

HE RIRI TĀ TE TAWA UHO,
HE RIRI TĀ TE TAWA PARA

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TE ARA POUTAMA

RĀRANGI UPOKO

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RĀRANGI KUPU RĀPOTO

LIST OF ACRONYMS¹

Auckland University of Technologies Ethics Committee (AUTEC)
Information and Communications Technology (ICT)
Language Management Systems (LMS)
New Zealand Centre for Educational Research (NZCER)
New Zealand on Air (NZOA)
Partnership for 21st Century Skills (P21)
Radio New Zealand (RNZ)
State Owned Enterprises (SOE)
Television New Zealand (TVNZ)
United Nations Educational, Scientific and Cultural Organization (UNESCO)

¹ Although it is common practice to use acronyms for the Māori names Te Māngai Pāho, Te Kōhanga Reo, Te Kura Kaupapa Māori, Te Puni Kōkiri and Te Taura Whiri i Te Reo Māori, I wish to leave these names in their pure form, thus honouring the kaupapa (*philosophy*) of utilising the Māori language as often as possible.

TE MANA TUHI
ATTESTATION OF AUTHORSHIP

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

Waitohu/ *Signature:*

Nā Jamie Cowell

MIHIMIHI *TRIBUTE*

Those who have endured and overcome hardship, loss, struggle, change...and life. My thoughts and aroha have been with you on this journey. I wish I could have helped more.

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HE MIHI

DEDICATION

For those who nurture the growth of the Māori language, of Māori language speakers and who instill aroha and ignite the passion within others to have love for our precious language. Ngā mihi nui ki a koutou.

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Mā te kahukura ka rere te manu

‘Tis by the feathers, that the bird takes flight

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HE WHAKARĀPOPOTOTANGA

ABSTRACT

Te reo Māori (*the Māori language*) is the life-force of what it means to be Māori, and embedded in the language is Māori knowledge, customs and culture. However, the health of the language was significantly compromised in the 19th and 20th centuries and “declined steeply over the past 100 years” (Te Puni Kōkiri, 2004, p.11). Despite considerable efforts made towards strengthening the language's health, te reo Māori (*the Māori language*) remains in a vulnerable position. This is where intervention into language loss plays an important role in the language's maintenance, revitalisation, and survival.

Mobile-learning (*m-learning*) can be viewed as an avenue to exploit for facilitating Māori language transmission and, accordingly, contribute to the revitalisation and maintenance of the language. M-learning, defined as "the exploitation of ubiquitous handheld technologies, together with wireless and mobile phone networks, to facilitate, support, enhance and extend the reach of teaching and learning” (Northampton College, n.d, para.3), can occur anytime, anywhere. The research situates m-learning within the contexts of Māori language revitalisation and Māori language transmission with reference to kaupapa Māori (*Māori ideology*) values and whakataukī (*proverbial saying/s*).

He riri tā te tawa uho, he riri tā te tawa para which features as the title is a *whakataukī* that addresses the different genres of Māori language, of language transmission and of language revitalisation. *Whakataukī* - which is one example of a Māori language genre - play an important role in the research by providing a philosophical underpinning and guiding philosophy for the research. M-learning as a possible avenue or genre of Māori language transmission is also situated within the philosophies of selected whakataukī. These whakataukī affirm the importance of the Māori language, its well-being and the necessary role of intervention into language loss for the maintenance and survival of the Māori language. The guiding principles for the study therefore come from a Māori perspective and the research is grounded in Kaupapa Māori Research Theory.

M-learning's role and validity in the facilitation of Māori language transmission and revitalisation is assessed and considerations that should be made to protect and

respect the mauri (*essence, life-force*) and mana (*integrity*) of the Māori language, and deliver it responsibly in the m-learning arena are highlighted. This includes proposing *He Rākau*: a model, a guideline based on the research findings for those who wish to create Māori language m-learning resources with respect to the language and tikanga Māori.

The Māori language is the poutokomanawa (*the centre pole*) of mana Māori (*Māori prestige*) and therefore Māori people need to "take control of the future destiny of the language and to plan for its survival" (Government Review Team, 1988, p.18).

KUPU WHAKATAKI

PREFACE

Nō hea au? *Where am I from?*

He uri tēnei nō Te Tai Rāwhiti, arā, Ko Porourangi te tangata, ko Tikapa te marae.
He uri hoki au nō te waka o Tainui. Nō Waiuku, nō Te Pūaha-o-Waikato hoki. Ko
Ngāti te Ata, ko Ngāti Apakura me Ngāti Tīpa ngā hapū.

I am a descendant of Porourangi, Tikapa is the marae my whānau affiliates to. I am
also a descendant of Tainui waka. From Waiuku and Port Waikato, Ngāti te Ata,
Ngāti Apakura and Ngāti Tīpa are the subtribes we affiliate to.

Ngā whakamanawa: *Inspiration for this kaupapa*

The kaupapa (*topic*) of exploring m-learning in the contexts of Māori language
revitalisation and transmission developed out of the desire to contribute to the
maintenance of te reo Māori me ōna tikanga (*the Māori language and its associated
protocol*). Associated with this desire is the recognition that the reo (*language*) holds
a significant importance, and should be protected and treated with due respect so that
the language is not compromised. The research focuses on using m-learning
responsibly with regards to respecting and protecting the language to ensure it is used
in an appropriate and secure manner.

My experience in this area includes an undergraduate qualification that was shaped
around the Māori language and technology. This included witnessing first hand the
introduction and evolution of new technologies over the past five years to assist with
the transmission and subsequent revitalisation of the language through the
digitisation of the Te Whanake Māori language resources within AUT's Faculty of
Māori Development, Te Ara Poutama. The evolution of technology during my
journey so far of acquiring the Māori language has been influenced by the
technological advancements that have occurred in the past two decades. It has been
evident through this journey that new technologies can aid in the learning, teaching
and promotion of the Māori language by offering new avenues for the exposure of
the language that are more accessible and available.

I myself was not brought up exposed to the Māori language, and have only recently acquired the skills and knowledge to be confident in the Māori language. My personal journey of acquiring the Māori language is one of enlightenment and inspiration. Through the process of learning the language, my sense of identity and belonging was strengthened; I felt my eyes were opened up to a world of understanding and beauty and strong sense of pride was instilled within me. It has only been recently that the next generation of tamariki Māori (*Māori children*) has been born in my circle of friends and whānau (*family*). Through my journey of acquiring the Māori language, the importance to foster and nurture the language within current and future generations has become apparent. Consequently, it has become a personal aspiration of mine to contribute to the development and support systems in place for these generations to be enlightened as I have in te ao Māori, (*the Māori world*) through acquiring the Māori language. I hope the research contributes towards achieving this aspiration, and also creates avenues for subsequent generations to share in the enlightenment. My wish is that initiatives continue to be established that exhibit Māori self-determination and provide sustenance for the Māori language, Māori children, Māori people and the future generations of Māori language speakers.

The main contributing factors that have inspired the thesis are part of my personal journey and have significantly influenced who I am today, and who I aspire to become in the future.

Ngā pikitia me ngā whakaahua: *Drawings and photographs*

All drawings and photographs included in the thesis are the authors’.

Ko te tuhi i te reo Pākehā: *Decision to write in English*

Although an advocate for the Māori language to be used as often as possible, the target audience does not only focus on those fluent in the Māori language, but also targets a wide audience of potential readers from those quite proficient in the language, to non-speakers of the language. The thesis therefore is bilingual, mostly written in English to accommodate the target readers. It is an aspiration of mine to write an equivalent version in te reo Māori (*the Māori language*).

Ko te whakatakoto o te reo Māori: Māori language conventions

As the research is founded on the importance of the Māori language and its transmission, the thesis is bilingual and encourages the revitalisation and maintenance of the Māori language wherever possible.

- ❖ Nouns in the Māori language can refer to both the singular and plural forms of the word, therefore an 's' will not be added to denote the plural form of the noun.
- ❖ An English interpretation of Māori terms in their first instance is provided and thereafter only the Māori term is used. (English interpretations are italicised). As Māori terms often have multiple meanings determined by the context in which they are used, there are a few instances in which an alternative interpretation is offered subsequent to the initial interpretation.
- ❖ Tohutō, pōtae or a macron over the vowels such as ‘ā’ indicates that vowel has a lengthened sound, for example: Māori is pronounced Maaori (Please note, where the original sources did not use macrons in the text, these have been left out).
- ❖ The term ‘Māori’ used on its own can refer to both the Māori people and the Māori language

PAPAKUPU

GLOSSARY

The following list of terminologies has consulted Professor John Moorfield's online *Te Aka Māori-English, English-Māori Dictionary* (<http://maoridictionary.co.nz/>) unless otherwise referenced throughout the thesis. Many of these words have been used frequently throughout the presented research and have been provided at the beginning to enable greater familiarisation with the concepts and terms that will be used.

Although unconventional to situate the glossary at the beginning of the thesis, there is an emphasis on the Māori language in the thesis and the terms below have been used extensively throughout. Therefore I believe it is appropriate and respectful to have the Māori terms and their relative meanings or interpretations before the main content of the thesis is presented.

ahi	<i>Fire</i>
ahi kā	<i>keeping the home fires burning</i>
ako	<i>learning, teaching</i>
ao	<i>realm, world</i>
Aotearoa	<i>New Zealand</i>
aroha	<i>love, compassion, concern, sympathy, gratitude, affection</i>
atua	<i>God</i>
atua Māori	<i>Māori god(s)</i>
ehē	<i>no</i>
hapū	<i>sub-tribe</i>
Haumiatiketike	<i>God of cultivation and wild foods</i>
Hawaiki	<i>ancient homeland</i>
he korokoro tūī	<i>the throat of the parson bird - used to describe a gifted orator or singer</i>
he manu tioriori	<i>songbird – used to describe a gifted singer</i>
He Taonga Te Reo	<i>Māori language year</i>

heke	<i>Rafters</i>
hiahia	<i>Desire</i>
hiko	<i>lightening, electricity, power</i>
hono	<i>Connection</i>
hua	<i>fruits, produce</i>
iwi	<i>tribe(s), tribal</i>
kaikaranga	<i>caller(s)</i>
kaikōrero	<i>speaker(s)</i>
kāinga	<i>Home</i>
kaitiaki	<i>Guardian</i>
kaitiakitanga	<i>guardianship, preservation, conservation, fostering, protecting and sheltering</i>
kaiwhakauru	<i>Participants</i>
kākā	<i>Nestor meridionalis</i>
kākano	<i>Seed</i>
kanohi ki te kanohi	<i>face-to-face</i>
kanohi kitea	<i>being seen in person, where one's face is seen and presence is noted</i>
kapa haka	<i>Māori cultural performing arts group</i>
karakia	<i>Incantations</i>
karanga	<i>formal ceremonial call</i>
kaumātua	<i>elderly people</i>
kaupapa	<i>topic(s), philosophy</i>
kaupapa Māori	<i>Māori ideology - a philosophical doctrine, incorporating the knowledge, skills, attitudes and values of Māori society</i>
kāuta	<i>Cookhouse</i>
kawa	<i>marae protocol</i>
kererū	<i>New Zealand pigeon</i>
kīwaha	<i>colloquial sayings</i>
kōhure	<i>a mature tree</i>
kōkō	<i>Parson bird</i>

