	<i>Te reo Māori, identity, mana, taiao, kōrero</i>
<i>Whanaungatanga</i>	<i>Relationships, collaboration, whānau, awhi</i>
<i>Te Ao</i>	<i>Life skills, interests, meaningful content, exposure, options, connection, competition</i>
<i>Tikanga</i>	<i>Hands-on activities, achievable goals, learning space, time, pākikitia, reward system</i>
<i>Tinana</i>	<i>Physical movement, ngā taonga tākaro, sports, kinaesthetic, play</i>
<i>Auahatanga</i>	<i>Creativity, music, dance</i>

Te Ao translates to ‘the World’ (Moorfield, 2023). In the context of this research, the Matua Element, *Te Ao*, is the parental element for the following gamification elements: *life skills, interests, meaningful content, exposure, options*, and *competition*. Hence, the element *Te Ao* highlights the importance of connecting the learning of tāne ākonga Māori to wider world contexts that are highly relevant and meaningful for them. Then, tāne ākonga Māori can better understand the purpose behind their learning and how it fits into their lives. Similarly, pakeke who participated in this study recognised that if tāne ākonga Māori do not understand the purpose or reasoning behind *why* they had to participate in a learning task or *why* they had to learn the subject content, this caused severe disengagement in their learning. Therefore, the Matua Element, *Te Ao* emphasises that to enhance the motivation and engagement of tāne ākonga Māori, they need to be able to connect their learning to wider world contexts which are helpful, and meaningful for their

future goals, and lives outside of education.

Life skills, interests, meaningful content

During Phase One of this PhD research project, pakeke felt that some of the learning content they experienced throughout their primary school years they have never had to know or use in their adult lives. More specifically, numerous pakeke used Shakespeare or aspects of Mathematics such as trigonometry as an example of learning content which they found completely irrelevant. Here, pakeke questioned why there was not more relevant learning content specific to either mātauranga Māori, ākonga of Aotearoa, or that aligns with the interests of ākonga (*interests, meaningful content*). Also, numerous pakeke debated why rote learning of times tables is still being encouraged now, when technology such as calculators are so readily available and often on hand. Thus, questions were raised by pakeke from this study, such as *Why are we still teaching learning content which, nowadays, seems almost entirely irrelevant, especially considering the advancements in modern society and technology?* In particular, pakeke recommended that kaiako identify the interests of tāne ākonga Māori, nurture them, and cultivate them into something bigger, especially when they relate to future mahi potential (*life skills*). Similarly, Highfield and Webber (2021) note that ākonga Māori are highly motivated by the potential of having ‘a good life’ and getting a good job when they are older, primarily to provide for and make their whānau proud. Finally, Highfield and Webber note that whānau of ākonga Māori were motivated by seeing their tamariki happy as they had opportunities to broaden their knowledge in subjects of high interest to them.

Exposure, options

Catering to the interests and needs of a large number of ākonga at once can be overwhelming for kaiako. Hence, pakeke pointed out that kaiako need to accept that they do not know and cannot teach absolutely everything – and sometimes, it is relevant to bring in outside experts (*options*). Here, pakeke fondly remembered times during their primary school years when visitors who were professionals in their field came into their classroom, such as representatives from DOC (the Department of Conservation), to teach them trade-specific learning content. When reflecting on this point, pakeke suggested that it would have been beneficial for kaiako to follow up on this by offering to take ākonga to places of particular interest, especially if they are places where ākonga have indicated

they may want to work in the future, such as industry-related work sites, or farms. Similarly, Durie (2006b) states that “Instead of expecting a single school to be expert in everything, students might rely on an education adviser who brokers a suitable mix of programmes” (p.1). Durie suggests that ākonga may learn biology from a vet, accountancy from an accountant, and business administration from an expert in the industry (*exposure*). In later research, Durie (2011) found that rangatahi Māori felt education settings were insufficiently focused by offering a wide range of curriculum content which, in turn, sacrificed depth and concentration. It was ultimately found that meaningful connections to future goals of ākonga must be factored into the curriculum and subject content to help ākonga Māori find their place in an increasingly competitive world.

Connection

Pakeke emphasised that if tāne ākonga Māori can make connections to their learning, their motivation and engagement significantly increases. Considering this, during Phase Two, the gamified book *Kai Mish* (Appendix 24) was written in a manner that aligned with the interests, local environment, and whānau of ākonga. Hence, they were highly engaged in the content due to their multiple connections to their own lives (i.e. Koro, Uncle, and hunting; a popular topic of interest among ākonga). In this sense, gaming elements can be alluring beyond a sense of play or fun. However, they should also contain elements that are intrinsically significant and specific to their audience both in informal and formal educational settings (Fiş Erümit & Karakuş Yılmaz, 2022). This is vital as it provides ākonga with an element that helps them understand *why* they must learn something, as it informs their level of intrinsic motivation.

The reciprocal nature of the gamification elements must not be undervalued because it substantially contributes to enhancing the motivation and engagement of ākonga, and supports kaiako to be more effective educators of tāne ākonga Māori. For instance, the enthusiasm Whaea displayed for the learning task and forthcoming trip down the awa was reflected in her passionate delivery of the learning content. In turn, her ākonga responded positively and were actively engaged in their learning. Hence, the kaiako and her ākonga made meaningful connections to the learning content and enjoyed the learning session.

Competition

In the context of gamification, *Te Ao* has not been recognised as an element; however, one of its sub-gamification elements is; *competition*. In fact, according to Sepehr and Head (2013), *competition* is a fundamental element of gamification. Furthermore, Reeves and Read (2009) identify the element of *competition* as one of the top 10 main features of successful game designs. However, a discussion in Chapter Three of this thesis regarding *competition* is useful to reiterate. A widely accepted belief that boys like competition is highly influenced by gender stereotypes. Pinkett and Roberts (2019) identified that on the surface, the element of *competition* for boys may appear productive; however, *competition* has proved to be counterproductive for boys and caused harm for their confidence, especially those who are already academically behind. In later research, Roberts (2022) maintain that *competition* could be used effectively by encouraging ākonga to compete against themselves. Thus, aligning with earlier discussions in this thesis (see Chapter Four), where it was pointed out that it is critical for a gamified learning space to be well-designed.

Fadhill and Villafiorita (2017), continue to point out that the true potential of personalised gamification is yet to be explored. With this in mind, one could argue that the element *Te Ao* is highly relevant for tailoring gamification to the needs of tāne ākonga Māori, as it highlights the importance of connecting tāne ākonga Māori learning to real-world contexts. Also, noting the reciprocal nature of gamification elements, the Matua Element, *Te Ao*, prompts kaiako to reflect on the learning content and ask themselves questions such as: *What am I teaching my ākonga? Why? How will this help them and be useful in their lives?*

Overall, the kōrero in this section has provided context for *why* the Matua Element, *Te Ao*, and its corresponding gamification elements (*life skills, interests, meaningful content, exposure, options, connection, and competition*) are crucial for the effective teaching of tāne ākonga Māori. It has also been pointed out that most of these elements (apart from competition) have not yet been considered in current studies of tailored gamification, or GIE but are unique to the concept of tailored gamification, and incorporate both cultural and learning needs of tāne ākonga Māori.

Tikanga

Table 8 - The Matua Element, Tikanga

Matua element	Gamification elements
<i>Mauri</i>	<i>Hā, tāne presence, āhua, te kupu tō te mana, ngā whatumanawa</i>
<i>Mātauranga Māori</i>	<i>Te reo Māori, identity, mana, taiao, kōrero</i>
<i>Whanaungatanga</i>	<i>Relationships, collaboration, whānau, awhi</i>
<i>Te Ao</i>	<i>Life skills, interests, meaningful content, exposure, options, connection, competition</i>
<i>Tikanga</i>	<i>Hands-on activities, achievable goals, learning space, time, pākikitia, reward system</i>
<i>Tinana</i>	<i>Physical movement, ngā taonga tākaro, sports, kinaesthetic, play</i>
<i>Auahatanga</i>	<i>Creativity, music, dance</i>

Tikanga derives from the Māori kupu ‘tika,’ meaning correct. Tikanga relates to Māori cultural customs, procedures, behaviours, habits, methods, techniques, rules, meaning, and purpose. Moreover, in Māori terms, tikanga refers to behaving in a culturally appropriate manner that aligns with Māori customs, practices, and beliefs. Tuhiwai Smith (2015) states that “Notions of tikanga are embedded in the ways people often think and behave” (p.49) and is an area where young people, or people who lack a deeper understanding of their identity, are often challenged. Charles Royal (2017) maintains, “Tikanga Māori are distinctive Māori ways of doing things and cultural behaviours through which Kaupapa Māori are expressed and made tangible” (p.92).

For the purposes of this PhD research, *Tikanga* has been identified as a Matua Element as it embraces gamification elements that represent teaching and learning practices, procedures, methods, and techniques that pakeke have identified as being effective for enhancing the engagement and motivation of tāne ākonga Māori. The gamification elements which align with the Matua Element, *Tikanga*, consist of *hands-on learning, achievable goals, learning space, time, pākikitia, and reward system*. For instance, most tāne Māori participants (pakeke and ākonga) from both Phase One and Phase Two found it easier to learn when they first had a clear demonstration or example. Consequently, they were more likely to succeed and have the confidence to attempt the learning task independently. In particular, the gamification elements align with teaching and learning

practices which; include activities where tāne ākonga Māori can actively use their hands and physically manipulate materials, ensure that learning goals are achievable in the allocated time frame and current knowledge base, set up the learning space thoughtfully and engagingly, and do not expect tāne ākonga Māori to sit and concentrate for long periods.

Hands-on activities

In addition to what was discussed above, pakeke found that if the instructions or learning content were based on pen and paper exercises or the kaiako *telling* them the answers, they found it harder to engage in the learning. Furthermore, most pakeke identified subjects such as art, metalwork, and woodwork were highly motivating for them, primarily because they are more *hands-on*; you get to *do* more, and there is not so much reading and writing involved. During the gamified observations in Phase Two, Whaea provided her ākonga with a physical example of completing one of the communication tasks. Following this, her ākonga could quickly complete the task because they knew what to do. During one of the focus group interviews, ākonga participants noted that they enjoyed watching the example first because they would have found it harder to understand if they had just been *told* how to do the activity. Similarly, Riley et al. (2017) found that tāne ākonga Māori in their study thrived when they could participate in learning activities that included hands-on experimentation. The motivation for the tāne ākonga Māori in their study was illustrated in their following feedback: ““We went out and actually investigated what the problem was instead of ... searching it up on the internet and just viewing it from the computer” ... “‘Cause you actually know it’s true, ’cause we actually found it out ourselves”” (p.83). Here, it is evident that their ākonga were more motivated and experienced more satisfaction in their learning when they had opportunities to make their own discoveries rather than simply reading about someone else’s discoveries or facts from a computer screen.

Learning space

The findings from Phase Two, the Gamification Implementation, highlighted the importance of the set-up of the learning space in a gamified learning environment. For example, the learning space was organised into four different areas ākonga rotated between: the tinana rotation, the kinaesthetic rotation, the quiet rotation, and the activity

rotation. The purpose of each rotation was to create different areas ākongā could physically move and participate in various learning tasks, each with its own atmosphere to encourage learning. More specifically, the tinana rotation had an active/energetic atmosphere (planned to be outside), the kinaesthetic rotation was intended to be on the verandah with soft music playing where ākongā could be creative, and the quiet and activity rotations were planned to be inside, where it was calm. Ākongā could focus on their reading and reading activities. Also, environmental and sensory elements were added, including (but not limited to): a fake campfire set-up, a hoochie (army tent), an entrance tunnel, music in the background, and clay.³⁷ Here, it is important to note that these sensory elements were related to the gamified book they were reading, *Kai Mish* (Appendix 24), a choose-your-own-path hunting book.

Throughout the gamified observations, it was observed that these environmental and sensory elements significantly enhanced the motivation and engagement of ākongā in their learning, as they were inspired by elements that simulated the environment the characters in the story were experiencing. Additionally, the elements incorporated kinaesthetic and tinana elements that encouraged physical movement and creativity. Finally, the different learning areas encouraged a variety of louder/energetic learning spaces and quieter/calmer learning spaces, a contrast that both the kaiako and ākongā participants fed back that they particularly enjoyed.

Time

An additional benefit to the set-up of the learning space was the ability for the kaiako to monitor the element of *time* closely. The rotations were timed so ākongā were not expected to sit and concentrate for long periods. Instead, ākongā had multiple opportunities to physically move around the learning space and experience different activities related to the text they were reading. As mentioned above, ākongā enjoyed the contrast between louder/energetic learning times and concentrated, quiet/focused learning times.

³⁷ See Chapter Six for more details

Reward system, achievable goals

During Phase One, pakeke discussed the concept of ‘*reward systems*’ in an education setting. In short, it was noted that not all pakeke agreed that reward systems were effective for them. More specifically, older pakeke were against implementing a reward system, stating that they did not need extra encouragement to complete a learning task – they just did it because they knew they would get into trouble if they did not. In contrast, pakeke from the two younger discussion groups noted that reward systems are effective if the kaiako is consistent and the prize is worthy. Some pakeke also emphasised the importance of *achievable goals*. For example, boys can typically lose interest if a learning (or reward) goal takes too long to achieve. However, if goals are set within a realistic/achievable timeframe, boys are more likely to engage with them actively. This aligns with research identified in Chapter Four of this thesis by Robertson (2012a); “*the winner effect*,” a phenomenon where the more we experience a win/success, the more dopamine and testosterone are secreted into our brains, and the more we want to win. Hence, increasing our motivation to keep doing more. Essentially, Robertson claims that people who experience the winner effect ultimately escalate into a spiral, where they keep experiencing more and more success. Here, an example is provided of the significant potential that the ‘power of games’ and gamification has for enhancing the motivation and engagement of learning.

Pākikitia

The gamification element, *pākikitia*, refers to the importance for tāne ākonga Māori to understand *why* they are learning the content presented to them; a belief that pakeke from Phase One noted can significantly enhance the motivation and engagement of boy’s learning if understood. This emphasises the importance for kaiako to have a foregrounded understanding of the questions that tāne ākonga Māori may be thinking but not actively asking. For example, “*Why do I need to know this? How will this benefit me? Will I need this for my future mahi? And What is the point of my learning this?*” Pakeke identified that it was more difficult for tāne ākonga Māori to motivate themselves to participate in the learning or to complete their work if they did not know or understand the purpose of the information. This encouraged an approach in Phase Two of this PhD research to focus on increasing Māori boy’s motivation and engagement by clearly stating the learning intentions and that the learning was meaningful and connected to a local

place they were visiting the following week. Hence, it was unanimous from all participants of this project that if the kaiako explicitly stated the purpose behind the learning and ākonga could see how the learning would benefit their life or future goals, their motivation and engagement for learning would significantly increase.

The element, *pākikitia*, aims to ensure kaiako make sure they make it clear to their ākonga the *why* that sits behind the learning so they can make connections to their real lives and become intrinsically motivated for their learning task. Similarly, Dueck (2020) affirms the importance for male ākonga to know *why* they are learning something and states that male ākonga are more likely than female ākonga to exhibit skepticism about the learning content. Hence, when male ākonga exhibit skepticism and ask questions regarding the purpose of the learning; this is not, and should not be seen as defiant behavior. Rather, they are simply seeking further clarification regarding the broader context of the learning and are attempting to make connections to their lives. An example of this was observed during Phase Two, where ākonga participants demonstrated increased motivation and engagement in their learning once they understood its purpose: to learn about a local place of significance they were connected to and were going to visit the following week.

Durie (2011) points out the importance of giving ākonga a deeper understanding of the curriculum content and that poor kaiako fail to demonstrate a passion for the learning content or motivate their ākonga and instead emphasize *getting through* the curriculum rather than *understanding* it. According to Durie, a good kaiako is passionate, committed to the subject they are teaching, and conveys enthusiasm for the learning content. Also, Bishop et al. (2009) recognise that the dominant, traditional pattern in English medium schools, where the kaiako is the active transmitter of pre-determined knowledge and ākonga are the receivers, causes frustration among ākonga Māori. Ultimately, this manifests in poor behavior, the kaiako employing behavioral intervention strategies, further leading to the disruption and break-down of the kaiako-ākonga relationship.

Hence, *pākikitia* is a gamification element that should be used as a prompt for the kaiako to deeply reflect on the nature of the learning content and its relevance to their ākonga, where they can ask themselves questions such as: *Why am I teaching this? How does this learning content relate to my ākonga, or help them in their lives?* Thus, prompting the

āhua that kaiako must create a classroom environment that encourages inquiry and to feel comfortable in seeking clarification the purpose of what they're learning and gaining a deeper understanding of the subject content.

The needs of tāne ākonga have been highlighted throughout the findings of this research via the gamification elements. That is, the gamification elements are aligned with the needs of tāne ākonga Māori, bringing them to the awareness of the kaiako, and in turn, ākonga reap the benefits. Researchers such as Roosta et al. (2016) have identified that a significant disadvantage of gamified learning systems is the uniformity of the gamification elements between learners. More specifically, learners with different personalities and interests all receive the same gamification elements, which, in turn, may cause frustration for ākonga. Thus, the Matua Element, *Tikanga*, is highly justifiable as a gamification element, as it integrates specific tikanga (or teaching and learning practices), which both older and younger tāne Māori have identified for future generations of tāne ākonga Māori as being highly engaging and motivating for their learning, and encompasses a wide range of teaching and learning strategies that are more likely to address a wider range of learning needs/preferences.

This section has provided background information for *why* the Matua Element, *Tikanga*, and its corresponding gamification elements (*hands-on activities, achievable goals, learning space, time, pākikitia, and reward system*) are significant for the effective teaching of tāne ākonga Māori. It has also been pointed out that these elements have not been considered in current studies of tailored gamification, or GIE. Hence, these elements are unique and incorporate both cultural and learning needs of tāne ākonga Māori.

Tinana

Table 9 - The Matua Element, Tinana

Matua element	Gamification elements
<i>Mauri</i>	<i>Hā, tāne presence, āhua, te kupu tō te mana, ngā whatumanawa</i>
<i>Mātauranga Māori</i>	<i>Te reo Māori, identity, mana, taiao, kōrero</i>
<i>Whanaungatanga</i>	<i>Relationships, collaboration, whānau, awhi</i>

<i>Te Ao</i>	<i>Life skills, interests, meaningful content, exposure, options, connection, competition</i>
<i>Tikanga</i>	<i>Hands-on activities, achievable goals, learning space, time, pākikitia, reward system</i>
<i>Tinana</i>	<i>Physical movement, ngā taonga tākaro, sports, kinaesthetic, play</i>
<i>Auahatanga</i>	<i>Creativity, music, dance</i>

Tinana refers to the body, the physical being. A model developed by Durie in 1982, mentioned earlier in this chapter, Te Whare Tapa Whā (Appendix 31), affirms the importance of the element, *tinana*, for Māori. More specifically, Durie identifies that Taha Tinana (the physical side) represents one of the key cornerstones/dimensions of Māori health and well-being. In particular, *tinana* brings awareness to overall physical health and well-being; how the body is looked after; how the body feels, grows, and moves. Thus, if the body is nourished and physical strength is maintained, it can better cope with hardship or difficult times. For the holistic well-being of Māori, Durie (1998) claims that “Tinana is the physical element of the individual and hinengaro the mental state, but these do not make up the whole. Wairua, the spirit and whanau the wider family, complete the shimmering depths of the health pounamu [greenstone/treasure]” (p.70). All participants from this research project maintained that physical activity is critical for the well-being of tāne ākonga Māori. Pakeke emphasised that regular exercise for tāne ākonga Māori is crucial, whereas expecting tāne ākonga Māori to concentrate on pen-and-paper-based learning activities for long periods, especially in the afternoons, is ineffective. An example of this was seen during Phase Two gamified observations, where rotations were utilised in the learning space, giving ākonga a mixture of shorter periods of concentrated learning times and physical/kinaesthetic learning activities. Feedback from the kaiako and ākonga participants noted that they enjoyed the variety of activities and were mainly engaged throughout.

Physical movement, sports

In the context of this PhD research, *Tinana* has been identified as the Matua Element for the following gamification elements: *physical movement, ngā taonga tākaro, sports, reward system, kinaesthetic, and play*. Hence, the Matua Element, *Tinana*, represents gamification elements that can encourage, nurture, and fulfill the physical well-being of

ākonga. An example of this was observed during action research in Phase Two, where ākonga participants were highly motivated by the tinana rotation.³⁸ More specifically, it was observed that having the opportunity to stretch, exercise, and have a turn on the various equipment gave ākonga a much-needed break from learning, and allowed them to exert some energy, before returning to more concentrated learning time in the activity rotations. Furthermore, the feedback from ākonga participants confirmed they enjoyed the kinaesthetic rotation, where they got to manipulate clay. All participants emphasized the importance and positive influence of physical movement, sports, and outdoor games for tāne ākonga Māori.

A common theme among all pakeke was that they needed more opportunities to participate in physical movement, sports, or outdoor games throughout their schooling years. This goes beyond a simple ten minute game of Soccer or Seaweed to fill in time at the end of the day; pakeke emphasised the importance of including sports, games, and other physical activities where tāne ākonga Māori can have opportunities to learn and practice new skills, games, and have a reasonable amount of time to be physically active. Additionally, pakeke identified an unsettling trend that negatively affected quite a few. That is, kaiako in English medium education often resort to taking away time for physical education, sports, or games as a punishment for ākonga not behaving during learning time or failing to complete a learning task. In particular, pakeke noted that kaiako would pick up on their interests (especially if it was rugby, for example) and regularly use it against them as a threat or bribe to make them work harder.

Notably, pakeke claimed that to have sports or physical activity taken away is quite a big thing for tāne ākonga Māori, especially if they are taken out of an important game they had coming up; the burden of letting down their teammates, for them, is devastating and damaging to their reputation amongst their peers. It is understandable to consider that representing the school in a sport carries the responsibility to maintain academic performance and positive behaviour in the classroom. However, pakeke identified that kaiako threatening to take physical education away in class was common and *not* solely

³⁸ See Chapter Six for more details

aimed at ākonga who represent the school in a particular sport. More specifically, P.E. sessions scheduled for the end of the day would often be used as a bribe by the kaiako throughout the day, and would slowly have their time limit diminished as punishment for not listening or completing work, sometimes until the time was completely gone. What has been highlighted here, is that kaiako may need support in *how* to engage ākonga in their learning without needing to resort to such control methods. For instance, kaiako must first consider *why* the learning task was not completed or understood and ask themselves questions such as; *Did my ākonga need more support? Was there a lack of understanding? Was a reasonable time frame given? What other factors may influence the performance of my ākonga?* Hence, the possibility of physical movement may aid in completing the learning task and help the ākonga re-focus, especially considering how beneficial physical education is for boys.

Throughout the discussion group kōrero, this issue raised a few questions among pakeke, where the intentions of the kaiako were questioned, especially regarding why they regularly resorted to such methods of punishment. Pakeke considered: *Do kaiako not have any other skills or methods for steering tāne ākonga Māori in the right direction other than taking away sports? Maybe kaiako need more professional development to increase their skill set in this area. Also, Why would kaiako remove such an integral element of the physical well-being of tāne ākonga Māori (especially during school)?* One pakeke remembered always getting in trouble for skiing during winter. However, he pointed out that skiing was his passion – so why was this not nurtured and encouraged, especially in his education setting? Here, an important issue has been highlighted; kaiako in English medium education must find alternative methods for maintaining positive behaviour, and engagement of tāne ākonga Māori. Hence, taking away sports is counterproductive, especially for the kaiako-ākonga relationship. Instead, kaiako must critically reflect on the root cause of any negative behaviour or disengagement in learning displayed by ākonga in their classroom. For instance, as identified by Bishop (2009), the issue could stem back to a lack of positive kaiako-ākonga relationships or an overemphasis on the behalf of the kaiako trying to push through curriculum content rather than focusing on maintaining positive learning relationships with their ākonga. More importantly, in conjunction with previous discussions, these findings highlight how kaiako taking away or threatening to take away, opportunities to participate in physical activities, including

sports or games, only intensifies the problem.

Kinaesthetic, play

As mentioned, a *kinaesthetic* rotation was incorporated into the gamified learning space during Phase Two. This included a table set up with clay where ākonga were encouraged to *make* the stag the characters in their gamified book, *Kai Mish* (Appendix 24), were hunting. However, making the stag was not compulsory for this rotation; ākonga could *free-play* if they liked, and music was an added sensory element to help promote a creative atmosphere. Ākonga participants were observed thoroughly enjoying this rotation and fed back during their interviews that the clay rotation was one of their favourites. An additional benefit to this rotation in a gamified learning environment is that it gives ākonga a break from concentrated learning and incorporates a creative element that can be linked to their learning content. Furthermore, pakeke from Phase One emphasised that encouraging creativity is highly engaging for tāne ākonga Māori and can also help ākonga who may not be as engaged in the reading or activity rotation still engage with the kaupapa/learning topic. Conclusively, the notion to incorporate elements of *kinaesthetic* and *play* into a learning space is confirmed by Blucher (2017), who, as identified in Chapter Four of this thesis, maintains that play-based learning promotes more in-depth learning and understanding for ākonga, including creativity, problem-solving, self-regulation, critical thinking, and social competence. In a gamified learning environment, this could also be highly effective for older ākonga, especially if the element of play is well-designed (another critical point this thesis has identified for GIE).

Ngā taonga tākaro

An activity the kaiako and ākonga participants thoroughly enjoyed during Phase Two was ngā taonga tākaro (traditional Māori games). In particular, ākonga favoured playing Poi Rākau and Manu Tī. To play Poi Rākau, ākonga stand in a circle with a rākau in front of them. A leader calls either “mataui” (right) or “maui” (left). Then, players move to the right or left, leaving their rākau standing where they were and quickly catching the next rākau before it falls. If the next rākau falls or ākonga go the wrong way, that ākonga is out. The last person standing wins. The benefits of Poi Rākau are to improve hand-eye coordination and increase confidence around rākau. For Manu Tī, ākonga put a tipare (headband) on their head with a rau (feather). ākonga stand opposite their opponent with

their feet shoulder-width apart and try to snatch the other person's feather without moving their feet. This game improves reflexes, spatial awareness, reading an opponent's movements and body language, and peripheral vision.

Through playing ngā taonga tākaro, whanaungatanga and collaboration are promoted. More importantly, ākonga Māori can make strong connections to their culture. For instance, playing ngā taonga tākaro connects ākonga Māori to their tupuna, who traditionally developed games to master essential skills and practice warfare. Brown & Brown (2019) confirms that our (Māori) tupuna developed ngā taonga tākaro for numerous reasons, including enjoyment and social and educational tools, and further identifies benefits such as social binding, peace, health, and technological innovations. Ngā taonga tākaro, therefore, is an excellent example of how a gamified learning environment can incorporate the cultural and learning needs of tāne ākonga Māori into an activity.

Several pakeke made a suggestion they thought would be effective for enhancing the motivation and engagement of the learning of tāne ākonga Māori, with their ideas emphasising greater integration with sports, games, and other physical activities with literacy, numeracy, or other subjects. For example, analysing sports games was identified as a meaningful activity that could incorporate many learning opportunities, including problem-solving, logical thinking, and numeracy and literacy skills. Hence, the potential for the Matua Element, *Tinana*, and its corresponding gamification elements is endless, especially via gamification. For instance, kaiako could integrate *Tikanga* in conjunction with one or two of the gamification elements from the Matua Element, *Tinana*, to enhance motivation and engagement even more. Likewise, researchers in gamification, such as Majuri et al. (2018), recognise that ākonga have different preferences for how they learn, their personality, and their demographic characteristics. Thus, Majuri et al. recommends that future GIE studies address these through gamification elements. Furthermore, Knutas et al. (2018) also state that gamification research should consider the personal characteristics of ākonga.

The kōrero in this section has provided background information regarding *why* the Matua

Element, *Tinana*, and its corresponding gamification elements (*physical movement, ngā taonga tākaro, sports, kinaesthetic, and play*) are impactful for enhancing the motivation and engagement of tāne ākonga Māori. It has also been noted that these elements are unique to the concept of tailored gamification, and incorporate both cultural and learning needs of tāne ākonga Māori. Therefore, it is highly justifiable to consider that the use of these elements in a tailored gamified environment will fulfil the aim of this study; to enhance the motivation and engagement of tāne ākonga Māori in English medium education.

Auahatanga

Table 10 - The Matua Element, Auahatanga

Matua element	Gamification elements
<i>Mauri</i>	<i>Hā, tāne presence, āhua, te kupu tō te mana, ngā whatumanawa</i>
<i>Mātauranga Māori</i>	<i>Te reo Māori, identity, mana, taiao, kōrero</i>
<i>Whanaungatanga</i>	<i>Relationships, collaboration, whānau, awhi</i>
<i>Te Ao</i>	<i>Life skills, interests, meaningful content, exposure, options, connection, competition</i>
<i>Tikanga</i>	<i>Hands-on activities, achievable goals, learning space, time, pākikitia, reward system</i>
<i>Tinana</i>	<i>Physical movement, ngā taonga tākaro, sports, kinaesthetic, play</i>
<i>Auahatanga</i>	<i>Creativity, music, dance</i>

Auahatanga relates to creativity and extends beyond arts, crafts, and imagination. Also, auahatanga involves the (often complex) more comprehensive integration of elements such as intuition, imagination, innovation, problem-solving, logical thinking, uplifting others, survival, spirituality, and cultural identity. Indigenous researchers such as Tuhiwai Smith (1999) maintain that “creating is not just about the artistic endeavours of individuals but about the spirit of creating which Indigenous communities have exercised over thousands of years” (p.158). Similarly, tāne Māori pakeke from this study identified that integrating creative elements into learning activities can significantly enhance their motivation and engagement, especially in hands-on activities. This was observed during Phase Two, where integrating the kinaesthetic rotation into the gamified learning space provided ākonga participants with a creative outlet that proved to be a highly engaging, popular activity. Both previous research and this study confirm that creativity can be a

complex process that stems from Indigenous ideologies, ways of being, and survival.

Creativity

According to Tuhiwai Smith (1999), Indigenous people's ability to create and be creative has allowed them to survive and develop innovative solutions to various problems. She maintains that Indigenous people have an imaginative spirit, an ability to think around a problem, and to adapt. Additionally, Bright (2014) claims that, from an Indigenous perspective, *auahatanga* includes spirituality (such as meditation or rituals), intuition, innovation, a state of personal fulfillment, and uplifting the spirits of others. For the purposes of this research project, *Auahatanga* has been recognised as the Matua Element for the following gamification elements: *creativity*, *music*, and *dance*. Furthermore, it is worth noting that these gamification elements are just the beginning and have huge growth potential, such as adding the elements suggested above.

Pakeke identified that to enhance the engagement and motivation of *tāne ākonga* Māori, they need more opportunities to be creative. More specifically, pakeke pointed out that not everyone learns in the same way. Hence, offering alternative teaching and learning methods will give *tāne ākonga* Māori a chance to succeed in a way that better aligns with how they learn. This could include providing them with more: hands-on activities, problem-solving tasks, learning activities that promote logical thinking, different challenges, thoughtful projects, a chance to be innovative and inventive, and activities that prompt and encourage them to use their imagination. Additionally, the Matua Element, *Auahatanga*, encourages *the kaiako* to be more creative and think critically about *how* they can teach *tāne ākonga* Māori in their learning space in a more innovative, fun, and engaging manner.

Webber and Macfarlane (2020) argue that schools that contribute primarily to the success of their *ākonga* Māori offer them plenty of opportunities to be innovative and creative, take risks, try new things, and go to new places. Also, Koya Vaka'uta (2021) claims that quality teaching and learning do not solely relate to programmed learning, producing teaching, or learning machines. Instead, quality teaching must remain a creative human endeavour that aims to place the learner at the centre, and provide meaningful social learning experiences for them. Another critical point of discussion emphasised by pakeke

is that a teaching and learning environment where the creative side of tāne ākonga Māori is promoted and encouraged ultimately sets them up for essential skills they can transfer to their real lives and future mahi. This aligns with the previous kōrero in this chapter regarding the Matua Element, *Te Ao*, where connecting learning to the wider world for ākonga, especially their future career interests, is essential for enhancing their engagement and motivation.

During action research in Phase Two, priority was given to ensure that the learning space was thoughtfully set up to be highly engaging for tāne ākonga Māori and give them plenty of opportunities to be creative. In particular, various rotations and activities were planned to promote imagination and creativity. Here, it is essential to note that the kaiako participant extended the original plan for action research and added her own environmental and sensory elements to the learning space, which, ultimately, significantly improved the set-up of the learning space and increased potential for ākonga to be creative.³⁹ This partly stemmed from the urgency to make some last-minute modifications to the learning space due to poor weather, that restricted original plans to take ākonga out into the taiao, and set up two of the rotations outside. Also, pakeke from Phase One contributed many ideas for how kaiako could enhance the element of *creativity* in their learning space. For instance, they suggested that setting up challenges, such as building a structure that needs to hold a specific weight or building something that can float only using a limited number of resources, would be highly engaging for tāne ākonga Māori.

Music, dance

Pakeke from Phase One noted that Māori tend to be creative people who are musically inclined. Given this, pakeke suggested that engaging tāne ākonga Māori through a creative lens, such as *music* or *dance* (i.e. kapahaka), would be effective. *Dance* was not trialled during Phase Two. However, *music* was, and was the only element that required technology. Whaea, the kaiako participant, played ngahere sounds in the background to add the sensory element of sound. Here, Whaea wanted her ākonga to connect with the

³⁹ See Chapter Six for more details

characters in the gamified book, *Kai Mish* (Appendix 24), and feel like they were in the bush hunting. Ākonga responded well to the sound effects, which elevated the environmental elements Whaea had put in the learning space.