kōrero	<i>speak, speech, discussion</i>
kōrero tawhito	<i>Histories</i>
koroua	<i>elderly man/men</i>
kōwhaiwhai	<i>painted scroll ornamentation – commonly used on meeting house rafters</i>
kuia	<i>elderly woman/women</i>
kupu hou	<i>new word(s)</i>
kupu tongi	<i>prophetic saying by a charismatic leader - Tainui dialect</i>
kupu whakarite	<i>simile, metaphor</i>
kupu	<i>word(s)</i>
Kura Kaupapa	<i>Māori immersion primary school</i>
Kura Kaupapa	<i>Māori immersion primary school</i>
māhuri	<i>Sapling</i>
mana	<i>authority, ethos, status, reputation or authoritative power one or something can acquire through leadership, prominence or being held in high regard, integrity, prestige</i>
mana atua	<i>power of the gods</i>
mana Māori	<i>Māori prestige</i>
mana moana	<i>mana of the sea</i>
manaaki	<i>support, take care of, protect</i>
manaakitanga	<i>Hospitality</i>
manapou	<i>a reddish coloured stone, believed to be a kernel of tree-fruits of Hawaiki</i>
manatawa	<i>a dark-coloured stone, or kernel, in form like that of the tawa berry. Believed to be a kernel of tree-fruits of Hawaiki</i>
manu	<i>bird(s)</i>
marae atea	<i>courtyard, public forum – open area in front of the meeting house where formal welcomes to visitors take place and issues are debated</i>

marae	<i>courtyard-the open area in front of the meeting house where formal greetings and discussion take place, often used to include the complex of buildings around the marae</i>
mātauranga Māori	<i>Māori knowledge</i>
maunga	<i>Mountain</i>
mauri	<i>power, force, life-force or essence</i>
mita	<i>pronunciation and sound of a language</i>
mokopuna	<i>grandchild, grandchildren, descendant</i>
mōteatea	<i>lament, traditional chant</i>
ngā kete mātauranga	<i>baskets of knowledge</i>
ngā kete wānanga	<i>baskets of knowledge</i>
ngā momo	<i>types of expressions such as proverbs, colloquial sayings, metaphors, similes, aphorisms and tribal proverbial sayings</i>
whakapuakitanga	
ngā taonga a ngā tūpuna	<i>ancestral treasures</i>
Ngāti Porou	<i>tribal group of East Coast area</i>
ngeri	<i>a type of haka with no set movements and usually performed without weapons</i>
noa	<i>free from the extensions of tapu, ordinary, unrestricted</i>
ōhākī a ngā tūpuna	<i>guidelines, maxims of the ancestors</i>
Pākehā	<i>New Zealanders of European descent</i>
pakiwaitara	<i>Narratives</i>
Papatūānuku	<i>Earth Mother, primeval mother, land</i>
pēpeha	<i>proverbial saying, tribal saying</i>
pātai	<i>Question</i>
pihinga	<i>Seedling</i>
pono	<i>Integrity</i>
pou	<i>carved figures</i>
poupou	<i>carved wall figures, ancestors</i>
poutokomanawa	<i>the centre pole</i>

pūrākau	<i>creation narratives</i>
rākau taumatua	<i>a tree in which birds were caught</i>
rākau	<i>wood, tree(s), tool, implement</i>
rangatiratanga	<i>sovereignty, chieftainship, right to exercise authority, chiefly autonomy, self-determination, self-management, ownership, leadership of a social group, domain of the rangatira, noble birth, autonomy</i>
Ranginui	<i>Sky-father</i>
reo ā-iwi	<i>tribal dialects</i>
reo karakia	<i>language of incantation</i>
reo	<i>language, voice</i>
rohe	<i>District</i>
Rongomātāne	<i>God of agriculture and peace</i>
Tainui	<i>Crew of this canoe from Hawaiki are claimed as ancestors by tribes of the Waikato, King Country and Tauranga areas.</i>
take	<i>Purpose</i>
tamariki Māori	<i>Māori children</i>
Tāne-Māhuta	<i>God of the forest and all who dwell within</i>
Tāne-nui-te-rangi	<i>Tāne who ascended the heavens</i>
Tangaroa	<i>God of the sea</i>
taonga	<i>inclusive holistic term meaning treasure, something precious, valuable treasure</i>
taonga tuku iho	<i>treasures bequeathed</i>
tapu (stative)	<i>be sacred, prohibited, restricted, set apart, forbidden, under atua protection</i>
tapu (noun)	<i>restriction - a supernatural condition</i>
tautoko	<i>Support</i>
tawa	<i>Beilschmiedia tawa - a tall tree with yellow-green foliage of long, narrow leaves.</i>
tawa uho	<i>heart of a tree</i>

Tāwhirimātea	<i>God of the winds</i>
te ao hou	<i>the modern world</i>
te ao hurihuri	<i>the ever-changing world</i>
te ao Māori	<i>the Māori world</i>
Te Kōhanga Reo	<i>immersion Māori language nests</i>
te reo	<i>the language</i>
te reo aroha	<i>the language of courting</i>
te reo Māori	<i>the Māori language</i>
te reo Māori me ōna	
tikanga	<i>the Māori language and its associated protocol</i>
te reo o ao	<i>the language of the world</i>
te reo ōkawa	<i>the language of the marae, formal language</i>
te reo ōpaki	<i>the language of storytelling, informal language</i>
te reo paki	<i>the language of storytelling</i>
te reo pōwhiri	<i>the language of the welcoming ceremony</i>
te reo o te kāinga	<i>the language of the home</i>
te reo o te kāuta	<i>informal language used in the cookhouse</i>
te reo o te kura	<i>the language of school</i>
te reo whakakatakata	<i>the language of laughter</i>
Te Tiriti o Waitangi	<i>The Treaty of Waitangi</i>
tiaki	<i>to look after, conserve</i>
tika	<i>correct, right, customary, correct procedures</i>
tikanga Māori	<i>Māori customary practice(s)</i>
tipu	<i>Grow</i>
titiro	<i>Look</i>
Tūhoe	<i>tribal group of the Bay of Plenty</i>
Tūī	<i>Parson bird</i>
tukutuku	<i>ornamental lattice-work – used particularly between carvings around the walls of meeting houses</i>
Tūmataunga	<i>God of war</i>

tumuaki	<i>Dean</i>
tupu	<i>Grow</i>
tūrangawaewae	<i>domicile, place where one has rights of residence and belonging through kinship and whakapapa</i>
wā kāinga	<i>home base</i>
wāhanga	<i>chapter(s)</i>
wāhi	<i>location</i>
waiata	<i>song, poetry</i>
wairua	<i>spirit, soul, quintessence</i>
wānanga	<i>a forum for discussion</i>
wawata	<i>Desire</i>
wero	<i>Challenge</i>
whaikōrero	<i>formal speech making</i>
whakairo	<i>carving(s)</i>
whakapapa	<i>Genealogy</i>
whakarongo	<i>Listen</i>
whakatauākī	<i>uttered proverb of which the creator is known</i>
whakataukī matua	<i>primary proverbial saying</i>
whakataukī	<i>proverbial sayings, proverbs</i>
whakawhanaunga	<i>to have a relationship, get together, get to know one another</i>
whakawhanaungatanga	<i>the process of establishing relationships in a Māori context, relationship building</i>
whānau	<i>family/families</i>
whānau Māori	<i>Māori families</i>
whanaungatanga	<i>kinship, nurturing relationships</i>
whare	<i>House</i>
wharekai	<i>dining hall</i>
wharehui	<i>meeting house</i>
whare wānanga	<i>Māori tertiary institution(s)</i>

whenua

Land

Wiki o te Reo Māori

Māori language week

TE AO MĀORI ME TE REO NGĀ AUPIKI ME NGĀ AUHEKE

SIGNIFICANT EVENTS PERTAINING TO THE MĀORI LANGUAGE AND CULTURE

UNLESS OTHERWISE REFERENCED, THE FOLLOWING IS AN ADAPTION OF THE FOLLOWING:

- Duder, E. D. (2010). *Ko tō ringa ki ngā rākau a te Pākehā – The use of digital resources in the learning and teaching of te reo Māori: A case study* (Master's thesis, Auckland University of Technology, Auckland, New Zealand). Retrieved from <http://aut.researchgateway.ac.nz/handle/10292/1219> (pp.4-7)
- Ka'ai, T. (2004). Te mana o te reo me ngā tikanga: Power and politics of the language. In T. Ka'ai, J. C. Moorfield, M. P. J. Reilly & S. Mosley (Eds.), *Ki te whaiāo - An introduction to Māori culture and society* (pp. 201-213). Auckland, New Zealand: Pearson Education.
- Te Taura Whiri i te Reo Māori. (n.d.). *History*. Retrieved May 12, 2009 from http://www.tetaurawhiri.govt.nz/english/issues_e/hist/index.shtml
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|--------------|---|
| C 950
AD | Kupe discovers Aotearoa – different iwi (<i>tribes</i>) have varying traditions as to the first arrival of Māori in Aotearoa (<i>New Zealand</i>). Subsequent voyagers bring with them a language with close links to Rarotongan, Tahitian, Hawaiian and others of the Proto-Central Eastern subset of the Proto-Austronesian family, which also includes Indonesian, Taiwanese and Madagascan. |
| C 1800 | Māori language – with regional dialects – develops independently from its related Polynesian languages. |
| 1807 | Dr John Savage records the language but uses inconsistent conventions. |
| 1815 | Kendall's vocabulary and grammar printed in the Bay of Islands <i>He Korao no New Zealand</i> . |
| 1820 | Publication of <i>New Zealand's First Written Language. A Rare and Valuable Manuscript of 1840</i> . The first transcription of te reo Māori, by Professor Samuel Lee with Hongi Hika and an unnamed person. |
| 1835 | Printing press established in the Bay of Islands. |
| Pre-
1840 | Māori is the predominant language of New Zealand. It is used extensively in social, religious, commercial and political interactions amongst Māori, and between Māori and Pākehā (<i>New Zealanders of European descent</i>). Education provided by missionaries is conveyed in Māori. |
| 1840 | Signing of the Treaty of Waitangi. Māori is the predominant language of New Zealand. The Treaty of Waitangi was first signed on 6 February 1840 at Waitangi. As stated by Keiha and Moon (2008), the treaty “gave foundation to a society of British intervention [and] was to become the instrument by which the British eventually acquired sovereignty over Māori” (p 4). |
| 1842 | First Māori language newspaper is published. |
| 1844 | First edition of Williams' <i>A Dictionary of Māori Language</i> , printed in Paihia, Bay of Islands. Seventh edition is still in print. |

1847	Education Ordinance Act, stating that for schools to be subsidised they had to teach in English and Māori.
1850s	Pākehā population surpasses the Māori population. Māori becomes a minority language in New Zealand.
1858	First official census to collect data about Māori records a population of 56, 049 Māori people (48.5 %). 115, 461 is the total population. <i>Te Hokioi</i> the Kīngitanga newspaper produced in Waikato. Land Wars in the North.
1860s	Land Wars in the North, Taranaki, Waikato and Nelson.
1867	Native Schools Act (1867) enforces instruction in the Native Schools to be given in English ‘as far practicable’. The policy is later rigorously enforced.
1868	First complete edition of the Bible in Māori in a single volume published in Sydney by Rev Maunsell.
1870s	Following the New Zealand Wars, society divides into two distinct zones, the Māori zone and the Pākehā zone. Māori is the predominant language of the Māori zone.
1890s	Many Māori language newspapers publish national and international news. Māori is the predominant language of the Māori zone.
1896	Māori population, as recorded by official census, reaches lowest point. A Māori population of 42,113 people is recorded.
1900	Education authorities took a hard line against the Māori language, which was forbidden in the playground. Corporal punishment was administered to children who disagreed.
1901	Māori population: 45,549 (5.6%).
1907	The Tohunga Suppression Act was introduced outlawing tohunga practices. This, like the assimilation policy of 1847, had the effect of eroding Māori society.
1913	90% of Māori school children are native speakers. <i>Te Puke ki Hikurangi</i> , <i>Te Mareikura</i> and other Māori newspapers publish national and international news and events in Māori as well extensive coverage of farming activities.
1920s	Sir Apirana Ngata begins lecturing Māori communities about the need to promote Māori language use in homes and communities, while also promoting English language education for Māori in schools.
1921	Māori Population: 56, 988 (4.5%).
1930s	Māori remains the predominant language in Māori homes and communities. The use of English begins to increase, and there is continued support for English-only education by some Māori leaders. Schools began incorporating Māori culture into their programs due to a change in direction of educational policy.
1939-1945	The 28th Māori Battalion engagement in the Second World War resulted in the loss of a generation of young Māori men who never returned home to New Zealand and a generation of native Māori speakers were lost (Naylor, 1996).
1940s	Māori urban migration begins.