Additionally, ākonga participants during Phase Two pointed out that modern music and video outlets, such as YouTube, provide a vast potential space for ākonga to share their understanding and interpretation of their learning. Finally, pakeke made some recommendations regarding teaching tāne ākonga Māori about various tools, how to use them safely and providing more opportunities for hands-on building experience. As mentioned above, these recommendations can connect tāne ākonga Māori learning to real-world contexts and provide them with tangible life skills they can use in their future. The importance of meaningful learning experiences where ākonga can connect to the real world is also affirmed by Webber et al. (2020). Here, Webber et al. point out that when ākonga Māori worked collaboratively to solve real-world, local problems, this greatly increased gifted ākonga Māori engagement in their learning.

The kōrero in this section has identified numerous examples of how the Matua Element, *Auahatanga*, and its corresponding gamification elements can effectively enhance the motivation and engagement of tāne ākonga Māori in English medium education settings. In gamification, the element identified earlier, *music*, has been recognised in the literature as an element. Therefore, building on the element of *music* and identify *Auahatanga* as a Matua Element aligns with current literature in the field of gamification. Furthermore, since creativity has been identified as effective for enhancing tāne ākonga Māori learning, this justifies considering the Matua Element, *Auahatanga*, for tailoring gamification to their needs. Additionally, researchers such as Knutas et al. (2018) state that to embrace the full potential of gamification, gamification systems should tailor gaming elements to the specific needs of their users. During Phase One, pakeke reflected on current games and technology and how much learning can be involved in playing some of them. For instance, one of the pakeke mentioned a game he plays, which involves him learning to manage money while running a whole village. In the game, players even learn about the different seasons of the year and when the best time to plant would be. However, the dilemma with these games is that they are fully technology-based. Hence, when

considering future generations of tāne ākonga Māori, pakeke proposed the following question: *How can we, through the use of minimal, or no technology at all, creatively design games, activities, learning resources, and meaningful experiences which are fun and engaging, incorporate our taiao, and embrace our cultural needs?*

Chapter Nine and Ten has discussed in-depth the Matua Elements identified from Phase One of this PhD research project, their corresponding gamification elements, and how they relate to the aim. Furthermore, the findings from Phase Two have been integrated throughout the discussions and how they relate to the Matua Elements. As mentioned at the beginning of this chapter, it is worth noting that the cultural elements identified in this chapter are not the only cultural elements that can be effective for enhancing the motivation and engagement of tāne ākonga Māori in their learning space; they are precisely the elements which have been identified from the key findings of Phase One and Phase Two of this study. This emphasises the great potential for future development regarding tailoring gamification to the needs of tāne ākonga Māori.

Chapter Eleven concludes this thesis. It reiterates the significance of the kaiako element, tailoring gamification to the needs of tāne ākonga Māori, developing a gamification framework for educational purposes, and putting forward limitations of this study and recommendations for future research.

Chapter Eleven: For future generations

This final chapter summarises the thesis, highlighting in particular the significant influence a kaiako can have on their ākonga, especially their motivation and engagement in their learning. I then identify how gamifying a learning space can guide teachers into becoming more effective in their pedagogy with tāne ākonga Māori. Additionally, a discussion regarding the logistics of gamifying a learning space is provided, emphasising the urgency of developing a Gamification Framework for Education to ensure the gamified learning space is well-designed. The limitations of this study, as well as recommendations for future research, are described.

This thesis set out to explore: *How tāne ākonga Māori can engage through a Māori gamification model in their learning spaces?* The rationale for this question originated from an urgent need to provide tāne ākonga Māori who attend English medium education settings in Aotearoa with an engaging teaching and learning pedagogy that caters to their unique needs as Māori.⁴⁰ Reflecting on *how* to improve the engagement and motivation of learning for ākonga led to the concept of gaming. More specifically, when informally observing the engagement of tamariki while gaming or using technology raised additional questions, including: *What motivates learners to play the game, persist and stick with problem-solving for so long? What is the science behind it; is this something that can be utilised to motivate ākonga in their learning space?*⁴¹ Preliminary research into these questions led to the concept of gamification. Furthermore, inspiration for this research was gained from reviewing the existing examples of GIE, which showed potential regarding its adaptability to the specific needs of ākonga.

In this study, I proposed two significant factors that must be catered for when tailoring GIE to the needs of tāne ākonga Māori: their cultural and male learning needs. Hence, this study investigated these aspects, intending to derive gamification elements from the

⁴⁰ The unique needs of Māori are discussed in more detail throughout Chapters Three and Seven

⁴¹ Deeper discussion of these questions is had in Chapter Four

findings. Pakeke were given the opportunity to contribute to this research project and share their experiences within the English medium education system. Then, I analysed their kōrero and derived 'Matua Elements' (and corresponding gamification elements) for tailoring gamification to the needs of tāne ākonga Māori. Some of these elements were trialled in an English medium primary school where observations were made, and feedback was gained from the kaiako and ākonga. Next, the elements were evaluated regarding their legibility and alignment to the needs of tāne ākonga Māori. This PhD research sought to adapt gamification methods *using very little technology*. The only technology utilised during the gamified sessions was used to play music as a sensory element. Hence, debunking the assumption that 'gamification' or 'gamification in education' is solely technology-based and proving that gamification can be successfully integrated as a teaching pedagogy into educational settings without using any technology.

Overall, the findings from this study demonstrate that tāne ākonga Māori can successfully engage in their learning via a Māori gamification model. More specifically, in order of priority, this PhD research project found that:

- GIE can be tailored to the needs of tāne ākonga Māori by integrating gamification elements that cater to both Māori boy's cultural needs and their needs as male learners.
- A learning space can be successfully gamified using minimal or no technology.
- GIE is highly engaging and motivating for *all* ākonga, not just tāne ākonga Māori.
- GIE can be tailored to the needs of various ākonga by adapting the gamification elements.
- The nature of the Matua Elements, and their corresponding gamification elements, are reciprocal. They pertain to the kaiako just as much as the ākonga. Hence, the gamification elements support and guide all kaiako to best cater to the specific learning needs of tāne ākonga Māori.

- A gamified learning space must be well-designed⁴² to impact the learning of ākonga positively.
- Before integrating the Matua Elements into a framework, further investigation is required to ensure the gamified is well-designed and a flow state is successfully achieved.

The above points highlight the main conclusions from this PhD research and answer the leading research question. GIE has vast potential and is an innovative, creative teaching pedagogy highly relevant for current and future generations of students. The proposed *Matua Elements* have pushed the boundaries of tailored GIE while considering cultural and other gamification elements specific to tāne ākonga Māori. More specifically, this study dove into cultural and other gamification elements (catering to male learners) that current studies on gamification neglect to address. Furthermore, this study proposes that gamification elements are reciprocal and influence the kaiako and ākonga. Again, this is also a new concept of tailored GIE. Therefore, this study's contribution to the field is significant and has immense potential for future growth, especially regarding developing a gamification framework for educational purposes.

The kaiako element

A predominant argument made throughout this thesis is how impactful the kaiako is in the learning space, especially regarding their influence on the motivation and engagement of their ākonga. Hence, the kaiako element is fundamental to a pedagogy such as tailored gamification in educational contexts. Current studies of tailored GIE neglect to recognise the kaiako in this manner or identify *their* impact on the learning of their ākonga. Instead, gamification elements are often used to motivate *ākonga* without guiding the kaiako to adopt more engaging teaching practices. Accordingly, this PhD research project has proposed that gamification elements have a reciprocal nature, where they pertain to the

⁴² See Chapter Four for more details.

kaiako and their ākonga. Therefore, the influence of the kaiako has been highlighted, and the ability of gamification to promote behavioural change has been capitalized on for both ākonga *and* their kaiako.

In this sense, gamification elements contain multiple learning factors that are beneficial for the kaiako and their ākonga. Hence, the impact of the kaiako is dependent on their ability to be knowledgeable of specific gamification elements that promote positive behavioural change. Pakeke also confirmed this, noting that the kaiako has the power to encourage, uplift, inspire, and excite their students. However, one of the main challenges in English medium education settings is the lack of kaiako Māori – especially tāne kaiako Māori. Often, this leads to tāne ākonga Māori being taught by teachers who lack knowledge of te ao Māori or how to effectively and respectfully integrate them into their teaching practices. Additionally, a lack of male teachers can lead to further disengagement of the learning of tāne ākonga Māori, as misunderstandings or communication breakdowns can occur between male students and female teachers (Roberts, 2022).

Therefore, part of the intention to integrate a pedagogy such as tailored gamification is to guide the kaiako to utilise teaching and learning practices that pakeke from this study have identified as being highly effective for the teaching of tāne ākonga Māori. The other part is to enhance the engagement and motivation of tāne ākonga Māori by integrating fun gamification elements that align with their cultural needs. Ultimately, ākonga will reap the benefits as they experience a teaching and learning environment more catered to their cultural and learning needs as males.

Gamifying a learning space

Overall, this study has highlighted that when gamifying a learning space, the focus should not solely be on ākonga. Instead, kaiako must reflect on their own mauri and teaching practices to be the best kaiako for their ākonga. Throughout the gamifying process, this PhD research proposes that kaiako integrate seven significant Matua Elements into their teaching and learning practice. However, further investigation into the gamifying process

is recommended to clarify the logistics of the ‘gamifying process,’ including:

- How many gamification elements must be used before a learning space is ‘well-designed?’
- Does *each* Matua Element need to be implemented before a gamified learning space can be considered ‘well-designed?’
- Is there a particular order the Matua Elements need to be in?

Considering the above questions and the importance of each Matua Element, it is plausible to consider that each Matua Element needs to be integrated into the learning space to ensure it is well-designed. Therefore, the gamifying process should include selecting *at least one* gamification element that aligns with each Matua Element. Also, this would provide flexibility regarding the nature of the learning activities, including *how* kaiako can implement the gamification elements to cater to the particular needs of their ākonga and the learning content.

One of the earlier points highlighted how ordering the Matua elements may be required, although, in order to confirm this point, further research is required. On this account, ordering the Matua Elements would not make one Matua Element more important than the other; it would aid in the gamifying process and provide more of a guide for kaiako to follow. Here, the order of the Matua Elements in the table above has been purposeful, especially regarding the Matua Element, *Mauri*, being at the forefront. *Mauri* is an integral element that should be focused on *prior* to learning, both for the kaiako and their ākonga, including karakia, relationship building/maintaining, checking in on ākonga before class (i.e. discussions/kōrero), warm-up activities, and games. Then, ākonga are more likely to be calm, quiet, and focused *before* teaching and learning commence.

The Matua Element, *Mauri*, was discussed in-depth in Chapter Nine. Pakeke from Phase One identified that mauri was a missing element throughout their experiences in English medium education and is crucial to cultivate for future generations of tāne ākonga Māori. It was recognised that the mauri of the kaiako greatly influences the motivation and engagement of the learning of their ākonga, and is reflected in the *āhua* of the kaiako. In an educational context, this looks like role modelling a calm, caring, and positive ‘vibe,’ even during times of frustration. Hence, *āhua* is observed in the manner that kaiako carry

themselves, treat their ākonga, speak and listen to their ākonga, how they react to their ākonga, and their overall demeanor and presence in the learning space. Essentially, pakeke noted that ākonga emulate the mauri of their kaiako, emphasising the significant impact kaiako have in the learning space, especially on their ākonga.

Following *Mauri*, *Mātauranga Māori* has been listed as the second most important Matua Element. This is mainly due to its focus on incorporating te ao Māori into the learning space, another critical element for catering gamification to the needs of tāne ākonga Māori. This study showed that the remaining Matua Elements share an equal level of importance and can be applied in any order.

It is critical to point out that the word ‘achievement’ has *not* been mentioned anywhere in this thesis *as a goal or outcome for using GIE*. The focus of this PhD research has not been on achievement. Instead, the focus has been on *enhancing the motivation and engagement* of tāne ākonga Māori in English medium education settings. Moreover, this study has demonstrated that if: the needs of tāne ākonga Māori are catered for, they are far more likely to be intrinsically motivated, have a good relationship with their kaiako, and be genuinely *happy* in their learning space, and in turn, experience achievement as a natural outcome of learning. As discussed earlier in this chapter, this begins with the kaiako and their ability to adapt gamification elements in a manner that is fun, engaging, and also aligns (i.e. is relevant) to the learning content. Overall, this reaffirms the importance of a well-designed gamified learning space, which requires using a gamification framework for education.

The importance of a gamification framework for education

GIE is still in its infancy, which motivated the necessity for this research (Oliveira et al., 2022a & Ofosu-Ampong, 2020). Consequently, the process for effectively gamifying a learning space is still being developed and requires further investigation. Given this, it was essential for this PhD research project to consider *how* educators could be supported throughout the process of gamifying a learning space. Hence, the need for a gamification

framework for education has been emphasised, as it would provide a deeper understanding regarding how to identify when GIE is being used and how to differentiate it from the various other electronic or game-based learning initiatives, such as e-learning, online learning, game-based learning, serious games, or gamification (EOGL). Further rationale regarding the need for a framework was discussed throughout this thesis and included ensuring that educators' workloads are not increased throughout the gamifying process, and the importance of the gamified learning space being well-designed. More specifically, this PhD research proves that developing a gamification framework for education would guide educators in aligning their gamified learning space to the cultural and learning needs of tāne ākonga Māori.

I have argued in regards to how to gamify a learning space is dependent on establishing boundaries for GIE. More specifically, if there is confusion about *which* EOGL initiative is being applied, this can make it almost impossible to ensure that the initiative is being effectively used or is well-designed, as each EOGL has its own set of rules and boundaries to make it effective. Therefore, this emphasises the need to develop a gamification framework specifically for educational purposes to clarify the boundaries of GIE. Then, the process of gamifying a learning space can be streamlined, rather than educators randomly selecting and integrating gamification elements into a learning space with limited understanding of their implications or what combinations of gamification elements would be suitable. Also, this framework would guide kaiako regarding *how* to gamify a learning space with minimal or no technology.

The process of gamifying a learning space can be complex and time-consuming for kaiako. The role of the kaiako in the gamified design is often undervalued and still needs to be investigated. The importance of the gamified design and the gamification framework being user-friendly and understood by the kaiako is imperative to the success of GIE. A consequence of not being kaiako-friendly could ultimately result in kaiako abandoning the concept of gamification for their classrooms and resorting back to traditional methods of teaching and learning. With this in mind, developing a gamification framework for education would be the next logical step for future research. On account of this, this chapter will now identify the limitations of this study, followed by recommendations for future research.

Limitations of this study

This section examines limitations across the following areas; the participants, the school, the weather, and researching during Covid-19.

Participants

Two different phases of data gathering were conducted for this PhD research project. Phase One, Pakeke Kōrero, saw pakeke interviewed via discussion groups of five pakeke each. Phase Two was the Gamification Implementation, where action research conducted within a senior English medium primary school classroom, with one kaiako and her class⁴³ of senior ākonga (who were observed, photographed, videoed, and interviewed). The time, effort, knowledge-sharing, and aroha received from all participants and their whānau is greatly appreciated. Their contributions are of the utmost value, as it has provided this research with essential feedback that directly contributes to the overall outcome, intending to benefit future generations of tāne ākonga Māori. With this in mind, it is essential to point out that there are also some limitations to the contributions of these participants, which are further discussed below.

Pakeke Kōrero participants

The participants during Phase One, Pakeke Kōrero, were pakeke - older tāne Māori aged 17 years and above. The goal was to run four discussion groups with similar-aged pakeke (17 – 25, 26 - 39, 40 - 50, and 50+). As mentioned in Chapter Two, the rationale for the age groups was to ensure that pakeke felt as comfortable as possible and could also speak to their experiences of being in the education system around the same time. However, while 20 pakeke were recruited, only 14 made it to the Pakeke Kōrero. This lower number of pakeke could be viewed as limiting the range of feedback received. Nevertheless, another argument could be made regarding the fact that this qualitative study sought to gain in-depth data, which was achieved via these Pakeke Kōrero.

⁴³ 21 ākonga were in her class in total; 17 who agreed to be participants for this PhD research project

Kaiako participant

As per the scope of this study, one kaiako participated, Whaea. Consequently, the observations and feedback gained from this kaiako only represented one person's view. Hence, it would be beneficial for future research to examine the perspectives and experiences of several kaiako, where it is possible to compare and contrast their views to expand on the information provided in this thesis.

Ākonga participants

There were 17 *ākonga* participants in this study; 11 tāne ākonga Māori, two non-Māori and four Māori females. Due to the low number of ākonga participants, there was a limitation concerning the amount of data collected. In other words, more ākonga, especially from different classrooms and schools, would have provided a more comprehensive range of observations and feedback regarding comparing gamified to traditional learning spaces. Moreover, given the aim and scope of this research, only male ākonga Māori participants were interviewed via focus groups following the observations. However, it would be suitable for future research to include the voices and opinions of all ākonga.

The School

One small, rural school was selected to conduct the Gamification Implementation during Phase Two and was the second school recruited due to the withdrawal of the first kaiako participant. The fact that only one school was selected could have limited the overall results. Hence, a larger school, or multiple schools would provide a wider range and more comprehensive data for future research. On another note, the ratio of boys and girls in most schools often represents more of a balance. However, the senior classroom involved in this study had a high percentage of tāne ākonga Māori (11 out of 17 ākonga; 64.7%). Also, out of the girls in the class, only four participated in the study. Hence, the class was very 'boy heavy,' which could have unintended consequences on the social and play behaviour of the classroom as a whole. Additionally, the higher number of boys aligns with the kaupapa of this PhD research and could have enriched the overall outcome.

Researching during Covid-19

Covid-19 lockdowns were largely affecting Aotearoa during Phase Two of this research.⁴⁴ Here, my original intention was to conduct the Gamification Implementation in either term two or term three of the school year, as these terms tend to be less disruptive for kaiako. However, due to Covid-19 lockdowns, and the introduction of strict policies regarding entering school grounds, the Gamification Implementation could only take place in term four, one of the busiest terms of the year. This is especially relevant for seniors anxious about completing primary school and beginning college. Hence, this ultimately led to the first kaiako participant withdrawing from this study.⁴⁵ When a new school and kaiako participant was recruited, only four weeks of term four was left. As a result, the time to recruit new participants and conduct the eight observations became extremely limited.

Due to the above time crunch, the gamified observations occurred on days with poor weather and could not be postponed to another day, as there was no time to do so. Also, two gamified observations had to be conducted in one day rather than one or two gamified observations per week spread out over a more extended period (as initially planned). Having two gamified sessions in one day ended up working well. That is, the set-up of the learning space was one where you would want to avoid having to pack down and set up again for another day (due to the immense workload). Therefore, having two observations in a row became an advantage. However, a longitudinal study for the Gamification Implementation would be more ideal, so factors such as novelty will not affect the reactions of ākonga to the gamified environment.

Recommendations for future research

This section will identify and discuss recommendations for future research to aid further development in the field, including kōrero with kaumātua, wānanga (to meet, deliberate,

⁴⁴ See Chapter Two

⁴⁵ See Chapter Two

and consider), length of study, learning content, resourcing, number of participants, and the use of a gamification framework for education.

Kōrero with kaumātua

The cultural elements in this PhD research have been identified by: conducting research, my knowledge and experiences as an educator and practitioner, and analysing kōrero from pakeke in the Phase One Pakeke Kōrero. Here, it is essential to note that one of the Pakeke Kōrero during Phase One involved pakeke over the age of 50. The significance of this is the importance of kaumātua for Māori. Kaumātua hold high status in Māori whānau, hapū, and iwi. Traditionally, Māori knowledge, stories, cultural values, beliefs, and traditions are passed down generations through kaumātua. Therefore, especially regarding future identification and development of *cultural* elements for tailoring gamification to the needs of tāne ākonga Māori, it is important to acknowledge the status of kaumātua and include *more* kaumātua in the research process in the future, both male and female. This could be achieved in many ways, including one-on-one interviews, discussion groups, or wānanga.

Wānanga

Wānanga means to meet, kōrero, deliberate, and consider. Hence, for the context of future research, conducting wānanga would involve meeting with several participants at once, possibly at a local place of significance the participants would feel most comfortable with, such as their local marae. Then, the researcher and participants would engage in protocols such as pōwhiri (a welcoming ceremony), kai, and whakawhanaungatanga. Next, the researcher would share the kaupapa of the PhD research project and pose questions to the participants. Following this, participants would then have the opportunity to share their thoughts, stories, wisdom, and recommendations regarding identifying cultural elements for engaging tāne ākonga Māori. This process of wānanga allows the sharing of knowledge, ideas, and understandings that ultimately leads to the formulation of new knowledge and decision-making for the benefit of future generations. Furthermore, wānanga are conducted in a culturally appropriate manner, allowing participants' contributions to be shared in a safe space.

If wānanga were to be conducted for future research, it would be recommended to plan several wānanga, possibly in different rohe around Aotearoa, to gain a comprehensive perspective. However, it is worth noting that Māori iwi have differences regarding tikanga and beliefs for different rohe. Therefore, careful consideration would need to go into conducting wānanga across different rohe, as varying viewpoints may clash between different iwi. Here, an additional recommendation could be to provide iwi with the flexibility to choose their own *Matua* or gamification elements to suit their rohe. Accordingly, this raises the possibility that the Matua Elements in the gamification framework could be interchangeable to make it even more suitable to the needs of the learners'/iwi/rohe it is intended.

Length of study

Covid-19 lockdowns largely hindered the length of the Gamification Implementation during Phase Two of this study. Due to this, several factors may have affected the responses of the kaiako and ākonga including stress, the anticipation of finishing school/beginning college, and the interruption of end-of-year activities, such as assessments, reporting, kapahaka, and prize-giving. Therefore, for future research, it is highly recommended to undertake the Gamification Implementation at a much more suitable time of year, which, notably, was the original intention for this PhD research, such as term two or three. Then, a longer study could achieve an outcome that will ideally not be as affected by factors such as novelty or causing extra stress on the kaiako participant due to a time crunch. Also, more feedback would be gained over an extended period, which could achieve a more extensive picture regarding the longer-term influence of gamification in the learning space.

Curriculum content

This PhD research project exclusively observed literacy lessons. For future research, trialling the gamifying method suggested in this study across numerous subject areas would be recommended. Then, it would be worth noting if the identified Matua Elements are effective for all subjects and if there are any differences in the responses of ākonga to their learning between the different subjects in a gamified learning space. Here, the flexibility of tailored gamification would be tested, especially regarding its capability to

be integrated curriculum-wide.

Resourcing

During the Gamification Implementation, literacy was the focus for the content of all eight observations in the classroom because literacy was identified by pakeke as the most challenging subject for them when they attended school. Furthermore, pakeke also confirmed that tāne ākonga Māori need extra encouragement and support for developing their communication skills.⁴⁶ Additionally, communication skills support literacy learning, as ākonga are expected to articulate more in-depth about what they have read at the senior primary school level.⁴⁷ On account of this, a gamified book *Kai Mish* (Appendix 24) was developed, and written by myself (a choose-your-own-path story where Koro and Uncle take their two nephews hunting). The book integrated gamification elements that were derived from the Pakeke Kōrero from Phase One and included Whakawhitinga kōrero (Appendix 25) for ākonga to complete.

Throughout the gamified observations, problems regarding the nature of the questions in the Whakawhitinga kōrero arose. For instance, Whaea noticed that many questions required ākonga to infer meaning. If ākonga had never been hunting, this made it difficult for them. As a result, some ākonga worked very hard, however, they never completed the task because they could not understand some of the deeper meanings of the text. Ākonga who were more familiar with hunting found the task a lot easier. Here, Whaea recommended that in the future, perhaps more of a variety of questions could be added alongside the option to choose which questions ākonga wanted to answer. Additionally, having only one text for ākonga to read further limited their options.

On reflection, the book might not need to be gamified. It could be more effective to gamify the *learning space* rather than the *text*. Here, ākonga would experience the sensory and environmental elements when choosing from a wider range of published literature, an important point that Whaea also noted during one of her interviews. However, there

⁴⁶ This was discussed in-depth in Chapter Six

⁴⁷ Also refer to Chapter Six for more details

needed to be more time to write multiple books for this study to try and combat this (i.e. provide ākonga with multiple options of gamified books to read). In a more longitudinal study, this could be an option to try. However, as suggested above, gamifying the *learning space* instead of the text could logistically be a more suitable option.

Participant range

This study conducted the Gamification Implementation in one English medium primary school, in one senior classroom. Conducting future research across several schools, in various classrooms, and different areas is highly recommended to gain a wider range of feedback from a variety of ākonga and kaiako participants. Also, as mentioned earlier in this thesis, interviewing *all* ākonga in the learning space would be beneficial, noting which responses are from tāne Māori participants. Here, this would ensure that the kaupapa of aligning to the needs of tāne ākonga Māori is upheld and still gain feedback from other ākonga to see if they enjoyed the gamification method.

Trialling a Gamification Framework for Education

This thesis has emphasised that more trialling and investigation is required before a gamification framework for education can be confirmed. More specifically, the importance of a framework has been discussed, especially regarding ensuring that the framework is user-friendly for kaiako. Then, a framework would aid in ensuring that a gamified learning space is well-designed. This is especially important, considering that previous studies of GIE have shown that certain combinations of gamification elements, especially when they are aligned to curriculum standards, can cause harm to ākonga.⁴⁸

Therefore, a logical next step, after kōrero with various kaumātua and wānanga to verify the Matua Elements, would be to draft a framework and trial it with various kaiako and ākonga participants to gain feedback regarding how user-friendly it is. Then, a comprehensive evaluation of the framework can be gained, including observations in a classroom where various combinations of Matua Elements and their corresponding

⁴⁸ The importance of a well-designed learning space is discussed in-depth throughout Chapter Four

gamification elements can also be evaluated.

A final reflection

My intentions for this PhD research were to investigate *how* kaiako could improve their teaching practices to become more effective educators of tāne ākonga Māori and use this knowledge to develop a fun, highly engaging pedagogy for teaching and learning. Ultimately, this led to tailored gamification for education. By integrating tailored GIE, I anticipate that *all* ākonga in the learning space will significantly reap the benefits and experience a teaching and learning environment where they are happier and more intrinsically motivated. Also, I am confident that ākonga Māori (boys *and* girls) will have their cultural and learning needs better catered for in a well-designed gamified learning space.

Additionally, research into gamification identified a common misconception that gamification, or GIE, is solely technology-based. Consequently, this made me determined to *prove* that gamification can be integrated successfully into educational settings *with either no, or minimal use of any technology*. Therefore, my goal was to disprove the misconception of GIE, I pushed the boundaries and introduced a method of tailored gamification that can significantly benefit *all* ākonga in the learning space *and* their kaiako. Also, it is anticipated that the method of tailored gamification posed in this study is user-friendly. It is not limited by the requirement of expensive resources or extensive preparation and can be utilised by schools with limited budgets and low resources.

There is much room for future development, especially regarding best practices for implementing cultural elements into the learning space. This study has also demonstrated that educating kaiako regarding male learning needs and combining these with the cultural needs of tāne ākonga Māori has enormous potential in tailored gamification and assisting kaiako to become more effective educators of tāne ākonga Māori. Furthermore, even though the focus of this PhD research is on the needs of tāne ākonga Māori, this project has indicated that this method of tailored gamification proposed can greatly benefit *all* ākonga, regardless of their culture or gender. The kaupapa of this study has

ensured that the learning needs of tāne ākongā Māori are not neglected within the English medium educational system.

Here, it is also important to reiterate that the cultural elements identified throughout this PhD research project are *not the only* cultural elements that can enhance the motivation and engagement of tāne ākongā Māori. It is anticipated that through future research with Māori (as suggested earlier), additional cultural elements may be identified, and possibly even adapted between the various beliefs or tikanga of different iwi.

I have worked with numerous colleagues in early childhood, primary, and college educational settings. I am inspired by their passion, commitment to their mahi, dedication, and tireless efforts to provide their ākongā with the best learning experiences they can, even in stressful moments when the pressure and politics of the job are intense. It is intended that the outcome of this PhD research helps to support both Māori and non-Māori educators in Aotearoa to understand their male ākongā Māori better and, consequently, cater more to their unique needs as not only Māori but as male learners.

This research project has been an emotional journey. The kaupapa was initially inspired by my tamariki, and the ākongā I am blessed to have the opportunity to teach. I love being a kaiako. It is truly a privilege to be trusted with the education of somebody's child, have opportunities to create fun and engaging learning experiences for them, and to be there for them through their successes and failures. Every ākongā carries their unique whakapapa, history, values, beliefs, and dreams for their future. Hence, as their kaiako, my job is to nurture their values, beliefs and encourage them to pursue their dreams. Whaea is a colleague I have worked with for a few years, and who shared some wisdom she was given from a principal she used to work with, which nicely sums up this thesis:

Never forget, every child is someone's precious taonga
[treasure]... There's no child that people don't care about.
None... I have yet to meet the parents, or the Nan or Koro that
don't want more for their babies than what they had.

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Appendices

Phase One documents and forms

1. Discussion group Information sheet



A Gamification Framework for education to engage Māori boys in their learning spaces

INFORMATION SHEET: STAGE 1

Researcher Introduction

*Ko Matua te Tapu me Maungarake ngā maunga
Ko Waingongoro me Ruamahunga ngā awa
Ko Aotea me Takitimu ngā waka
Ko Mawhitiwhiti me Hurunui-o-rangi me Makirikiri ngā marae
Ko Ngaruahinerangi me Ngati Kahungunu ngā iwi
Ko Kanihi te Hapū i te taha o tōku Pāpā
Ko Tamzyn Rosina Paewai – Te Riaki tōku ingoa*

My name is Tamzyn Paewai - Te Riaki. I am in my 13th year of study at Massey University, currently studying a PhD in Māori studies. I am presently working on a research project called "A Gamification Framework for education to engage Māori boys in their learning spaces."

This research project aims to investigate ways to improve the engagement, motivation and achievement of Maori boys in their education settings through gamification. Gamification is when you take the elements of a game (such as strategy, chance, reward, aesthetics etc.) and you use them in a non-gaming context – in this case, education. The goal of gamification is to enhance the motivation, engagement and participation of the participant. The purpose of the research is to support Year 7/8 Māori boys to be more motivated, engaged and achieve as Māori in mainstream primary education settings.

Project Description and Invitation

I am passionate about our Māori tamariki succeeding as Māori in mainstream education settings. I am especially interested in supporting our Māori boys to reach their full potential and to see them motivated and excited about their learning. This research project will produce a Gamification Framework which educators can use to 'gamify' teaching and learning experiences. The Gamification Framework will be designed to specifically cater to the needs of our Māori boys, providing them with learning experiences which they can connect and experience more success with.

I would like to invite you with an opportunity to be a participant in this research project. If you decide to participate, your contributions will help future generations of Māori boys experience teaching and learning methods in their education settings which better cater to their needs as Māori.

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Participant Identification and Recruitment

Recruitment method:

Step one: I will approach you as a potential participant and provide you with information regarding the research project. Your whānau will also be approached and provided with the information. You will be given two weeks to consider if you would like to participate. During that time, you are welcome to contact me with any questions/concerns.

Step two: After two weeks, I will contact you and ask you to confirm if you would like to be a part of the research project. If you agree, the appropriate consent forms will be given to you to be signed. You will be given one week to read over and sign the forms.

Step three: The consent forms will be collected and kept in a locked filing cabinet to protect your confidentiality. A time, date and place for the discussion group will then be given. All discussion groups will be held between October 2020 – May 2021.

Exclusion criteria

Participation in this research project is dependent on you agreeing to being recorded on video, voice recorded and photographed.

Participants

This part of the research project requires four discussion groups of five participants each (Māori males aged 17+), a total of 20 participants. You will be organised into four different age ranges, with five participants in each age range. The age ranges are: 17 - 25, 26 – 39, 40 - 50, and 50+. As a participant you will be given the first opportunity to see the results of the research once the full research project is completed (June 2023).

During the discussion group, I will ask you to share details of your experiences throughout your education as a Māori boy. Some of these questions may bring forth memories of anxiety or distress. An appropriate environment will be created to ensure you feel comfortable and safe. This includes tikanga whānau: your whānau will also be approached as part of the recruitment process. This will enable your whānau to provide comfort if needed after the discussion group has finished. The other participants in the discussion group you will participate in are also part of our local whānau hapū which will provide additional comfort throughout the process. Furthermore, a kai will be provided at the conclusion of the discussion group to help you 'come out' of the space.

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Ground rules for Discussion Groups

To ensure the safety of all participants in the discussion group, each participant is asked to adhere to the following tikanga:

- listen respectfully without interrupting
- listen actively with an ear for understanding other's views
- avoid blame, speculation, and inflammatory language
- allow everyone a chance to speak
- commit to sharing; not debating. Comment in order to share information, not to persuade.
- avoid assumptions about any other member of the discussion group
- allow thinking time to consider thoughtful responses
- respect the privacy of the other members of the group by not disclosing any personal information that they share during our discussion

Project Procedures

- The process will begin with whakawhanaungatanga (introductions)
- A cup of tea will then be offered (10mins)
- The discussion group in the form of an in-depth semi-structured interview will then begin. This will last approximately 60 minutes.
- We will conclude with a kai

In total the process will take no longer than 3 hours and will take place on a weekend so as not to interfere with your mahi.

Data Management

- The data recorded from the discussion groups will be used as the basis for my study.
- When the data is obtained, it will be stored on a password protected external hard drive and kept confidential.
- The data will be stored in a lockable draw and disposed of after 7 years.
- At the conclusion of the research project in June 2023, you will be contacted and provided with a summary of the research findings.
- Your confidentiality will be maintained. Your name, location and school(s) attended will not be identified anywhere throughout the data/research findings.
- Note: There are limits on confidentiality as there are no formal sanctions on other group participants from disclosing your involvement, identity or what you say to others in the discussion group. There are risks in taking part in discussion group research and taking part assumes that you are willing to assume those risks.

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Participant's Rights

You are under no obligation to accept this invitation.

If you decide to participate, you have the right to:

- decline to answer any particular question;
- withdraw from the study at any time;
- ask any questions about the study at any time during participation;
- provide information on the understanding that your name will not be used unless you give permission to the researcher;
- be given access to a summary of the project findings when it is concluded (June 2023).

Project Contacts

Primary Researcher:

Tamzyn Rosina Paewai - Te Riaki

Mobile: [REDACTED]

Email: [REDACTED]

Primary Supervisor:

Prof Huia Jahnke

Professor of Māori and Indigenous Education

Phone (work): (06) 356 9099 ext. 83277

Email: H.T.Jahnke@massey.ac.nz

If you have any questions or concerns regarding this research project, I invite you to contact myself as the primary researcher, or my supervisor from Massey University.

MUHEC APPLICATIONS

Committee Approval Statement

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application SOB 20/36. If you have any concerns about the conduct of this research, please contact Dr Gerald Harrison, Chair, Massey University Human Ethics Committee: Southern B, telephone 06 356 9099 x 83570, email humanethicsouthb@massey.ac.nz.

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2. Discussion group schedule



A Gamification Framework for education to engage Māori boys in their learning spaces

DISCUSSION GROUP SCHEDULE

5 participants per Discussion group

Date	Approx. Age range	Time
Saturday 12th December	17 - 25	10am – 1pm
Saturday 12th December	50+	3pm- 6pm
Sunday 13th December	40 - 50	10am – 1pm
Sunday 13th December	26 - 39	3pm- 6pm

Agenda

- Karakia timatanga
- Whakatau/mihi
- Kapu tī
- Whakawhanaungatanga (*Ko wai koe?*)
- Short Presentation/overview of research
- Discussion group to commence
- Kai
- Karakia whakamutunga

Note: Participants will be voice and video recorded during the Discussion Group for transcribing purposes only.

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3. Discussion group questions

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Massey Student ID: [REDACTED]

A Gamification Framework for education to engage Māori boys in their learning spaces

QUESTIONS FOR DISCUSSION GROUP WITH MĀORI MALES AGED 17+

To prepare you for the discussion group, please see below the questions which will be raised. The discussion group will be run for a total of 100 minutes. In the event where we might run out of time to get through all of the questions, I invite you to write down your responses and any other contributions you would like to make. Please bring along with you on the day of the discussion group.

I would also like to give you the opportunity to come up with your own 'pseudonym,' (fake name) which will be used in place of your real name during data analysis/write up to protect your identity (first name only).

Duration: 100 minutes

Experiences in school

1. What are your areas of interests?

2. What were the best experiences you had throughout your education?

3. Do you feel your interests were nurtured and encouraged throughout your education?
Why/How?

4. Who, in your primary school years, was the person you were closest to? Why?

5. Are there any subjects you feel you needed more support with? Why/what support would have helped you?

Teacher influence

6. Reflect on a time you got frustrated/angry in the classroom. Do you feel that your teacher influenced/escalated your reaction? Why/how?

7. Do you have any suggestions to help guide these moments towards a more positive outcome?

8. Did you have any male teachers throughout your education?

9. Do you think, for boys, that having the presence of another male in the learning space influences, engages and motivates them more in their learning? Why/How?

Engagement in learning

10. What learning styles works best for you? (For example, outdoor/pen & paper/textiles/visual etc.)
11. Were there any experiences you had which made you disconnect from learning?
12. Do you have any suggestions for teachers to help them better engage and motivate the next generation of Māori boys?
13. Do you feel that working in a group with your peers made you more engaged/motivated in your learning? Why/How?

14. Are there times when you would prefer to work by yourself? When/Why?

15. Did the use of a reward system help motivate you to do your work? Why/how?

Gaming

16. Reflect on a time you remember having lots of fun at school. What things were you doing?

17. Do you think that learning through games would help Māori boys in their learning?
How/why?

18. What kinds/types of games would be best for engaging and motivating Māori boys?
What games?

19. What specific elements from the games keep you motivated to stay engaged?
(Music/colour/avatars/pictures/tackling etc.)

Technology

20. Do you think technology could improve the engagement and motivation of Māori boys?
How?

21. What kinds of technology would be best for supporting Māori boys with their learning?

22. Is the protection of cultural data/IP a concern for you? If it is, do you have any
suggestions for how we can protect our IP?

23. Is there anything else you would like to contribute?



23. Do you have any questions for me/any other feedback or contributions you would like to make?

4. Discussion group participant consent form



A Gamification Framework for education to engage Māori boys in their learning spaces

DISCUSSION GROUP PARTICIPANT CONSENT FORM

I have read, or have had read to me, and I understand the Information Sheet attached. I have had the details of the study explained to me, my questions have been answered to my satisfaction, and I understand that I may ask further questions at any time. I have been given sufficient time to consider whether to participate in this study and I understand participation is voluntary and that I may withdraw from the study at any time.

1. I understand that I have an obligation to respect the privacy of the other members of the group by not disclosing any personal information that they share during our discussion.
2. I understand that all the information I provide will be kept confidential to the extent permitted by law, and the names of all people in the study will be kept confidential by the researcher.

Note: There are limits on confidentiality as there are no formal sanctions on other group participants from disclosing your involvement, identity or what you say to others in the discussion group. There are risks in taking part in discussion group research and taking part assumes that you are willing to assume those risks.

3. I agree to participate in the discussion group under the conditions set out in the Information Sheet attached.

Declaration by Participant:

I [print full name] _____ hereby consent to take part in this research project.

Signature: _____ **Date:** _____

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5. Discussion group confidentiality agreement



A Gamification Framework for education to engage Māori boys in their learning spaces

CONFIDENTIALITY AGREEMENT FOR PARTICIPANTS

I (Full Name - printed)

agree to keep confidential all information concerning the project *A Gamification Framework for education to engage Māori boys in their learning spaces*. I am aware that all information regarding the research project is copyrighted to the researcher and disclosing information regarding the research project will put me in breach of this agreement.

I will not retain or copy any information involving the project.

Signature:

Date:

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Phase Two documents and forms

6. The Gamification Implementation: Information sheet for the kaiako participant



A Gamification Framework for Education to engage Māori boys in their learning spaces

INFORMATION SHEET: STAGE 2

For the Teacher Participant

Researcher Introduction

*Ko Matua te Tapu me Maungarake ngā maunga
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Ko Aotea me Takitimu ngā waka
Ko Mawhitiwhiti me Hurunui-o-rangi me Makirikiri ngā marae
Ko Ngaruahinerangi me Ngati Kahungunu ngā iwi
Ko Kanihi te Hapū i te taha o tōku Pāpā
Ko Tamzyn Rosina Paewai – Te Riaki tōku ingoa*

My name is Tamzyn Paewai - Te Riaki. I am in my 14th year of study at Massey University, currently studying a PhD in Māori studies. I am presently working on a research project called "A Gamification Framework for Education to engage Māori boys in their learning spaces."

This research project aims to investigate ways to improve the engagement, motivation and achievement of Māori boys in their education settings through gamification. Gamification is when you take the elements of a game (such as strategy, chance, reward, aesthetics etc.) and you use them in a non-gaming context – in this case, education. The goal of gamification is to enhance the motivation, engagement and participation of the participant. The purpose of the research is to support Year 7/8 Māori boys to be more motivated, engaged and achieve as Māori in mainstream primary education settings.

Research Description and Invitation

I am passionate about our Māori tamariki succeeding as Māori in mainstream education settings. I am especially interested in supporting our Māori boys to reach their full potential and to see them motivated and excited about their learning. This research project will produce a Gamification Framework which educators can use to 'Gamify' teaching and learning experiences. The Gamification Framework will be designed to specifically cater to the needs of our Māori boys, providing them with learning experiences which they can connect and experience more success with.

I would like to invite you with an opportunity to be the Teacher participant in this research project. If you decide to participate, your contributions will help future generations of Māori boys experience teaching and learning methods in their education settings which better cater to their needs as Māori.

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This stage of the research project requires one Teacher participant and ideally, his or her normal class of Year 7 and 8 students. While I am observing the whole class, my focus will be observing the Year 7 and 8 Māori boys, and although I will be videoing and photographing the whole class with parental permission, all the other children's identity will be concealed.

Participant Recruitment

Step one: I will provide you with information regarding the research project. You will be given as much time as you need to consider if you would like to participate. During that time, you are welcome to contact me with any questions/concerns.

Step two: I will contact you and ask you to confirm if you would like to be a part of the research project. If you agree, the appropriate consent forms will be given to you.

Step three: The signed consent forms will be collected and kept in a locked filing cabinet to protect your confidentiality. A time and date which suits you will then be made to have a kōrero about the planning of the Gamified lessons for Term 4.

Research Procedure

This stage of the research project requires classroom observations. In total there are eight classroom observations in Term 4: four normal observations and four Gamified observations. The Teacher participant and the Year 7 and 8 Māori male participants will be interviewed a total of five times, for approximately 15 minutes each time.

During the observations my husband Hikoi Te Riaki who is a member of the local iwi will be present during each of the four Gamified observations to assist with the videoing process. As he is known by the students, he will also provide extra support for them if required.

Data Management

- *The data collected will be used as the basis for my study*
- *The data includes: classroom observations, photographs and videos taken during the classroom observations, samples of student work completed during the observations and audio recordings of the interviews.*
- *The data will be stored on a password protected external hard drive, located in a lockable draw and kept confidential. After 7 years the data will be disposed of.*

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Participant's Rights

You are under no obligation to accept this invitation.

If you decide to participate, you have the right to:

- decline to answer any particular question;
- withdraw from the study within 2 weeks of starting;
- ask any questions about the study at any time during participation;
- provide information on the understanding that your name will not be used unless you give permission to the researcher;
- participation in this research project is dependent on you agreeing to being observed in the classroom, recorded on video, voice recorded, photographed and interviewed;
- a summary of the project findings when it is concluded (June 2023);
- your confidentiality will be maintained: your name, location and school will not be identified anywhere throughout the data/research findings.

Project Contacts

Primary Researcher:

Tamzyn Rosina Paewai - Te Riaki

Mobile: [REDACTED]

Email: [REDACTED]

Primary Supervisor:

Prof Huia Jahnke

Professor of Māori and Indigenous Education

Phone (work): (06) 356 9099 ext. 83277

Email: H.T.Jahnke@massey.ac.nz

If you have any questions or concerns regarding this research project, I invite you to contact myself as the primary researcher, or my supervisor from Massey University.

MUHEC APPLICATIONS

Committee Approval Statement

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application SOB 21/23. If you have any concerns about the conduct of this research, please contact Dr Gerald Harrison, Chair, Massey University Human Ethics Committee: Southern B, telephone 06 356 9099 x 83570, email humanethicsouthb@massey.ac.nz.

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7. The Gamification Implementation: Information sheet for ākonga participants and their whānau



A Gamification Framework for Education to engage Māori boys in their learning spaces

INFORMATION SHEET: STAGE 2

For the Student Participants' and their whānau

Researcher Introduction

*Ko Matua te Tapu me Maungarake ngā maunga
Ko Waingongoro me Ruamahunga ngā awa
Ko Aotea me Takitimu ngā waka
Ko Mawhitiwhiti me Hurunui-o-rangi me Makirikiri ngā marae
Ko Ngaruahinerangi me Ngati Kahungunu ngā iwi
Ko Kanihi te Hapū i te taha o tōku Pāpā
Ko Tamzyn Rosina Paewai – Te Riaki tōku ingoa*

My name is Tamzyn Paewai - Te Riaki. I am in my 14th year of study at Massey University, currently studying a PhD in Māori studies. I am presently working on a research project called "A Gamification Framework for Education to engage Māori boys in their learning spaces."

This research project aims to investigate ways to improve the engagement, motivation and achievement of Māori boys in their education settings through gamification. Gamification is when you take the elements of a game (such as strategy, chance, reward, aesthetics etc.) and you use them in a non-gaming context – in this case, education. The goal of gamification is to enhance the motivation, engagement and participation of the participant. The purpose of the research is to support Year 7/8 Māori boys to be more motivated, engaged and achieve as Māori in mainstream primary education settings.

Research Description and Invitation

I am passionate about our Māori tamariki succeeding as Māori in mainstream education settings. I am especially interested in supporting our Māori boys to reach their full potential and to see them motivated and excited about their learning. This research project will produce a Gamification Framework which educators can use to 'Gamify' teaching and learning experiences. The Gamification Framework will be designed to specifically cater to the needs of our Māori boys, providing them with learning experiences which they can connect and experience more success with.

I would like to invite you with an opportunity for your child to be a participant in this research project. If you agree to participate, your child's contributions will help future generations of Māori boys experience teaching and learning methods in their education settings which better cater to their needs as Māori.

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This stage of the research project requires one Teacher participant and ideally, his or her normal class of Year 7 and 8 students. While I am observing the whole class, my focus will be observing the Year 7 and 8 Māori boys, and although I will be videoing and photographing the whole class with parental permission, all the other children's identity will be concealed.

Participant Identification and Recruitment

Recruitment method:

Step one: I will provide you with all the information you need regarding the research project.

Step two: During the hui, I will approach you and your child as a potential participant and provide you with information regarding the research project. You will be provided with an opportunity to ask questions and raise any concerns, then you will be given some time to consider if you would like your child to participate. During that time, you are welcome to contact me with any questions/concerns.

Step three: I will contact you and ask you to confirm if you would like your child to be a part of the research project. If you agree, the appropriate consent forms will be given to you and your child to be signed.

Step four: The signed consent forms will be collected and kept in a locked filing cabinet to protect you and your child's confidentiality.

Research Procedure

This stage of the research project requires classroom observations. In total there are eight classroom observations in Term 4: four normal observations and four Gamified observations. The Teacher participant and the Year 7 and 8 Māori male participants will be interviewed a total of five times, for approximately 15 minutes each time.

During the observations my husband Hikoi Te Riaki who is a member of the local iwi will be present during each of the four Gamified observations to assist with the videoing process. As he is known by the students, he will also provide extra support for them if required.

Ground rules for the Focus Groups

To ensure the safety of all participants in the focus group, each participant is asked to adhere to the following tikanga:

- *listen respectfully without interrupting*
- *listen actively with an ear for understanding other's views*
- *avoid blame, speculation, and inflammatory language*
- *allow everyone a chance to speak*

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- commit to sharing; not debating. Comment in order to share information, not to persuade.
- avoid assumptions about any other member of the discussion group
- allow thinking time to consider thoughtful responses
- respect the privacy of the other members of the group by not disclosing any personal information that they share during our discussion, or of their identity to anyone who is not participating in the focus group

Data Management

- The data collected will be used as the basis for my study
- The data includes: classroom observations, photographs and videos taken during the classroom observations, samples of student work completed during the observations and audio recordings of the interviews.
- The data will be stored on a password protected external hard drive, located in a lockable draw and kept confidential. After 7 years the data will be disposed of.
- Note: There are limits on confidentiality as there are no formal sanctions on other group participants from disclosing your involvement, identity or what your child says to others in the focus groups. There are risks in taking part in focus group research and taking part assumes that you are willing to assume those risks.

Participant's Rights

You are under no obligation to accept this invitation.

If you decide for your child to participate, you and your child have the right to:

- decline to answer any particular question;
- withdraw from the study within 2 weeks of starting;
- ask any questions about the study at any time during participation;
- provide information on the understanding that your name will not be used unless you give permission to the researcher;
- participation in this research project is dependent on you agreeing to being observed in the classroom, recorded on video, voice recorded, photographed and interviewed;
- a summary of the project findings when it is concluded (June 2023);
- your confidentiality will be maintained: your name, location and school will not be identified anywhere throughout the data/research findings.

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Project Contacts

Primary Researcher:

Tamzyn Rosina Paewai - Te Riaki

Mobile: [REDACTED]

Email: [REDACTED]

Primary Supervisor:

Prof Huia Jahnke

Professor of Māori and Indigenous Education

Phone (work): (06) 356 9099 ext. 83277

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8. The Gamification Implementation: Information sheet for ākonga participants and their whānau (2)



A Gamification Framework for Education to engage Māori boys in their learning spaces

INFORMATION SHEET: STAGE 2

For student participants and their whānau (2)

Researcher Introduction

*Ko Matua te Tapu me Maungarake ngā maunga
Ko Waingongo me Ruamahunga ngā awa
Ko Aotea me Takitimu ngā waka
Ko Mawhitiwhiti me Hurunui-o-rangi me Makirikiri ngā marae
Ko Ngaruahinerangi me Ngati Kahungunu ngā iwi
Ko Kanihi te Hapū i te taha o tōku Pāpā
Ko Tamzyn Rosina Paewai – Te Riaki tōku ingoa*

My name is Tamzyn Paewai - Te Riaki. I am in my 14th year of study at Massey University, currently studying a PhD in Māori studies. I am presently working on a research project called "A Gamification Framework for Education to engage Māori boys in their learning spaces."

This research project aims to investigate ways to improve the engagement, motivation and achievement of Māori boys in their education settings through gamification. Gamification is when you take the elements of a game (such as strategy, chance, reward, aesthetics etc.) and you use them in a non-gaming context – in this case, education. The goal of gamification is to enhance the motivation, engagement and participation of the participant. The purpose of the research is to support Year 7/8 Māori boys to be more motivated, engaged and achieve as Māori in mainstream primary education settings.

Research Description and Invitation

I am passionate about our Māori tamariki succeeding as Māori in mainstream education settings. I am especially interested in supporting our Māori boys to reach their full potential and to see them motivated and excited about their learning. This research project will produce a Gamification Framework which educators can use to 'Gamify' teaching and learning experiences. The Gamification Framework will be designed to specifically cater to the needs of our Māori boys, providing them with learning experiences which they can connect and experience more success with.

I would like to invite you with an opportunity for your child to be a participant in this research project. If you agree to participate, your child's contributions will help future generations of Māori boys experience teaching and learning methods in their education settings which better cater to their needs as Māori.

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This stage of the research project requires one Teacher participant and ideally, his or her normal class of Year 7 and 8 students. While I am observing the whole class, my focus will be observing the Year 7 and 8 Māori boys, and although I will be videoing and photographing the whole class with parental permission, your child's identity will be concealed.

Participant Identification and Recruitment

Recruitment method:

Step one: I will provide you with all the information you need regarding the research project.

Step two: During the hui, I will approach you and your child as a potential participant and provide you with information regarding the research project. You will be provided with an opportunity to ask questions and raise any concerns, then you will be given some time to consider if you would like your child to participate. During that time, you are welcome to contact me with any questions/concerns.

Step three: I will contact you and ask you to confirm if you would like your child to be a part of the research project. If you agree, the appropriate consent forms will be given to you and your child to be signed.

Step four: The signed consent forms will be collected and kept in a locked filing cabinet to protect you and your child's confidentiality.

Research Procedure

This stage of the research project requires classroom observations. In total there are eight classroom observations in Term 4: four normal observations and four Gamified observations. The Teacher participant and the Year 7 and 8 Māori male participants will be interviewed a total of five times, for approximately 15 minutes each time.

During the observations my husband Hikoi Te Riaki who is a member of the local iwi will be present during each of the four Gamified observations to assist with the videoing process. As he is known by the students, he will also provide extra support for them if required.

Data Management

- *The data collected will be used as the basis for my study*
- *The data includes: classroom observations, photographs and videos taken during the classroom observations, samples of student work completed during the observations and audio recordings of the interviews.*
- *The data will be stored on a password protected external hard drive, located in a lockable draw and kept confidential. After 7 years the data will be disposed of.*
- *Note: There are limits on confidentiality as there are no formal sanctions on other group participants from disclosing your involvement, identity or what your child says to others in the focus groups. There are risks in taking part in focus group research and taking part assumes that you are willing to assume those risks.*

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- withdraw from the study within 2 weeks of starting;
- ask any questions about the study at any time during participation;
- provide information on the understanding that your name will not be used unless you give permission to the researcher;
- participation in this research project is dependent on you agreeing to being observed in the classroom, recorded on video, voice recorded, photographed and interviewed;
- a summary of the project findings when it is concluded (June 2023);
- your confidentiality will be maintained: your name, location and school will not be identified anywhere throughout the data/research findings.

Project Contacts

Primary Researcher:

Tamzyn Rosina Paewai - Te Riaki

Mobile: [REDACTED]

Email: [REDACTED]

Primary Supervisor:

Prof Huia Jahnke

Professor of Māori and Indigenous Education

Phone (work): (06) 356 9099 ext. 83277

Email: H.T.Jahnke@massey.ac.nz

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9. The Gamification Implementation: Information sheet for the Kaiāwhina



A Gamification Framework for Education to engage Māori boys in their learning spaces

INFORMATION SHEET: STAGE 2

For the Teacher Aide Participant

Researcher Introduction

*Ko Matua te Tapu me Maungarake ngā maunga
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Ko Aotea me Takitimu ngā waka
Ko Mawhitiwhiti me Hurunui-o-rangi me Makirikiri ngā marae
Ko Ngaruahinerangi me Ngati Kahungunu ngā iwi
Ko Kanihi te Hapū i te taha o tōku Pāpā
Ko Tamzyn Rosina Paewai – Te Riaki tōku ingoa*

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Research Description and Invitation

I am passionate about our Māori tamariki succeeding as Māori in mainstream education settings. I am especially interested in supporting our Māori boys to reach their full potential and to see them motivated and excited about their learning. This research project will produce a Gamification Framework which educators can use to 'Gamify' teaching and learning experiences. The Gamification Framework will be designed to specifically cater to the needs of our Māori boys, providing them with learning experiences which they can connect and experience more success with.

My research focuses on Year 7 and 8 Māori boys, so I hope to undertake this research in Room 4 with the permission of the whānau and students. All students in Room 4 will be given the opportunity to participate in the research and sent home with an information pack. Because you work as the full time Teacher Aide in Room 4, I would like to invite you with an opportunity to be the Teacher Aide participant in this research

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project. If you decide to participate, your contributions will help future generations of Māori boys experience teaching and learning methods in their education settings which better cater to their needs as Māori.

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Participant Recruitment

Step one: I will provide you with information regarding the research project. You will be given as much time as you need to consider if you would like to participate. During that time, you are welcome to contact me with any questions/concerns.

Step two: I will contact you and ask you to confirm if you would like to be a part of the research project. If you agree, the appropriate consent forms will be given to you.

Step three: The signed consent forms will be collected and kept in a locked filing cabinet to protect your confidentiality.

Research Procedure

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During the observations my husband Hikoi Te Riaki who is a member of the local iwi will be present during each of the four Gamified observations to assist with the videoing process. As he is known by the students, he will also provide extra support for them if required.

Data Management

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- decline to answer any particular question;
- withdraw from the study within 2 weeks of starting;
- ask any questions about the study at any time during participation;
- provide information on the understanding that your name will not be used unless you give permission to the researcher;
- participation in this research project is dependent on you agreeing to being observed in the classroom, recorded on video, voice recorded, photographed and interviewed;
- a summary of the project findings when it is concluded (June 2023);
- your confidentiality will be maintained: your name, location and school will not be identified anywhere throughout the data/research findings.

Project Contacts

Primary Researcher:

Tamzyn Rosina Paewai - Te Riaki

Mobile: [REDACTED]

Email: [REDACTED]

Primary Supervisor:

Prof Huia Jahnke

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Phone (work): (06) 356 9099 ext. 83277

Email: H.T.Jahnke@massey.ac.nz

If you have any questions or concerns regarding this research project, I invite you to contact myself as the primary researcher, or my supervisor from Massey University.

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10. The Gamification Implementation: Kaiako participant consent form



A Gamification Framework for Education to engage Māori boys in their learning spaces

TEACHER PARTICIPANT CONSENT FORM

I have read or have had read to me the Information Sheet attached and I understand the contents. I have had the details of the study explained to me, and any questions I had have been answered to my satisfaction. I understand that I may ask further questions at any time. I have been given sufficient time to consider whether to participate in this study and I understand participation is voluntary and that I may withdraw from the study at any time.

1. I agree to participating in eight classroom observations
2. I agree to the eight classroom observations being videoed
3. I agree to photographs being taken of me throughout the eight classroom observations
4. I agree to participating in five semi-structured fifteen-minute one-on-one interviews
5. I agree to the five semi-structured one-on-one interviews being sound recorded
6. I wish/do not wish to have my recordings and images returned to me.
7. I agree to participate in this study under the conditions set out in the Information Sheet.

Declaration by Participant:

I [print full name]_____ hereby consent to take part in this study.

Signature: _____

Date: _____

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11. The Gamification Implementation: Kaiāwhina participant consent form



A Gamification Framework for Education to engage Māori boys in their learning spaces

TEACHER AIDE PARTICIPANT CONSENT FORM

I have read or have had read to me the Information Sheet attached and I understand the contents. I have had the details of the study explained to me, and any questions I had have been answered to my satisfaction. I understand that I may ask further questions at any time. I have been given sufficient time to consider whether to participate in this study and I understand participation is voluntary and that I may withdraw from the study at any time.

1. I agree to participating in eight classroom observations
2. I agree to the eight classroom observations being videoed
3. I agree to photographs being taken of me throughout the eight classroom observations
4. I agree to participating in five semi-structured fifteen-minute one-on-one interviews
5. I agree to the five semi-structured one-on-one interviews being sound recorded
6. I wish/do not wish to have my recordings and images returned to me.
7. I agree to participate in this study under the conditions set out in the Information Sheet.

Declaration by Participant:

I [print full name]_____ hereby consent to take part in this study.

Signature: _____

Date: _____

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12. The Gamification Implementation: Parental consent form



A Gamification Framework for Education to engage Māori boys in their learning spaces

PARENTAL CONSENT FORM

I have read or have had read to me the Information Sheet attached and I understand the contents. I have had the details of the study explained to me, and any questions I had have been answered to my satisfaction. I understand that I may ask further questions at any time. I have been given sufficient time to consider whether to participate in this study and I understand participation is voluntary and that I may withdraw from the study at any time.

1. I agree for my child to participate in eight classroom observations
2. I agree to my child being videoed throughout the eight classroom observations
3. I agree to my child being photographed throughout the eight classroom observations
4. I agree to my child participating in five focus group meetings
5. I agree to the five focus group meetings being sound recorded
6. I wish/do not wish to have the recordings and images of my child returned to me.
7. I agree for my child to participate in this study under the conditions set out in the Information Sheet

Declaration by Student participant:

I [print full name] _____ hereby consent for

my child [print full name] _____ to take part in this study.

Signature: _____

Date: _____

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13. The Gamification Implementation: Parental consent form (2)



A Gamification Framework for Education to engage Māori boys in their learning spaces

PARENTAL CONSENT FORM 2

I have read or have had read to me the Information Sheet attached and I understand the contents. I have had the details of the study explained to me, and any questions I had have been answered to my satisfaction. I understand that I may ask further questions at any time. I have been given sufficient time to consider whether to participate in this study and I understand participation is voluntary and that I may withdraw from the study at any time.

1. I agree for my child to participate in eight classroom observations
2. I agree to my child being videoed during the eight classroom observations and understand that my child's identity will be concealed
3. I agree to my child being photographed throughout the eight classroom observations and understand that my child's identity will be concealed
4. I agree for my child to participate in this study under the conditions set out in the Information Sheet

Declaration by Student participant:

I [print full name] _____ hereby consent for

my child [print full name] _____ to take part in this study.

Signature: _____

Date: _____

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14. The Gamification Implementation: Ākonga participant consent form



A Gamification Framework for Education to engage Māori boys in their learning spaces

STUDENT PARTICIPANT CONSENT FORM

I have read or have had read to me the Information Sheet attached and I understand the contents. I have had the details of the study explained to me, and any questions I had have been answered to my satisfaction. I understand that I may ask further questions at any time. I have been given sufficient time to consider whether to participate in this study and I understand participation is voluntary and that I may withdraw from the study at any time.

1. I agree to participate in eight classroom observations
2. I agree to being videoed throughout the eight classroom observations
3. I agree to being photographed throughout the eight classroom observations
4. I agree to participating in five focus group meetings
5. I agree to the five focus group meetings being sound recorded
6. I wish/do not wish to have the recordings and images returned to me.
7. I agree to participate in this study under the conditions set out in the Information Sheet

Declaration by Participant:

I [print full name]_____ hereby consent to take part in this study.

Signature: _____

Date: _____

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15. The Gamification Implementation: Ākonga consent form



A Gamification Framework for Education to engage Māori boys in their learning spaces

STUDENT CONSENT FORM

I have read or have had read to me the Information Sheet attached and I understand the contents. I have had the details of the study explained to me, and any questions I had have been answered to my satisfaction. I understand that I may ask further questions at any time. I have been given sufficient time to consider whether to participate in this study and I understand participation is voluntary and that I may withdraw from the study at any time.

1. I agree to participating in eight classroom observations
2. I agree to the eight classroom observations being videoed and understand that my identity will be concealed
3. I agree to photographs being taken of me throughout the eight classroom observations and understand that my identity will be concealed
4. I agree to participate in this study under the conditions set out in the Information Sheet

Declaration by Participant:

I [print full name]_____ hereby consent to take part in this study.

Signature: _____

Date: _____

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16. The Gamification Implementation: Focus group participant consent form



A Gamification Framework for education to engage Māori boys in their learning spaces

FOCUS GROUP PARTICIPANT CONSENT FORM

I have read, or have had read to me, and I understand the Information Sheet attached. I have had the details of the study explained to me, my questions have been answered to my satisfaction, and I understand that I may ask further questions at any time. I have been given sufficient time to consider whether to participate in this study and I understand participation is voluntary and that I may withdraw from the study at any time.

1. I understand that I have an obligation to respect the privacy of the other members of the group by not disclosing any personal information that they share during our discussion.
2. I understand that all the information I provide will be kept confidential to the extent permitted by law, and the names of all people in the study will be kept confidential by the researcher.

Note: There are limits on confidentiality as there are no formal sanctions on other group participants from disclosing your involvement, identity or what you say to others in the discussion group. There are risks in taking part in discussion group research and taking part assumes that you are willing to assume those risks.

3. I agree to participate in the focus group under the conditions set out in the Information Sheet attached.

Declaration by Participant:

I [print full name] _____ hereby consent to take part in this research project.

Signature: _____ Date: _____

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17. The Gamification Implementation: Confidentiality agreement for all participants



A Gamification Framework for education to engage Māori boys in their learning spaces

CONFIDENTIALITY AGREEMENT FOR PARTICIPANTS

I (Full Name - printed)

agree to keep confidential all information concerning the project *A Gamification Framework for education to engage Māori boys in their learning spaces*. I am aware that all information regarding the research project is copyrighted to the researcher and disclosing information regarding the research project will put me in breach of this agreement.

I will not retain or copy any information involving the project.

Signature: _____ Date: _____

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18. The Gamification Implementation: Focus group questions for Year 7 and 8 tāne ākonga Māori

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Massey Student ID: 03131963

A Gamification Framework for education to engage Māori boys in their learning spaces

FOCUS GROUP QUESTIONS FOR YEAR 7 & YEAR 8 MĀORI MALE STUDENTS

***First Focus Group questions following the 4 observations in the classroom
using normal teaching and learning methods***

1 focus group session of 4 – 5 student participants per session

Duration: 15 minutes

Initial questions

1. What are your interests and why?
2. What is your favourite subject?
3. Is there something you wish you did more of at school? Why?
4. When do you do your best work?
5. What is the best way you learn?
6. Do you enjoy reading and writing? Why/why not?
7. What things do you enjoy about reading and writing?
8. Do you think learning through games would be fun? Why/why not?
9. Do you play many games in your classroom? If so, what games?
10. Would you rather work in a group or by yourself? Why?
11. What do you think could help you learn better in the classroom?
12. Describe how you feel when you misunderstand something.
13. How do you communicate when you misunderstand something?
14. What would make the learning content clearer for you?
15. What is something about you that nobody else knows?

Theme One: Student enjoyment

16. How enjoyable were the learning sessions and why?
17. What did you enjoy the least? Why?
18. What things do you do in your classroom which are fun?

Theme Two: Differences between the Mainstream and Gamified learning environments

19. Did you enjoy learning about *(insert content)* today? Why/why not?
20. Can you tell me what the atmosphere/environment of your classroom was like during the learning sessions? (noise level, mood, energy etc.)
21. Did you like the way the learning sessions were set up for you? Why/why not?

Theme Three: Motivation

22. Did you feel like you really wanted to do your learning tasks? Why/why not?
23. Would you like to learn more about *(insert content)*? Why/why not?
24. Did you find any of the work hard? If so, what would have helped you?
25. Did you find any of the work easy? Why?
26. Did you work well with others during the session? (Group work/individual?)

Theme Four: Engagement & Learning

27. Is there anything your teacher did which helped you in your learning today?
28. Were you focused on your learning during the session? Why/why not?
29. Did you get your work complete?
30. Was there anything which switched you off from your learning?
31. Do you feel like you learnt something new today? (Prompt: about Reading – if needed)

Theme Five: Improvements for next time

- 32. Is there anything you would like to do again?
- 33. If you could change anything about the next session, what would you change and why?
- 34. Do you have any suggestions for fun ways you could learn?

Focus Group questions following each Gamified teaching and learning session during Action Research

4 focus group sessions of 4 – 5 student participants per session

Duration: 15 minutes

Theme One: Student enjoyment

1. How enjoyable were the learning sessions today and why?
2. What did you enjoy the least? Why?
3. What did you enjoy the most? Why?

Theme Two: Differences between the Mainstream and Gamified learning environments

4. Did you notice anything different about the way the learning session was set up for you today? If so, what were the differences?
5. Did you enjoy learning about (insert content) today? Why/why not?
6. Can you tell me what the atmosphere/environment of your classroom was like during the learning session today? (noise level, mood, energy etc.) Is this normal for your class?

Theme Three: Motivation

7. Did you feel like you really wanted to do your learning tasks? Why/why not?
8. Did you find any of the work hard? If so, what would have helped you?
9. Did you find any of the work easy? Why?
10. Did you work well with others during the session? (Group work/individual?)

Theme Four: Engagement & Learning

11. Is there anything your teacher did which helped you in your learning today?
12. Were you focused on your learning during the session? Why/why not?
13. Did you get your work complete?
14. Was there anything which switched you off from your learning?
15. Do you feel like you learnt something new today? (Prompt: about Reading – if needed)

Theme Five: Improvements for next time

16. Is there anything you would like to do again?
17. If you could change anything about the next session, what would you change and why?