1943	Wiremu Parker the first Māori broadcaster reads the news in Māori on Radio NZ. Māori population: 115,7551 (6.8%).
1950s	Māori urban migration continues. Māori families are ‘pepper-potted’ in predominantly non-Māori suburbs, preventing the reproduction of Māori community and speech patterns. Māori families choose to speak English, and Māori children are raised as English speakers.
1951	Māori population is recorded in official 1951 Census as 134,097 people. First Māori language papers taught at University of Auckland by Bruce Biggs.
1952	Anger is expressed at the film <i>Broken Barriers</i> , a love story between Pākehā man and a Māori woman.
1960	Television first broadcasted in Auckland on the 1 June.
1960s	Play centre supporters encourage Māori parents to speak English in order to prepare Māori children for primary school.
1961	Hunn Report describes the Māori language as a relic of ancient Māori life. Māori population: 201,159 (8.3%).
1971	Māori population: 289,887 (10%).
Early 1970s	Concerns for the Māori language are expressed by Māori urban groups including Ngā Tamatoa and Te Reo Māori Society.
1972	Māori Language Petition signed by 30,000 signatories sent to Parliament supporting the teaching of Māori language and culture in schools (Meredith, 2008).
1973-78	New Zealand Centre for Educational Research (NZCER) national survey shows that only about 70,000 Māori, or 18-20% of Māori are fluent Māori speakers, and that most are elderly.
1974	<i>Tangata Whenua</i> documentary series appear on TV.
1975	Ngāti Raukawa, Ngāti Toa and Te Āti Awa initiate <i>Whakatipuranga Rua Mano</i> , a tribal development exercise which emphasises Māori language development. The first Wiki o te Reo Māori (<i>Māori language week</i>) is celebrated Treaty of Waitangi Act 1975 is enacted. The Waitangi Tribunal is established.
1976	123 secondary schools were recorded as teaching Māori language as a curriculum subject.
1978	Rūātoki School becomes the first bilingual school in New Zealand. Dr. Richard Benton of the NZER led a team which undertook a comprehensive survey of the Māori population in the North Island. Approximately 16% (64,000) were recorded as fluent language speakers (Christensen, 2001).
1979-80	Te Ataarangi movement established by Ngoi Pēwhairangi and Katerina Te Heikōkō Mataira in an attempt to restore Māori language knowledge to Māori adults. This was a language revitalisation movement specifically for Māori women, and uses a method of learning and teaching te reo Māori using cuisenaire rods [colored rods] (Naylor, 1996). Te Ataarangi would become one of the significant programmes to address the revitalisation of te reo Māori amongst non-speaking Māori adults.

- 1979-80
contd.
- Richard Benton presents paper Who Speaks Māori in New Zealand? At the New Zealand's Language Future symposium identifying the impact of a dwindling number of native speakers of Māori.
- 1981 First whare wānanga (*Māori tertiary institution*) established, Te Whare Wānanga o Raukawa in Ōtaki.
- The hui whakatauirā of Māori leaders proposed and established the first Te Kōhanga Reo (*immersion Māori language nests*) as a response to the imminence of language death.
- The newly organized Ngā Kai Whakapūmau i Te Reo took a far more assertive stance toward Māori broadcasting. The Wellington group was established in January 1981 under the mana (*authority*) of the Māori Affairs Department (P. Walker, 1995; cited in Beatson, 1996). Ngā Kai Whakapūmau i Te Reo undertook a study into the implications of FM technology becoming a tool, or vehicle for the retention of Te Reo Māori.
- 1982 Te Kōhanga Reo established in an attempt to instil Māori language knowledge to Māori infants. First Kōhanga Reo opened in Wainuiomata, near Wellington.
- 1982 Te Upoko o te Ika Māori Radio Station is launched
- 1983 Te Reo o Poneke – the first Māori owned, Māori language radio station goes to air.
- Te Karere* Māori news programmes begins on Television New Zealand (TVNZ).
- 1984 'Kia ora controversy' sparked debate regarding using the Māori language. Naida Glavish – a national telephone tolls operator –began greeting callers with 'Kia ora'. When it was insisted that she only use formal English greetings, Glavish refused and was subsequently demoted (NZ History Online, 2008). The issue sparked widespread public debate, those in support of using Māori greetings, and those who weren't keen to hear them used commonly. Glavish returned to her job after the prime minister intervened and she continued to use the greeting 'Kia ora'.
- 1985 First Kura Kaupapa Māori (*immersion Māori primary school*) established to cater for the needs of Māori children emerging from Te Kōhanga Reo.
- Te Reo Māori claim (WAI 11)* brought before the Waitangi Tribunal by Huirangi Waikerepuru and Ngā Kaiwhakapūmau i te Reo Māori in which the Tribunal had to determine whether language was recognised as a taonga (*valuable treasure*), which the Crown was obliged to protect under the Treaty of Waitangi (Walker, 2004 p. 268).
- The number of Māori speakers is estimated to have fallen to about 50,000 or 12% of the Māori population.
- 1986 Māori population: 404, 775 (12%).
- Estimated 700 Māori children under 10 speak te reo Māori.
- The report of the Waitangi Tribunal on the *Te Reo Māori claim (WAI 11)* asserted that te reo Māori was a taonga guaranteed protection under Article II of the *Te Tiriti o Waitangi (The Treaty of Waitangi)*. The report also recommended recognition of te reo Māori as an official language of New Zealand, that legislation be introduced to enable Māori language to be used in Courts of Law, and that a supervising body be established by statute to supervise and foster the use of the Māori language.
- 1987 *Māori Language Act 1987* passed in Parliament; Māori declared to be an official language and Te Taura Whiri i te Reo Māori – Māori Language Commission established. The act also created a right to use Māori in court proceedings (Te Taura Whiri, 2009).
- Te Kōhanga Reo National Trust established.
- 1988 The Crown took back all the assets from TVNZ and Radio New Zealand (RNZ) for a short time to amend the *Broadcasting Act* and create State Owned Enterprises (SOE) (Beatson, 1996).
- 1989 *Education Amendment Act 1989* provides formal recognition for Kura Kaupapa Māori, Whare Kura (*immersion Māori secondary schools*) and whare wānanga. Children who had attended Kōhanga Reo could

now further their education in a way that included te reo Māori (Treaty 2U, 2007).

Broadcasting Act 1989 extends the Crown's obligation to include te reo Māori content in radio and television. Government reserves radio and television broadcasting frequencies for use by Māori.

1 July, the Broadcasting Commission (renamed New Zealand On Air, NZOA) was established under the *Broadcasting Act 1989*.

- 1990 *Te Ata Hāpara* – Māori language syllabus for primary and secondary schools introduced.
- 1991 Broadcasting Assets case initiated.
Māori population: 434,847(12.9%).
- 1993 More than twenty iwi radio stations broadcast throughout the country.
The Broadcasting Amendment Act 1993 saw the establishment of Te Māngai Pāho – Māori Broadcasting Funding Agency. The statutory role of Te Māngai Pāho is to promote Māori language and culture by making funds available, on such terms and conditions as it thinks fit, for broadcasting and the production of programs to be broadcast (Te Puni Kōkiri, 2008).
Mai Time, Māori and Pacific focused youth television programme pilot launched.
- 1994 800 established Kōhanga Reo with 14,000 children.
- 1995 He Taonga Te Reo (*Māori language year*) celebrated.
Hui Taumata Reo Māori held in Wellington.
A national Māori language survey shows that the number of Māori adults that are very fluent speakers of Māori has fallen to about 10,000 from approximately 64,000 in Benton's 1978 Survey.
Te Māngai Pāho receives funding for 21 iwi radio stations.
- 1996 Aotearoa Television Network broadcasts a trial free-to-air television service in the Auckland area.
Mai Time now broadcast on a weekly basis.
Māori population: 523,371(14.5%).
- 1997 A total of 675 Te Kōhanga Reo and 30 developing Te Kōhanga Reo cater to 13,505 children. There are 54 Kura Kaupapa Māori established since 1985 and 3 Whare wānanga established since 1891.
32,000 students were recorded as receiving Māori-medium education.
Over 53,399 students were recorded as learning the Māori language.
Māori translations validated in parliament.
Publication of the *Reed Reference Grammar of Maori* by Winifred Bauer.
- 1998 Government announces funding for Māori television channel and increased funding for Te Māngai Pāho. Government also announces that it has set aside a \$15M fund for Community Māori Language Initiatives.
- 1999 *Tūmeke*, a Māori Language youth programme began screening on Television 4.
Education Amendment Act 1999 recognising philosophical approach of kaupapa Māori (*Māori ideology*) education.
- 2000 *Tūmeke* changes broadcasters and name to *Pūkana* now showing on TV 3.
- 2001 NZ Census held.
Government announces its support and management structure for Māori Television channel. Government

also announces that it will soon begin allocating the \$15M fund.

Māori population: 526, 281 (14%).

Te Puni Kōkiri - Ministry of Māori Development's *Health of the Māori Language Survey* showing the number of Māori language speakers had stabilised at around 130, 600 people between 1996 and 2001, which constitutes approximately 25% of the Māori population.

Uia Ngā Whetū: Hui Taumata Reo hosted in Wellington by Te Taura Whiri i te Reo Māori.

- 2002 Mā te Reo Fund established to support Māori language growth in communities.
- 2003 7th Polynesian Languages Forum – Te Reo i te Whenua Tipu, Language in the Homeland.
Irirangi.net is launched in November whereby 21 iwi radio stations can be broadcast on the Internet.
Revised Labour Government's 25 year *Māori Language Strategy* launched to “co-ordinate and prioritise government action towards Māori language revitalisation”.
Māori Television Service Act 2003 passed in Parliament.
Localisation of Microsoft Windows XP and Microsoft Office 2003 into Māori. Windows Vista and Office (2007) have subsequently been localised and are available free from Microsoft (Keegan.P.J., Keegan, Te T. & Laws, 2011).
- 2004 Māori Television Service begins broadcasting 28 March.
First inaugural Māori Language Week Awards held in Wellington 14 September.
Māori language version of Microsoft Word developed.
- 2006 NZ Census held.
Te Puni Kōkiri's *Health of the Māori Language Survey* held again.
Māori population: 565, 329 (14%).
8, 910 Māori speakers of te reo aged 0–4 as reported in 2006 Census (18.2%).
131, 613 (23.7 %) of Māori could hold a conversation about everyday things in te reo Māori, an increase of 1,128 from the 2001 Census (Statistics New Zealand, 2007).
Te Whanake series *Te Aka Māori-English, English-Māori Dictionary* interactive online dictionary launched.
- 2007 By June, Te Māngai Pāhō had funded 12, 950 hours of Māori Television programming and 472, 610 hours of radio programming.
- 2008 9,165 children in 467 Te Kōhanga Reo, that is, 23.4% of all Māori children in early childhood education at Te Kōhanga Reo.
Māori language version of Google launched in July 2008.
He Pātaka Kupu – Te Kai a te Rangatira, the first monolingual Māori language dictionary published, in digital and print formats by Te Taura Whiri i te Reo Māori in September 2008 (Te Rito, 2008).
The Health of the Māori Language in 2006 published by Te Puni Kōkiri, claiming a slight increase in the number of speakers.
Te Māngai Pāhō celebrate more than 500,000 hours of funded Māori language broadcasting.
Te Reo, Māori language only television channel launched.
Te Ipukarea: National Māori Language Institute established. At the core of the institute is the pursuit of excellence in scholarship, teaching and research in the Māori language and a collaboration of partners committed to advancing the mana (*prestige*) of the Māori language.
Te Puni Kōkiri (2010b) conducted qualitative research aimed to understand the broadcasting and e-media content and devices preferred by young Māori today and in the future. The findings revealed that young