19. The Gamification Implementation: One-on-one semi-structured interview questions for the Kaiako participant

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PhD Title: A Gamification Framework for education to engage Māori boys in their learning spaces

ONE-ON-ONE SEMI-STRUCTURED INTERVIEW QUESTIONS FOR THE TEACHER PARTICIPANT

First One-on-one semi-structured interview following the 4 observations in the classroom using normal teaching and learning methods

** 1 interview in total*

Duration: 15 minutes

Initial questions

1. Where do you come from?
2. How long have you been teaching?
3. How long have you been teaching at this school for?
4. What do you think makes a good teacher?
5. What are your areas of strengths/interest/favored curriculum areas to teach?

Theme One: Teacher/student enjoyment

6. How enjoyable were the learning sessions and why?
7. What did you enjoy the least? Why?
8. How did you feel about the learning sessions?
9. How do you think the students felt about the learning sessions, and how do you know?

Theme Two: Differences between the Mainstream and Gamified learning environments

10. What was the atmosphere/environment like in your classroom during the learning sessions?

Theme Three: Motivation

11. How motivated do you think your students were during the sessions and how do you know?
12. What was it about the student's interactions that tells you they were motivated?
13. What do you usually do during Reading to help motivate your students?
14. What did you do throughout the learning sessions which you think worked well to motivate your students?
15. Was there anything you think switched your students off from their learning? How do you know?

Theme Four: Engagement & Learning

16. Do you think your students were engaged in the learning tasks throughout the sessions and how do you know?
17. Do you think your students completed their learning task/s to a good standard?
18. What level of understanding did your students demonstrate throughout their learning tasks and how do you know?
19. What percentage of your students did you get quality one-on-one time with? Is this planned/typical during a reading session?

Theme Five: Reflecting/Improvements for next time

20. Reflecting on the learning sessions, what are your thoughts overall about what went well, what didn't go so well and why?
21. If you were to make any improvements for the next session, what would you change and why?
22. Do you think having a quality teacher aide would enhance the learning space?
23. Is there anything else you would like to add or comment on?

One-on-one semi-structured Interview following each Gamified teaching and learning session during Action Research

*** 4 interviews in total**

Duration: 15 minutes

Theme One: Teacher/student enjoyment

1. How did you feel about the learning sessions?
2. What did you enjoy the least and most? Why?
3. How do you think your students felt about the learning sessions, and how do you know?

Theme Two: Differences between the Mainstream and Gamified learning environments

4. What was the atmosphere/environment like in the learning space today?
5. Was there anything different between today's learning session and your usual teaching session? If so, what were they?
6. Does this approach enhance your teaching? If so, how? If not, why not?
7. Did you notice any differences in how your students responded to their learning environment today? If so, what were they?

Theme Three: Motivation

8. How motivated do you think your students were during the session and how do you know?
9. What was it about the student's interactions that tells you they were motivated?
10. Was there anything you think switched your students off from their learning? How do you know?

Theme Four: Engagement & Learning

11. Do you think your students were engaged in the learning tasks throughout the session and how do you know?
12. What level of understanding did your students demonstrate throughout their learning tasks and how do you know?

Theme Five: Reflecting/Improvements for next time

13. If you were to make any improvements or changes for the next session, what would you change and why?
14. Is there anything else you would like to add or comment on?

20. The Gamification Implementation: One-on-one semi-structured interview questions for the Kaiāwhina participant

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PhD Title: A Gamification Framework for education to engage Māori boys in their learning spaces

ONE-ON-ONE SEMI-STRUCTURED INTERVIEW QUESTIONS FOR THE TEACHER AIDE PARTICIPANT

First One-on-one semi-structured interview following the 4 observations in the classroom using Mainstream teaching and learning methods

** 1 interview in total*

Duration: 15 minutes

Initial questions

1. Where do you come from?
2. How long have you been a teacher aide for?
3. How long have you been at this school for?
4. What do you think makes a good teacher aide?
5. What are your areas of strengths/interest/favored curriculum areas?

Theme One: Teacher/student enjoyment

6. How enjoyable were the learning sessions and why?
7. What did you enjoy the least? Why?
8. How did you feel about the learning sessions?
9. How do you think the students felt about the learning sessions, and how do you know?

Theme Two: Differences between the Mainstream and Gamified learning environments

10. What was the atmosphere/environment like in the classroom during the learning sessions?

Theme Three: Motivation

11. How motivated do you think the students were during the sessions and how do you know?
12. What was it about the student's interactions that tells you they were motivated?
13. What usually happens during Reading to help motivate the students?
14. What did you do throughout the learning sessions which you think worked well to motivate the students?
15. Was there anything you think switched the students off from their learning? How do you know?

Theme Four: Engagement & Learning

16. Do you think the students were engaged in the learning tasks throughout the sessions and how do you know?
17. Do you think the students completed their learning task/s to a good standard?
18. What level of understanding do you think the students demonstrated throughout their learning tasks and how do you know?
19. What percentage of the students did you get quality one-on-one time with? Is this planned/typical during a reading session?

Theme Five: Reflecting/Improvements for next time

20. Reflecting on the learning sessions, what are your thoughts overall about what went well, what didn't go so well and why?
21. If you were to make any improvements for the next session, what would you change and why?
22. Do you think having a quality teacher aide enhances the learning space?
23. Is there anything else you would like to add or comment on?

One-on-one semi-structured Interview following each Gamified teaching and learning session during Action Research

*** 4 interviews in total**

Duration: 15 minutes

Theme One: Teacher/student enjoyment

1. How enjoyable was the learning session and why?
2. What did you enjoy the least? Why?
3. How did you feel about the learning session?
4. How do you think the students felt about the learning session, and how do you know?

Theme Two: Differences between the Mainstream and Gamified learning environments

5. What was the atmosphere/environment like in the classroom today? Is that a typical atmosphere/environment for this class?
6. Was there anything different between today's learning session and the usual teaching session? If so, what were they?
7. Did this approach enhance the teaching and learning? If so, how? If not, why not?
8. Did you notice any differences in how the students responded to their learning environment today? If so, what were they?
9. Do you think using the gamified elements in the teaching session today enhanced the engagement and motivation of the students? If yes, why/how do you know? If no, why not?

Theme Three: Motivation

10. How motivated do you think the students were during the session and how do you know?
11. What was it about the student's interactions that tells you they were motivated?

12. What happened during the session today which you noticed really motivated the students?
13. What did you do throughout the learning session which you think worked well to motivate the students?
14. Was there anything you think switched the students off from their learning? How do you know?

Theme Four: Engagement & Learning

15. Do you think the students were engaged in the learning tasks throughout the session and how do you know?
16. Do you think the students completed their learning task/s to a good standard?
17. What level of understanding did the students demonstrate throughout their learning tasks and how do you know?
18. What percentage of the students did you get quality one-on-one time with? Is this planned/typical during a reading session?

Theme Five: Reflecting/Improvements for next time

19. Reflecting on the learning session, what are your thoughts overall about what went well, what didn't go so well and why?
20. If you were to make any improvements for the next session, what would you change and why?
21. Is there anything else you would like to add or comment on?

21. The Gamification Implementation: Planning for gamified observation #1 and 4

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Gamified Lesson plan		
Gamified Lessons #1 & 4		
Group: Whole class	Date: Term 4, 2021	Time: 9am – 12:30pm
WALT: Communication: We are learning to build our communication skills so we can practice effectively communicating our thoughts, ideas and feelings. Literacy link: As we practice to verbally communicate more effectively, our writing skills will improve as we learn to provide more details and convey our thoughts and personal views. We are learning that effective communication leads to stronger relationships. Meditation/focus: We are learning how to re-focus our energy to help us concentrate.		
Aotearoa New Zealand Curriculum links		
Level Four English Listening, Reading, and Viewing Processes and Strategies Students will: Purposes and audiences	Level Four English Speaking, Writing, and Presenting Processes and Strategies Students will: Language features	Level Four Health and Physical Education Personal Health and Physical Development Processes and Strategies Regular physical activity Students will:

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- show an increasing understanding of how texts are shaped for different purposes and audiences. Language features - show an increasing understanding of how language features are used for effect within and across texts.	- use a range of language features appropriately, showing an increasing understanding of their effects. Structure - organise texts, using a range of appropriate structures.	- demonstrate an increasing sense of responsibility for incorporating regular and enjoyable physical activity into their personal lifestyle to enhance well-being. Safety management - Access and use information to make and action safe choices in a range of contexts.
Level Four The Arts Visual Arts Students will: Explore and use art-making conventions, applying knowledge of elements and selected principles through the use of materials and processes.	Level Three and Four Learning Languages Proficiency Descriptor Students can understand and construct simple texts using their knowledge of the target language. Students can describe aspects of their own background and immediate environment. Cultural Knowledge Students will: compare and contrast cultural practices.	
Gamification elements		

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More than 1000 hours of research

• Breath - Re-focusing using meditation/breath to settle/get ready for the Fishbowl. • Kōrero - During the Fishbowl, students will learn to open up/talk/share on a deeper level - Communication exercises: students learn to listen/communicate more clearly • Tikanga - Conducting the communication exercises outside - Being aware of the space for the Fishbowl (i.e. outside/in the bush) to set an appropriate environment for deeper sharing • Identity - Students learn, through effective communication, more about themselves through self-reflection (journaling) and learning how to open up/communicate their thoughts and feelings	• Play - Ngā taonga tākaro helps practice whanaungatanga/gets us out of the wānanga space (Fishbowl) • Physical movement - The communication exercises and walk through the bush get students out of the classroom/their desks and physically moving around their environment - Ngā taonga tākaro session at the end promotes active/physical movement • Kai - Sharing a kai in the ngāhere/at the end of the session helps us to come out of wānanga space • Exposure - Students will be exposed to a style of learning (wānanga) which are traditional to Māori (wānanga/ngā taonga tākaro) • Life skills • Students will learn essential life skills of communication; both talking and listening	• Creativity - Students have the opportunity to be creative in their journals/diaries • Taiao - The communication exercises/wānanga will happen outside in the taiao to help students learn the importance of our taiao and how being in the taiao can help us to focus/connect/be calm • Connection • Connecting the importance of communication skills to students' real lives and how it is highly relevant for positive relationships in their lives • Collaboration • Communication exercises in pairs encourage collaboration as we practice good communication skills • Mātauranga - The students are learning essential communication skills, including learning how to listen and share on a deeper level
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More than 1000 hours of research

Lesson sequence

Session One (Communication focus)

Duration: 1.5 hours

Time: 9am – 10:30am on Monday

Resources:

- ~ 1 A5 lined journal per student
- ~ 2 different bags (for the journals)
- ~ 1 pencil per student
- ~ Scrap paper with cardboard backing
- ~ *Ngā taonga tākaro equipment (rākau, poi toa, kuku, tipare, raukura, black rubber bands)
- ~ Equipment for communication exercises (scrap paper, pencils, cardboard, pictures)
- ~ 2minute timer (for the fishbowl)
- ~ 15minute timer (for the journal writing)
- ~ Morning tea (I will provide this – we need to take this into the ngāhere with us)
- ~ The question prompts for the Fishbowl

Step 1. (9:00am – 15minutes)

Introduction: Communication

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- ~ **Introduce Communication:** Tell students that today we will be learning about the importance of communication. Prompt the students with a question: *Talk to your elbow buddy about why you think communication is important.* Give the students a few minutes to discuss this, then get their feedback.

Following the students' feedback, inform the students that by communication we mean talking/opening up/sharing – and listening; listening *well* with the intention to think about what the other person has said and be supportive, rather than listening to respond/interrupt/keep talking about ourselves. Ask the students if they have heard of 'active listening' before. Prompt them to talk to their elbow buddy about it, then discuss with the students about what active listening is. Briefly discuss the importance of active listening.

- ~ **Journals:** Introduce the students to the journals/diaries. Tell the students that today they will get one each. They can write or draw whatever they want in them. Tell the students that people often use journals/diaries to record their thoughts, experiences, and emotions; it can help you if you are experiencing

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a hard time or going through tough emotions. We get to know ourselves by revealing our most private fears, thoughts and feelings. Sometimes it can make us feel better to write these things down. It is a time where we can de-stress and wind down.

Tell the students that they don't have to share what they have written in their journals with you, but they can if they want. Show them the 2 bags. Tell them one bag is for returning journals they want you to look at, and the other bag is for returning journals they don't want you to look at. Tell them on Wednesday afternoon they will get to keep the journals and take them home.

Journal/diary etiquette: tell the students that it is essential to never ever look at anyone else's diary – unless they want you to. Tell them that journals/diaries are very personal, and we need to respect each other's privacy.

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~ **Fishbowl:** tell the students that today we will practice learning how to communicate through some fun exercises. Tell them that first we will go out on the field outside and do an activity in pairs which test how well we listen to each other, and then we will do what is called a 'Fishbowl' in the bush.

Tell the students that a Fishbowl is when we will split into two groups and form two circles; one circle will be on the inside and one on the outside (draw these circles on the board). Tell the students that the inside circle of students will be answering questions which will encourage us to open up and share, and the students on the outside of the circle will be learning how to actively listen. The students on the outside circle have a really important job, because they need to protect the students on the inside by showing awhi/aroha by simply quietly listening and 'holding a safe space' for them. Tell the students we will be doing this Fishbowl in the ngāhere by the tōtara tree. We will do this to connect to the taiao (environment) and use the taiao as our safe space of connection.

Step 2. (9:15am - 15minutes)

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Communication exercise

In the grassy area outside your classroom: Put students into pairs.

Task 1: Drawing challenge (15mins)

- Students sit back-to-back in pairs. One partner has a scrap paper (leaning on cardboard) and a pencil. The teacher gives the other partner a picture. Make sure the partner doesn't see this picture!
- The partner with the picture needs to describe how to draw the picture to their partner. Their partner needs to draw the picture following their instructions. The pair with the picture matching closest to the original wins!
- Play again, but swap who is drawing/giving instructions. You can give time limits of about 5minutes to increase the difficulty/importance of clear instructions if you like.

Step 3. (9:30am - 45minutes)

Fishbowl

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- ~ Walk to the tōtara tree in the ngāhere.
- ~ Split the class in half. Find a large grass area which will be comfortable to sit in.
- ~ Sit the students in 2 circles; 1 circle on the outside, and 1 circle on the inside. Have them seated so they are at least arm's length apart (i.e. not too close together). The students sitting in the outside circle will be spread out a bit more than the inside circle. The teacher needs to also sit somewhere in the circle and participate (I will as well).
- ~ Remind the students that this is a communication and listening exercise. Remind the students that if you are sitting in the inside circle, you will be talking. If you are on the outside circle, your job is to awahi the inside students by 'holding the space' and quietly listen without saying a word. Tell the students that once everyone on the inside circle has had a turn, you will swap over and have a turn sitting in the other circle.
- ~ *** Pause, Breathe, Smile ☺**
- ~ Put the large 2minute timer in the middle. Pose question #1 to the students who are in the inside circle. Have one of the adults who are in the inside circle role model by starting. Once that adult has had their turn, they need to leave the 2minute timer in the middle of the circle and step back, allowing the students to take the timer and have their turn when they are ready.

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- ~ One by one, students will take turns. Once everyone in the middle has had their turn, pose question #2 and then #3 (if time – otherwise just do 2 questions).
- ~ After question #3 is completed, give the students a bit of a stretch.
- ~ Now the students need to swap; those who were sitting on the inside need to sit in the outside circle and vice versa.
- ~ Pose questions #1 - #3 again (depending on time), in the same manner as before. Remind the students on the outside that it is their turn to now be quiet and listen to those who are in the inside circle.
- ~ Once complete, give the students a quick stretch.

Step 4. (10:15am – 15minutes)

Journal writing (in the bush)

- ~ Tell the students they will now have 15minute **quiet** reflection/journal writing time (like you talked to them about earlier). Tell them that when their name is called, they can come up, choose a journal and a pencil, and find somewhere quiet to sit. Tell the students that they can either write or draw in their journals; it is up to them. Remind them of the kōrero just had in the fishbowl, and if they have any self-

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reflections, in their journal is a good place to write (or draw) them. No one is to talk during this time, and they need to sit spread out – as long as you can see them (set a boundary if you like). Hand out the journals and pencils. The adults need to participate as well (there are enough journals for them too).

- ~ Everyone to sit and quietly write (or draw if they like) in their journals. The adults as well. Set the timer so everyone can see how much time is left.
- ~ At the end of the 15minutes, students to hand their journals back to the teacher. Offer the students 2 bags – if they put their book in one bag, it signals they want their teacher to look at their mahi. If they put it in another bag, it signals for the teacher to not look. **Remind students to name their journals**

Step 5. (10:15am – 15minutes)

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Ngā taonga tākaro (Traditional Māori games)

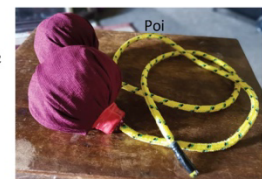
P.E. session. Split the class into three groups (a mixture of boys and girls). Run 3 rotations: the teacher to run Manu Tī, the teacher aide to run Poi Toa, and the male role model to run Poi Rākau. Run each taonga tākaro for 15minutes then swap around.

~ Poi Toa

Game whakapapa:

Poi Toa is the umbrella term used to describe any Tākaro where Poi Toa were utilised. Poi Toa were used by men to develop a range of skills as well as strength and conditioning needed for weaponry such as taiaha and patu (short club made from stone). Typically Poi Toa were made from harakeke (flax) and raupo (bullrush), sometimes they were filled with rocks and thrown at Toa (warriors) who would practice evading them.

NOTE: There is a different tikanga (value) around the use of Poi Toa. These Poi are designed to throw, pass, or kick.



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***For safety reasons please use Poi Toa in a safe manner to avoid injury.**

Also, these should not be confused or used the same as performance Poi for example which are used in Kapa Haka. Each has its own place as well as tikanga attached

Game description:

As said earlier Poi Toa is the umbrella term used to describe any game where a Poi Toa is used. The following activities can be used as warm up games:

- Basic passing: Passing of a spinning Poi between two or more players, catching by the Aho (rope part of the Poi).
- Evasive (Dodging): one person in the middle of the circle, that person has to dodge the swinging Poi being thrown at them. If the person in the middle catches the Poi by the Aho (the tail of the Poi) without it touching the ground they change places with the thrower of the Poi and so on.

Game benefits:

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Improve skills around coordination, spinning, passing and handling of the Poi Toa and keeping the Poi in motion.

~ Poi Rākau

Game whakapapa:

Traditionally Poi Rākau was a training game for warriors. One person stood in the middle (pūtahi), surrounded by the throwers (tukunga) standing in a circle (wi). The rākau were made from Mako wood and sharpened. They were thrown to the person in the pūtahi. On catching a rākau the warrior threw it at a person in the circle who didn't have a stick, who then had to catch and throw it on.

Game description:

Small group cooperation game using rākau passing to improve hand eye coordination. Pass and catch.

Pass the rākau without dropping it or hitting other players.

Game benefits:

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Traditionally this game helped developed skills when using a rākau or Taiaha, improving hand eye coordination and also increasing confidence around rākau.

Guidelines:

Mauī/Matau; rākau placed standing up on the ground. The players leave their rākau and move quickly to the left or right trying to catch the rākau before it touches the ground.

A player can be eliminated if they don't catch the next rākau or make a bad pass (where the other player has NO chance of getting to the rākau before it hits the ground).

Can also be used as a team building activity where you try to get all people catching or a certain amount of catches.

~ Whati(anga) Kuku

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Game whakapapa:

'Kuku' are aro-takaro (traditional Māori games implements). Kuku are also known as pirori, kui, ku-l, ku and ta-ku. They are made out of bush vines called kareao. Used in several games and in training regimes in the ancient whakawhai (schools of physical skill and technique development) and in wananga. There are several common traditional forms of play and evolving modern day hybridised creations.



Game description:

Two players each hold onto the central kuku, either both with their left hand or both with their right hand.

The objective is to keep holding on to the kuku without losing your grip and to use your free hand to tag the shoulder, knee and ankle joints of your opponent on the same side as their arm holding the kuku. First to touch all 3 joints wins! You can then swap arms and try on the other side.

Alternative way of playing: Kuku Mamau (Wrestling)

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Two players hold onto the kuku with one hand each. This hand is not allowed to move during the game. Draw a line in the ground behind each player. The first player to pull his or her opponent across the line wins. This game can also be extended with two opponents.

Game benefits:

Improve reflexes, spatial awareness, reading an opponent's movements and body language, peripheral vision, strength and agility. A great way to warm up, whakawhanaungatanga, have a laugh, and generally encourage participation and engagement.

~ Manu Tī

Game whakapapa:

Traditionally played where opponents tried to snatch raukura (feathers) out of each other's hair (top knots) or from the tipare (headband)

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Game description:

- Students wear tipare on their heads and put 1 feather in their tipare.
- Students to stand opposite an opponent with their feet shoulder width apart.
- 1 on 1 activity where students try to snatch the other persons feather, they are not allowed to move their feet.

Game benefits:

Improve reflexes, spatial awareness, reading an opponent's movements and body language, peripheral vision. A great way to warm up, whakawhanaungatanga, have a laugh, and generally encourage participation and engagement.

Step 6. (10:15am – 15minutes)

Kai

Conclude the session by having kai together.

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*** Session One and Session Four will not happen on the same day ***

Session Four (Communication focus)

Duration: 1.5 hours

Time: 11am – 12:30pm on Wednesday

Resources:

- ~ 1 A5 lined journal per student
- ~ 2 different bags (for the journals)
- ~ 1 pencil per student
- ~ Scrap paper with cardboard backing
- ~ *Ngā taonga tākaro equipment (rākau, poi toa, kuku, tipare, raukura, black rubber bands)
- ~ Equipment for communication exercises (blindfolds, different coloured flags/pegs, cones)
- ~ 2minute timer (for the fishbowl)
- ~ 15minute timer (for the journal writing)
- ~ The question prompts for the Fishbowl

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Step 1. (9:00am – 15minutes)

Introduction: Communication

- ~ **Introduce Communication:** Tell students that today we will be practicing communication again. Prompt a discussion reminding on the importance of communication (as discussed on Monday morning).

If needed, remind the students about the importance of communication and active listening. Tell them that by becoming good communicators, we can learn to help control our emotions and manage/maintain our relationships with others' better. Give some examples, i.e. how to solve disputes/how to communicate how we are feeling to our parents/teacher/whānau members – especially in times where we are experiencing high emotion.

- ~ **Journals:** Remind the students of our journals/diaries. See if the students can tell you why we may bother having a journal or diary. Prompt them if needed, reminding them that writing down our thoughts, feelings and/or emotions can help us if we are experiencing a hard time or going through tough emotions. We get

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to know ourselves by revealing our most private fears, thoughts and feelings. Sometimes it can make us feel better to write these things down. It is a time where we can de-stress and wind down.

Remind the students that they don't have to share what they have written in their journals with you, but they can if they want to. Remind the students of the 2 bags. Tell them one bag is for returning journals they want you to look at, and the other bag is for returning journals they don't want you to see. Tell them on Wednesday afternoon they will get to keep the journals and take them home.

Remind the students of journal/diary etiquette: remind the students that it is essential to never ever look at anyone else's diary – unless they want you to. Tell them that journals/diaries are very personal and we need to respect each others' privacy.

~ **Fishbowl:** tell the students that today we will practice another Fishbowl today and encourage them to try and open up/share some more if they can.

Remind the students that a Fishbowl is when we will split into two groups and form two circles; one circle will be on the inside and one on the outside (draw these circles on the board). Tell the students that the

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inside circle of students will be answering questions which will encourage us to open up and share, and the students on the outside of the circle will be learning how to actively listen. The students on the outside circle have a really important job, because they need to protect the students on the inside by showing awhi/aroha by simply quietly listening and 'holding a safe space' for them. Tell the students we will be doing this Fishbowl in the ngāhere by the tōtara tree. We will do this to connect to the taiao (environment) and use the taiao as our safe space of connection.

Step 2. (9:15am - 15minutes)

Communication exercise

In the grassy area outside your classroom: Put students into pairs. Each pair needs 1 blindfold. Each pair will be 'racing' against another pair.

Task 1: Pair communication exercise using blindfolds (15mins)

* Set up: flags (1 flag per 2 pairs (4 students)). Flags need to be pegged somewhere in the ngāhere where the 2 of the pairs who are blindfolded need to race to get first. The partners giving the instructions need to stand by a cone and cannot move from the cone.

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- Students need to be in pairs. One partner in each pair wears a blindfold.
- Students are going to be in competition with another pair. The blindfolded partner from each pair is going to race against another blindfolded partner from another pair to get a certain coloured flag. The other two partners of the pairs need to stand by a cone and not move while they are giving their partner instructions.
- The partners giving instructions need to give clear instructions to their blindfolded partner and direct them towards the flag. They have to stand by the cone and not move the whole time. The first blindfolded partner to get the flag wins for their pair.
- Swap who is blindfolded/giving instructions and try again, this time with the flag moved in a different place (the teacher/teacher aide can move the flags).

Step 3. (9:30am - 45minutes)

Fishbowl

- ~ Walk to the tōtara tree in the ngāhere.
- ~ Split the class in half. Find a large grass area which will be comfortable to sit in.

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- ~ Sit the students in 2 circles; 1 circle on the outside, and 1 circle on the inside. Have them seated so they are at least arm's length apart (i.e. not too close together). The students sitting in the outside circle will be spread out a bit more than the inside circle. The teacher needs to also sit somewhere in the circle and participate (I will as well).
- ~ Remind the students that this is a communication and listening exercise. Remind the students that if you are sitting in the inside circle, you will be talking. If you are on the outside circle, your job is to awhi the inside students by 'holding the space' and quietly listen without saying a word. Tell the students that once everyone on the inside circle has had a turn, you will swap over and have a turn sitting in the other circle.
- ~ *** Pause, Breathe, Smile ☺**
- ~ Put the large 2minute timer in the middle. Pose question #1 to the students who are in the inside circle. Have one of the adults who are in the inside circle role model by starting. Once that adult has had their turn, they need to leave the 2minute timer in the middle of the circle and step back, allowing the students to take the timer and have their turn when they are ready.
- ~ One by one, students will take turns. Once everyone in the middle has had their turn, pose question #2 and then #3 (if time - otherwise just do 2 questions).

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- ~ After question #3 is completed, give the students a bit of a stretch.
- ~ Now the students need to swap; those who were sitting on the inside need to sit in the outside circle and vice versa.
- ~ Pose questions #1 – #3 again (depending on time), in the same manner as before. Remind the students on the outside that it is their turn to now be quiet and listen to those who are in the inside circle.
- ~ Once complete, give the students a quick stretch.

Step 4. (10:15am – 15minutes)

Journal writing (in the bush)

- ~ Tell the students they will now have 15minute quiet reflection/journal writing time (like we did on Monday morning). Tell them that when their name is called, they can come up, grab their journal and a pencil, and find somewhere quiet to sit. Remind the students that they can either write or draw in their journals; it is up to them. Remind them of the kōrero just had in the fishbowl, and if they have any self-reflections, in their journal is a good place to write (or draw) them. No one is to talk during this time, and they need

Mauri Ekei Gamified lesson planning template

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Mauri Ekei Gamified lesson planning template

to sit spread out – as long as you can see them (set a boundary if you like). Hand out the journals and pencils. The adults need to participate as well (there are enough journals for them too).

- ~ Everyone to sit and quietly write (or draw if they like) in their journals. The adults as well. Set the timer so everyone can see how much time is left.
- ~ At the end of the 15minutes, students to hand their journals back to the teacher. Remind the students of the two bags – if they put their book in one bag, it signals they want their teacher to look at their mahi. If they put it in another bag, it signals for the teacher to not look.

Step 5. (10:15am – 15minutes)

Ngā taonga tākaro (Traditional Māori games)

P.E. session. Split the class into three groups (a mixture of boys and girls). Run 3 rotations: the teacher to run Manu Tī, the teacher aide to run Poi Toa, and the male role model to run Poi Rākau. Run each taonga tākaro for 15minutes then swap around.

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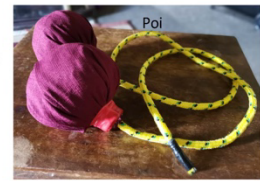
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~ Poi Toa

Game whakapapa:

Poi Toa is the umbrella term used to describe any Tākaro where Poi Toa were utilised. Poi Toa were used by men to develop a range of skills as well as strength and conditioning needed for weaponry such as taiaha and patu (short club made from stone). Typically Poi Toa were made from harakeke (flax) and raupo (bullrush), sometimes they were filled with rocks and thrown at Toa (warriors) who would practice evading them.



NOTE: There is a different tikanga (value) around the use of Poi Toa. These Poi are designed to throw, pass, or kick.

**For safety reasons please use Poi Toa in a safe manner to avoid injury.*

Also, these should not be confused or used the same as performance Poi for example which are used in Kapa Haka. Each has its own place as well as tikanga attached

Game description:

As said earlier Poi Toa is the umbrella term used to describe any game where a Poi Toa is used. The following activities can be used as warm up games:

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- Basic passing: Passing of a spinning Poi between two or more players, catching by the Aho (rope part of the Poi).
- Evasive (Dodging): one person in the middle of the circle, that person has to dodge the swinging Poi being thrown at them. If the person in the middle catches the Poi by the Aho (the tail of the Poi) without it touching the ground they change places with the thrower of the Poi and so on.

Game benefits:

Improve skills around coordination, spinning, passing and handling of the Poi Toa and keeping the Poi in motion.

~ Poi Rākau

Game whakapapa:

Traditionally Poi Rākau was a training game for warriors. One person stood in the middle (pūtahi), surrounded by the throwers (tukunga) standing in a circle (wī). The rākau were made from Mako wood

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and sharpened. They were thrown to the person in the pūtahi. On catching a rākau the warrior threw it at a person in the circle who didn't have a stick, who then had to catch and throw it on.

Game description:

Small group cooperation game using rākau passing to improve hand eye coordination. Pass and catch.

Pass the rākau without dropping it or hitting other players.

Game benefits:

Traditionally this game helped developed skills when using a rākau or Taiaha, improving hand eye coordination and also increasing confidence around rākau.

Guidelines:

Mauī/Matau; rākau placed standing up on the ground. The players leave their rākau and move quickly to the left or right trying to catch the rākau before it touches the ground.

A player can be eliminated if they don't catch the next rākau or make a bad pass (where the other player has NO chance of getting to the rākau before it hits the ground).

Can also be used as a team building activity where you try to get all people catching or a certain amount of catches.

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~ Whati(anga) Kuku

Game whakapapa:

'Kuku' are aro-takaro (traditional Māori games implements). Kuku are also known as pirori, kui, ku-l, ku and ta-ku. They are made out of bush vines called kareao. Used in several games and in training regimes in the ancient whakawhai (schools of physical skill and technique development) and in wananga. There are several common traditional forms of play and evolving modern day hybridised creations.



Game description:

Two players each hold onto the central kuku, either both with their left hand or both with their right hand.

The objective is to keep holding on to the kuku without losing your grip and to use your free hand to tag the shoulder, knee and ankle joints of your opponent on the same side as their arm holding the kuku.

First to touch all 3 joints wins! You can then swap arms and try on the other side.

Alternative way of playing: Kuku Mamau (Wrestling)

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Two players hold onto the kuku with one hand each. This hand is not allowed to move during the game. Draw a line in the ground behind each player. The first player to pull his or her opponent across the line wins. This game can also be extended with two opponents.

Game benefits:

Improve reflexes, spatial awareness, reading an opponent's movements and body language, peripheral vision, strength and agility. A great way to warm up, whakawhanaungatanga, have a laugh, and generally encourage participation and engagement.

~ Manu Tī

Game whakapapa:

Traditionally played where opponents tried to snatch raukura (feathers) out of each other's hair (top knots) or from the tipare (headband)

Game description:

- Students wear tipare on their heads and put 1 feather in their tipare.
- Students to stand opposite an opponent with their feet shoulder width apart.

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Mount Floss Gameplan lesson planning template

- 1 on 1 activity where students try to snatch the other persons feather, they are not allowed to move their feet.

Game benefits:

Improve reflexes, spatial awareness, reading an opponent's movements and body language, peripheral vision. A great way to warm up, whakawhanaungatanga, have a laugh, and generally encourage participation and engagement.

Step 6. (10:15am – 15minutes)

Kai

Conclude the session by having kai together.

Evaluation of learning:

Session One:

Session Two:

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Maori Place Guided lesson planning template

Where to next?

Session One:

Session Two:

Reflection:

Session One:

Session Two:

22. The Gamification Implementation: Planning for gamified observation #2 and 3

Massey Flow Gamified lesson planning template

Gamified Lesson plan		
Gamified Literacy Lessons #2 & 3		
Group: Whole class	Date: Term 4, 2021	Time: 9am – 12:30pm
Learning focus: Reading Comprehension: We are learning to identify figures of speech and use our prior knowledge to decipher their meaning/understand the deeper meaning of the text. Writing We are learning about the structure of a narrative. We are learning to write in paragraphs. We are learning to use a range of interesting vocabulary/figures of speech in our writing. Visual Art We are learning different techniques for shaping and molding clay. Physical Education We are learning how to look after and maintain our tinana (bodies) and hauora (physical well-being). We are learning that if we look after our bodies, we can concentrate, function and perform at our best.		

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Aotearoa New Zealand Curriculum links		
Level Four English Listening, Reading, and Viewing Processes and Strategies Students will: - Integrate sources of information and prior knowledge confidently to make sense of increasingly varied and complex texts. Language features - show an increasing understanding of how language features are used for effect within and across texts.	Level Four English Speaking, Writing, and Presenting Processes and Strategies Students will: Language features - use a range of language features appropriately, showing an increasing understanding of their effects. Structure - organise texts, using a range of appropriate structures.	Level Four Health and Physical Education Personal Health and Physical Development Processes and Strategies Regular physical activity Students will: - demonstrate an increasing sense of responsibility for incorporating regular and enjoyable physical activity into their personal lifestyle to enhance well-being. Safety management - Access and use information to make and action safe choices in a range of contexts.
Level Four The Arts Visual Arts Students will: Explore and use art-making conventions, applying knowledge of elements and selected principles through the use of materials and processes.	Level Three and Four Learning Languages Proficiency Descriptor Students can understand and construct simple texts using their knowledge of the target language. Students can describe aspects of their own background and immediate environment. Cultural Knowledge Students will: compare and contrast cultural practices.	
Gamification elements		

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Page 2

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• Breath - Re-focusing using meditation/breath to come back into class from physical mahi (Pause, breathe, smile) - Learning about looking after our tinana through specialized gym equipment which practices using our breath • Kōrero - Focus on building communication skills rather than written answers - Discussions with adults encouraged instead. These can be video or voice recorded for student profiles/evidence/ monitoring progress • Learning space - Set up a Gym/Art area outside on the grass - Set up inside area as separate areas for each group, giving each student plenty of their own space - *Quiet set up inside; active/louder setup outside. Students rotate between the different learning spaces • Reward system - Point system on the class leaderboard will encourage and reward hard work and good behaviour • Identity - The learning and playing of ngā taonga tākaro help students to	• Play - The use of ngā taonga tākaro (traditional Māori games) encourages: physical education, interaction, whakawhanaungatanga, and fun • Kinaesthetic - Clay work on the kinaesthetic rotation gives students opportunities to physically re-create what they have read in the story • Physical movement - Gym rotation: students will learn about specialized equipment which can help them look after their bodies/health. Students will become more aware how the effects of looking after our tinana can help us to learn/focus/ concentrate. - Playing ngā taonga tākaro at the end of the session allows students a chance to 'come out' of their learning space in a fun and active way • Exposure - Students will be exposed to Hunting and what it is like to go hunting throughout the story - Students will be introduced to equipment in the gym rotation which they may not have been exposed to before and learn how that equipment can help them look after their tinana/hauora	• Creativity - Clay work allows for creativity to happen where students can physically re-create what they have just read. Inspiration of a pre-made clay model will be in the middle of the clay table. • Music/dance - Music will be playing inside and outside. Active music for outside, and quieter instrumentals for inside, to help students focus and create a friendly/welcoming learning environment • Achievable goals - Kai Mish is tailored to students reading levels, making the reading level and comprehension achievable for each student • Time - 20minute rotations; limiting the time so it is manageable for the students/help them keep focused • Meaningful content - Deer Hunting book which features Māori male characters who share cultural practices/tikanga along the way; highly engaging content, especially for our local Māori boys • Options - The book Kai Mish is a choose your own path story. Students can choose which way the character goes throughout their hunt, ultimately resulting in six different endings
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- learn about their culture/old practices/customs - Cultural practices and customs related to hunting are throughout the reading book Kai Mish	• Life skills - Life skills will be learnt through kōrero shared by Koro and TK in the Hunting book, including kai gathering and basic tikanga practiced by hunters • Competition - A hunting competition is linked to the book. The competition element is fair because the books are levelled to each students' needs, however the story/hunting competition is the same across the board	• Connection - Content: hunting/Koro/cuzzies/ Uncle) is familiar for the students. - The tikanga practiced shared in the Hunting story aligns with students' culture and local practices • Collaboration - Playing ngā taonga tākaro encourages collaboration and whakawhanaungatanga
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Mount Floor Gamified lesson planning template

Lesson sequence

Session Two (Reading focus)

Duration: 1.5 hours

Time: 11am – 12:30pm on Monday

Resources:

- ~ 1 copy of *Kai Mish: The Hunting Series* per student
- ~ *Kai Mish Teacher's Guide*
- ~ *Whakawhitinga kōrero – Ngā Ākonga/Kaiako* (Discussion cards for students/teacher)
- ~ *Mahi torohanga* (Extension worksheets)
- ~ Timer (computer)
- ~ A tarpaulin for the clay table outside
- ~ A box to store clay creations
- ~ Printed large Rotation table
- ~ Clay carving equipment
- ~ Clay
- ~ Gym rotation equipment
- ~ Computer set up for leaderboard/inside music
- ~ A device for playing outside music
- ~ 1 pencil and workbook per student
- ~ Classroom ipads for Seesaw
- ~ Whiteboard markers for teacher

Set up:

1. Set up the clay rotation table outside on the grass near the gym rotation.

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Mount Floor Gamified lesson planning template

2. Set up the music: 'active' music outside, quieter instrumentals for inside.
3. Set up the laptop to the TV with the leaderboard showing.
4. Put the Rotation Table on the board for all to see.
5. Make sure you have the following resources ready:
 - *Kai Mish* books and the *Kai Mish Teacher's Guide*
 - *Whakawhitinga kōrero – Ngā Ākonga/Kaiako* ready for the Activity rotations
 - 1 pencil and 1 workbook per student
 - At least 5 ipads on hand with Seesaw ready
 - 20minute timer set up on the TV screen next to the leaderboard

How to score points:

- ~ There are six different endings in the book. Only two endings finish in the characters catching something. During the reading, students will 'hunt' by reading the book. They need to choose their own path as they read and keep reading until they manage to catch something in their hunt (biggest prize – the Stag. 2nd biggest prize – the spiker). You could possibly reward 50 points for catching the stag, and 30 points for catching the spiker. You may also want to give 15 points for completing a story, even if it ends in no catch. * Set these scores at the beginning of the lesson so students know from the start.
- ~ You could also give out points throughout the lesson for things such as good behaviour/hard work – more suggestions in Step 2 below.

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Four 20minute Rotations:

* It is important to stick to the time limit. Please have the 20minute timer on the computer screen by the leaderboard.

Rotation 1: Quiet reading/Reading 1-1 with an adult (*Rotation 1 is for everyone at the same time*)

Rotation 2: Activity (*hunting competition linked to the book. See details below*)

Rotation 3: Gym (*exercises for maintaining hauora/well-being*)

Rotation 4: Kinaesthetic (*clay table outside by the gym*)

Rotation Table (Session Two)

Rōpū	Rotation 1	Rotation 2	Rotation 3	Rotation 4
1	Reading	Gym	Activity	Kinaesthetic
2	Reading	Activity	Kinaesthetic	Gym
3	Reading	Gym	Activity	Kinaesthetic
4	Reading	Kinaesthetic	Gym	Activity
* Teacher				
* Teacher aide				

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Step 1

Hauora/Tinana introduction

Outside in the 'Gym' teach the students how to use the gym equipment correctly and safely. Explain to them *why* we would use this equipment (to look after our tinana/hauora/help us focus). Students will learn to understand different ways we need to care for our tinana/hauora so we can perform at our best. Show a couple of examples using the equipment. Tell the students it is essential to use the equipment correctly so they don't injure themselves.

Step 2

Introduce the book

Move the students back inside. Teacher to introduce the Hunting book '*Kai Mish*' and the competition which aligns with the book. Explain to the students they can choose their own path in the book, and if they 'catch' something while 'hunting' (reading), they can earn points on the scoreboard. Also tell the students that today they are not to do the 'write your own ending' option on page 8 – that is for Wednesday.

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Mauri Floor Guided lesson planning template

Show the students the scoreboard on the T.V and explain to the students they can earn points by demonstrating:

- | | |
|--|--|
| ~ good behaviour | ~ showing manaaki/aroa (helping others) |
| ~ hard work | ~ demonstrating school values |
| ~ achieving a learning goal | ~ showing manners/being respectful |
| ~ 'catching' something during their hunt (in the book) | ~ completing Mahi torohanga (extension worksheets) for extra points - these are not compulsory |

Explain to the students they could also receive 'penalties' for negative behaviour. A serious offense - 10 points off, minor offense - 5 points off.

** Set these boundaries before you begin the rotations **

Step 3

Focus (Meditating: Pause, Breathe, Smile ☺)

- ~ Students to find a space to sit on the ground with their legs folded. Make sure all students are quiet, sitting up and focused on you.
- ~ Ask students to sit with straight backs and soft bellies.
- ~ Follow the 'Pause, Breathe, Smile' script.

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Mauri Floor Guided lesson planning template

Step 4

Four 20minute rotations

Follow the colour coded guidelines in the Rotation table above.

During rotation 1 roam the class and listen to some students read 1-1.

** For this first session, the male role model needs to run the gym rotation during rotations 2 - 4 to make sure all students learn/use the equipment correctly and safely.*

During the Teacher support rotation:

Learning focus: comprehension (deeper meaning)/vocabulary/cultural practices

- ~ In the group you are with, listen to students reading out loud 1 - 1 (please don't do round robin reading).
- You may not have time for all the students - try to get through a minimum of 2 or 3 per rotation.

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- ~ Use the Teacher's Guide to help prompt you with discussions/kōrero about what is happening in the story (or your own instincts). Check for deeper meaning/comprehension. Promote discussions where you can, especially where you can connect to students' real lives. *Encourage lots of discussion/kōrero with the students.

If students are in their **Activity rotation** and have 'caught' something during the hunt:

- ~ Use the *Whakawhitinga kōrero* (discussion cards - note there are different ones per level). These will help you to identify if students have actually read the story correctly (i.e. not cheated/jumped ahead to the catch). You will be able to tell by their answers if they have actually read the book or not. If students correctly answer and you are convinced they have read the story correctly, you can reward the relevant points (i.e. for catching the stag/spiker/finishing a story). * If you are busy and students need to share their answers, they can record themselves via Seesaw for you to check later.
- ~ If students have completed their hunt and there is still time left, students can then spend the rest of the time either continuing to read (to find the different endings), they could do the word find on page 11, or they can complete the optional *Mahi torohanga* for extra points.

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Activity Rotation:

- Students need to keep reading *Kai Mish* until they have caught something during the hunt. Once they have, students then use the *Whakawhitinga kōrero - Ngā Ākonga* (students) version only. Make sure you don't give them the *Kaiako* (teacher) version because it has the answers on the back! Students need to record their answers/write notes about each discussion point in their workbooks IF THEY WANT - it is not compulsory, but it is recommended.
- When students are ready, they need to tell the teacher so they can have a kōrero to prove they have been successful in their hunt. If students can't answer the questions correctly/thoroughly, they need to go back and do some more reading. They can use their workbook and pencils to write notes if needed, but it is not compulsory for them to write the answers. * Please note you are assessing their spoken answers, not the way they have written their answers/notes in their books. You do not need to edit or check their written responses - just listen to their spoken response. These can also be recorded on Seesaw for evidence for later/monitoring their progress. Students are allowed to refer to their notes when giving you their spoken answers.

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*** Session Two (Reading) and Session Three (Writing) will not happen on the same day ***

Session Three (Writing focus)

Duration: 1.5 hours

Time: 9am – 10:30am on Wednesday

Resources:

- ~ 1 copy of *Kai Mish: The Hunting Series* per student
- ~ *Kai Mish Teacher's Guide*
- ~ A tarpaulin for the clay table outside
- ~ A box to store clay creations
- ~ Clay
- ~ Clay carving equipment
- ~ Printed large Rotation Table
- ~ Gym rotation equipment
- ~ Computer set up for leaderboard/inside music
- ~ A device for playing outside music
- ~ 1 workbook and pencil per student
- ~ The Writing Editing Stamp
- ~ Whiteboard marker & Whiteboard for the teacher

Set up:

1. Set up the clay rotation table outside on the grass near the gym rotation.

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Mourit Floor Gamified lesson planning template

2. Set up the music: 'active' music outside, quieter instrumentals for inside.
3. Set up the laptop to the TV with the leaderboard and timer showing.
4. Put the Rotation Table on the board for all to see
5. Make sure you have the following resources ready:
 - *Kai Mish* books and the *Kai Mish Teacher's Guide*
 - 1 pencil and 1 workbook per student
 - The Writing Editing stamp
 - At least 5 ipads on hand with Seesaw

How to score points:

- ~ There are six different endings in the book. Only two endings finish in the characters catching something. During the reading, students will 'hunt' by reading the book. They need to choose their own path as they read and keep reading until they manage to catch something in their hunt (biggest prize – the Stag. 2nd biggest prize – the spiker). You could possibly reward 50 points for catching the stag, and 30 points for catching the spiker. You may also want to give 15 points for completing a story, even if it ends in no catch. * Set these scores at the beginning of the lesson so students know from the start.
- ~ You could also give out points throughout the lesson for things such as good behaviour/hard work – more suggestions in Step 2 below.

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Four 20minute Rotations:

* It is important to stick to the time limit. Please have the 20minute timer on the computer screen by the leaderboard.

Rotation 1: Quiet Writing (rotation 1 is for everyone at the same time)

Rotation 2: Activity (writing their own ending to the story from page 8)

Rotation 3: Gym (equipment for maintaining hauora/well-being)

Rotation 4: Kinaesthetic (clay table outside by the gym)

* Teacher and teacher aide roaming and supporting as needed (note there are no colour codes like last session)

Rotation Table (Session Three)

Rōpū	Rotation 1	Rotation 2	Rotation 3	Rotation 4
1	Writing	Gym	Activity	Kinaesthetic
2	Writing	Kinaesthetic	Activity	Gym
3	Writing	Activity	Gym	Kinaesthetic
4	Writing	Kinaesthetic	Gym	Activity

Step 1

Hauora/Tinana set up

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Remind the students how to use the gym equipment correctly and safely. Brief discussion/reminder around why we use this equipment (to maintain our tinana/hauora/keep ourselves performing at our best/help keep us focused). Do a couple of examples using the equipment. Remind students of the importance of using the equipment correctly and safely.

Step 2

Explicit Writing lesson: Narrative Writing

Learning focus: Writing the Climax, Falling Action and Conclusion for a Narrative and using interesting vocabulary/figures of speech in their writing.

1. Tell the students they will practice writing part of a narrative today. Draw the following diagram on the whiteboard and briefly go through the different parts of a narrative:



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- 2.** Students each need their own copy of *Kai Mish: The Hunting Series* in front of them. Remind the students that this story has six different possible endings. Tell the students to go to page 8 of their books. Ask them to identify what has happened so far in the introduction and rising action (*choose to go to page 8 from the first path selections on page 4*). See if students can identify the introduction first; then the rising action.

What has happened so far (prompts for you):

(Introduction)

- We have been introduced to the characters: TK (Te Kama), Teina (his cousin), Uncle Pakihiwi and Koro
- TK really looks up to his Koro and wants to make him proud.
- TK's Nan has passed away, and she would have been really proud to see TK out hunting with Koro and Uncle.
- There is a big hui (meeting) on at their marae which is why they are out hunting.
- There is a slight breeze coming from the East.

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(Rising Action)

- They decided to bush bash in the ngāhere towards the West.
- They walk for what feels like a long time, with not many rests.
- The ngāhere is dense and it is starting to get slightly dark.
- They have spotted some smaller trails which may be signs of pigs.
- The ground is a bit wet and muddy; they have to walk carefully through it to be quiet.
- A fence has now appeared in front of them. They could either climb the fence or... ? (students to write their own ending from this point onwards).

Tell the students that today they will be writing the Climax, Falling Action and Resolution to complete this story – the Introduction and Rising Action has already been written for them.

(If time only:) See if the students can tell you what some of the climax/falling action and resolutions have been for some of the endings in the book they have read so far.

Prompts for you – some of the climax/falling action and resolutions in the other story endings:

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- TK and Koro find a black sow rooting up the ground.
- It started raining heavily and getting dark. They hid under a tree for shelter but still kept getting wet, so they ended up going home.
- They found a spiker which TK decided to go for, and he hit It – his first spiker.
- TK finds a spiker but decides to wait for a stag. Stags come and TK tries to shoot one, but he misses and they all run off.
- Koro gets really tired and Teina starts complaining. They end up going home.
- TK decides to go where Koro suggested to go. They wait and a herd of deer shows up. TK ends up shooting his first stag.

- 3.** Show students, using a diagram on the whiteboard, how to leave spaces between each section of the story to create paragraphs. Tell them when they are finished, they should have three different paragraphs: the Climax, the Falling Action, and the Resolution. Remind students that the introduction and rising action is already done for them.

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- 4.** Finally, encourage your students to use as much interesting vocabulary as they can. Give some examples from the book. Tell the students that they can earn points on the scoreboard by using interesting vocabulary and showing paragraphs. Remind students they can look through the book to give them ideas/examples of vocabulary. Show a couple of examples of figures of speech such as similes and metaphors from the book.

* Some examples of figures of speech/interesting vocabulary from the book (Level Four):

- Thousands of dark green Pine trees stand like rows of tall soldiers... (page 5)
- Our ears, if they could, are pricked up like a hunting dog... (page 8)
- A tinge of excitement starts bubbling inside me... (page 13)
- Koro enthusiastically pushes forward through the ngahere... (page 15)
- I carefully follow Koro, anticipating what we might find... (page 18)

* Some examples of figures of speech/interesting vocabulary from the book (Level Three):

- Thousands of dark green Pine trees stand like rows of tall soldiers... (page 5)
- Our ears, if they could, are pricked up like a hunting dog... (page 8)

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- Excitement starts bubbling inside me... (page 13)
- The ngahere starts thinning out... (page 19)
- ... a black sow is rooting up the ground... (page 18)

* Some examples of figures of speech/interesting vocabulary from the book (Level Two):

- ... our ngahere used to be deafening with the sounds of our native birds... (page 5)
- Excitement starts bubbling inside me... (page 13)
- He moves through the bush quickly, ducking trees and carefully holding back low hanging branches... (page 15)
- The ngahere starts thinning out... (page 19)
- ... their eyes constantly scanning through the bush as we see more deer appear. (page 24)

Step 3

Focus (Meditating: Pause, Breathe, Smile 😊)

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- ~ Students to find a space to sit on the ground with their legs folded. Make sure all students are quiet, sitting up and focused on you.
- ~ Ask students to sit with straight backs and soft bellies.
- ~ Follow the 'Pause, Breathe, Smile' script.

Step 4

Four 20minute rotations

Note there are no set places to be this session as there was last session.

Teacher to roam and support students where needed. Ensure you get as much 1-1 quality time with as many different students as you can. * Guide the teacher aide and male role model to do the same, however make sure someone is always monitoring the Gym/Art area outside (you can all tag in and out of this one if you like).

Teacher support during rotations:

Suggested teaching and learning techniques to use during the 1-1 teacher support:

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Learning focus: narrative structure/paragraphs/vocabulary

- ~ Encourage students to read what they have written out loud to you.
- ~ Support students in their writing by ensuring their structure is correct (i.e. clear paragraphs/links for paragraphs/they are correctly writing their climax, falling action and resolution – not the introduction or rising action).
- ~ Remind students to use interesting vocabulary as demonstrated throughout the book they have read – show some examples in the book if needed.
- ~ Encourage students to read their own writing out loud to a friend and to themselves.
- ~ Encourage students to self and peer edit, support students with this if needed. You can use the Writing Editing Stamp as a prompt if you like.

Evaluation of learning:

Session One:

Session Two:

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Where to next?

Session One:

Session Two:

Reflection:

Session One:

Session Two:

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23. Observation grid for The Gamification Implementation

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Massey Student ID: [REDACTED]

PhD title: A Gamification Framework for Education to engage Māori boys in their learning spaces

Observation Grid for Action Research in Situ: Classroom Observations			
Mainstream teaching and learning lesson		Gamified teaching and learning lesson	
Teacher participant:		Number/age of student participants:	
Observation number:	Date:	Start time:	Stop time:
Context:			
Area of observation	What went well	What didn't go so well	Even better if...? (Areas for discussion)
Students' demeanor - How are the students responding to their teacher? - Describe the students' movements around the classroom			

Research title: A Gamification Framework for Education to engage Māori boys in their learning spaces

Page 1

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Massey Student ID: [REDACTED]

What kind of temperament/attitude are the students demonstrating?			
Teachers' demeanor - How is the teacher responding to his/her students? - Describe the teachers' movements around the classroom - What kind of temperament/attitude is the teacher demonstrating?			
Students' Motivation (/10) What is the level of motivation amongst the students – are they excited/interested/willingly participating in the learning task?			
Students' Engagement (/10) - What is the level of participation amongst the students? - What level of happiness are the student demonstrating throughout the lesson?			

Research title: A Gamification Framework for Education to engage Māori boys in their learning spaces

Page 2

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Massey Student ID: [REDACTED]

- What kind of understanding of why they are doing the task do the students have? - What is the standard and level of completion of the learning task?			
Teacher – Student interaction What is the level of engagement and interaction between the teacher and the students, initiated by the teacher?			
Student – Teacher interaction What is the level of engagement and interaction between the students and the teacher, initiated by the students?			
Student – Student interaction How does working collaboratively with others affect students?			

Research title: A Gamification Framework for Education to engage Māori boys in their learning spaces

Page 3

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Massey Student ID: [REDACTED]

What is the level of engagement and interaction between the students?			
Students understanding of the task (/10) - How independently are the students working? - What level of understanding do students have of the learning task? - What is the completion rate of the learning task?			
Questioning (/10) - What was the level of inquiry between the students and the teacher? - What types of questions motivated the students? - What types of questions disengaged the students? - What types of questions did the students initiate?			

Research title: A Gamification Framework for Education to engage Māori boys in their learning spaces

Page 4

Classroom Environment (/10) • What is the noise level in the classroom: loud, quiet? • What is the nature of students' voices/noise level? • What is the nature of the teachers' voice/noise level? • What is the general atmosphere of the classroom: buzzing with excitement/quiet and calm/busy/loud/exciting/productive?			
Other			
Reflective comments			

24. *Kai Mish*, written by Tamzyn Te Riaki

Level Two:



Kaí Mísh

Kaimahi: The Hunting Series

*A prototype resource developed for the PhD research
Project 'A Gamification Framework for Education to
engage Māori boys in their learning spaces.'*

*A big mihi to all the participants
who have contributed their time and wisdom to
this research project.*

Ehara taku toa, he takitahi, he toa takitini.

 Kai Mish Kaimahi the Hunting Series

dusty, bumpy road leads us into the ngahere. Koro has to drive his ute slowly around lots of potholes. Pine trees stand in rows on each side of us, until suddenly the Pine trees turn into native trees. I put my window down so I can listen to the ngahere and feel if there is any wind. There is a breeze coming from the East. Koro says our ngahere used to be deafening with the sounds of our native birds, but now there are a lot less of them, so it is not as noisy as it used to be.

I see Kererū perched high in a tree. They don't move as our truck goes past, but I can tell they are watching us.

Uncle Pakihiwi (Paki) laughs as Koro talks to him while he drives, one arm hanging out his window. I can't hear what Koro is saying, but I can tell by the way Koro is waving his arm and pointing towards the bush that he is telling another story. Koro loves sharing his stories with us. Most of his stories are hunting stories. Koro reckons he's caught a 16 pointer in this bush before. Koro usually leaves big stags, but because there was a big hui at our marae, he shot the stag and took it back to feed everyone. Koro says we should leave big stags so they can keep breeding and carrying on their line.

I dream of shooting my own 16 pointer one day so I can provide for my marae too. I love hunting. Koro and Uncle Paki are good hunters. Nan

 Kai Mish Kaitiaki the Hunting Series

used to say I should learn as much from them while I can. I miss my Nan. I know she would be proud to see me out with Koro.

Back at our marae there is a big hui. We need lots of meat. Now is my chance to prove I can provide too.

“Bro, TK!” My cousin Teina calls out to me. He is sitting by me in the back seat and pointing to a clearing you can see through the bush. “Shhhh,” Uncle Paki says. We know if we want to come we have to be quiet. Uncle Paki takes hunting seriously. He taught us how to move stealthily through the bush so we don’t make any noise.

Koro parks the truck on the side of the road. I see Koro and Uncle quietly talking to each other. Teina and I watch from the back seat, quietly taking our seatbelts off. Suddenly Koro turns to me and says “Te Kama, you decide where we go today. You want to catch that big stag?” My heart starts racing. Koro is letting me decide where we go?! I haven’t even come up with a reply before Koro slaps me on the shoulder and says, “Today’s the day, boy.”

We open the truck doors and step out. Koro and Uncle sort the gun and the hunting pack. I take a few deep breaths to calm myself down. I can’t think properly when I am this excited. As I breathe, I take in the ngahere. I listen to the birds and cicadas. I see the way the trees are blowing in the wind. I smell and taste the freshness of the forest floor and nearby bush.

 Kaitiaki Māui Kaitiaki the Hunting Series

I feel the grass under my boots. Koro says a good hunter listens to the taiao (environment) to help lead the way.

We go to the front of the truck so Koro can lead karakia. Koro says it's important to acknowledge the taiao and Papatuanuku (Mother Earth), asking permission to be there and giving thanks for the life of an animal we may be about to take. At the end of the karakia Koro looks at me, waiting for my lead. It is time for me to decide where we will go.

To bush bash in the ngahere towards the East, go to page 5.

To bush bash in the ngahere towards the West, go to page 8.

Kai Mish Kaimahi the Hunting Series

point to the East. Koro points for me to follow behind him. follows close behind me and Uncle Paki follows at the back. We bush bash through the ngahere stealthily. Our eyes constantly scan the bush, looking for signs of movement. Our ears are pricked up like a hunting dog, listening for any noise. Our noses hunt through the smells of the ngahere to pick up any animal scents. We carefully look through the bush around us, looking for signs that an animal has been - a footprint, broken twigs or branches, fresh kaka or rustling leaves.

Sometimes we stop just to listen. Nobody moves or makes a sound. We watch for Koro's lead. If Koro stops, we stop. When he moves, we move. We go deeper and deeper into the ngahere. I turn back to check Teina and Uncle Paki. They are a bit behind. Teina has a serious look on his face. Sometimes he breaks twigs under his feet and gets a growling from Uncle. I keep close behind Koro. I look up to Koro. I try my best to copy his movements and show him I can be a stealth hunter, just like him.

Suddenly Koro crouches down low. He points for me to come beside him. I crouch down next to him, my eyes peeled on the bush. A few hundred yards in front of us there is a little clearing. Koro turns to me. "See that clearing through there boy?" I nod. I can hear Teina and Uncle Paki coming up behind us. I can tell Teina has something in his hand. Koro continues talking to me, "Right up there. That is where they are." Uncle and Teina look too once they catch up to us.

 Kai Misk Kaitiaki the Hunting Series

“Koro, look!” Teina shows Koro what he found. A tuft of long, thick hair. Patches of white and golden brown. Definitely a deer. Uncle and Teina tell Koro and I they have seen tracks and signs of deer a bit further back. Koro is not sure. “Trust me boy, up there is our best chance.”

Teina hands me the tuft of hair and whispers, “TK, we saw fresh kaka too! And tracks!” Koro and Uncle look at me, waiting for my direction.

To follow the tracks Uncle Paki and Teina found, go to page 9.

To follow Koro’s lead and investigate the clearing up ahead, go to page 11.

 **Kai Mish** Kaitiaki the Hunting Series

The Deer Hunt

There are seven different deer species in Aotearoa.
Can you hunt for them all?

S	C	G	S	Y	A	W	A	Q	R	Y	Z
O	S	I	D	S	J	O	F	N	G	E	D
P	K	U	B	L	U	L	U	T	G	J	D
A	R	A	W	T	B	L	Z	A	K	E	Q
O	T	T	I	A	G	A	A	N	L	J	M
R	A	B	M	A	S	F	W	I	W	O	U
C	B	G	V	K	Q	U	A	O	I	B	Q
Z	N	C	J	M	U	T	R	W	Q	I	J
X	V	W	X	U	E	O	I	A	S	Y	E
W	X	N	A	T	C	Q	H	P	W	T	Z
Z	G	K	I	K	S	W	N	I	C	Y	H
F	I	H	N	J	X	S	K	T	N	C	T
I	W	A	O	O	H	S	S	I	T	B	Y
H	N	C	F	J	A	L	A	D	C	R	K

Kai Mish Kaimahi the Hunting Series

point to the West. Koro signals for me to follow behind. Teina and Uncle follow at the back. We bush bash quietly through the ngahere. We keep walking through the bush for what feels like ages. I keep close behind Koro, watching him in case I bump into him. Only once does he stop for a short rest.

The ngahere is thick, and it is starting to get dark. Still no signs of deer, but we did spot some small tracks which looked like a small animal. The ground is wet. Uncle growls Teina as he noisily walks through a patch of wet mud.

Suddenly a fence appears in front of us. We could climb the fence, or, you could make up the ending! Koro and Uncle turn to look at me, waiting for my decision.

To climb the fence, go to page 12.

To write your own destiny, write the ending in your Writing book!

Kai Mish *Kaimahi the Hunting Series*

look back at Teina again. I can tell by the look in his eyes that he really wants to follow the tracks he and Uncle found. “Let’s check your tracks out,” I say to Teina and Uncle. I can’t even look Koro in the eye, I don’t want to see his disappointment. Koro gets up and looks at Teina, “Show us what you got, boy.”

Teina tries to run ahead, but Uncle grabs the back of his hood and pulls him back, reminding him to be stealth. Uncle lets Teina take the lead and we all follow behind. Excitement starts bubbling inside me as Uncle and Teina point out the signs of deer. Fresh kaka, some tracks, some broken branches, and tufts of hair.

Uncle signals for us to stop. We crouch low and listen. There is a sound up ahead. Sticks breaking, heavy breathing and the sound of grass ripping. Teina turns around to look at us. “There!” he whispers. We look through the trees and see a deer eating grass. Its coat is a grey-brown colour with a light grey belly. Its long ears suddenly pricked up and it raises its head, looking almost directly at us. Two long and two small brown antlers poke up through the top of its head. A spiker. “About 90kg, not bad” Koro whispers.

We sit very still, the spiker stares straight back at us. After about a minute it goes back to eating. “We’re down wind,” Koro says. “It can’t smell us.”

“Should we shoot it Koro?!” I whisper. “We could.” Koro pauses. “Or we

 Kai Misk Kaitiaki the Hunting Series

could wait and see if there are any stags.” I stop to have a think. Deer usually travel in herds. Each herd is led by a dominant stag. This is just a spiker. If we waited, we might see a stag come out. My heart races. I look at the spiker. A clear shot. Then I look at the gun Koro is holding in his hand. Go for the spiker or the stag?

To shoot the spiker, go to page 15.

To wait and hope to see a stag, go to page 17.

Kai Mish *Kaimahi the Hunting Series*

Is that where you found the 16 pointer?" I ask Koro. Koro nods.

“Koro reminds us of one of the many hunting stories. “Down there is their wallow. There’s lots of great spots for us to hide and get a good shot.” “Show us the way Koro,” I whisper.

I hear Teina and Uncle sigh behind me, disappointed that we are not following their path. Koro pushes through the ngahere toward the clearing. He moves through the bush quickly, ducking trees and carefully holding back low hanging branches. We keep walking for ages. The sun is getting low and it starts getting darker.

Koro leads us to a spot where we have a good view of the clearing. He finds a place to sit. Uncle, Teina and I find a spot beside him, taking a few minutes to catch our breath.

“There is their wallow,” Koro says, pointing. Teina, Uncle and I look. A large section of wet mud, looking like it had recently been rolled in. My heart starts racing. Koro and Uncle start whispering to each other, pointing further down the hill. I lean in so I can listen in. “... what if we followed that path down through the bush?” Uncle was saying. Koro disagreed. “We should wait here for them to come out.” Koro looks at me. “Te Kama, what should we do boy?”

To bush bash through the ngahere to get closer to the wallow, go to page 19.

To wait where you are, go to page 20.

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Page 11

Kai Mish Kaimahi the Hunting Series

decide to climb the fence. Uncle shows us how to quietly. Koro signals for us to follow him down the fence line.

We follow Koro down the clearing next to the fence line. The ground we are walking on is uneven, creating lots of little potholes which would make great places to hide. The grass is long and a little bit wet.

Suddenly, Koro stops. He points to something in the ground. "Deer tracks" Uncle says, crouching down next to them. Teina and I crouch down beside him. "Fresh!" Teina says. Some of the tracks lead into the ngahere, some lead further down the clearing. "Well boy, where should we go now?"

To keep walking down the fence line, go to page 13.

To go into the ngahere, go to page 14.

Kai Mish Kaimahi the Hunting Series

point down the fence line so we can follow the deer tracks heading down the clearing. We carefully walk the fence line, stopping every now and then so we can look for any signs of life. The deer tracks start to fade. After about 15 minutes, Koro crouches down into a ditch. We all find a spot next to him, peering into the clearing.

About half an hour goes by before Teina whispers, "I can hear something!" We all listen carefully. Sure enough, we can hear a rustling. Koro starts creeping forward to get a better look. I carefully follow Koro. I can hear what sounds like grunting, and the sound of digging. "A sow," Koro says. He stops, looking ahead. Right in front of us a black sow is rooting the ground. It suddenly stops and looks directly at us, then races back into the ngahere. "We spooked it," Koro said.

I relax and stand back up. Koro and I walk back to where Uncle and Teina are waiting. "Just a sow," Koro explains. Uncle and Teina stand up from their spot. We had been here awhile now, and it is beginning to get dark. "Another day, boys," Koro says, as he begins walking back towards the truck. I sigh, disappointed, and follow Koro and Uncle back to the truck.



Kai Mish Kaimahi the Hunting Series

 stop and think for second. I signal to Koro and Uncle for us to follow the tracks into the ngāhere. We begin walking in. I can feel Teina close behind me, excited to follow the tracks.

The ngāhere starts thinning out. The grass is long and swishes under our feet. The tracks get harder and harder to follow through the grass. Eventually, they disappear. We stop, listening carefully. I feel a fat raindrop roll down my face. Suddenly, all we can hear are raindrops. Soon, the ngāhere is deafening with the sound of rain. We hide under a tree to attempt to keep dry.

Teina and I both try to pull our collars and hoods up high to keep dry. I see Koro and Uncle Paki talking, but we can't hear them through the rain. I look around us, hoping to see a deer through the bush. No sign of them at all, and no hope of hearing them in this weather.