- 2008
cont. Māori are over-represented amongst a group of New Zealanders who are heavy and extensive users of the new emerging mobile devices such as cellphones, PDAs, iPods/MP3 players and are more likely to have access to or own these technologies.
- 2009 28, 231 students in Maori-medium education; 394 schools offering Maori-medium education. That is 15.2% of Māori students in Māori-medium education.
- Number of Kōhanga Reo drops to 464.
- Special panel complete a review of the *Māori Language Act 2003*.
- First Māori Language Expo, He Huia Kaimanawa, held by Te Taura Whiri i te Reo Māori in Porirua.
- Launch of Google translation tool for te reo Māori.
- Telecom includes common te reo Māori words in the dictionary for the predictive text message function on two new phones (New Zealand Press Association, 2009). Te Taura Whiri i te Reo Māori were instrumental in the creation of the list of words, and the function is now being adopted by other mobile companies.
- 2010 *Te Taumata Tuatahi: Te Reo Māori Pre-publication Waitangi Tribunal Report 262* released by the Waitangi Tribunal describes that te reo Māori is approaching a crisis point, and that urgent and far-reaching change is required to save it.
- Minister of Māori Affairs, Pita Sharples, announced Ministerial Review of *Māori Language Strategy and Sector*, and advisory group formed, named Te Paepae Motuhake.
- Simultaneous interpretation of te reo Māori into English becomes available in the House and galleries, and on Parliament Television.
- Victoria University of Wellington's Faculty of Law announces the completion of the Legal Māori Corpus and the Legal Māori lexicon.
- 2011 The report *Te Reo Mauriora: Te Arotakenga o te Rāngai reo Māori me te Rautaki Reo Māori: Review of the Māori Language Sector and the Māori Language Strategy* by Te Paepae Motuhake released.
- Latest update Williams' Dictionary of the Maori Language (1957) android app. The dictionary is embedded within the app, allowing offline browsing (Widged, 2013).
- In October, 2degrees launched the Te Reo Huawei G6600 phone. In November 2degrees introduces the world's first Te Reo Māori smartphone (2degrees, 2011)
- 2012 Te Kōhanga Reo Trust Board has its urgent claim heard before the Waitangi Tribunal. The Trust Board claimed that the Crown had treated Te Kōhanga Reo like an Early Childhood Education provider, thereby undermining it and contributing to the perilous state of te reo Maori.
- Reo Online Language Systems designed to help support efforts to revitalise endangered languages launched.
- Hika Lite app released by Hika Group in partnership with Vodafone NZ for Maori Language Week 2012. The app allows for audio playback in both male and female voice and there is a section with fun and interesting facts about the Maori language and culture (Hika Group, 2013).

Please note: As well as the Māori web and information communications technological (ICT) developments mentioned in this timeline, more information regarding other accomplishments in the ICT area that have also played a significant role in Māori language transmission and revitalisation can be viewed in Appendix G.

WĀHANGA I HE TĪMATANGA KŌRERO CHAPTER I: INTRODUCTION

Te piko o te māhuri, tērā te tupu o te rākau

The way in which the young sapling is nurtured determines how the tree will grow

(Ministry of Education, 2009, p.1).

If Māori language is a seed, then for it to develop and grow strong it must be nurtured and provided with sustenance. For it to flourish and remain strong and healthy, it must be looked after, and given special care and attention. Efforts must be made to ensure the survival of the seed, lest it perish and die. The analogy that the Māori language is a seed is used as a constant thread throughout the presented thesis. Through the incorporation and interpretation of whakataukī (*proverbial sayings*) the analogy is used as the guiding philosophy for the thesis. The analogy and the whakataukī used metaphorically express and reinforce that the purpose of this research is derived from the fact that the Māori language and its well-being are important. Language revitalisation initiatives and efforts play an integral and necessary role in the maintenance and survival of te reo Māori.

Chapter One introduces the reader to the background of the study through outlining the importance of the Māori language. A brief overview of the decline and the loss of the Māori language is provided to highlight and justify the importance of Māori language revitalisation and maintenance initiatives for the continued transmission of the language. The chapter also presents the aims for this study and outlines in detail the layout for the thesis as governed by selected whakataukī.

Ko te reo Māori: *The importance of the Māori language*

The Maori culture of New Zealand is unique in the world. Its carvings are rich in symbolism. Its music is harmonious and appealing. Its dancing has captivated many hearts and its oral tradition is abundant in song and story. There is a great body of ‘oral literature’ that has survived for many generations, full of wisdom in its narrative and beauty in its poetry, and at the heart of it all is the Maori language. (Waitangi Tribunal, 1989, 3.5.2)

Language is central to the cultural identity of both the individual and the community to which he or she belongs (Te Taura Whiri i te Reo Māori, 2009) and “has been created

and moulded to express our feelings and sentiments and no other medium of speech can take its place” (Buck, as cited in Sorrenson, 1986, p. 182). The Māori language is of significant importance to its people, underpinning Māori cultural development and accordingly providing the platform for social and economic development (Te Puni Kōkiri, 2002, p.40). Articulating and summarising the importance the Māori language has, Pōhatu (2005) expresses how:

Language fulfils multiple roles, it being kaitiaki [*guardian*] of knowledge and thinking, in which our actions can be immersed and intertwined. This template is a reminder of just how ‘lived’ and embedded Māori theory in fact is in our daily activities. Language is the source of Māori wisdom that holds explanations of safety and respectfulness. It also initiates entry-points to deeper readings of Māori knowledge. (p. 4)

The origins of the Māori language have been traced back by historical linguists to an original language known as Proto-Austronesian. This is believed to have originated on the island of Taiwan and evolved over 5000 years (Williams, 2004, p. 27) to become a unique taonga in Aotearoa. The Māori language had an extensive vocabulary, which was adequate to express anything connected with Māori culture at its highest development. However, Buck (1977) claims “the impact of Western civilisation led to the gradual abandonment of many arts, crafts and rituals” (p. 81) and the process of change and loss, which increased with each generation, was hastened by the acceptance of various phrases of English culture. Dr. Te Huirangi Waikerepuru (1995) explains how:

All that is spoken comes from the land, and the sky. The land speaks to us, and we speak to our children, so that they may know the language of the land. The sacredness of the universe is spoken and explained. (*Waka Huia*: Interview, 2009 Series, Episode 20)

It is undeniable that Māori society and culture has changed because of colonisation and its effects. The language has also been impacted upon. “Other ways have entered into our hearts, therefore be brave for the children at Kōhanga Reo and at Kura Kaupapa Māori, to speak the language of the land, the universe, the forest, the river and the ocean” (Waikerepuru, 1995). It has a life-force and a spirit. It is the poutokomanawa, or the heart of Māori culture (Tangaere, 1997). The language is the embodiment of the particular spiritual and mental concepts of the Māori (Waitangi Tribunal, 1989) and there is an important connection between understanding te reo Māori and understanding Māori concepts and philosophy. It is also considered that appreciation of the intricacies

and nuances that support a Māori identity is hard to achieve without the ability to speak the Māori language (Tangaere, 1997). Therefore an understanding of te reo (*the language*) can provide better opportunities to connect to tribal affiliations and maintain a strong Māori identity. Royal (1992) suggests that the more proficient one is with the language, the easier it is to transmit ancient knowledge to them. This reinforces that te reo Māori underpins Māori philosophy and plays a significant role in all facets of te ao Māori. The language is a medium that assists in the shaping of ones cultural and individual identity and is one of the key factors that comprises identity formation for Māori, which also includes lineage and genealogy, and ancestral connections to land such as tūrangawaewae (*domicile, place where one has rights of residence and belonging through kinship and whakapapa*) (Durie, 1997).

Today, the Māori language remains an important component of Māori cultural, social and economic development. “Ko te reo te mauri o te mana Māori” (*The language is the life-force of Māori status*) (Henare, 1989 as cited in Waitangi Tribunal, 1989). “Ko te reo te hā, te mauri o te Māoritanga” (*The language is the breath of Māori culture and what it means to be Māori*) (Kāretu & Waite, 1988). “Ko te reo te waka o te whakaaro. Ko te reo te aho ki te ao Māori” (*The language is the vehicle for our thought, and it is the connection to the Māori world*) (Rewi, 2005, p.7).

Decline of the Māori language: Factors that hindered Māori language transmission

Despite the importance of the language, its health was significantly compromised in the 19th and 20th centuries, and “declined steeply over the past 100 years” (Te Puni Kōkiri, 2004, p.11). The 19th century saw European expansion into the world and “set in train the historic process of colonisation and subjection of the tangata whenua, the first nations, the people of the land... and included population decline induced by epidemic diseases carried by the coloniser, conversion to Christianity, treaty-making, military invasion, cultural and language suppression, and political subjection” (Walker, 1996, p.161).

Other factors that had the most significant impact on the transmission of the language include the introduction and acceptance of the English language. Kōhere - the editor of the Māori language newspaper, *Te Pipiwharauoa*, wrote an article in 1903 which warned against neglect of the Māori tongue, stating “Ko te Maori ano kei te kaha te patu i tona reo, apopo, ka ngaro whenua, ka ngaro tangata, ka ngaro reo” (Kōhere, 1903). An

interpretation of this statement could be that if Māori continue to allow the language to be threatened, tomorrow the land, the people and the language will be lost.

During the 1800s, the education policies put in place undermined the Māori language (Ka'ai-Oldman, 1988). For five decades corporal punishment enforced the suppression of the native language, and consequences for being punished included the language being devalued as it was seen as bad or inferior (Simon & Smith, 2001). Another impact was that the system had effectively beaten the language out of those who defied the ban and “some of our elders cannot use their own language without feeling the pain on their hands or bottoms...because of scars left from practices in childhood” (Selby, 1999, p.10). The ongoing effects of suppressing the language and enforcing punishment if it was spoken were not just educational and linguistic, but “the psychological impact was immense” (Simon & Smith, 2001, p.173). It also meant that opportunities were denied to develop intimate relationships with whānau, and also for intellectual and cognitive development through their language (Simon & Smith, 2001).

It is however suggested that earlier education policy had not nearly as much effect on the language as the breakdown of Māori family and tribal links in the post-war years (Belich, 2001; King, 2003). The economic climate of New Zealand soon changed, and in response many Māori "tentatively" began to migrate to the urban centres (Keiha & Moon, 2008, p.5). Māori were "faced with the demands of a new lifestyle" (Te Puni Kōkiri, 2010a, p.8), and were encouraged to assimilate a new environment that did not support or promote the use of the Māori language. The value Māori placed upon the language was compromised and “the linguistic result was that despite the fact that virtually all Māori adults could speak Māori, they stopped transmitting the language to their children” (Chrisp, 2005, p.152) which discontinued the language transmission from older to younger generations (Te Puni Kōkiri, 2010a, p.8). “Years of subtle and not so subtle discouragement regarding the use of the Māori language, both in and out of the home, loosened the links of intergenerational language transmission, so important for the viability of a language and culture” (Simon & Smith, 2001, p.173), and the ramifications would be present for decades to come.

Christensen (2001) reports that the findings of two similar Māori language surveys indicate a decline from 64,000 or some of the 16% of the Māori population were fluent

speakers of the language in the 1978 Benton Survey², to 10,000 adults in the 1995 Survey³ conducted by Te Taura Whiri i te Reo Māori, which represented 8% of the Māori population. Christensen (2001) provides the following summary of the Māori language decline:

It has been argued that the decline in status, corpus, and acquisition of the language has been either the direct result of decisions made to restrict its range of functional uses and its acquisition, or as the natural consequence of the general deterioration of political, social and economical circumstances of Māori people that accompanied colonisation. (p. 58)

Te whakahaumanutanga o te reo Māori: *Revitalisation of the Māori language*

By the 1970s, 70% of the Māori population was urban, and the language was only playing a very marginal role in the upbringing of Māori children. From the early 1970s Māori were prompted to take an active stance. With the transition from rural to urban life accomplished, Māori people turned to political action and new groups emerged. They made a commitment to strengthening the Māori culture and the language and many Māori reasserted their identity as Māori (Ministry for Culture and Heritage, 2008). They made concerted efforts to halt the decline of the Māori language through a range of initiatives (Te Puni Kōkiri, 2004, p.11) and education, government and law, and media, the three prominent “language-bearing institutions in society” (Bell, 1991. p. 70) were where most of the efforts by Māori were focused.