After waiting about fifteen minutes in our spot under the tree, Uncle and Koro signal for us to start heading back. The rain was showing no sign of slowing down or stopping, and it was starting to get dark. We get up from our spot and start heading back.



Kai Mish Kaimahi the Hunting Series

decide to go for the spiker. I signal to Koro. He smiles. "Good call boy, it's big enough for us." I feel proud of my decision. Koro tells us hunting is not all about getting the biggest animal we find. Sometimes it's best to leave big stags so they can keep breeding and carry on their line.

Koro loads his gun quietly. I keep my eye on the spiker, praying it won't spook. It keeps eating, flicking its ears every now and then. Koro and Uncle help me get into the right position and hold the gun correctly. I lie flat on the ground, trying to hold the gun as steady as I can in my hands.

Koro sees my hands trembling. "Breathe," he reminds me. Just as I did before, I close my eyes. I breathe in and out, slowly to calm myself down. I listen to the sounds of the spiker in front of me, I feel the breeze which is gently blowing on my face. As I breathe, I can feel my hands steady. I open my eyes and look through the scope.

"Aim for the base of the neck," Uncle says. He helps me to aim. "Take your time," Koro says.

Suddenly the spiker stops eating and lifts its head up. "Now!" Koro whispers in my ear. I squeeze the trigger. I feel the power of the gun in my hands as I pull the trigger. The sound echoes throughout the ngahere, scaring away nearby birds.

 Kai Mish Kaitiaki the Hunting Series

“Hit!” I hear Teina shout. Koro and Uncle give me a slap on the back. “Shot, boy!” The spiker falls down straight away, its feet kicking straight out in front of it. It starts making grunting noises and blood starts coming out of its mouth. Koro takes the gun off me. Uncle and Teina start running down towards the spiker. I jump up and follow them down excitedly.

When we reach the spiker, Uncle picks its head up by its ears to bend its neck back. He grabs a knife from the back of his pouch and slices its neck. “Kia ora,” he says. “Nga mihi nui Papatuanuku, we are grateful for this blessing.” Koro has come down too now. Koro says it’s important to always mihi to Papatuanuku for providing us with kai. He recites a karakia to mihi to the deer for giving its life.

“Well done, boy!” Koro rubs the top of my head with a big smile on his face. My first spiker!



Kai Mish Kaimahi the Hunting Series

he thought of catching a big stag ran through my mind. This could be the day – my first ever kill could be the big stag. “Let’s wait,” I say to Koro.

Koro and Uncle nod. We all find a place to sit, making sure we don’t break any sticks. Our eyes stay on the spiker, we watch him eat in front of us. Suddenly, we see three hinds come up behind him, eating as well. My heart starts racing as we see another spiker appear. The whole herd must be here!

Uncle and Koro stay calm yet alert, their eyes constantly scanning through the bush as we see more deer appear. Koro starts loading the gun. Two spikers and three hinds! Suddenly, a fourth hind appears. All the deer move around like nothing is watching them.

We sit quietly and wait for about ten or fifteen more minutes before Koro gently taps me on the shoulder and points to the right. A huge, twelve pointer stag! Koro gestures for me to follow him, and for Uncle and Teina to stay back.

Koro and I creep closer towards the stag. It takes us a few minutes to find a place where we can set up for a good shot. “Get low,” Koro makes me lie as flat as I can. I look through the scope and move the gun around until it is pointing at the base of the stag’s neck. “Keep your sights on him and wait for the shot,” Koro whispers. I follow the stag’s movements with the

 **Kai Mish** Kaitiaki the Hunting Series

gun, taking deep breaths to keep myself calm.

The stag is now still, its head down and eating. Perfect! I line up the shot. It's really quiet. All I can hear is the sound of my own breath and the racing of my heart. 3, 2, 1... I squeeze the trigger and - BANG!! All of the deer suddenly race back into the ngahere.

"Damnit!" Koro shouted. I missed. I watch some dust rise in part of the grass where the bullet hit, and the stag racing off with its herd. The bush was too thick and the ground too rough to run after them. "Better luck next time boy," Koro says as he packs the gun away. My heart sinks as I watch the last of the herd disappear through the ngahere to safety.



Kai Mish Kaimahi the Hunting Series

Let's go down there," I point down to where I saw Uncle point to  before. We get up and start bush bashing. We stop often so we can listen for any signs of life. I can hear Koro's breath get louder as he starts to get tired. He pauses for a rest, leaning against a tree.

Uncle grabs a drink for Koro. We all take turns having a drink. No noise. No signs of deer, even though we are really close to the wallow. "It's starting to get dark," Uncle says. "Time to head back soon, eh?" Koro takes one more look in the bush. "We must be near," he says. "Just a little bit longer."

We keep walking through the bush, it is getting darker. Teina and I look at each other, a bit disappointed. We know it's going to be too dark soon to carry on. Teina starts to moan that his feet are tired. We crouch low in a spot just before the clearing and wait. The air is starting to cool, we can see our breath in the air.

"That's us," Koro says, looking at me. "Sorry boys, next time." I knew this was coming. My heart sinks a bit as we turn around and start heading back. Koro starts telling us one of his hunting stories again. Teina and I hang at the back and scare each other in the dark as we walk back.



Kai Mish Kaimahi the Hunting Series

Let's wait," I say to Koro. Koro pats me on the back. "Good call, boy." It doesn't take very long for us to see some deer come into the clearing. "Yes!!" Teina says excitedly. Uncle and Koro quickly signal to him to be quiet. Koro pulls his gun out, carefully loading it.

Three, four, then five deer come into view. Three hinds and two spikers. It doesn't take very long for even more deer to appear. "Two stags!" Uncle says, pointing. Two stags come out from the bush. One is a bit bigger than the other, both heading toward the wallow. Sometimes the bigger stag nudges the smaller stags' rump, pushing it out of the way.

"Here's your chance, boy!" Koro says, signaling for me to come by him. He sets me up with the gun. "Go for the smaller stag," Koro tells me. Koro says it's important to leave the big stags sometimes, so they can keep breeding. I look through the scope. The smaller stag is still pretty big – an 8 pointer, about 140kg. My heart starts racing.

"Breathe," Koro whispers in my ear. I keep the gun pointed at the stag, relax and take a few deep breaths. I take some deep breaths. I notice the wind blowing against my face and the long, slightly damp grass tickling my face. I aim for the base of the neck.

I squeeze the trigger – BANG!! The sound echoes throughout the ngahere. The whole herd races back into the bush. Birds fly out from nearby trees.

Kai Mish *Kaimahi the Hunting Series*

“Hit!” Uncle yells. I look out and see the stag I hit, trying to run but falling, hurt.

Koro takes the gun off me, we all start racing down towards the wallow. By the time we get to the stag it has stopped moving. Blood is coming out of it’s mouth. “Phew – it’s a good one boy!” Koro slaps me on the back. “Shot bro!” Teina exclaims. I can’t stop smiling. I kneel down next to the stag and put my hand gently on its back. Koro takes his pōtae off and says a karakia, giving thanks to Papatūānuku for this blessing.

My first stag! I couldn’t wipe the smile off my face the whole way back to our marae.



Deer Hunt answers for page 11: Red, Sika, Sambar, Fallow, Whitetailed, Wapiti, Rusa

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Page 21

Level Three:



Kaí Mísh

Kaimahi: The Hunting Series

*A prototype resource developed for the PhD research
Project 'A Gamification Framework for Education to
engage Māori boys in their learning spaces.'*

*A big mihi to all the participants
who have contributed their time and wisdom to
this research project.*

Ehara taku toa, he takitahi, he toa takitini

Kai Mish Kai mahi the Hunting Series

A dusty, bumpy one-way road leads us through the ngahere. Koro has to drive his 4wd ute slowly around what feels like hundreds of potholes. Thousands of dark green Pine trees stand like rows of tall soldiers on either side of us, until you reach this part when suddenly the Pine trees turn into native trees. I wind my window down so I can listen to the sounds of the ngahere and feel if there is any wind. The air is cool, there is a breeze coming from the East. I can hear lots of birds and cicadas. Koro says our ngahere used to be deafening with the sounds of our native birds, but now there are a lot less of them, so it is not as noisy as it used to be.

I see the fat bellies of Korerū perched high in a tree. They don't even move as our truck creeps past, but I can tell they are watching us because their heads slowly follow us.

Uncle Pakihiwi (Paki) laughs as Koro talks to him while he drives, one arm hanging out his window, his fingers wide, feeling for any wind. I can't hear what Koro is saying, but I can tell by the way Koro is waving his arm and pointing towards the bush that he is telling another one of his stories. Koro loves sharing his stories with us. Most of his stories are hunting stories. Koro reckons he's caught a 16 pointer in this bush before. Koro usually leaves big stags, but because there was a big hui, he shot the stag and took it back to feed everyone. Koro says that usually he would leave big stags so they can keep breeding and carrying on their line.

I dream of shooting my own 16 pointer one day, just like Koro, so I can provide for my marae too. I love hunting. Koro and Uncle Paki are good hunters. I jump at any chance to go out with them. Nan used to say I should learn as much from them while I still can. I miss my Nan. I know she would be proud to see me out with Koro.

 Kai Mish *Kaitiaki the Hunting Series*

Back at our marae there is a big hui. Lots of our whanau are on their way now. We need lots of meat. Now is my chance to prove I can provide too, just like Koro.

“Bro, TK!” My cousin Teina excitedly calls out to me. He is sitting by me in the back seat and pointing to a clearing you can make out through the bush. “Shhhhh,” Uncle Paki waves his hand at me and Teina. We know if we want to come we have to be quiet, or we won’t be allowed to come next time. Uncle Paki takes hunting seriously. He taught us how to move stealthily through the bush so we don’t make any noise. Teina looks at me with a cheeky grin. We know once we get the signal to be quiet, it’s nearly hunting time.

Koro slowly parks the truck on the side of the road, poking the truck as far into a clearing as he can so our truck is bit hidden. I see Koro and Uncle quietly talking to each other, trying to decide which way to go. Teina and I watch from the back seat, carefully taking our seatbelts off so we don’t make any noise. Suddenly Koro turns to me and says “Te Kama, you decide where we go today. You want to catch that big stag?” My heart starts racing. I can’t believe it. Koro is letting me decide where we go?! Suddenly images of a big 16 pointer jump into my head. I haven’t even come up with a reply before Koro slaps me on the shoulder and says, “Today’s the day, boy.”

We carefully open the truck doors and step out. Koro and Uncle sort the gun and the hunting pack. I take a few deep breaths to calm my racing heart. I can’t think properly when I am this excited. As I breathe, I take in the ngahere. I listen to the birds and cicadas. I see the way the trees are blowing in the wind. I can smell and taste the freshness of the forest floor and nearby bush. I feel the grass under my boots. Koro says a good hunter listens to the taiao to help lead the way. Signs that an animal may be nearby include the smells, the tracks in the ground, the sound of rustling



leaves, signs of pathways through thick bush and bark rubbings on tree trunks.

We gather by the front of the truck so Koro can lead us in karakia. Koro says it's important to acknowledge the taiao (environment) and Papatuanuku (Mother Earth), asking permission to be there and giving thanks for the life of an animal we may be about to take. At the end of the karakia Koro looks at me, waiting for my lead. It is time for me to decide where we are going to go.

To bush bash in the ngahere towards the East, go to page 5.

To bush bash in the ngahere towards the West, go to page 8.

 Kai Mish Kaimahi the Hunting Series

 point towards the East. Koro indicates for me to follow behind him. Teina follows close behind me and Uncle Paki follows at the back. Stealthily, we bush bash through the ngahere, carefully so we don't make too much noise. All the time we are on high alert. Our eyes are constantly scanning the bush, looking for signs of movement. Our ears, if they could, are pricked up like a hunting dog, listening for any noise. Our noses hunt through the smells of the ngahere to pick up any animal scents. We carefully scan the bush around us, looking for signs that an animal has been. A footprint, broken twigs or branches, fresh kaka or rustling leaves are the signs we are looking out for.

Sometimes we stop, just to listen. Nobody moves or makes a sound. We watch for Koro's lead. If Koro stops, we stop. When he starts moving, we start moving. We go deeper and deeper into the ngahere, carefully moving through the thick bush. I turn back to check Teina and Uncle Paki. They are a little bit behind. Teina has a serious look on his face. He reminds me of me when I was his age, wanting to try his best to impress Koro and Uncle. Sometimes he accidentally breaks twigs under his feet and gets a growling from Uncle. I keep close behind Koro. I look up to Koro. I try my best to copy his movements and show him I can be a stealth hunter, just like him.

Suddenly, Koro crouches down low on the top of a rise in the ground. He points for me to come beside him. I crouch down next to him, my eyes peeled on the bush surrounding us. A few hundred yards in front of us there is a little clearing. Koro turns to me and points towards the clearing. "See that clearing through there boy?" I nod my head. I can hear Teina and Uncle Paki still coming up from behind us. I can tell Teina has something in his hand. He has an excited look on his face. Both Teina and Uncle's movements are a lot faster than before. Koro continues talking to me, "Right up there. That is where they are." Uncle and Teina look too once they catch up to us.

 Kai Mish Kaitiaki the Hunting Series

“Koro, look!” Teina shows Koro what he found. A tuft of long, thick hair. Patches of white and golden brown. Definitely a deer. Uncle and Teina excitedly tell Koro and I they have seen tracks and signs of deer a little further back. Koro is hesitant. “Trust me boy, up through there is our best chance.” He begins telling us one of his stories, saying that just further up there is where we can expect to see a lot of deer.

Teina hands me the tuft of hair and excitedly whispers, “TK, we saw fresh kaka too! And tracks!” I look at Uncle and Teina who is clearly determined they want to follow the tracks they found. Then, I look back at Koro. I can tell by the look in his eyes that he truly believes his way is the right way to go. Part of me wonders if this is where he got his big 16 pointer. Koro and Uncle look at me, waiting for my direction.

To follow the tracks Uncle Paki and Teina found, go to page 9.

To follow Koro’s lead and investigate the clearing up ahead, go to page 11.

Kai Mish Kai mahi the Hunting Series

The Deer Hunt

There are seven different deer species in Aotearoa.
Can you hunt for them all?

S	C	G	S	Y	A	W	A	Q	R	Y	Z
O	S	I	D	S	J	O	F	N	G	E	D
P	K	U	B	L	U	L	U	T	G	J	D
A	R	A	W	T	B	L	Z	A	K	E	Q
O	T	T	I	A	G	A	A	N	L	J	M
R	A	B	M	A	S	F	W	I	W	O	U
C	B	G	V	K	Q	U	A	O	I	B	Q
Z	N	C	J	M	U	T	R	W	Q	I	J
X	V	W	X	U	E	O	I	A	S	Y	E
W	X	N	A	T	C	Q	H	P	W	T	Z
Z	G	K	I	K	S	W	N	I	C	Y	H
F	I	H	N	J	X	S	K	T	N	C	T
I	W	A	O	O	H	S	S	I	T	B	Y
H	N	C	F	J	A	L	A	D	C	R	K

 Kai Mish Kai mahi! the Hunting Series

point to the West. Koro signals for me to follow behind. Teina and Uncle follow at the back. We carefully bush bash through the ngahere, making sure we are quiet. We keep walking through the bush for what feels like ages. I keep close behind Koro, watching him in case I bump into him. Only once does he stop for a short rest.

The ngahere is thick, and it is starting to get dark. Still no signs of deer, but we did spot a few trails which looked like a smaller animal, maybe a pig. The ground is a bit wet. Our boots make loud noises if we aren't careful. Uncle growls Teina as he noisily walks through a patch of wet mud. "Watch your feet!"

Suddenly a fence appears in front of us. Koro stops walking, he signals to Uncle, and they both start whispering to each other, trying to determine which way to go. We could climb the fence, or, you could make up the ending! Koro and Uncle turn to look at me, waiting for my decision.

To climb the fence, go to page 12.

To write your own destiny, write the ending in your Writing book!

 Kai Mish Kai mahi! the Hunting Series

glance back at Teina again. I can tell by the look in his eyes and the way he is holding the tuft of hair that he really wants to follow the tracks he and Uncle found. “Let’s check your tracks out,” I say to Teina and Uncle. I can’t even look Koro in the eye, I don’t want to see his disappointment. Koro gets up slowly and looks at Teina, “Show us what you got, boy.”

Teina excitedly tries to run ahead, but Uncle quickly grabs the back of his hood and pulls him back, reminding him to be stealth. Uncle lets Teina take the lead and we all creep slowly behind. Excitement starts bubbling inside me as Uncle and Teina eagerly point out the signs that a deer is near. Fresh kaka, some tracks, some broken branches and tufts of hair on the bark of a few trees.

Uncle signals for us to stop. We crouch low and listen. There is a sound of movement further up ahead. Sticks breaking, heavy breathing and the sound of grass ripping. Teina turns around to look at us. “There!” he whispers. We look through the trees and see a deer, eating grass. Its coat is a grey-brown colour with a light grey belly. Its long ears suddenly pricked up and it raises its head, looking almost directly at us. Two long and two small brown antlers poke up through the top of its head. A spiker. “About 90kg, not bad” Koro whispers.

We sit very still, the spiker stares straight back at us. After about a minute it goes back to eating. Our camouflage must have worked. “We’re down wind,” Koro says. “It can’t smell us.”

“Should we shoot it Koro?!” I whisper. Koro looked deep in thought. “We could.” Koro pauses. “Or we could wait and see if there are any stags nearby.” I stop to have a think. Deer usually travel in herds. Each herd is led by a dominant stag. This spiker in front of us is definitely not the big stag. If we waited a bit, we might see the stag come out and go for him instead. My heart races. I look at the spiker right in front of us. A clear

 Kai Mish Kaitiaki the Hunting Series

shot. Then I look at the gun Koro is holding in his hand. Go for the spiker or the stag?

To shoot the spiker, go to page 15.

To wait and hope to see a stag, go to page 17.

 Kai Mish *Kaimahi the Hunting Series*

Is that where you found the 16 pointer?" I ask Koro. Koro nods.  Koro reminds us of one of the many hunting stories we have heard plenty of times before. "Down there is their wallow," Koro continues. "There's lots of great spots for us to hide and get a good shot." "Show us the way Koro," I whisper.

I hear Teina and Uncle sigh behind me, disappointed that we are not following their path. Koro pushes forward through the ngahere toward the clearing. He is moving faster now. He moves through the bush quickly, ducking trees and carefully holding back low hanging branches. We keep walking for what feels like ages. The sun is getting low, the light is quickly dimming.

Koro starts slowing down. He leads us to a spot where we have a good view of the clearing. Koro finds a place to sit. Uncle, Teina and I find a spot beside him, taking a few minutes to catch our breath. We take in the view, looking at the clearing in front of us for any sign of deer.

"There," Koro points to part of the clearing, "... is their wallow." Teina, Uncle and I look. A large section of wet mud, looking like it had recently been rolled in. My heart starts racing. Koro and Uncle start whispering to each other, pointing further down the hill. I lean in so I can listen in. "... What if we followed that path down through the bush?" Uncle was saying. Koro disagreed. "We should wait here for them to come out." Koro looks at me. "Te Kama, what should we do boy?"

To bush bash through the ngahere to get closer to the wallow, go to page 19.

To wait where you are, go to page 20.

 Kai Mish Kaimahi the Hunting Series

decide for us to climb the fence. Uncle shows us how to quietly, using the biggest fence post. Koro signals for us to follow him down the fence line.

We follow Koro down the clearing next to the fence line. The ground we are walking on is uneven, creating lots of little pothole like ditches which would make great places to hide. The grass is long and a little bit wet.

Suddenly, Koro stops. He points to something in the ground. “Deer tracks” Uncle says, crouching down next to them. Teina and I crouch down beside him to look at them a bit closer. “Fresh!” Teina says, with fresh dirt on his hands from poking at the tracks. Some of the tracks lead into the ngāhere, some lead further down the clearing. “Well boy, where should we go now?”

To keep walking down the fence line, go to page 13.

To go into the ngāhere, go to page 14.

 Kai Mish Kaimahi the Hunting Series

 point down the fence line so we can follow the deer tracks heading down the clearing. We carefully walk down the fence line, stopping often so we can look for any signs of life. The deer tracks start to fade. After about 15 minutes, Koro crouches down into a ditch. We all find a spot next to him, peering into the clearing.

About half an hour goes by before Teina whispers, “I can hear something!” We all listen carefully. Sure enough, we can hear a rustling up ahead. Koro starts creeping forward to get a better look. I carefully follow Koro. I can hear what sounds like grunting, and the sound of digging. “A sow,” Koro says. He stops, looking ahead. Right in front of us, a black sow is rooting the ground. It suddenly stops and looks directly at us before racing into the ngahere. “We spooked it,” Koro said.

I relax and stand back up. Koro and I walk back to where Uncle and Teina are waiting. “Just a sow,” Koro explains. Uncle and Teina stand up from their spot. We had been here awhile now, and it is beginning to get dark. “Another day, boys.” Koro says, as he begins walking back towards the truck. I sigh, disappointed, and follow Koro and Uncle back to the truck.



Kai Mish Kaimahi the Hunting Series

stop and think for second. My eyes glance up and down the fence line at the deer tracks. Most of the tracks lead into the ngāhere. I signal to Koro and Uncle for us to follow the tracks into the ngāhere. We begin walking in. I can feel Teina close behind me, excited to follow the tracks.

The ngāhere starts thinning out. The grass is long and swishes under our feet. The tracks get harder and harder to follow through the grass. Eventually, they disappear. We stop, listening carefully. I feel a fat raindrop roll down my face. Suddenly, all we can hear are raindrops. Soon, the ngāhere is deafening with the sound of rain. We hide under a tree to attempt to keep dry, but we can't escape the rain.

Teina and I look at each other, both trying to pull our collars and hoods up high to keep our necks dry. I see Koro and Uncle Paki talking, but we can't hear them through the rain. I look around us, hoping to see a deer through the bush. No sign of them at all, and no hope of hearing them in this weather.

After waiting about fifteen minutes in our spot under the tree, Uncle and Koro signal for us to start heading back. The rain was showing no sign of slowing down or stopping, and it was starting to get dark. Reluctantly, we get up from our spot and start heading back.



 Kai Mish Kaimahi the Hunting Series

 decide to go for the spiker. I signal to Koro. He smiles. "Good call boy, it's big enough for us." I feel proud of my decision. Koro tells us hunting is not all about getting the biggest animal we find. Sometimes it's best to leave big stags so they can keep breeding and carry on their line.

Koro loads his gun quietly. My hands sweat with excitement. My body is trembling. I keep my eye on the spiker, praying it won't spook. It keeps eating, flicking its ears every now and then. Koro and Uncle help me get into the right position and hold the gun correctly. I lie flat on the ground, trying to hold the gun as steady as I can in my sweaty hands.

Koro sees my hands trembling. "Breathe," he reminds me. Just as I did before, I close my eyes. I breathe in and out, slowly to calm myself down. I listen to the sounds of the spiker in front of me, I feel the breeze which is gently blowing on my face. As I breathe, I can feel my hands steady. I open my eyes and look through the scope.

"Aim for the base of the neck," Uncle says. He helps me to aim. "Take your time," Koro says.

Suddenly, the spiker stops eating and lifts its head right up. "Now!" Koro whispers in my ear. A hint of panic sweeps through me. I squeeze the trigger. I feel the power of the gun in my hands as I pull the trigger. The sound echoes throughout the ngahere, scaring away nearby birds.

"Hit!" I hear Teina shout. Koro and Uncle give me a slap on the back. "Shot, boy!" The spiker fell down straight away, its feet kicking straight out in front of it. It starts making grunting noises and blood starts coming out of its mouth. Koro takes the gun off me. Uncle and Teina start running down towards the spiker. I jump up and follow them down excitedly.

When we reach the spiker, Uncle picks its head up by its ears to bend its neck back. He grabs a knife from the back of his pouch and slices down



Kai Mish Katuahi the Hunting Series

its neck. “Kia ora,” he says. “Nga mihi nui Papatuanuku, we are grateful for this blessing.” Koro has come down too now. Koro says it’s important to always mihi to Papatuanuku for providing us with kai. He recites a karakia to mihi to the deer for giving its life.

“Well done, boy!” Koro rubs the top of my head with a big smile on his face. My first spiker!



 Kai Mish Kaimahi the Hunting Series

he thought of catching a big stag ran through my mind. This could be the day – my first ever kill could be the big stag. “Let’s wait,” I say to Koro.

Koro and Uncle nod. We all find a comfortable place to sit, making sure we don’t break any sticks. Our eyes stay on the spiker, we watch him slowly walk about and eat in front of us. Suddenly, we see three hinds come up from behind him, eating as well. My heart starts racing as we see another spiker appear. The whole herd must be here!

Uncle and Koro stay calm yet alert, their eyes constantly looking through the bush as we see more deer appear. Koro starts loading the gun. Two spikers and three hinds! Suddenly, a fourth hind appears. All the deer move about as if nothing is watching them.

We sit quietly and wait for about ten or fifteen more minutes before Koro gently taps me on the shoulder and points to the right. A huge, twelve pointer stag! Koro signals for me to follow him, and for Uncle and Teina to stay back.

Koro and I creep closer towards the stag. It takes us a few minutes to find a place where we can set up for a good shot. “Get low,” Koro directs me to lie as flat as I can. I look through the scope and move the gun around until it is pointing toward the base of the stag’s neck. “Keep your sights on him and wait for the shot,” Koro whispers. I follow the stag’s movements with the gun, taking deep breaths to keep myself calm.

The stag is now still, its head down and eating. Perfect! I line up the shot for the base of its neck. It’s really quiet. All I can hear is the sound of my own breath and the racing of my heart. 3, 2, 1... I squeeze the trigger and - BANG!! All of the deer suddenly race back into the ngahere.

“Damnit!” Koro shouted. I missed. I can feel my heart sink as I watch some

 Kai Mish Kaitiaki the Hunting Series

dust rise in part of the grass where the bullet hit, and the stag racing off with its herd. The bush was too thick and the ground too rough to run after them. "Better luck next time boy," Koro says as he packs the gun away. My heart sinks as I watch the last of the herd disappear through the ngahere to safety.





Kai Mish Kai mahi the Hunting Series

Let's go down there," I point down to where I saw Uncle point to before. We get up from our position and start bush bashing through the ngahere. We stop often so we can listen and scan the bush for any signs of life. I can hear Koro's breath get louder as he starts to get tired. He pauses for a rest, leaning against a tree.

Uncle grabs a drink out of the pack for Koro. We all take turns having a drink. No noise. No signs of deer, even though we are really close to the wallow. "It's starting to get dark," Uncle says. "Time to head back soon, eh?" Koro takes one more scan of the bush. "We must be near," he says. "Just a little bit longer."

We keep walking through the bush, the light is fading fast. Teina and I look at each other, a bit disappointed. We know it's going to be too dark soon to carry on. Still no sign of deer. Teina starts to moan that his feet are tired. We crouch low in a spot just before the clearing and wait. The air is starting to cool, we can see our breath in the air.

"That's us," Koro says, looking at me. "Sorry boys, next time." I knew this was coming. My heart sinks a bit as we turn around and start heading back. Koro starts telling us one of his hunting stories again. Teina and I hang at the back on the walk back to the truck, trying to scare each other in the dark.



 Kai Mish Kai Mish! the Hunting Series

“Let’s wait,” I say to Koro. Koro pats me on the back. “Good call, boy.” It doesn’t take very long for us to see some deer come into the clearing. “Yes!!” Teina says in excitement. Uncle and Koro quickly signal to him to be quiet. Koro starts pulling his gun out, carefully loading it.

Three, four, then five deer come into view. Three hinds and two spikers. It doesn’t take very long for even more deer to appear. “Two stags!” Uncle says, pointing. Sure enough, two stags emerge from the bush. One slightly bigger than the other, both heading toward the wallow. Sometimes the bigger stag nudges the smaller stag’s rump, pushing it out of the way.

“Here’s your chance, boy!” Koro exclaims, signaling for me to come by him. He sets me up with the gun. “Go for the smaller stag,” Koro tells me. Koro says it’s important to leave the big stags sometimes, so they can keep breeding. I look through the scope. The smaller stag is still pretty big – an 8 pointer, about 140kg. My heart starts racing.

“Breathe,” Koro whispers in my ear. I keep the gun pointed at the stag, relax into the grass and take a few deep breaths. I enjoy watching the stag for a bit through the scope, waiting for my hands to steady. I take some deep breaths. I notice the wind blowing against my face and the long, slightly damp grass tickling my cheeks. I aim for the base of the neck.

I squeeze the trigger – BANG!! The sound echoes throughout the ngahere. The whole herd races back into the bush. Birds fly out from nearby trees. “Hit!” Uncle yells. I look out and see the stag I hit, trying to run but falling, hurt.

Koro takes the gun off me, we all start racing down towards the wallow. By the time we get to the stag it has stopped moving. Blood is coming out of it’s mouth. “Phew – it’s a good one boy!” Koro slaps me on the back. “Shot bro!” Teina exclaims. I can’t stop smiling. I kneel down next to the

Kai Mish Kai mahi the Hunting Series

stag and put my hand gently on its back. Koro takes his pōtae off and says a karakia, giving thanks to Papatūānuku for this blessing.

My first stag! I couldn't wipe the smile off my face the whole way back to our marae.



Deer Hunt answers for page 11: Red, Sika, Sambar, Fallow, Whitetailed, Wapiti, Rusa.

Level Four:



Kaí Mísh

Kaimahi: The Hunting Series

*A prototype resource developed for the PhD research
Project 'A Gamification Framework for Education to
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*A big mihi to all the participants
who have contributed their time and wisdom to
this research project.*

Ehara taku toa, he takitahi, he toa takitini

Kai Mish Kaimahi the Hunting Series

dusty, bumpy one-way road leads us through the ngahere. Koro has to drive slowly to maneuver his 4wd ute around what feels like hundreds of deep potholes. Thousands of dark green Pine trees stand like rows of tall soldiers on either side of us until you reach this part when suddenly the Pine trees turn into thick native trees. I wind my window down so I can listen to the sounds of the ngahere and feel if there is any wind. The air is cool, there is a slight breeze coming from the East. I can hear lots of birds and cicadas. Koro says our ngahere used to be deafening with the sounds of our native birds, but now there are a lot less of them, so it is not as noisy as it used to be.

I see the fat, white bellies of Kererū perched high in a tree. They don't even move as our truck creeps past, but I can tell they are watching us because their heads slowly follow us.

Uncle Pakihiwi (Paki) laughs as Koro talks to him while he drives, one arm hanging out his window, his fingers spread wide, feeling for any wind. I can't hear what Koro is saying, but I can tell by the way Koro is waving his arm and gesturing towards the bush that he is telling another one of his stories. Koro loves sharing his stories with us. Most of his stories are hunting stories. Koro reckons he's caught a 16 pointer in this bush before. Koro usually leaves big stags, but because there was a big hui at our marae, he shot the stag and took it back to feed everyone. Koro says that usually he would leave big stags so they can keep breeding and carrying on their line.

I dream of shooting my own 16 pointer one day, just like Koro. Not so I can hang its head on the wall, but so I can provide for my marae too. I love hunting. Koro and Uncle Paki are good hunters. I jump at any chance to go out with them. Nan used to say I should learn as much from them while I still can. I miss my Nan. I know she would be proud to see me out with Koro.

**Kai Mish** Kaitiaki the Hunting Series

Back at our marae there is a big hui. Lots of our whanau are on their way now from different parts of the Country. We need lots of meat. Now is my chance to prove I can provide too, just like Koro.

“Bro, TK!” My cousin Teina excitedly calls out to me. He is sitting by me in the back seat and pointing to a clearing you can make out through a section of bush. “Shhhh,” Uncle Paki gestures toward me and Teina. We know if we want to come we have to be quiet, otherwise we won’t be allowed to come next time. Uncle Paki takes hunting seriously. He taught us how to move stealthily through the bush so we don’t make any noise. Teina looks at me with a cheeky grin. We know once we get the signal to be quiet, it’s nearly hunting time. He excitedly jiggles in his seat as he anticipates the hunt.

Koro slowly parks the truck on the side of the road, poking the truck as far into a little clearing as he can so our truck is a little hidden. I see Koro and Uncle quietly signaling to each other, trying to decide which way to go. Teina and I watch from the back seat, softly taking our seatbelts off so we don’t make any noise. Suddenly Koro turns to me and says “Te Kama, you decide where we go today. You want to catch that big stag?” My heart starts racing. I can’t believe it. Koro is letting me decide where we go?! Suddenly images of a big 16 pointer jump into my head. The excitement is overwhelming, I haven’t even come up with a reply before Koro slaps me on the shoulder and says, “Today’s the day, boy.”

We carefully open the truck doors and step outside. Koro and Uncle sort the gun and the hunting pack. I take a few deep breaths to calm my racing heart. I can’t think properly when I am this excited. As I breathe, I take in the ngahere. I listen to the birds and cicadas. I see the way the trees are blowing in the wind. I can smell and taste the freshness of the mulch in the ground and nearby bush. I feel the grass under my boots. Koro says a good hunter listens to the taiaro to help lead the way. The way the wind

**Kai Mish** Kaitiaki the Hunting Series

blows, the smells, the tracks in the ground, the sound of rustling leaves, signs of pathways through thick bush and bark rubbings on tree trunks are all signs that a large animal may be nearby.

We huddle by the truck so Koro can lead us in karakia. Our ritual every time we go hunting. Koro says it's important to mihi to the taiao and to Papatuanuku, asking permission to be there and giving thanks for the life of an animal we may be about to take. At the end of the karakia Koro looks at me, waiting for my direction. It is time for me to decide.

To bush bash in the ngahere towards the East, go to page 5.

To bush bash in the ngahere towards the West, go to page 8.

**Kai Mish** *Kaimahi the Hunting Series*

point towards the East. Koro signals for me to follow behind him. Teina follows close behind me and Uncle Paki follows at the back. Stealthily, we bush bash through the thick ngahere, carefully and slowly so we don't make too much noise. All the time we are on high alert, sensing for any signs of life. Our eyes are constantly scanning the bush, looking for signs of movement. Our ears, if they could, are pricked up like a hunting dog, listening carefully for any distant noise. Our noses filter through the smells of the ngahere to pick up the scent of any animals which may be hiding nearby. We carefully scan the bush around us, looking for signs that an animal has been there. A footprint, broken twigs or branches, fresh kaka, rustling leaves, or signs of smaller animals suddenly moving because they may be frightened by the presence of a deer are the signs we are looking out for.

Sometimes we stop, just to listen. Nobody moves or makes a sound. Any movement, such as our boots, clothes or sticks breaking, could give us away and scare off nearby animals. We watch for Koro's lead. If Koro stops, we stop. When he starts moving again, we start moving. We go deeper and deeper into the ngahere, carefully and skillfully moving through the thick bush. I turn back to check Teina and Uncle Paki. They are trailing a little bit behind. Teina has a serious look on his face. He reminds me of me when I was his age, wanting to try his best to impress Koro and Uncle. Sometimes he unintentionally breaks twigs under his feet and gets a scolding from Uncle. I keep close behind Koro. I look up to Koro. I try my best to copy his movements and show him I can be a stealth hunter, just like him.

Suddenly, Koro crouches down low on the top of a hill-like rise in the ground. He signals for me to come beside him. I crouch down next to him, my eyes peeled on the bush surrounding us. A few hundred yards in front of us there is a little clearing. Sunlight pours through from through the tall trees. Koro turns to me and points towards the clearing. "See that clearing through there boy?" I nod my head. I can hear Teina and Uncle

**Kai Misk** Kaitiaki the Hunting Series

Paki still coming up from behind us. I can tell Teina has something in his hand. He has an excited look on his face. Both Teina and Uncle's movements are a lot faster than before. Koro continues talking to me, "Right up there. That is where they are." Uncle and Teina look too once they catch up to where we are.

"Koro, look!" Teina shows Koro what he found. A tuft of long, thick hair. Patches of white and golden brown. Definitely a deer. Uncle and Teina excitedly tell Koro and I they have seen tracks and signs of deer a little further back. Koro is unconvinced. "Trust me boy, up through there is our best chance." He begins telling us one of his stories, saying that just further up there is where we can expect to see a lot of deer.

Teina hands me the tuft of hair and excitedly whispers, "TK, we saw fresh kaka too! And tracks!" I look at Uncle and Teina who is clearly determined they want to follow the tracks they found. Then, I look back at Koro and am torn. I can tell by the look in his eyes that he truly believes his way is the right way to go. Even though he knows Uncle and Teina found tracks, this clearing up ahead is one of Koro's spots he's been telling us through his many stories. Part of me wonders if this is where he got his big 16 pointer. Koro and Uncle look at me, waiting for my direction.

To follow the tracks Uncle Paki and Teina found, go to page 9.

To follow Koro's lead and investigate the clearing up ahead, go to page 11.



Kai Mish Kai mahi the Hunting Series

The Deer Hunt

There are seven different deer species in Aotearoa.
Can you hunt for them all?

S	C	G	S	Y	A	W	A	Q	R	Y	Z
O	S	I	D	S	J	O	F	N	G	E	D
P	K	U	B	L	U	L	U	T	G	J	D
A	R	A	W	T	B	L	Z	A	K	E	Q
O	T	T	I	A	G	A	A	N	L	J	M
R	A	B	M	A	S	F	W	I	W	O	U
C	B	G	V	K	Q	U	A	O	I	B	Q
Z	N	C	J	M	U	T	R	W	Q	I	J
X	V	W	X	U	E	O	I	A	S	Y	E
W	X	N	A	T	C	Q	H	P	W	T	Z
Z	G	K	I	K	S	W	N	I	C	Y	H
F	I	H	N	J	X	S	K	T	N	C	T
I	W	A	O	O	H	S	S	I	T	B	Y
H	N	C	F	J	A	L	A	D	C	R	K

**Kai Mish** Kaimahi the Hunting Series

point to the West. Koro signals for me to follow behind. Teina and Uncle follow at the back. We carefully bush bash through the ngahere, making sure we are quiet. I constantly scan the bush around us, hoping to catch a glimpse of a deer. We keep walking through the bush for what feels like a very long time. I keep close behind Koro, carefully watching his movements in case I bump into him. Only once does he stop for a short rest.

The ngahere is dense, and it is starting to get dark. Still no signs of deer, although we did spot a few trails which looked like a smaller animal, maybe a pig. The ground is slightly wet. Our boots make a loud sludging noise if we aren't careful. Uncle scolds Teina as he noisily sludges through a patch of wet mud. "Watch your feet!" Uncle directs Teina, teaching him to walk in the driest patch of ground.

Suddenly a fence appears in front of us. Koro stops walking, he signals to Uncle, and they both start whispering to each other, trying to determine which way to go. We could climb the fence, or, you could make up the ending! Koro and Uncle turn to look at me, waiting for my decision.

To climb the fence, go to page 12.

To write your own destiny, write the ending in your Writing book!

 Kai Mish Kaimahi the Hunting Series

glance back at Teina again. I can tell by the way his eyes are sparkling and the way he is clenching tight to the tuft of hair he found that he really wants to follow the tracks he and Uncle found. Koro may be right – I believe his stories, but, when you have so many signs such as fresh kaka and tracks, it's an obvious sign that a deer is nearby. "Let's check your tracks out," I say to Teina and Uncle. I can't even look Koro in the eye, I don't want to see his disappointment. Koro gets up slowly and looks at Teina, "Show us what you got, boy."

Teina excitedly tries to run ahead, but Uncle quickly grabs the back of his hood and pulls him back, reminding him to be stealth. Deer could be really close, any noise or movement could scare it off. Uncle lets Teina take the lead and we all creep slowly behind. A tinge of excitement starts bubbling inside me as Uncle and Teina eagerly point out the signs that a deer is near. Fresh kaka, some tracks, some broken branches and tufts of hair on the bark of a few trees.

Uncle signals for us to stop. We crouch low and listen. There is an unmistakable sound of movement further up ahead. Sticks breaking, heavy breathing and the sound of ripping grass. Teina turns around to look at us, his eyes huge and bright. "There!" he whispers. We look through the trees and see a deer, casually eating at the grass, totally oblivious to the fact that we were just a few meters away. Its coat is a grey-brown colour with the underside of its belly being a light grey. Its long ears suddenly pricks up and it raises its head, looking almost directly at us. Two long and two small brown antlers poke up through the top of its head. A spiker. "About 90kg, not bad" Koro whispers.

We sat frozen, the spiker seemed to stare straight back at us. After about a minute, it goes back to eating. Our camouflage must have worked. "We're down wind," Koro says. "It can't smell us."

**Kai Mish** Kaitiaki the Hunting Series

“Should we shoot it Koro?!” I excitedly whisper. Koro looks deep in thought. “We could.” Koro pauses. “Or we could wait and see if there are any stags nearby.” I stop to have a think. Typically, deer travel in herds. Each herd is led by a dominant male, or stag. This spiker in front of us is definitely not the big stag. If we waited a bit, we might see the stag come out and go for him instead. My heart races. I think about my whanau back at our marae waiting on us to bring some meat back. I look at the spiker right in front of us. A clear shot. Then I look at the gun Koro is holding tightly in his hand. Go for the spiker or the stag?

To shoot the spiker, go to page 15.

To wait and hope to see a stag, go to page 17.

**Kai Mish** Kaimahi the Hunting Series

Is that where you found the 16 pointer?" I ask Koro. Koro nods. **//** Koro reminds us of one of the many hunting stories we have heard plenty of times before. "Down there is their wallow," Koro continues. "There's lots of great spots for us to hide and get a good shot." "Show us the way Koro," I whisper, hoping his story lives up to expectation.

I hear Teina and Uncle sigh behind me, disappointed that we are not following their path. Koro enthusiastically pushes forward through the ngahere toward the clearing. He is moving faster now. Stealth, but fast. He expertly moves through the bush, ducking trees and carefully holding back low hanging branches. We keep walking for what feels like ages. The sun is getting low, the light is quickly dimming. Dark shadows of bush are easily mistaken for animals. Sometimes I have to look twice because I swear I can see the outline of a deer.

Koro starts slowing down. He leads us to a spot where we have a good view of the clearing. We have finally made it. Koro crouches down and finds a place to sit. Uncle, Teina and I find a spot beside him, taking a few minutes to catch our breath. We take in the view as we rest, scanning the clearing in front of us for any sign of deer.

"There," Koro points to part of the clearing, "... is their wallow." Teina, Uncle and I look. Sure enough, there it is. A large section of wet mud, looking like it had recently been rolled in. My heart starts racing. I look at Teina who is holding his hands up like binoculars as if it helps him to see better. Koro and Uncle start whispering to each other, gesturing further down the hill. I lean in so I can listen in. "... What if we followed that trail down through the bush?" Uncle was saying. Koro disagreed. "We should wait it out here for them to come out." Koro looks at me. "Te Kama, what should we do boy?"

To bush bash through the ngahere to get closer to the wallow, go to page 19.
To wait where you are, go to page 20.

**Kai Mish** Kaimahi the Hunting Series

point to the fence, signalling to Koro and Uncle for us to climb it. Uncle shows us how to climb the fence the quietest way using the fence post. Koro signals for us to follow him down the fence line.

We follow Koro down the clearing next to the fence line. The ground we are walking on is on a gentle slope and is uneven, creating lots of little pothole like ditches throughout the ground which would make great places to hide. I see Uncle and Koro spying these as we quietly walk down the fence line, dodging them carefully as we walk. The grass is long and a little bit wet. I look down at my feet and appreciate the dryness of my feet, admiring my new boots Uncle bought me.

Without warning, Koro stops. He points to something in the ground. "Deer tracks" Uncle says, crouching down next to them. Teina and I crouch down beside him to inspect them a bit closer. "Fresh!" Teina exclaims, with fresh dirt on his hands from poking at the tracks. Some of the tracks lead into the ngāhere, some lead further down the clearing. I can tell that Uncle and Koro have noticed as well. "Well boy, where should we go now?"

To keep walking down the fence line, go to page 13.
To go into the ngāhere, go to page 14.

 Kai Mish Kaimahi the Hunting Series

signal to Koro to keep walking down the fence line so we can follow the deer tracks heading down the clearing. We quietly and carefully walk down the fence line, stopping often so we can carefully scan for any signs of life. The deer tracks start to fade. After about 15 minutes, Koro crouches down into a ditch. We all find a spot next to him, peering out into the clearing.

About half an hour goes by before Teina whispers, "I can hear something!" We all listen carefully. Sure enough, we can hear the sound of rustling up ahead. All our eyes are peeled, but we can't see anything yet. Koro starts inching forward to get a better look, signaling for Uncle and Teina to wait behind. I carefully follow Koro, anticipating what we might find. I can hear what sounds like grunting, and the sound of digging. "A sow," Koro says. He stops, looking directly ahead. Right in front of us, a black sow is rooting up the earth. It suddenly stops and looks directly at us before racing into the ngahere. "We spooked it," Koro said. Oh well, it wasn't a deer anyway.

I relax and stand back up. Koro and I walk back to where Uncle and Teina are waiting. "Just a sow," Koro explains. Uncle and Teina stand up from their spot. We had been here awhile now, and it is beginning to get dark. I sensed Koro and Uncle had had enough. "Another day, boys," Koro says, as he begins walking back towards the truck. I sigh, disappointed, and follow Koro and Uncle back to the truck.



**Kai Mish** Kaimahi the Hunting Series

stop and think for second. My eyes glance up and down the fence line at the deer tracks Koro just found. Most of the tracks lead into the ngāhere. My curiosity is peaked. I signal to Koro and Uncle for us to follow the tracks into the ngāhere. We begin walking in, following the tracks we found. I can feel Teina close behind me, excited to follow the tracks.

The ngāhere starts thinning out. The grass is long and swishes under our feet. The tracks get harder and harder to follow through the grass. Eventually, they disappear. We stop, listening carefully. I feel a fat raindrop roll down my face. I brush it away, trying to focus on listening for sounds of deer. Suddenly, all we can hear are raindrops. Within minutes, the ngāhere is deafening with the sound of rain. We shelter under a tree to attempt to keep dry, but we can't escape the thickness of the rain.

Teina and I look at each other through the thickness of the downpour, both attempting to pull our collars and hoods up high to keep our necks dry. I see Koro and Uncle Paki talking, but we can't hear them through the loudness of the rain. I look around us, hoping to see a deer through the bush. No sign of them at all, and no hope of hearing them in this weather.

After waiting about fifteen minutes in our spot under the tree, Uncle and Koro signal for us to start heading back. The rain was showing no sign of slowing down or stopping, and it was starting to get dark. Reluctantly, we get up from our spot and start heading back.



 Kai Mish Kaimahi the Hunting Series

decide to go for the spiker. It's so close I worry that if we wait or try to move, it might spook. I signal to Koro. He smiles. "Good call boy, it's big enough for us." I feel proud of my decision. Koro tells us hunting is not all about getting the biggest. Sometimes it's best to leave big stags so they can keep breeding and carry on their line.

Koro prepares and loads his gun, slowly so it doesn't make too much noise. My hands sweat with excitement. My body is trembling. I nervously keep my eye on the spiker, praying it won't spook. It keeps eating, flicking its ears every now and then. Koro and Uncle help me get into the right position and hold the gun correctly. I lie flat on the ground, trying to hold the gun as steady as I can in my sweaty hands which are trembling with excitement.

Koro sees my hands trembling. "Breathe," he reminds me. Just as I did before, I close my eyes. I breathe in and out, slowly to calm myself down. I listen to the sounds of the spiker in front of me, I feel the breeze which is gently blowing on my face. As I breathe, I can feel my hands steady. I open my eyes and look through the scope.

"Aim for the base of the neck," Uncle says. He helps me to aim. "Take your time," Koro says. I watch the spiker through the scope as it eats, directing my gun towards the base of its neck.

Suddenly, the spiker stops eating and lifts its head right up. "Now!" Koro whispers in my ear. A hint of panic sweeps through me. I really don't want this one to get away. I squeeze the trigger with my finger. I feel the power of the gun in my hands as it recoils and kicks back into my shoulder. The sound of the shot echoes through the ngahere, scaring away nearby birds which fly off from surrounding trees.

"Hit!" I hear Teina exclaim. Koro and Uncle give me a slap on the back. "Shot, boy!" The spiker fell down straight away, its feet kicking straight



out in front of it. It starts making grunting noises and blood starts coming out of its mouth. Koro takes the gun off me. Uncle and Teina start running down towards the spiker. I jump up, brush myself off and follow them down, excited to see my first kill.

When we reach the spiker, Uncle picks its head up by its ears to tilt its neck back. He grabs a knife from the back of his pouch and slices down its neck. "Kia ora," he says. "Nga mihi nui Papatuanuku, we are grateful for this blessing." Koro has come down too now. Koro says it's important to always mihi to Papatuanuku for providing us with kai to sustain us. He recites a karakia to mihi to the deer for giving its life.

"Well done, boy!" Koro rubs the top of my head with a big smile on his face. My first spiker!





Kai Mish Kai mahi the Hunting Series

he excitement of the thought of catching a big stag ran through my mind. Surely there must be a stag nearby. Maybe even really close. This could be the day – my first ever kill could be the big stag. “Let’s wait,” I say to Koro.

Koro and Uncle nod in agreement. Teina looks a little disappointed at first, then I can see him thinking about the thought of catching an even bigger stag. He relaxes back down. We all find a comfortable place to sit, making sure we don’t break any sticks. Our eyes stay peeled on the spiker, we watch him slowly walk about and eat in front of us. Suddenly, we see three hinds come up from behind him, eating as well. My heart starts racing as we see another spiker appear. The whole herd must be here!

Uncle and Koro stay calm yet alert, their eyes constantly scanning through the bush as we see more deer appear. Koro starts preparing and loading the gun, slowly so it doesn’t make any noise. Two spikers and three hinds! Suddenly, a fourth hind appears. All the deer are moving about as if nothing is watching them, swishing their tails every now and then and pricking their ears backwards and forth.

We sit quietly and wait for about ten or fifteen more minutes before Koro gently taps me on the shoulder and points to the right. A huge, twelve pointer stag! Clearly the dominant one of the group. Uncle and Teina spot the stag too, their eyes glistening with excitement. Koro gestures for me to follow him, and for Uncle and Teina to stay back.

Stealthily, Koro and I inch closer towards the stag, trying to find a good spot. It takes us a few minutes to find a place where we can set up for a good shot. “Get low,” Koro directs me to lie as flat as I can. I look through the scope and move the gun around until it is directed toward the base of the stag’s neck. The stag is pushing one of the spikers around, moving around quite a bit. “Keep your sights on him and wait for the shot,” Koro whispers. I follow the stag’s movements with the gun, taking deep breaths

**Kai Mish** Kaitiaki the Hunting Series

to keep myself calm.

The stag is now still, its head down and eating. Perfect! I line up the shot for the base of its neck. It's really quiet. All I can hear is the sound of my own breath and the racing of my heart. 3, 2, 1... I squeeze the trigger and - BANG!! The gun recoils, slight smoke coming out from the end of its barrel. All of the deer suddenly race back into the ngahere, with the sound of the gun shot echoing throughout the trees.

"Damnit!" Koro exclaimed. I missed. I watch some dust rise in part of the grass where the bullet hit, and the stag racing off with its herd. The bush was too thick and the ground too rough to run after them, plus they were running fast. "Better luck next time boy," Koro says as he packs the gun away. My heart sinks as I watch the last of the herd disappear through the ngahere to safety.





Kai Mish Kai mahi the Hunting Series

Let's go down there," I point down to where I saw Uncle point to before. We get up from our position and start bush bashing through the ngahere, carefully and slowly. We stop often so we can listen and scan the bush for any signs of life. I can hear Koro's breath get louder as he starts to tire from all the walking. He pauses for a rest, leaning against a tree.

Uncle grabs a drink out of the pack for Koro. We all take turns having a drink as we all catch our breath. No noise. No signs of deer, even though we are really close to the wallow. "It's starting to get dark," Uncle exclaims. "Time to head back soon, eh?" Koro takes one more scan of the bush. "We must be near," he says. "Just a little bit longer."

We keep walking through the bush, the light is fading fast. Teina and I look at each other, a bit disappointed. We know it's going to be too dark soon to carry on. Still no sign of deer. Koro is clearly fading fast now, and Teina is starting to moan that his feet are tired. We crouch low in a spot just before the clearing and wait. The air is starting to cool, we can see our breath in the air.

"That's us," Koro says, looking at me. "Sorry boys, next time." I knew this was coming. My heart sinks a bit as we turn around and start heading back. Koro starts telling us one of his hunting stories again. Teina and I hang at the back on the walk back to the truck, trying to scare each other in the dark.





Kai Mish Kai'mahi the Hunting Series

“Let’s wait,” I say to Koro. Koro pats me on the back. “Good call, boy. This is the best view from up here.” It doesn’t take very long at all for us to see some deer come into the clearing. “Yes!!” Teina says in excitement. Uncle and Koro quickly signal to him to be quiet. Koro starts pulling his gun out, carefully loading it.

Three, four, then five deer come into view. Teina makes binoculars with his hands to get a ‘better look.’ All four of us are silent as we investigate the deer to see what they are. Three hinds and two spikers. It doesn’t take very long for even more deer to appear, some running out from where they’ve come from, heading toward their wallow. “Two stags!” Uncle exclaims, pointing. Sure enough, two stags emerge from the bush. One slightly bigger than the other, both heading toward the wallow. Sometimes the bigger stag nudges the smaller stag’s rump, pushing it out of the way. “Here’s your chance, boy!” Koro exclaims, signaling for me to come by him. He sets me up with the gun. “Go for the smaller stag,” Koro tells me. Koro says it’s important to leave the big stags sometimes, so they can keep breeding and repopulating the deer herd. I look through the scope. The smaller stag is still pretty big – an 8 pointer, about 140kg. My heart starts racing as excitement builds at the thought of bringing this stag back to our marae.

“Breathe,” Koro whispers in my ear. I keep the gun pointed at the stag, relax down into the grass and take a few deep breaths. I enjoy watching the stag for a bit through the scope, waiting for my hands to steady. I take some deep breaths. I notice the wind blowing against my face and the long, slightly damp grass tickling my cheeks. My heart slows, my hands steady. I aim for the base of the neck.

There is movement amongst the herd. The bigger stag and a couple of the spikers begin pushing each other around. It’s now or never. I squeeze the trigger – BANG!! The gun recoils into my shoulder. The sound echoes throughout the ngahere. The whole herd scatters, retreating back into the

Kai Mish Kai mahi the Hunting Series

bush where they came from. Birds flutter out from nearby trees. “Hit!” Uncle exclaims. My heart is in my throat, I look out and see the stag I hit, trying to run but falling, obviously hurt.

Koro takes the gun off me, we all start racing down towards the wallow. As we run we excitedly slip and fall through the bush, not caring because we want to get down to the stag as quickly as we can. By the time we get to the stag, it has stopped moving. Blood is coming out of it’s mouth. “Phew – it’s a good one boy!” Koro slaps me on the back. “Shot bro!” Teina exclaims. I can’t stop smiling. I kneel down next to the stag and put my hand gently on its back. Koro takes his pōtae off and recites a karakia, giving thanks to Papatūānuku for this blessing.

My first stag! I couldn’t wipe the smile off my face the whole way back to our marae.



Deer Hunt answers for page 11: Red, Sika, Sambar, Fallow, Whitetailed, Wapiti, Rusa.

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25. Whakawhitinga kōrero

Kaiako

Whakawhitinga kōrero Caught a Spiker!

Encourage *conversation*. Students need to verbally respond to the following questions. Once they have answered the questions to your satisfaction, they can be rewarded the agreed amount of points on the leader board for their catch. (Make sure students are responding with similar answers to below (i.e. what was in the book) rather than making it up from their own knowledge.

To catch the spiker, students have to follow this path:
page 8 – page 12 – page 18

1. Why does Koro always lead a karakia before a hunt?
2. Why does Teina remind TK of him when he was his age?
3. Why was Koro so keen to go towards the clearing rather than follow the tracks Uncle and Teina found?
4. Why could TK not look Koro in the eye when he decided to follow the tracks Uncle and Teina found?
5. Why did Koro think if they waited a stag may come along?
6. Why did TK feel proud of his decision to go for the spiker rather than wait to see if a stag would come?

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Kaiako

1. Koro always leads karakia before a hunt because it is important to mihi (acknowledge) the taiao (environment), and to Papatūānuku (Mother Earth), asking permission to be there and giving thanks for the life of an animal they may be about to take. It's a respectful tikanga which is practiced in a lot of different cultures around the world.
2. Teina reminds TK of himself when he was his age because Teina is trying hard to impress Uncle and Koro. Teina has a serious look on his face because he is concentrating, however he is a bit clumsy (he is young and still learning) and keeps breaking sticks unintentionally, just like TK used to.
3. Koro was keen to go to the clearing because he has been there many times before, and knows it is a good spot to find herds of deer. Koro has talked about the spot many times in his stories he tells. He is very confident they will find something there if they go – so confident in fact, that he is unconvinced that following the path Uncle and Teina have found is better.
4. TK couldn't look Koro in the eye when he decided to follow the tracks Uncle and Teina found, because he knew Koro would be disappointed in his decision. TK was really torn between whose path to take, because he could see that Teina really wanted to follow the tracks he found, but he also knew Koro really wanted to go to his spot. It was a hard decision for TK to make.
5. Koro thought if they waited a stag may come along, because deer tend to travel in herds, and each herd always has a dominant male (stag). They had found 1 spiker – Koro knew there was a high chance it's herd must be nearby, so if they waited, they may just see the stag come out.
6. TK felt proud of his decision to go for the spiker, because he knows that when you hunt, you shouldn't always take the biggest stag you can find – sometimes it's important to leave them so they can keep breeding/carrying on their line. It's best to take just as much as you need, rather than simply take the biggest as a trophy/to show off. TK knew that Koro would be proud of his decision too.

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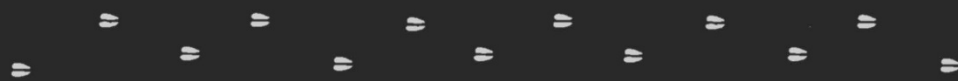
Kaiako

Whakawhitinga kōrero

Caught the Stag!

Encourage conversation. Students need to verbally respond to the following questions. Once they have answered the questions to your satisfaction, they can be rewarded the agreed amount of points on the leader board for their catch. (Make sure students are responding with similar answers to below (i.e. what was in the book) rather than making it up from their own knowledge.

To catch the spiker, students have to follow this path:
page 8 – page 14 – page 23



1. How does the taiao help a hunter?
2. Why do you think TK chose to go where Koro suggested?
3. Why was Koro happy with TK's decision to wait in the spot rather than bush bash?
4. Why did Koro tell TK to go for the smaller stag?
5. Why was TK excited to get the stag?
6. Why does Koro tell TK to breathe?



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Kaiako

1. The taiao helps a hunter if a hunter is alert and listens with all of his or her senses: listening to the sounds, feeling the way the wind blows, being aware of the smells, noticing (seeing) the tracks in the ground/rubbings on the bark of trees, and tasting/smelling any change in the air.
2. TK chose to go where Koro suggested because he realised that the clearing ahead of them was one of the places where Koro has talked about in one of his hunting stories. TK also wondered if this was the spot where Koro caught his 16 pointer. TK really looks up to his Koro and didn't want to disappoint him by not following his lead.
3. Koro was happy with TK's decision to wait in the spot rather than bush bash in the ngahere because he knows the spot where they are in gave them the best view. Koro knows the place well and he already knows where they are is the best spot they could be in.
4. Koro told TK to go for the smaller stag because the smaller stag was enough for them. Koro tries to teach them to not to always go for the bigger stag, as sometimes it is best to leave the bigger stag to be able to breed and carry on its line. If we keep wiping out the big stags all the time, the quality of the deer population will slowly decline.
5. TK was excited to get the stag, because he really wanted to take it back to his marae to prove that he could provide, just like his Koro. There was a big hui going on at his marae and they really needed the meat.
6. Koro tells TK to breathe, because it helps him to focus. When TK breathes, it allows him to 'tune in' to his surroundings, he notices his breath, the wind, the sounds, and he becomes more in control of his body. Then, he is more steady with the gun and more focused/better able to aim/shoot.

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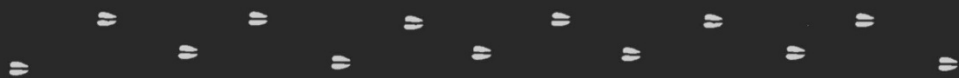
Kaiako

Whakawhitinga kōrero

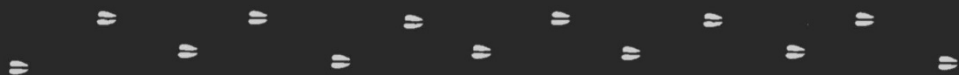
Caught a Spiker!

Encourage *conversation*. Students need to verbally respond to the following questions. Once they have answered the questions to your satisfaction, they can be rewarded the agreed amount of points on the leader board for their catch. (Make sure students are responding with similar answers to below (i.e. what was in the book) rather than making it up from their own knowledge.

To catch the spiker, students have to follow this path:
page 8 – page 12 – page 18



1. Why does Koro always lead a karakia before a hunt?
2. Why was Koro not so sure about following the tracks Uncle Paki and Teina had found?
3. Why could TK not look Koro in the eye when he decided to follow the tracks Uncle and Teina found?
4. Why did Koro think if they waited a stag may come along?
5. Why did TK feel proud of his decision to go for the spiker rather than wait to see if a stag would come?



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Kaiaako

1. Koro always leads karakia before a hunt because it is important to mihi (acknowledge) the taiao (environment), and to Papatūānuku (Mother Earth), asking permission to be there and giving thanks for the life of an animal they may be about to take. It's a respectful tikanga which is practiced in a lot of different cultures around the world.
2. Koro was not so sure to follow the tracks Uncle and Teina had found because he has been to the clearing he just spotted many times before, and knows it is a good spot to find herds of deer. Koro has talked about the spot many times in his stories he tells.
3. TK couldn't look Koro in the eye when he decided to follow the tracks Uncle and Teina found, because he knew Koro would be disappointed in his decision. TK was really torn between whose path to take, because he could see that Teina really wanted to follow the tracks he found, but he also knew Koro really wanted to go to his spot. It was a hard decision for TK to make.
4. Koro thought if they waited a stag may come along, because deer tend to travel in herds, and each herd always has a dominant male (stag). They had found 1 spiker – Koro knew there was a high chance it's herd must be nearby, so if they waited, they may just see the stag come out.
5. TK felt proud of his decision to go for the spiker, because he knows that when you hunt, you shouldn't always take the biggest stag you can find – sometimes it's important to leave them so they can keep breeding/carrying on their line. It's best to take just as much as you need, rather than simply take the biggest as a trophy/to show off. TK knew that Koro would be proud of his decision too.

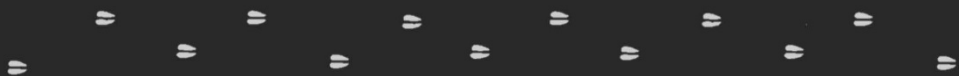
Kaiako

Whakawhitinga kōrero

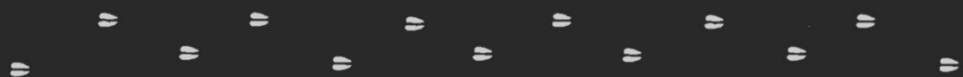
Caught the Stag!

Encourage *conversation*. Students need to verbally respond to the following questions. Once they have answered the questions to your satisfaction, they can be rewarded the agreed amount of points on the leader board for their catch. (Make sure students are responding with similar answers to below (i.e. what was in the book) rather than making it up from their own knowledge.

*To catch the spiker, students have to follow this path:
page 8 – page 14 – page 23*



1. How does the taiao help a hunter?
2. Why was Koro happy with TK's decision to wait in the spot rather than bush bash?
3. Why did Koro tell TK to go for the smaller stag?
4. Why was TK excited to get the stag?
5. Why does Koro tell TK to breathe?



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Kaiako

1. The taiao helps a hunter if a hunter is alert and listens with all of his or her senses: listening to the sounds, feeling the way the wind blows, being aware of the smells, noticing (seeing) the tracks in the ground/rubbings on the bark of trees, and tasting/smelling any change in the air.
2. Koro was happy with TK's decision to wait in the spot rather than bush bash in the ngahere because he knows the spot where they are in gave them the best view. Koro knows the place well and he already knows where they are is the best spot they could be in.
3. Koro told TK to go for the smaller stag because the smaller stag was enough for them. Koro tries to teach them to not to always go for the bigger stag, as sometimes it is best to leave the bigger stag to be able to breed and carry on its line. If we keep wiping out the big stags all the time, the quality of the deer population will slowly decline.
4. TK was excited to get the stag, because he really wanted to take it back to his marae to prove that he could provide, just like his Koro. There was a big hui going on at his marae and they really needed the meat.
5. Koro tells TK to breathe, because it helps him to focus. When TK breathes, it allows him to 'tune in' to his surroundings, he notices his breath, the wind, the sounds, and he becomes more in control of his body. Then, he is more steady with the gun and more focused/better able to aim/shoot.

Ngā Akonga

Whakawhitinga kōrero

Caught a Spiker!



1. Why does Koro always lead a karakia before a hunt?
2. Why does Teina remind TK of him when he was his age?
3. Why was Koro so keen to go towards the clearing rather than follow the tracks Uncle and Teina found?
4. Why could TK not look Koro in the eye when he decided to follow the tracks Uncle and Teina found?
5. Why did Koro think if they waited a stag may come along?
6. Why did TK feel proud of his decision to go for the spiker rather than wait to see if a stag would come?

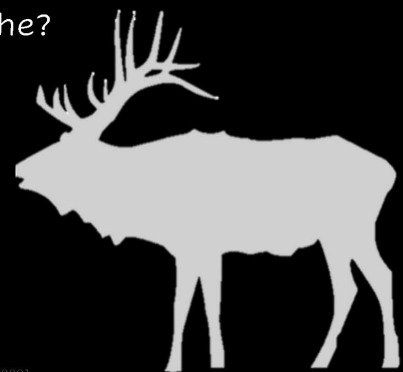
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Ngā Akonga

Whakawhītinga kōrero

Caught the Stag!

1. How does the taiao help a hunter?
2. Why do you think TK chose to go where Koro suggested?
3. Why was Koro happy with TK's decision to wait in the spot rather than bush bash?
4. Why did Koro tell TK to go for the smaller stag?
5. Why was TK excited to get the stag?
6. Why does Koro tell TK to breathe?



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Ngā Akonga

Whakawhitinga kōrero

Caught a Spiker!

1. Why does Koro always lead a karakia before a hunt?
2. Why was Koro not so sure about following the tracks Uncle Paki and Teina had found?
3. Why could TK not look Koro in the eye when he decided to follow the tracks Uncle and Teina found?
4. Why did Koro think if they waited a stag may come along?
5. Why did TK feel proud of his decision to go for the spiker rather than wait to see if a stag would come?



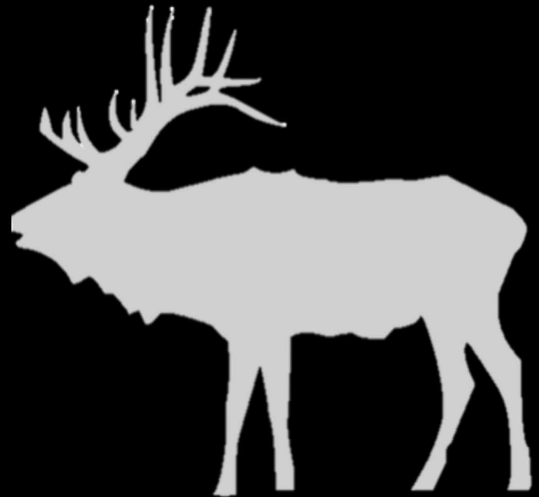
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Ngā Akonga

Whakawhitinga kōrero

Caught the Stag!