An example is the emergence of two urban Māori groups in the early 1970s, Te Reo Māori Society and Ngā Tamatoa, who in their protest for rights and language played significant roles in advocating te reo Māori. In particular, in 1972 these activist groups presented a Māori Language petition to Parliament containing more than 30,000 signatures (Te Kete Ipurangi, 2002) supporting the teaching of Māori language and culture in schools (Meredith, 2008). The event represented a major turning point in the struggle to save the Māori language from extinction and prompted other revitalisation initiatives.

²Benton., R.A. (1979). *The legal status of the Māori language: Current reality and future prospects*. Wellington: New Zealand Council for Educational Research.

³ Te Taura Whiri i te Reo Māori. (1996). *Ae rānei, he taonga tuku iho; Te mahi rangahau reo Māori huri I te motu 1995*. Wellington: Author

Educational institutions were established to foster language transmission and to promote the revitalisation of the Māori language. Te Kōhanga reo were established across the country fostering the transmission of language from older generations to children. This movement brought about a spectacular Māori language renaissance, and marks the first true revitalisation program because of the awakening impact it had on Maoridom (Reedy, 2000). The philosophy of Te Kōhanga Reo was extended to Kura Kaupapa Māori at the primary level then to Whare Kura at secondary level to ensure Māori language continuity from preschool through to university (Walker, 1996, p.176). Many people, students, parents and teachers alike embraced the kaupapa of Kōhanga Reo as their own personal rediscovery and recovery of the Māori language (Naylor, 1996). Also in 1981, a national association was formed in response to the highly successful movement of Te Ataarangi, which was developed in 1979 by the late Kumeroa Ngoi Pewhairangi and Dr. Katerina Mataira. This was a language revitalisation movement designed specifically for Māori women, a method of learning and teaching te reo Māori utilising cuisenaire rods [coloured rods] (Naylor, 1996). Te Ataarangi would become one of the significant programmes to address the revitalisation of te reo Māori amongst non-speaking Māori adults.

In June 1985 the Waitangi Tribunal decided that the language was a taonga which the Crown was obliged to protect under the Treaty of Waitangi (Walker, 2004, p. 268) and that 'active steps' must also be taken by the Crown to ensure the obligation was upheld (Walker, 2004). The passing of the *Māori Language Act 1987* saw the establishment of Te Taura Whiri i te Reo Māori, te reo Māori was recognised as an official language of the country (Te Rito, 2008) and the right to use Māori in court proceedings was created (Kāretu & Waite, 1988).

The doors were unlocked for Māori to pursue a Crown commitment to Māori language broadcasting. After many years of heartache and struggle during the seventies and onwards agitating for greater Māori language presence in the media, the national Māori Television Service was established as a stand-alone entity in 2004 (Te Rito, 2008). In early 2008 a second channel, Te Reo was launched which broadcasts in 100% Māori language during prime time. The aim of the channel is to better meet the needs of fluent Māori speakers, Māori language learners and to enable New Zealanders to have total immersion Māori language households. With the support of Te Māngai Pāho (*Māori Broadcasting Funding Agency*) twenty-one iwi/Māori radio stations now stream via the Internet, which means that not only are they accessible world-wide, but they are a

means of broadcast that provide dialect differences inherent in the different iwi. These radio stations are now accessible on e-learning and m-learning platforms as well as the conventional radio and have allowed for the transmission of the same content over various mediums.

The continued persistence and initiatives of Māori have on many accounts promoted a brighter future for the Māori language, to a situation where it can be available and accessible for future generations. There are many achievements, individuals and groups that have not been mentioned in this account however their contributions towards the survival of the Māori language although unspoken of, are not forgotten. The establishments and events outlined above highlight the resistance and the desire of Māori to save their language, their culture and their knowledge because of the significance it has for them.

Te oranga o te reo Māori: *The current health of the Māori language*

Despite these significant achievements, “te reo Māori has still not reached a safety level” (Hohepa, 1999, p.54). According to Cleave (2009) Māori are “caught up in a survival situation, [and] such a position requires the language to be a nurturing shield” (pp. 86-87). The Endangered Languages website explains that it is estimated by experts that only 50% of the languages that are alive today will be spoken by the year 2100. They continue to express that “the disappearance of a language means the loss of valuable scientific and cultural information, comparable to the loss of a species” (Endangered Languages, n.d.). The state of a community’s language can not be determined by a single factor, however United Nations Educational, Scientific and Cultural Organization (UNESCO) offer the following nine factors that “can determine the viability of a language, its function in society and the type of measures required for its maintenance or revitalisation” (2003, para.2). They are:

1. Absolute number of speakers
2. Proportion of speakers within the total population
3. Availability of materials for language availability and literacy
4. Response to new domains and media
5. Type and quality of documentation
6. Governmental and institutional language attitudes and policies, including official status and use
7. Shifts in domains of language use
8. Community members attitudes towards their own language
9. Intergenerational language transmission (UNESCO, 2003, para.2)

Using the UNESCO framework for determining the state of a language measured by the level of intergenerational language transmission amongst its speakers (see Table 1), Te Paepae Motuhake (2011) outlines how the Māori language fits somewhere in between 'definitely endangered' and 'severely endangered' (p.17). This is based on statistics around the use of Māori language in households with children.

Table 1: UNESCO Framework 2009

Degree of endangerment	Intergenerational Language Transmission
Safe	The language is spoken by all generations; intergenerational transmission is uninterrupted.
Vulnerable	Most children speak the language, but it may be restricted to certain domains (e.g. home).
Definitely endangered	Children no longer learn the language as mother tongue in the home.
Severely endangered	The language is spoken by grandparents and older generations. While the parent generation may understand it, they do not speak it to children or among themselves.
Critically endangered	The youngest speakers are grandparents and older, and they speak the language partially and infrequently.
Extinct	There are no speakers left.

(Lewis and Simons 2009, p.26)

Over the past ten years, the number of Māori speakers in the Māori population has stabilised (Te Puni Kōkiri, 2004) but this number is estimated at 130,000 people, which only accounts for approximately 25% of the Māori population. This means that Māori speakers are the minority not only within New Zealand society, but also within Māori society (Te Puni Kōkiri, 2004). Of these Māori speakers only 58% know a "few words or phrases, and make only limited use of Māori language in homes" (May, Hill, & Tiakiwai, 2006, p.2). The remainder consists of approximately 22,000 fluent Māori speakers, and 22,000 with medium levels of fluency (May, Hill, & Tiakiwai, 2006).

Despite these figures, Te Puni Kōkiri (2007) explain how their 2006 Survey on the Health of the Māori language indicates that based on the comparison to the statistics in the 2001 Survey:

- The language is making good progress
- It is particularly positive to see significant increases in the areas that directly contribute to the restoration of intergenerational language transmission
- There are an increasing number of Māori adults who have language skills across a range of proficiency levels

- The number of people with high proficiency is increasing in the younger age groups
- There have also been increases in the amount of language spoken and heard in the home and community
- There are a number of Māori adults who have skills but still do not use them.

Bauer (2008) does not support this “optimistic” of the state of the Māori language and notes that “It was, of course, in the interests of TPK [Te Puni Kōkiri] to demonstrate that the tax-payers money that has been put into Māori language revitalisation is producing positive results (p.34). Bauer further explains how the positive publicity given to the figures of the recent surveys encourages a false sense of security, and consequently, complacency, when in reality the language is still struggling if not losing ground.

Other factors that hinder the growth of the language include that there is a lack of Māori speakers in society and it is often difficult to grow or nurture one's language because of this. In some cases I have witnessed little or no interest shown by potential Māori speakers to learn the language because they feel it is too difficult and have limited access or no access to Māori language speakers. This view is supported by Hunn (cited in Benton, 1981) who stated “Each Māori who can no longer speak the language...makes it just so much harder for those remnants of Māori culture to be perpetuated” (p.66). This contributes to the low statistics for Māori language speakers. Another contributing factor is that because Māori speakers are the minority within the Māori population, they have restricted access to other Māori speakers (Te Puni Kōkiri, 2004). Because Māori language speakers are the minority, in order to create more language outputs for speakers it is necessary to grow the number of Māori language speakers as “...there is a cumulative relationship between the number of speakers and language outputs” (Te Puni Kōkiri, 2004, p.9). The reduced exposure or complete lack of exposure to the language or “to understanding Māori concepts and the place such concepts have in enabling them to stand tall within a strong Māori New Zealand identity” is experienced today by thousands of Māori people (Pere, 1982, p. 55). According to Pere (1982) “these concepts imply a dignity and tradition of the past well worth carrying into the future” (p.55). This worth is understood by Māori, as highlighted in a survey conducted by Te Puni Kōkiri (2010a). The Māori population place a high level of importance upon the language, and that they see their role in supporting the language as important (Te Puni Kōkiri, 2010a). The attitudes people hold against the language are crucial to its survival and maintenance, especially those of

the target population, Māori people (Harlow, 2005). Harlow explains how many Māori who overtly assert positive attitudes towards the language and its maintenance often also hold covert attitudes which may be contradictory. These covert attitudes may tend to “militate” (p.135) against the goals of Te Taura Whiri, Te Kōhanga Reo and Kura Kaupapa Māori which is not just focused on the preservation of the language but also its revival as the “preferred language for most functions within the Māori community” (pp. 134-135).

Harlow (2005) further discusses the effect attitudes can have on the language, stating that if the desirable outcome of language maintenance is perceived as impossible by the target population, or they see no value in such an outcome, this will have a major negative effect of the language’s future. These unspoken or covert positions could be detrimental to revitalising the language, including that being able to speak Māori does not define you as a ‘real Māori’, and that it is possible to be ethically and culturally Māori through the medium of English. Therefore, although the language may be recognised as important by the general target population, it is not to say that Māori are actively learning the language themselves or contributing towards Māori language revitalisation, despite every individual holding a potentially significant role for the language’s survival. As explained by Durie (1998) when discussing the enthusiasm of Māori to promote the language, “More than any single factor it is that enthusiasm which is probably the most essential prerequisite for language revitalisation” (p.75).

Te whakahaumanutanga: *Intervention*

The health of the Māori language is not ideal, and “remains fragile at its best” (Waitangi Tribunal, 2011, p.441). Therefore we are still in an era where the maintenance and revitalisation of te reo Māori must be actively nurtured. This is where intervention processes into language loss become an important factor in the maintenance and continued survival of an endangered language. This has been given various labels, such as “language revival, language revitalisation and language reversal” (Hohepa, 1999, p. 45). New technologies and resources developed can be utilised for the transmission and exposure of the language thereby serving as complementary or supplementary resources to assist in this intervention process. Hohepa (1990) also explains that the role of regenerating a language is not “to return to the traditional, but to secure the life of a

language and culture” and the goal is “to ensure that language and the culture it indexes are a vital part of a people's wellbeing and healthy existence” (p.47).

Ko te hangarau: *Technology and m-learning*

Technology has played a significant contribution towards the continued transmission of the Māori language. With the development of new technologies such as print, radio and television, the internet and information communication technologies, Māori have willingly adopted and adapted to utilising these technologies as a means to transmit Māori language and knowledge. With the advent of the internet, Māori language and knowledge has gone global, and has now entered the digital arena of mobile learning (m-learning).