1. How does the taiao help a hunter?
2. Why was Koro happy with TK's decision to wait in the spot rather than bush bash?
3. Why did Koro tell TK to go for the smaller stag?
4. Why was TK excited to get the stag?
5. Why does Koro tell TK to breathe?



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Other documents

26. New Zealand Covid-19 alert levels summary

New Zealand COVID-19 Alert Levels Summary

Unite
against
COVID-19

- The Alert Levels are determined by the Government and specify the public health and social measures to be taken in the fight against COVID-19. Further guidance is available on [Covid19.govt.nz](https://covid19.govt.nz).
- Different parts of the country may be at different Alert Levels. We can move up and down Alert Levels.
- Services including supermarkets, health services, emergency services, utilities and goods transport will continue to operate at any level. Employers in those sectors must continue to meet health and safety obligations.
- Restrictions are cumulative (for example, at Alert Level 4, all restrictions from Alert Levels 1, 2 and 3 apply).

Updated 27 October 2021

Elimination Strategy – New Zealand is working together to eliminate COVID-19

Alert Level	Risk assessment	Measures that can be applied locally or nationally
4 Lockdown Likely the disease is not contained	- There is sustained and intensive community transmission. - Outbreaks are widespread.	- Stay home in your bubble. - No travel is allowed except for necessities or to undertake safe recreational activities. You must work and learn from home. - No gatherings are allowed. All public and education facilities close. - If you work for an Alert Level 4 business or service and you have no available options for childcare, you can extend your household bubble to include a carer for your children. - Businesses must close except for necessities (e.g. supermarkets, pharmacies, petrol stations) and lifeline utilities. Green grocers, butchers, bakeries, and fishmongers can sell uncooked food items online and must deliver all orders. - As in Alert Level 2, you legally must wear a face covering in some settings. Refer to the detailed table for more information. It's recommended you wear a face covering whenever you leave the house. - Rationing of supplies and requisitioning of facilities as well as reprioritisation of healthcare services is possible. - Members of a household or shared bubble may view or accompany the deceased in a funeral home, cemetery or faith-based institution subject to strict conditions.
3 Restrict Medium risk of community transmission – active but managed clusters	- There are multiple cases of community transmission. - There are multiple active clusters in multiple regions.	- Stay home and keep your bubble small. You can expand to reconnect with close family/whānau, enable caregiving, or support isolated people. This extended bubble legally must remain exclusive. - Travel is still restricted, so stay local. Inter-regional travel is highly limited with limited permissions. You can travel for work, school, to pick up necessities and goods purchased in a contactless way or undertake low-risk recreational activities. Work and learn from home if you can. - Only people who can't work from home should return to businesses that can safely open under Alert Level 3. - You legally must wear a face covering in some settings. Refer to the detailed table for more information. It's recommended you wear a face covering whenever you leave the house. - Gatherings of up to 10 people are allowed for weddings and civil union ceremonies, funerals and tangihanga (exclusive of staff). Up to 5 staff may be present. Physical distancing and record keeping are legally required. - When you leave home, keep a 2-metre distance from others when in public or 1-metre in controlled environments like workplaces, where practical. - Customers are only allowed inside specific businesses: supermarkets, banks, primary produce retailers, pharmacies, petrol stations or hardware stores providing goods to trade customers, or if it is an emergency or critical situation. - Other businesses can open if they trade in a contactless way. - Public facilities remain closed. Early childhood centres and schools will open for students up to Year 10 for those who can't learn from home. - Healthcare services should use virtual, non-contact consultations where possible. - People at high risk of severe illness, such as older people and those with existing medical conditions, are encouraged to stay at home where possible, and take additional precautions when leaving home. You may choose to work.
2 Reduce Low risk of community transmission within applied area	- There could be limited community transmission. - There are active clusters in more than one region.	- You can connect with friends and whānau in person, socialise in groups and go shopping and travel domestically, if following public health guidance. - You can return to the place where you work or learn but alternative ways of working are still encouraged. - Businesses, schools, early learning services, tertiary education providers and public facilities, such as museums, libraries and pools can now all open with additional health measures in place. - Gatherings of up to 100 people in a defined space are allowed including weddings, funerals and tangihanga. Mandatory record keeping (as in Alert Level 1) and physical distancing are legally required. - Hospitality businesses legally must keep groups of customers separated and seated. Physical distancing of 1 metre must be applied – this will determine the maximum capacity of the business. - Event facilities, including cinemas, stadiums, concert venues and casinos can open. Physical distancing of 1 metre must be applied – this will determine the maximum capacity of the event. - You legally must wear a face covering if you are aged 12 and over when: - using public transport, airplanes (including in departure points such as train/bus stations) and in a taxi or ride-share vehicle - visiting a healthcare or aged care facility (other than for a patient) - inside retail businesses, such as supermarkets, pharmacies, shopping malls, indoor marketplaces, takeaway food stores and public venues – such as museums and libraries - visiting the public areas within courts and tribunals, local and central Government agencies, and social service providers with customer service counters - providing services while on site in a home or place of residence (except for providing childcare). - You legally must wear a face covering if you work: - as a driver of a taxi or ride-share vehicle - at close contact businesses, for example barbers, beauticians and hairdressers - in a public facing role at a hospitality venue, for example a cafe, restaurant, bar or nightclub - at retail businesses, such as supermarkets, shopping malls, indoor marketplaces, takeaway food stores - in the public areas of courts and tribunals, local and central Government agencies, and social service providers with customer service counters - at indoor public facilities, for example libraries and museums (but not swimming pools) - Health and disability care services can operate as normally as possible. - Keep 2 metres apart from people you do not know in public and places like retail stores, libraries, gyms, and museums. - Keep 1 metres apart from people in other places like office buildings and factories, and in places where there is a cap on numbers, like cinemas and hospitality. - People at higher risk of severe illness from COVID-19 (for example, those with underlying medical conditions, especially if not well-controlled, and older people) are encouraged to take additional precautions when leaving home, unless fully vaccinated. You may work, if you agree with your employer that you can do so safely. - Sport and recreation activities are allowed, subject to conditions on gatherings, record keeping, and – where practical – physical distancing. Gyms – 2m physical distancing, outdoor teams sport – no physical distancing.
1 Prepare The disease is contained in New Zealand	- COVID-19 is uncontrolled overseas. - There could be sporadic imported cases. - There could be isolated local transmission in New Zealand.	- All businesses, facilities, schools, education providers and workplaces can open. - NZ COVID Tracer QR codes issued by the NZ Government legally must be displayed in workplaces and on public transport. - The following places legally must have systems and processes to ensure visitors keep a record of where they have been (whether via the NZ COVID Tracer app or otherwise), including healthcare facilities, aged care facilities, close-contact businesses, hospitality venues, public facilities, exercise facilities and social gatherings such as weddings, funerals and tangihanga. - In all other places, we encourage you to keep track of everywhere you have been, as this helps contact tracing to identify any potential spread of COVID-19. - There are no restrictions on personal movement or gatherings. - In all other settings you are encouraged to maintain a record of where you have been. - You legally must wear a face covering if you are aged 12 and over when: - using public transport and airplanes (excluding inter-island ferries and school buses) - exclusions apply for people with disabilities or mental health conditions.

New Zealand COVID-19 Alert Levels Summary Updated 27 October 2021

Note. New Zealand Government

<https://covid19.govt.nz/assets/resources/tables/COVID-19-Alert-Levels-summary-table.pdf>

27. Differences between the translations of The Treaty of Waitangi and Te Tiriti o Waitangi

ARTICLE 1

By the Treaty in English, Māori leaders gave the Queen ‘absolutely and without reservation all the rights and powers of Sovereignty which the said Confederation or Individual Chiefs respectively exercise or possess ... over their respective Territories as the sole sovereigns thereof.’

By Te Tiriti in te reo, they gave the Queen ‘te Kawanatanga katoa o ratou wenua’ – the governance or government of their land.

ARTICLE 2

By the Treaty in English, Māori leaders and people, collectively and individually, were confirmed in and guaranteed ‘the full exclusive and undisturbed possession of their Lands and Estates, Forests, Fisheries, and other properties ... so long as it is their wish and desire to retain the same in their possession.’

By Te Tiriti in te reo, they were confirmed and guaranteed ‘te tino Rangatiratanga o o ratou wenua o ratou kainga me o ratou taonga katoa’ – the unqualified exercise of their chieftainship – over their lands, settlements, and all their valued possessions.

ARTICLE 3

The Treaty in English extended to Māori the Queen’s ‘royal protection and imparts to them all the Rights and Privileges of British Subjects.’

By Te Tiriti in te reo, in consideration of the agreement to the government of the Queen, the rights and privileges of British subjects – ‘nga tikanga katoa rite tahi ki ana mea ki nga tangata o Ingarani’ – were extended to all the Māori of New Zealand.

Orange, C. (2021). The Treaty of Waitangi = Te Tiriti o Waitangi : an illustrated history (3rd ed.). Bridget Williams Books.

28. Table of the 19 studies on gamification

Table 2: 19 studies on gamification			
Title of study/participant details	Method of the gamified component	Reference	Evidence of the method for the gamified element
Engaging Engineering Students with Gamification <i>Participants: 77 master's level university students</i>	Gamification of online learning <i>(Moodle)</i>	Barata, G., Gama, S., Jorge, J., & Goncalves, D. (2013). Engaging Engineering Students with Gamification. <i>2013 5th International Conference on Games and Virtual Worlds for Serious Applications (VS-GAMES), Games and Virtual Worlds for Serious Applications (VS-GAMES), 2013 5th International Conference On</i> , 1–8.	“This paper describes an experiment in which game-like elements were used to improve the delivery of a Master’s level College course, including scoring, levels, leaderboards, challenges and badges” (p.1). “The courses were completely synchronized, using a single shared online Moodle platform” (p.2).
LEGA: A LEarner-centered GAmification design framework	Testing of a learner-centered gamification framework	Baldeón, J., Rodríguez, I., & Puig, A. (2016). <i>LEGA: A LEarner-centered GAmification design framework</i> . ACM International Conference Proceeding Series.	“This paper aims to fill a gap in the literature proposing LEGA, a LEarner-centered GAmification Design Framework that focuses on who is the learner/player and aligns both course's intended learning outcomes” (p.1).
Towards an ontology for gamifying collaborative learning scenarios <i>No participants used: the development of a resource for CL</i>	Gamification of GBL <i>(Collaborative Learning [CL] scenarios)</i>	Challco, G C, Moreira, D, Mizoguchi, R, & Isotani, S (2014). <i>Towards an ontology for gamifying collaborative learning scenarios</i> . In International conference on intelligent tutoring systems (pp. 404–409). Springer.	“our approach has developed semantic web tools that assist the design of CL scenarios based on the principles of learning theories, instructional design and game design” (p.404).
Educational gamification based on personality <i>Participants: 57 university students</i>	Gamification of online learning <i>(Moodle Learning Management System [LMS])</i>	Denden, M, Tlili, A, Essalmi, F, & Jemni, M (2017). <i>Educational gamification based on personality</i> . In 2017 IEEE/ACS 14th International conference on computer systems and applications (AICCSA) (pp. 1399–1405). IEEE.	“in order to investigate the relationship between game elements and learner’s personality traits, a gamified online LMS Moodle was prepared to teach “Object Oriented Design Methodology” for undergraduate learners” (p.1400).
An adaptive learning with gamification & conversational UIs: The rise of CiboPoliBot <i>Participants: 44 primary school students</i>	Gamification of E – learning <i>(Chatbots)</i>	Fadhil, A, & Villafiorita, A (2017). <i>An adaptive learning with gamification & conversational uis: The rise of cibopolibot</i> . In Adjunct publication of the 25th conference on user modeling, adaptation and personalization (pp. 408–412). ACM.	“Since the user demographic are kids and the purpose of the game is to motivate them to interact with the game and learn about healthy diet and food waste management, the game we envision is a social game where kids interact with each other and the chatbot whenever relevant” (p.410).
Gamification Design in	GIE	Fiş Erümit, S., & Karakuş Yılmaz, T. (2022). Gamification	“Both similar and different gamification activities were

Education: What Might Give a Sense of Play and Learning? <i>Participants: 22 post-graduate university (masters and doctoral) students</i>	<i>(A combination of in-class, out of class, and virtual activities, including social media, Edmodo, in-class debates, competitive activities, collaborative activities, painting, poetry etc.)</i>	Design in Education: What Might Give a Sense of Play and Learning? <i>Technology, Knowledge and Learning</i>, 1–23.	carried out in the two implementations of the study. The lessons involved a combination of in-class, out-of-class, and virtual activities” (p.6). “In the four-paper activity, the students were divided into four groups to engage in painting, story writing, newspaper story writing, and poetry writing. Each group began one of the four genres of the writing activity and then passed their paper to the next group to provide continue the writing until the time was up” (p.16).
Gamifying Mathematics for Primary Students in Rural Sri Lanka <i>Participants: 130 primary school students (8 year olds)</i>	Gamification of GBL <i>(A custom-made maths game called ‘Sellam Gannan’)</i>	Halloluwa, T., Vyas, D., Sahama, T., Usoof, H., & Hewagamage, K. P. (2016). Gamifying mathematics for primary students in rural Sri Lanka. <i>ACM International Conference Proceeding Series</i>, 23-27-October-2016.	“Since there were no custom developed games catering to the Sri Lankan curriculum in native languages, we decided to build our own game” (p.2). “student were given a tablet device but we saw there were instances where students get together and work on one device” (p.2).
Assessing the effects of gamification in the classroom: A longitudinal study on intrinsic motivation, social comparison, satisfaction, effort, and academic performance <i>Participants: 80 university students</i>	GIE <i>(A mixture of technology and non-technology activities)</i>	Hanus, M. D., & Fox, J. (2015). Assessing the effects of gamification in the classroom: A longitudinal study on intrinsic motivation, social comparison, satisfaction, effort, and academic performance. <i>Computers & Education</i>, 80, 152–161.	“In the gamified group, 22 badges were created and were designed to engage students in class-related work outside and inside the Classroom ... to earn the Critical Hit badge students required to play a video game, write a critical review, and share it with the class ... Other badges were given for quality class participation, turning in assignments early, having no formatting or grammar mistakes in a paper, and even coming to class dressed up as a video game character” (p.156).
Personalized gaming for motivating social and behavioral science participation <i>No participants: personalizing the Mad Science platform</i>	Gamification of E-learning <i>(The Mad Science platform; a game-like research environment)</i>	Harteveld, C., & Sutherland, S C (2017). <i>Personalized gaming for motivating social and behavioral science participation</i>. In Proceedings of the 2017 ACM workshop on theory-informed user modelling for tailoring and personalizing interfaces (pp. 31–38). ACM.	“The Mad Science platform consists of building the following main components: the basic authoring tools, scenarios, personal lab, and a portal. It is intended to be used in higher education for teaching experimental research in a constructionist, experiential manner and by professional researchers for conducting the next generation of experimental research” (p.33).
Implementing a theory-driven gamification model in higher	Gamification of online learning <i>(Moodle/flipped</i>	Huang, B., & Hew, K. F. (2018). Implementing a theory-driven gamification model in higher education	“The treatment class used gamified course activities, while the control class used the same activities but

education flipped courses: Effects on out-of-class activity completion and quality of artifacts <i>Participants: 40 university post-graduate (masters) students</i>	<i>learning)</i>	flipped courses: Effects on out-of-class activity completion and quality of artifacts. <i>Computers & Education</i> , 125, 254–272.	without any gamification” (p.260). “The treatment class accessed the gamified Moodle webpage, and the control class accessed the conventional Moodle webpage” (p.264).
Machine learning for personalized challenges in a gamified sustainable mobility scenario <i>No participants: instead, the development of a framework for personalising a game</i>	Gamification of GBL <i>(A framework for personalising a game, Trento Play&Go)</i>	Khoshkangini, R, Marconi, A, & Valetto, G (2017). Machine learning for personalized challenges in a gamified sustainable mobility scenario. In Extended abstracts publication of the annual symposium on computer-human interaction in play (pp. 361 368). ACM.	“our PCG framework ... was implemented for a gamified urban mobility system called Trento Play&Go, experimented in a long-running game in Trento, Italy in 2016 ... The framework has been developed having in mind two main principles; 1) automating procedural content generation in the gamified system, 2) personalizing and assigning the generated content to each individual player during the game week” (p.362).
A process for designing algorithm-based personalized gamification <i>No participants: instead, the development of a personalized algorithm</i>	Gamification of E-learning <i>(Personalizing a computer supported Collaborative Learning [CL] environment used by software engineering students)</i>	Knutas, A, Van Roy, R, Hynninen, T, Granato, M, Kasurinen, J, & Ikonen, J. (2018). <i>A process for designing algorithm-based personalized gamification</i> . Multimedia Tools and Applications, 78(10),13593–13612.	“we demonstrate the design process presented in the previous section by using it to design a personalized gamification approach for a computer-supported collaborative learning environment ... More specifically, the system is aimed to gamify a computer supported collaborative learning environment used by software engineering students who practice working as engineering teams” (p.8).
Adaptive Gamification for Learning Environments <i>Participants: 266 men and women aged between 18 and 75 years old</i>	Gamification of online learning <i>(Web-based learning environment used to teach French spelling and grammar)</i>	Lavoué, E, Monterrat, B, Desmarais, M, & George, S. (2018). <i>Adaptive gamification for learning environments</i> . IEEE Transactions on Learning Technologies.	“we propose a model for adaptive gamification according to learners’ player types. We then present an implementation of this model in an existing web-based learning environment” (p.18). “We developed five gaming features for an existing online learning environment named Projet Voltaire. This environment is used to teach French spelling and grammar to Frenchspeaking people” (p.19).
Does Gamification Improve Flow Experience in Classroom? An	Gamification of E-learning <i>(Goal Question Metric [GQM])</i>	Marinho, A., Ibert Bittencourt, I., dos Santos, W. O., & Dermeval, D. (2019). Does Gamification Improve Flow Experience	“we conducted an experiment in a gamified classroom. We analyzed the flow experience of 18 students during four

Analysis of Gamer Types in Collaborative and Competitive Settings <i>Participants: 18 undergraduate university students</i>	(Basili et al., 1994) approach)	in Classroom? An Analysis of Gamer Types in Collaborative and Competitive Settings. <i>Revista Brasileira de Informática Na Educação</i> , 27(2), 40–68.	scenarios with different settings of competition and collaboration, comparing their results according to the gamer type and gender” (p.1). “In this study, the Goal Question Metric (GQM) (Basili et al., 1994) approach is adopted” (p.47).
Adaptation of Gaming Features for Motivating Learners <i>Participants: 59 middle school students aged between 14 and 15 years old</i>	Gamification of online learning (Projet Voltaire platform, an online learning environment to practice French spelling and grammatical rules)	Monterrat, B., Lavoué, É., & George, S. (2017). <i>Adaptation of Gaming Features for Motivating Learners. Simulation & Gaming</i> , 48(5), 625–656.	“The number of participants was 59, aged between 14 and 15 (28 boys and 31 girls). For the school, we gave a free access to the learning environment (which is generally not free) in exchange of for their feedback ... We implemented the adaptation process and the models proposed in section 3 in the Projet Voltaire platform, which is an online learning environment to practice French spelling and grammatical rules.” (p.635).
Does Tailoring Gamified Educational Systems Matter? The Impact on Students’ Flow Experience <i>Participants: 121 primary school students</i>	Gamification of E-learning (A gamified educational system called MeuTutor that provides different kinds of educational tasks like quiz’s and mini essays)	Oliveira, W., Hamari, J., Joaquim, S., Toda, A.M., Palomino, P.T., Vassileva, J., & Isotani, S. (2022b). <i>The effects of personalized gamification on students’ flow experience, motivation, and enjoyment. Smart Learning Environments</i> , 9(1), 1–26.	“The tailoring model was implemented in a gamified educational system called MeuTutor, chosen by convenience because it was considered more geographically accessible and implements the nine most used gamification elements in gamified intelligent educational system (Points, Levels/Stages, Badges, Leaderboards, Prizes and Rewards, Progress bars, Storyline, and Feedback) ... The system provides different kinds of educational tasks (e.g. quiz and mini essays)” (p.8).
Personalization of gamification-elements in an e-learning environment based on learners’ motivation <i>Participants: 100 college students</i>	Gamification of E-learning (Learning Management System [LMS] platform)	Roosta, F., Taghiyareh, F., & Mosharraf, M. (2016). Personalization of gamification-elements in an e-learning environment based on learners’ motivation. 2016 8th International Symposium on Telecommunications (IST), Telecommunications (IST), 2016 8th International Symposium On, 637–642.	“we prepared a gamified LMS platform by designing and implementing gamification-elements and embedding them into an existing learning environment called DoosMooc [18]. DoosMooc is a web-based learning environment which provides facilities for teachers, teacher assistances (TAs), and students by defining assignments, resources, forum discussions, grade management, etc” (p.639).
How gamification	Gamification of	Sailer, M, Hense, J U, Mayr, S K, &	“we conducted an

motivates: An experimental study of the effects of specific game design elements on psychological need satisfaction <i>Participants: 699 participants with an average age of 22 years old</i>	online learning <i>(Digital simulation setting)</i>	Mandl, H (2017). <i>How gamification motivates: An experimental study of the effects of specific game design elements on psychological need satisfaction</i>. Computers in Human Behavior, 69, 371–380.	experimental study in a digital simulation setting. The content domain of the simulation was the internal handling of materials and supplies at production or delivery sites. The order-picking process was simulated in a computer-based, cross-platform application, implemented in the Java programming language, and made available on the internet. Within the game environment, players had to collect parts from a storage depot setting, similar to a real life order picking task in internal material handling. In total, five orders had to be fulfilled” (P.375).
Does gender stereotype threat affects the levels of aggressiveness, learning and flow in gamified learning environments?: An experimental study <i>Participants: 150 high school and undergraduate students</i>	Gamification of online learning <i>(Online gamified tutoring system)</i>	Santos, J., Andrade, E., Benevides, K., Silva, K., Nascimento, J., Bittencourt, I., Pereira, M., Fernandes, S., & Isotani, S. (2022). Does gender stereotype threat affects the levels of aggressiveness, learning and flow in gamified learning environments?: An experimental study. <i>Education and Information Technologies: The Official Journal of the IFIP Technical Committee on Education</i>, 1–26.	“recent studies indicate the presence of a gender gap not considered in the construction of the attributes present in the gamified tutoring system. To investigate this impact by observing users’ behavioural changes in gamified online educational environments, the present study aims to investigate the effects of the stereotype threats using a quantitative experiment with a Factorial Design in three gamified environments (stereotypical male version, stereotypical female version and control environment). Was conducted an experiment with 150 individuals (high school and undergraduate students) without considering age, ethnicity, or social class” (p.1).
Title of study/participant details	Method of the gamified component	Reference	Evidence of the method for the gamified element

29. Gamified activities

Gamified activities (*Fiş Erümit & Karakuş Yılmaz, 2022*)

Table 2 Gamification activities during the two implementations

Activities	Activity name	Purpose of activity	Game Dynamics	Game Mechanics	Imp. I	Imp. II
Collaborative activities	“Four paper” activity “Four materials” activity Drama activity	To make the lesson more fun, increase motivation and participation, and support the learning activity	Achievement, Reward	Point, Badge, Level, Trophy, Leaderboard, Challenge, Feedback	✓	✓
Competitive activities	“Game basket” game “Tenant-land owner” game	To provide information, make the lesson more fun, and increase motivation and participation	Achievement, Reward, Progression, Competition	Point, Badge, Level, Trophy, Leaderboard, Challenge, Feedback	✓	✓
Intriguing activities	Compass activity “Knowing each other” activity	To provide information, support the learning activity, and arouse curiosity	Achievement, Reward, Self-expression, Altruism, Progression	Point, Badge, Trophy, Leaderboard, Restrictions, Feedback, Challenge	✓	✓
Sharing the leaderboard	Winning a trophy Winning a badge	To encourage students	Reward, Progression	Point, Badge, Level, Trophy, Leaderboard, Feedback	✓	✓
Informing about gamification	Informing students about gamification at the beginning of the semester Informing about point, badge, level, trophy, during the semester	To prepare for the lesson, arouse curiosity, and increase motivation and participation	Achievement, Altruism, Constraints	Point, Badge, Level, Trophy, Leaderboard, Restriction		✓
Weekly award ceremony	Trophy painting Badge-pinning in class	To encourage students	Achievement, Reward, Progression	Point, Level, Trophy, Feedback, Competition, Leaderboard		✓
End-of semester award ceremony	Trophy ceremony	To provide a real reward	Achievement, Reward	Point, Level, Trophy, Leaderboard, Feedback		✓
Level-up Strategies	Activities to earn additional trophy	To increase motivation and participation and support the learning activity	Achievement, Constraints, Progression	Point, Level, Trophy, Leaderboard, Competition Challenge		✓
Reflection of gamification scores to the final grade	Adding point to pass mark	Real reward, to encourage students, and to increase motivation and participation	Achievement, Reward, Progression	Point, Level, Trophy, Feedback, Leaderboard		✓

Imp: Implementation

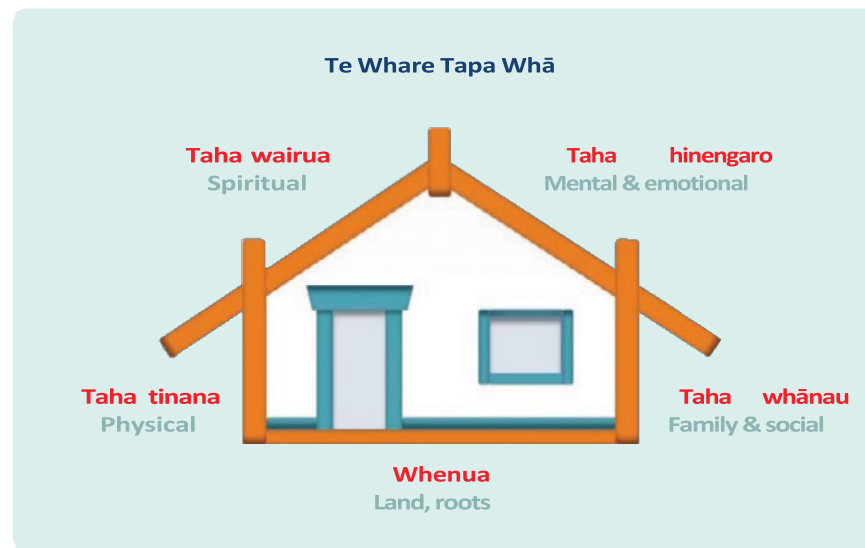
30. Description of the gamified activities

Description of the gamified activities (*Fiş Erümit & Karakuş Yılmaz, 2022*)

Description of gamified activities	
Activities	Activity name
Collaborative learning activities	“Four paper” activity: In this activity, students were divided into four groups. Each group was given a piece of paper and asked to tell the history of the game. These narratives were carried out in the form of painting, story writing, newspaper news and poetry writing. Each group carried out their work for 5 min, and when the time was up, they gave their paper to the next group. In this way, four rounds were made. “Four materials” activity: Each group was given 2 glasses, 2 paper clips, 1 ping pong ball and rope. It was asked to produce a game from these materials in 15 min. Thus, students were provided with the simplest way to experience the game design process and to identify the difficulties experienced in game design. Drama activity: Words covering cognitive learning theories and cognitive psychology were prepared by the lecturer and researcher before the lesson. These words were explained by the students using the drama method in the classroom.
Competitive activities	“Game basket” game: In this activity, a social game was applied by associating it with the subject of the lesson. First, a <i>mother</i> was selected in the class. The game and non-game elements of Huizinga were written on paper. These papers are scattered on the floor. Except for the mother, each student went on a piece of paper and changed places with the commands “it’s a game” or “it’s not a game” given by the lecturer. “Tenant-land owner” game: First of all, a social game was played with all the students. At the end of the game, the students were asked how this game could be used for an educational purpose. The class was divided into groups of three and each group planned this game by adapting it to a topic they wanted. The groups presented the topic they adapted in turn to the class, and these presentations were shared in the Facebook group of the lesson.
Individual activities	“Real-time research” activity: “What effects can games have on people?” This activity was held to answer the question. First, the keywords for the research question were created and 5 research questions were developed with the words selected from among them. The class was divided into five groups and each group chose one of these questions. Within the framework of these questions, the groups were given 30 min to collect data. Data were collected from the people they could reach within the faculty about the research topic. Finally, the collected data was reported, and a group presentation was made in the class. Social networking activities: Each week, the video, information, or document related to the topic of the week, or the lesson was shared on the Facebook group of the lesson or on Edmodo. In addition, comments were written on the questions asked by the students. Sharing passwords: Each week, students were given articles on the topic of the week. Passwords have been added to these articles. With the passwords, the students were asked to perform the tasks that differed every week and were hidden in the article. Each password was requested to be shared on Edmodo or Facebook group.
Intriguing activities	Compass activity: This activity is prepared to explain “gamification”. Four encrypted compasses were prepared for the activity. Each group, moving from the starting point with the same compass, found the other three compasses in their hiding places and struggled to come first to their destination. This activity is planned to teach concepts related to gamification. “Knowing each other” activity: The activity was implemented in the classroom. Fifteen questions were asked. Eight of these questions are personal questions that the student will ask a friend in class. Seven questions are about cognitive learning.
Sharing the leaderboard	Winning a trophy, badge, and point: The leaderboard, which includes trophies and badges earned each week, has been shared on Facebook and Edmodo. The points added to the exam results according to the trophies they won were shared with the students.
Informing about gamification	At the beginning of the semester, students were informed about gamification. In addition, the students were informed about the points, badges, levels, and cups they earned during the semester.
Weekly award ceremony	Trophy painting: This activity was carried out by having students paint a real trophy picture. Thus, it was ensured that the students who were behind in participation in activities or in the number of trophies were aware of their situation. Thus, it was tried to increase participation in the activities. Badge-pinning in class: The student who wins the most trophies each week is given the badge of the week in the class.

End-of semester award ceremony	<i>Trophy ceremony:</i> Real trophies on which the terms related to gamification were printed were given to the top three students.
Level-up Strategies	<i>Activities to earn additional trophies:</i> Activities are planned for the lower-level students on the leaderboard to win additional trophies.
Reflection of gamification scores to the final grade	<i>Adding point to pass mark:</i> Points are added to the pass mark of the students according to the trophies they have won.

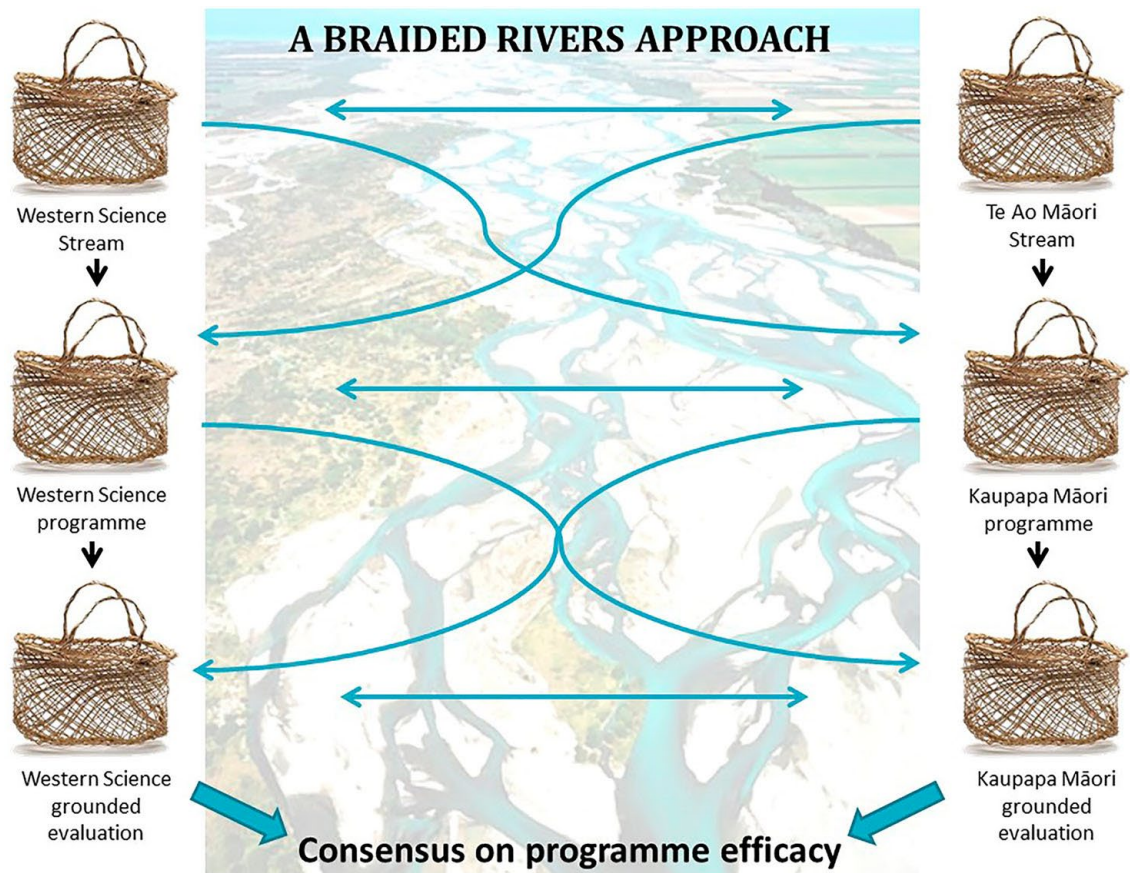
31. Te Whare Tapa Whā



Copyright: Mason Durie (1982)

<https://www.healthnavigator.org.nz/healthy-living/t/te-whare-tapa-wh%C4%81-and-wellbeing/>

32. He Awa Whiria: a braided rivers approach



He Awa Whiria: a braided rivers approach (Macfarlane, Macfarlane & Gillon, 2015)