M-learning, defined as “the exploitation of ubiquitous handheld technologies, together with wireless and mobile phone networks, to facilitate, support, enhance and extend the reach of teaching and learning” (Northampton College, n.d, para.3) can occur anytime, anywhere “including traditional learning environments such as classrooms as well as in workplaces, at home, community locations and in transit” (Northampton College, n.d, para.3). To reinforce this, E-Learning Guild (2007) define m-learning as “any activity that allows individuals to be more productive when consuming, interacting with, or creating information, mediated through a compact digital portable device that the individual carries on a regular basis, has reliable connectivity, and fits in a pocket or purse” (para. 2). M-technologies that facilitate m-learning such as mobile phones, smart phones, mp3 players, mp4 players, PDAs, e-book readers, tablets and iPads, handheld gaming devices and notebooks have become ubiquitous in New Zealand society. The Māori language can be viewed as forming a nexus between the past, present and the future, and m-learning, can be viewed as the next step towards securing a stronger future for the language by utilising tools of this digital era as a means to aid in the maintenance of the language.

Ngā whāinga o te rangahau: *The aims of the research*

It is crucial that revitalisation initiatives towards facilitating the continued transmission of the Māori language are crucial for its survival and maintenance. It is also crucial to protect and respect the language. The research aims to situate mobile-learning within the contexts of Māori language revitalisation and Māori language transmission with reference to kaupapa Māori values and whakataukī. The purpose is to assess m-learning's role in the facilitation of Māori language transmission and revitalisation and

also to highlight the considerations that should be made to protect the language and deliver it responsibly when facilitated on an m-learning platform.

Language transmission is important for the survival and revitalisation of the language. As expressed in *Let My Whakapapa Speak*, “it is an organic matter...language is organic. If I don’t hand my language on to you, then it ceases to exist. That is the simple message of language transference” (Milligan & Stephens, 2009). So what needs to be considered for m-learning to be a responsible mode of facilitating Māori language transmission? How do you enter the arena of m-learning safely and move forward with respect and acknowledgement to Māori language, Māori knowledge and the Māori world-view? The research will explore these questions by situating m-learning in the contexts of Māori language transmission and Māori language revitalisation with reference to kaupapa Māori values and whakataukī. The research will also emphasise the importance of the language to Māori people, Māori culture, Māori wellbeing, Māori development and highlight any considerations that should be made for the protection of the mana and mauri (*life-force*) of the Māori language in the m-learning environment. Māori language is the poutokomanawa, (*centre pole*) of mana Māori (*Māori prestige*) and therefore Māori people need to “take control of the future destiny of the language and to plan for its survival” (Government Review Team, 1988, p.18). These questions propose the specific issues and topics that will be central to the research and findings, as well as the central themes that are discussed in the previous paragraph.

The guiding principles for the study will come from a Māori perspective with reference to principles of Kaupapa Māori Research Theory. Kaupapa Māori research "focuses on Māori – Māori culture, language, values, history, people and contemporary realities" (Rautaki Ltd & Ngā Pae o Te Māramatanga, n.d.a, para.9) and provides a foundation for the presented research.

Māori sayings, or whakataukī, are an important literary device of the Māori language and have been incorporated to play an integral role as a methodological and philosophical component for the presented research. Whakataukī and their importance within Māori language and culture are discussed below, then the whakataukī that are intertwined throughout the thesis as guiding principles for the research are examined to explain their significance and relevance to this research.

Whakataukī: *Proverbial sayings*

Māori proverbs, often termed whakataukī, whakatauākī (*uttered proverb of which the creator is known*) or pēpeha (*proverbial saying, tribal saying*) and the role they play within Māori language and culture is an important one. Some have been handed down through generations, the valuable advice and wisdom of the ancestors is embodied in the whakataukī and therefore “constitute a communication with the ancestors” (Mead & Grove, 2003, p.9). Mead and Grove also state how “it is a rare privilege to be able to reach out to the ancestors and touch their minds” (p.9). As guiding principles, I believe the advice offered in these whakataukī is valuable and useful and through interpreting whakataukī from the past, the thoughts that the ancestors held and their perspectives on different aspects of life are revealed.

The content and metaphorical symbolisms of whakataukī are used to convey key messages and are usually succinct (Kōrero Māori, n.d.). This view was supported by Sir Apirana Ngata who wrote “in former times a wealth of meaning was clothed within a word or two as delectable as a proverb in its poetical form and in its musical sound” (2004, p.xxiii). Whakataukī are often so accurate in capturing a moment, a thought or conveying a message that there will be little or no need to explain it any further (Kōrero Māori, n.d.). The appropriate employment of whakataukī in formal speeches indicates the skill and knowledge of a good orator. However, the audience must also have an understanding of the whakataukī, or the essence of the speakers’ kōrero (*speech/discussion*) will not be understood (Brougham & Reed, 1999). This highlights the importance of whakataukī for the language and for the language's survival. It also reflects the relationship between the culture and the language. If the whakataukī are lost or forgotten, the messages of the ancestors are also. These messages encapsulate thoughts and moments regarding history, religious life, conduct, ethics, warfare, marriage, death, weather and land (Mead & Grove, 2003). They are “injunctions to industry, ironical allusions to vanity, display and laziness” (Cowan, 1930, p.110). They are poetic and embody the uniqueness of the language and carry flair, imagery, metaphor (Kōrero Māori, n.d.) and the wisdom of the elders. They are couched in language ‘terse’ and are ‘forcible’ (Cowan, 1930; Kōrero Māori, n.d.) embracing charm, witticisms, figures of speech, boasts and other sayings (Williams, 1971, p. 274). Although coined in the past and encompassing values and advice of the ancestors, the ‘philosophies expounded’ are no less relevant to the generations of today (Brougham & Reed, 1999), and can be interpreted or viewed to reflect contemporary issues and

moments. The ancestors “economy of words become a beautiful legacy to pass on to generations yet unborn” (Mead & Grove, 2003, p.9).

Ngā whakataukī hei ārahi: *Framework of using whakataukī as a guiding philosophy*

The importance of whakataukī to the Māori language and culture is so apparent and relative to everyday conduct and speech that it is appropriate to incorporate whakataukī throughout this research project for guidance. The following is an overview of the whakataukī that have been employed as guiding principles and outlines the significance and an interpretation of each whakataukī as it relates to the presented research. The whakataukī are all relevant to the Māori language, and the analogy that the Māori language is a seed is expressed and reinforced through the incorporation of the selected whakataukī. They serve as a reminder to the importance of the Māori language, and accordingly the importance of its maintenance and revitalisation. New whakataukī will introduce each chapter as a guiding philosophy for that chapter, and m-learning as a tool for language transmission will be explored within the theories of those whakataukī. By incorporating the messages contained within selected whakataukī as the guiding philosophy for the research, the research is built upon a foundation rooted in traditional cultural values, and this particular language genre is and its significance are affirmed.

He kākano: *A seed*

The metaphor that the Māori language is a seed that must be nurtured and sustained may be better expressed by looking at the Whanake project, a set of learning resources created by Professor John Moorfield designed to teach people how to speak Māori from beginners level up to the advanced level (Spooner, 2008). The progression through the resource textbooks complements the above metaphor. The beginner’s level textbook is titled *Te Kākano*, the seed. *Te Kākano* is then followed by *Te Pihinga* - the seedling, *Te Māhuri* - the sapling, and the final book in the series, *Te Kōhure* - which is a term used to describe the development of a tree to maturity (Moorfield, 2005).

‘Kei hea taku manatawa, taku manapou?’ is the whakataukī matua, or the *primary proverbial saying* for the thesis. It provides a philosophical basis for the analogy that the Māori language is a seed, and plays an important role as it has been incorporated to provide an *overarching* guiding philosophy for the thesis.

Where is my manatawa, **Kei hea taku manatawa,**
my manapou? **taku manapou?**

‘Kei hea taku manatawa, taku manapou?’ encapsulates a story of the Māori language (Williams, 2009), the origins and the transmission of the language from times of old and represents the language’s importance. The manatawa is a *dark-coloured stone, or kernel*. The manapou is a *reddish coloured stone*, and both are believed to be kernels of tree-fruits of Hawaiki (*ancient homeland*) (Best, 1908). Kaa Williams (2009) explains how in the times of old, the kākā (*Nestor meridionalis*) bird travelled here from the homeland, Hawaiki. In its throat it carried two seeds; the manatawa and the manapou. Within these seeds was the ancient language of the ancestors of Hawaiki. Upon reaching Aotearoa, the two seeds were planted into Papatūānuku (*Earth Mother*). A tawa (*Beilschmiedia tawa – type of tree*) and its fruits grew, as did the Māori language within those fruits.

The guiding messages found within ‘Kei hea taku manatawa, taku manapou?’ are:

- ❖ To awaken the spirit of the recipient as words of encouragement for those who have fallen into an unpleasant mindset, an ugliness of the heart, a weakness of the body, or are presenting signs that represent the well-being of the person or iwi has become weak, defeated or troubled.
- ❖ To stimulate and encourage someone to look at themselves, their identity, their heritage, their characteristics and those things inherited by their parents and ancestors. It is used to represent the pride of the person, their integrity, their tribal affiliations and their lineage (Te Kete Ipurangi, 2010; Milroy, 2004).

In this context the importance of the language and lineage to an individual's cultural identity and wellbeing are reinforced. The whakataukī is used to encourage “people who have become lacksidaisical, unenthusiastic and listless” (Moorfield, 2013c) Its relevance and application to the presented research serve to inspire and encourage Māori language revitalisation and maintenance initiatives. It is an encouraging reminder to Māori people that they have a rich lineage, they come from a line of ancestors, from times of old and within that is the Māori language, and in pursuing those initiatives considerations must be made to protect and nurture the mana and the mauri of the Māori language.

The heart of the tawa tree has a sound, He riri tā te tawa uho,
as does its flesh. he riri tā te tawa para.

Williams (2004) explains that within the whakataukī that is the title of the thesis, 'tawa uho' is the *heart of the tree*; it was the seed instilled with the ancient language that was conveyed to the new homeland by the kākā. The 'tawa uho' represents the beginnings of the language, the ancient language including karakia (*incantations*) and mōteatea (*lament-traditional chant*). The 'riri' describes the various sounds of the language. If we envisage a cross-section of the trunk of a tree, from the centre, the 'tawa uho', grows concentric circles. Each represents a different genre of the Māori language. Williams describes the different genres that are represented by the concentric circles including (but not limited to):

- ❖ te reo ōkawa - *formal language, the language of the marae (courtyard-the open area in front of the meeting house where formal greetings and discussion take place. Often used to include the complex of buildings around the marae)*
- ❖ te reo ōpaki - *the language of storytelling, informal language*
- ❖ te reo o te kāuta - *informal language used in the cookhouse*
- ❖ pakiwaitara - *narratives*
- ❖ pūrākau - *creation narratives*
- ❖ waiata - *song(s)*
- ❖ te reo o te kāinga - *the language of the home*
- ❖ te reo o te kura - *the language of school*
- ❖ ngā momo whakapuakitanga – *types of expressions*. This genre includes kīwaha and kīrehu (*colloquial sayings*), kupu whakarite (*metaphor, simile*), pēpeha, whakatauākī and whakataukī
- ❖ te reo whakakatakata - *the language of laughter*
- ❖ te reo aroha - *the language of courting*
- ❖ te reo o ao - *the language of the world*

There are more genres within each of these genres themselves (Williams, 2004). These many facets within the language, such as karanga (*formal, ceremonial call*), whaikōrero (*formal speech making*) and waiata serve different purposes as reinforced by Pihama, Smith, Taki, & Lee (2004) who state:

There are many genre of te reo Māori that exist and which transmission particular forms of mātauranga Māori, [*Māori knowledge*] some examples of this being te reo karakia [*the language of incantation*], te reo pōwhiri [*the language of the welcoming ceremony*], te reo Paki [*the language of storytelling*]. This indicates in Māori society there are complex language and knowledge systems and therefore existed a range of pedagogical approaches that required a range of approaches and processes. (p.23)

The different genres (represented analogously by the concentric circles) all play a significant role in the language's survival; whakataukī is one of these language genres. These language genre all serve different roles, and at the core remains the ancient language. The concentric circles represent the Māori language in its entirety, its history and evolution, its growth, like the development of a tree, forever growing and changing.

The concentric circles can also represent the different avenues or vehicles that are used to transmit the Māori language within Māori language revitalisation efforts whether through film, education, classroom settings, written texts, oratory, e-learning, m-learning, podcasts or alternative methods. Each concentric circle represents a different medium or genre of language revitalisation or transmission.

The title, '*He riri tā te tawa uho, he riri tā te tawa para*' reminds us of the important role different language genre play, especially the role of whakataukī for the presented research and the fact that m-learning is a possible avenue for the transmission of the Māori language.

Te whakatakotoranga: *Organisation of the thesis*

The thesis consists of six wāhanga (*chapters*), and each individual chapter is introduced with a new whakataukī. All whakataukī used in the research reiterate the essence of the whakataukī matua, 'Kei hea taku manatawa, taku manapou?' and link to the Māori language, transmission and revitalisation. Chosen specifically for the guidance they provide for each of the chapters, the organisation of the thesis and the whakataukī relative to each of the chapters are outlined below.

Wāhanga I: Introduction

*The way in which the young sapling is nurtured
determines how the tree will grow.*

**Te piko o te māhuri,
tērā te tupu o te rākau.**

(Ministry of Education, 2009, p.1).

The notion of likening the Māori language to a seed and its development reflects the strong connection and relationship between the Māori language and nature. The message of the whakataukī matua can be related to the seed of Māori language within individuals. Through nurturing and attention the development of that seed to a seedling, a sapling and then its growth to maturity is metaphorical of the development and growth

of the Māori language. The philosophy of ‘Te piko o te māhuri, tērā te tupu o te rākau’ is a reminder that the quality and exposure to different modes of transmission of the Māori language experienced by an individual influences the development of that individual’s language. Providing an m-learning resource in the Māori language should encourage growth, fostering and nurture a healthy upbringing that facilitates rich language transmission and accordingly contributes towards te reo Māori revitalisation. So what must be considered when creating such a resource?

The relevance of the whakataukī to the chapter is that the concept or the seed has been planted. It represents the beginning, the formative stage of the research where the concept is nurtured and sets the premise and justification for the remainder of the research. It is where the development of the seed into a tree is set in motion and where the foundation work is put in place to ensure growth will be successful.

Wāhanga II: Literature Review

<i>The soil is sown.</i>	Tiritiria te oneone.
<i>Deepen your roots to Mother Earth,</i>	Tautoroa o paiaka ki te ūkaipō,
<i>to feed on the sustenance and the</i>	kia rongo tonu i te reka,
<i>richness</i>	i te haumakotanga, i te taurikuratanga
<i>from beyond,</i>	nō tua,
<i>so that it does not become barren.</i>	kia kore ai e titōhea.

(Rewi, 2009).

The whakataukī heading this chapter encourages Māori to nurture the seed of the Māori language, a seed instilled with the language of their ancestors. Papatūānuku has been referenced here, as she is a source of sustenance for Māori people. She is the primeval mother, Māori lineage traces back to her, Māori originate from her, and when they pass on, they return to her. She is the land, humans care for her and she provides for them. The richness from beyond refers to the valuable and enriching sustenance that originates from an intangible source, from times of old. The whakataukī encourages the nurturing of the seed and the soil to hold fast to the language of old, so that it also does not become barren. If the soil and the seeds are cared for, the earth and its enriching sustenance will not become barren.

This chapter offers a comprehensive literature review examining the current literature relevant to the research. The whakataukī is relevant to the chapter as the sustenance and richness from beyond can be likened to existing literature, resources and information held by repositories of knowledge. The relevance here is that through stretching forth and searching within existing baskets of knowledge, the richness that can be found can provide an in-depth review of the literature and acknowledges the value of the research that has been previously conducted, so that it does not become barren. The whakataukī also poses the question, to ensure that the language is protected what knowledge needs to be sought and what research needs to be done before using m-learning to facilitate Māori language transmission?

Wāhanga III: Methodology

<i>Grow o young one</i>	E tipu, e rea,
<i>for the days of your world.</i>	mō ngā rā o tōu ao.
<i>(Dedicate) your hands to the skills of</i>	Ko tō ringa ki ngā rākau
<i>the Pākehā</i>	a te Pākehā
<i>to guide you on life's way.</i>	hei ora mō te tinana.
<i>Your spirit to the treasures</i>	Ko tō ngākau ki ngā taonga
<i>of your ancestors.</i>	a ō tīpuna Māori,
<i>as a proud diadem to your brow, and</i>	hei tikitiki mō tō mahuna, ā,
<i>your soul to the maker,</i>	Ko tō wairua ki tō Atua
<i>from whom cometh all things.</i>	nāna nei ngā mea katoa

(Ngata, 1949).

Sir Apirana Ngata wrote these words encouraging movement forward in the modern world, adopting and embracing non-Māori philosophies and ideas whilst remaining true to a Māori identity and ancestry. This Māori identity derived from the past, in a “rapidly changing world ... could be a stabilising force in the midst of change and uncertainty” and retaining a strong Maori identity "ensured an awareness of responsibility to Maori people” (Manaia & Hona, 2005, para.7). Education and knowledge was recognised as having ‘influence and power’, and academics have long identified education as one of the pathways to empowerment for Māori (Bennet, 2003).

The relevance of the whakataukī to the chapter is similar in that it encourages people like me to partake in research, to nurture one’s growth in this modern world. My hand

to the tools of the Pākehā, i.e. university, using non-Māori methodologies, writing a thesis and using modern technology to do so, and exploring m-learning as a mode of facilitating the Māori language and culture. However, my heart and spirit to remain with those values of the Māori ancestors. Kaupapa Māori practices were adhered to, tikanga Māori (*Māori customary practices*) were observed at all times and the Māori language was respected and utilised where appropriate. The approach of incorporating whakataukī as a guiding philosophy for the thesis is also in alignment with respecting the values and treasures of the ancestors.

During all stages of this research, particularly the data collection phase, Kaupapa Māori Research theories were employed to endeavour to uphold tikanga Māori at all times. The analysis drew on primary data sourced from qualitative in-depth interviews with key informants who could provide a valuable contribution to this research project, including recognised repositories of knowledge of the Māori language, tikanga Māori, Māori world view and the m-learning arena. Secondary data such as existing literature including academic writing, journals, surveys and government publications and reports also contributed to the thesis.

The chapter outlines the philosophical and methodological approaches that were applied and how these were actioned in the research. Ethical considerations, including ethical dimensions of research for Māori, Kaupapa Māori research principles and ethics and their significance to the research are discussed in this chapter, before a discussion that elaborates on the ethical considerations involved in this research.

In reference to te reo Māori, my interpretation of the whakataukī views ‘E tipu, e rea’, as words encouraging the growth of resources that foster Māori language transmission. As outlined by Dr. Teorongonui Josie Keelan (2001) in reference to the first line ‘E tipu e rea’, “the connotations are of growth, new life, new beginnings...of fertilisation, propagation, nurturing, blooming and harvest” (p.63). The organic process of growth can be likened to the growth of the language, and depending on the environment it may or may not thrive (Keelan, 2001). The words encourage the growth and the nurturing of the seed of the Māori language that is to grow in this modern world. ‘Ko tō ringa ki ngā rākau a te Pākehā’ encourages the use of the tools of others, such as non-Māori technology and education systems to obtain the language and “taking advantage of whatever resources are available for maximum development” (Keelan, 2001, p.63). Development is encouraged whilst being proud of and remaining true to those values

and customary practices treasured by the ancestors, ‘ngā taonga a ō tīpuna Māori’. The concluding section of the whakataukāi ‘Ko tō wairua ki tō Atua, nāna nei ngā mea katoa’ acknowledges the spiritual dimension, a world beyond what can be seen, touched, felt, smelt and heard. When moving forward in the modern world and using those mobile technologies to hold fast to the Māori language, what ‘taonga’ or values should be considered to ensure the language is protected and respected?

Wāhanga IV : Findings

<i>The tūi chatters.</i>	Ka koekoe te kōkō.
<i>The kākā cackles.</i>	Ka ketekete te kākā.
<i>The kererū coos.</i>	Ka kūkū te kereru.

This chapter presents the research findings, before analysing and interpreting them with supporting evidence and situating m-learning within the contexts of Māori language revitalisation and transmission with reference to kaupapa Māori values and whakataukāi.

When the fruits of the tawa tree grew, the birds flocked to the tree to feast. They feasted on the fruits from Hawaiki, the fruits of language that were once the manatawa and the manapou and the languages of the birds appeared. Ka koekoe te kōkō, ka ketekete te kākā, ka kūkū te kererū. “The beautiful voices that you hear before dawn” (Williams, 2009). This whakataukāi celebrates diversity and difference. The flights and distance travelled by each of the birds was different, their journeys of obtaining te reo Māori were different and the reo that appeared from each bird was different. That is, the chattering of the kōkō, or tūi (*Parson bird*), the cackling of the kākā and the cooing of the kererū (*New Zealand pigeon*). This diversity can be likened to the different reo ā-iwi (*tribal dialects*) and different mita (*pronunciation and sound of a language*) of the Māori language.

Dialect, mita, tribal reo and reo ā-iwi are all terms related to the various ‘dialects’ of the Māori language. These dialects can be identified based on distinct geographical divides and dialects are “at times pronounced in terms of idiom and accent” (Waitangi Tribunal, 2010, p.3). Dr. Apirana Mahuika of Ngāti Porou (*tribal group of East Coast area*) ‘bristled’ at the use of the phrase ‘tribal dialects’, and stated that: “Te reo ake o Ngāti Porou is not a tribal dialect. It is my language and therefore all that I am” (Mahuika, 2006, as cited in Waitangi Tribunal, 2010, p.3). Despite the diversities in the different

reo and iwi, they are “not sufficient to impede verbal understanding between native speakers from different tribal areas” and the commonalities that exist allow for understanding other dialects no matter where you come from (Mahuika, 2006, cited in Waitangi Tribunal, 2010, p.3). It must be understood that these dialectal differences exist, and that each different dialect is beautiful and unique, its own language in its own right and must be acknowledged as such.

The whakataukī ‘Ka koekoe te kōkō, ka ketekete te kākā, ka kūkū te kererū’ also serves as a reminder that each different Māori language revitalisation effort or vehicle of Māori language transmission, no matter how big or how small, is likely to serve different audiences in different ways. A reminder that we are all diverse, we all have different learning styles and what works for an individual or whānau (*family/families*) might not work for others. Although the transmission genre is different, it is still the transmission of te reo Māori that is occurring. In what ways should those differences and diversity within the Māori language be acknowledged and considered when using m-learning as a genre for facilitating Māori language transmission?

Wāhanga V: Analysis of Findings

<i>One of the smallest birds in the forest,</i>	Iti rearea,
<i>is able to scale the kahikatea;</i>	teitei kahikatea
<i>one of the tallest trees, by hopping</i>	ka taea.
<i>from one branch to the next.</i>	

An interpretation of the findings is presented here with supporting evidence to situate m-learning within the contexts of Māori language revitalisation and transmission with reference to kaupapa Māori values and whakataukī. As in the previous chapter, the analysis will be presented in four main sections; the Māori language, Māori language revitalisation and transmission, m-learning’s role in Māori language transmission and revitalisation and also a section which highlighted the considerations that should be made to protect the language and deliver it responsibly when facilitated on an m-learning platform. The analysis is then followed by a section which highlights other kaupapa (*topics*) that emerged and reviews them in the context of the research.

The whakataukī guiding this chapter refers to overcoming the largest obstacles by taking small steps. This can be likened to the many steps required on the journey of

reaching this point of the thesis, where all the steps have led up to the analysis of the findings to address the aims outlined for the study.

In terms of growth and language the whakataukī again expresses the many steps that need to be taken on the journey to acquiring the language, and as a ‘manu’ or a *bird*, hungry for the language you must be determined, committed and persevere in your quest to feast on the fruits. the ‘rākau taumatua’ have to offer as outlined in the following section.

Wāhanga VI: Conclusion

<i>The birds flocked there because of the</i>	He rākau taumatua,
<i>sweetness of the tree's fruits and nectar.</i>	he huihuinga manu.

Forever growing and living, a tree that has reached the stage of development known as kōhure continues to grow and needs nourishment. The learning of the Māori language never stops, like the growth of a tree. The language is forever evolving and adapting with te ao hurihuri (*the ever-changing world*), it doesn't remain static; it is living like a tree. With the advent of new technologies, kupu hou (*new words*) are coined, and therefore concentric circles are forever growing, the most outer representing the most evolved or recently developed words and phrases. When a tree has reached this stage of development, growing from a seed to maturity, it will begin to bear fruits and blossoms like those that the birds feasted on. This developmental stage of the tree can be termed 'rākau taumatua', which refers to *a tree in which birds were caught*. 'Huihuinga manu' refers to the gathering of birds, and they would be caught easily in these trees as they would gather there in great numbers to feast on the fruits and nectar. The concentric rings of a rākau taumatua are solid and multiple. They all contribute to the strength of the tree, of the language and the knowledge held within.

In my view, this is the final stage of the development the seed of language can reach. It encourages the reader to seek a path that will allow them to one day have their own seed of te reo Māori develop into a 'rākau taumatua', so that they become gifted orators, speaking the language of the birds, the language of old. The Māori saying 'He rākau taumatua, he huihuinga manu' is a kupu whakarite (*simile, metaphor*), and refers to a person who is an expert or well adept in their area. Because of their skill and the 'sweetness' of their fruits, people flock to them to listen, admiring and 'feasting' on

what they offer. Through sharing their fruits, those who feast on the knowledge will become proficient orators and themselves adept in the language - he korokoro tūī, he manu tioriori (*a gifted orator, a beautiful songbird*).

This view can also be related to the final chapter of the thesis, the concluding stage of development for this research. It is hoped that the ‘fruits’ this research has to offer are of interest to Māori, other indigenous communities, m-learning communities and other relevant communities. The concluding remarks summarise the findings by listing the main results, discussing the limitations of the study, possible areas for further research and recommendations. Also addressed are key issues that must be considered or observed for an m-learning resource to become a ‘rākau taumatua’ in its own right. It is hoped the ‘fruits’ are beneficial and of value for all who were involved in bringing this project into fruition and in turn contribute to the knowledge base that is kaupapa Māori.

He kōrero whakatepe: *Summary of chapter*

It is evident through exploring the early events of resistance and persistence that the Māori knew that in order for their language to survive, action must be taken. A favourite proverb cited at the time of protest by Ngā Tamatoa and Te Reo Māori Society was ‘Mauri tū, mauri ora! Mauri moe, mauri mate!’ Loosely translated, it means “*By standing forth one will flourish, but by sitting back one will perish*” (Te Rito, 2008, p. 2). Action must still be taken for the survival of the language, and the message within this proverb can be applied to individuals making the conscious decision to nurture the seed that is the Māori language. It can also be encouragement to stand forth and embrace new technologies to facilitate Māori language revitalisation or maintenance initiatives that contribute meaningfully towards the continued transmission of the Māori language, whilst upholding its integrity.

WĀHANGA II TE MĀTĀTUHI

CHAPTER II: LITERATURE REVIEW

**Tiritiria te oneone.
Tautoroa o paiaka ki te ūkaipō,
kia rongo tonu i te reka,
i te haumakotanga,
i te taurikuratanga nō tua,
kia kore ai e titōhea.**

This chapter offers a substantial and critical review of the literature pertaining to the relevant research contexts of Māori language revitalisation and Māori language transmission. The review will also investigate m-learning and its role in facilitating language transmission. As well as literature focusing on these topics, one might expect research literature in the area of ako (*learning/ teaching*) to be significant, which includes themes such as pedagogy and learning contexts. It must be explicitly noted that although pedagogy, learning, teaching and acquisition are considered useful, the focus is on language transmission. Accordingly, only key elements or literature that relate to or explore the transmission of language and the subsequent contribution to Māori language revitalisation are included. The review also aims to highlight considerations that should be made to protect the language and deliver it responsibly when facilitated on an m-learning platform.

As most of the areas of interest in this review are fairly recent domains of research, the literature cited is largely restricted to the second half of the 20th century to the present year. There is a fairly limited scope of research that has been conducted pertaining to the transmission techniques of the Māori language and the nature and role of revitalisation efforts within the context of the digital realm. This review draws from both national and international literature, recognising that international research does not always apply to the national and regional contexts of Aotearoa, New Zealand. Most of the literature searched came from the areas of Māori development, sociolinguistics and technology. Literature was selected for review if it concerned any of the relevant kaupapa and then the selected material was scanned for any relevant information. With a Māori language and m-learning lens, abstraction was used as the form of analysis. For

example, not all pedagogies and theories associated with m-learning were discussed, only the information that was relevant to Māori language transmission and revitalisation. The chapter is organised into main sections with a brief summary of the review as the concluding paragraph. Whakataukī are used to head each subsection. Their relevance to those sections is explained in the body of text under their headings.

1. TE REO MĀORI: *THE MĀORI LANGUAGE*

Te piko o te māhuri, tēra te tupu o te rākau.

The way in which the language is nurtured or transmitted determines how the language will grow.

The transmission of the Māori language through generations of speakers ensures the survival of not only the language, but also aspects of the culture and customary practices. There is an “inherent connection between language and culture. Language is embedded in culture and also expresses culture” (Ministry of Education, 2007a, p.22). Pre-European contact, the Māori language was transmitted orally, as was knowledge, values, traditions and societal mores. Moorfield & Johnston (2004) note how these “were also communicated through time by way of visual symbols, such as whakairo [carving], tukutuku [ornamental lattice-work – used particularly between carvings around the walls of meeting houses] and kōwhaiwhai [painted scroll ornamentation – commonly used on meeting house rafters]” (p.41) (See Photograph 1).



Photograph 1: Kōwhaiwhai and tukutuku panels

Wāhi (Location): Pohatu, the wharekai (dining hall) at Tikapa marae, Tikapa

Te Ahukaramu Royal (1992) concurs:

Māori information and knowledge resided in the memories and minds of the people. It was not recorded in books or in any other such medium. Knowledge was passed down from parents and elders to children in informal and formal learning situations by vocal expression. Oral literature was recited continuously until it was carved into the house of the mind. (pp.20-21)

Aural and oral skills were concentrated on as a means of communication and “the language expressed the values, beliefs and ideology of people in a powerful way” (Pere, 1982, pp.17-18). The oral transmission from generation to generation was the natural intergenerational transmission that occurs and is taken for granted when a language is in a healthy state. Chrisp (2005) defines intergenerational language transmission as “the ongoing process whereby a language is transferred from generation to generation through the normal familial interactions of parents and children (and grandparents, grandchildren, etc)” (p.150). Pre-urbanisation, the majority of Māori lived in quasi-autonomous rural settlements and intergenerational language transmission was normal. With the exception of primary and secondary schools, the principle language of Māori communities, homes and other key language domains was te reo Māori (Ball, 1940, p. 278; Benton, 1981, p. 18 and 1991, pp.9-10; Chrisp, 2005, p. 151).

Kei hea taku manatawa, taku manapou?

A reminder of the importance of the language and why contributing to its survival through revitalisation initiatives is crucial

In relation to languages ‘revitalisation’ and ‘revival’ are terms preferred by sociolinguists. Revitalisation refers to “languages that are still in common use but in a declining state of health” and revival refers to languages that are “functionally dead or extinct” (Waitangi Tribunal, 2010, p.3). There is a preference for ‘revival’ which is not to suggest that the Māori language is dead, but is used in a general sense to mean ‘bringing back to strength’. There are also other terms such as regeneration, rejuvenation, preservation and documentation, which are related to the revitalisation of an endangered language. There is however a difference between documentation and revitalisation.

Hinton (2003) outlines how that “for many linguists and funders, to save a language means to document it before the last speakers die” (p.45). However to merely document a language is to just pickle it in the view of many native activists in the communities where the language is being lost. Saving a language instead means training new speakers and finding ways of “helping people learn the language in situations where normal language transmission across generations no longer exists” (Hinton, 2003, 45). Normal language transmission or intergenerational language transmission is recognised widely as the critical process maintaining and revitalising minority and threatened languages (Te Puni Kōkiri, 2004, p.15, Fishman 1991, 2000). According to Te Taura Whiri i te Reo Māori (2007) “...sustainable Māori language development and use is best supported through intergenerational transmission and the key environment for that to occur is in the whānau setting” (p.19). This is reinforced by Chrisp (2005), who explains that the process of children having regular and iterative exposure to the language in natural circumstances “normalizes [sic] the use of the language by socializing [sic] children to appreciate that the language is an ordinary and omnipresent feature of domestic and community life” (p.151). He further explains that the identity and cultural paradigms that are associated with the respective language are also inherited if the “children are socialised through a language by their most significant caregivers and role models” and that the essence and authenticity of the language is maintained among the population of speakers if the process continued across generations is ensured (Chrisp, 2005). Te Puni Kōkiri (2001) express how “once the handing down of the language from generation to generation is established, we will have ignited a tool that, with the appropriate support, will be able to sustain itself” (p.7). It is expressed however, that the motivation and desire of Māori adults to speak and transmit the language is vital for Māori intergenerational transmission (Chrisp 2005, p. 170). What this highlights is the importance of establishing systems, which facilitate whānau Māori (*Māori families*) to become speakers of the language, and then use it within their homes with their families. The importance of domestic language development for language revitalisation is that through intergenerational language transmission, the basis for language acquisition and socialisation is provided. This ensures that people are capable of using the endangered language and therefore is a necessary condition. Domestic language development however is not by itself sufficient to secure language revitalisation (Te Puni Kōkiri, 2004, p.21).

This is contrasted by world-renowned linguist, Joshua Fishman, who professes that in order for a dying language to regenerate itself, “nothing is as crucial for basic reverse language shift success as intergenerational mother-tongue transmission” (Fishman, 2001 as cited in Te Rito, 2008). He also explains how “whatever is accomplished in the other sectors is merely ‘buying time’ until home and community has been firmly established” (Fishman, 1991, p. 161). This extends the responsibility to the community also, with whānau as the core. In other words, the best avenue for transmission is from one generation to the other within the home on a daily basis, “regardless of all other efforts to save the language through domains such as education and the media” (Te Rito, 2008, p.4). “Māori language revitalisation: When whānau use it we won’t lose it” (Te Puni Kōkiri, 2001, p.7). This reinforces the importance of intergenerational transmission for the revitalisation and survival of the Māori language and is supported by Native American educator and author Richard E. Littlebear, who in reference to threatened languages discusses how families must retrieve their rightful position as the first teachers of languages (Littlebear, 1996 as cited in Hinton, 2003, p.48). What these views highlight is the critical role that intergenerational transmission plays for the survival and maintenance of not only the language, but also the associated customs and culture and the handing down of information for future generations. What became evident was that because of the breakdown of the natural transmission it is necessary for the current generations to learn the language in order to transmit the language. In saying that, what perhaps is not highlighted in the literature is the ongoing process and effort required to learn a language and establish it within a domestic setting, especially with the high demands of the urbanised lifestyle many Māori find themselves in today.

Ruth Lysaght (2012) discusses the concept of ‘refamiliarisation’ in contrast to revitalise, revival and retrieval. She explains how the main focus of refamiliarisation is on “building the relationship people have with the language” (p.46) and that the language must be regarded as a normal method of communication or unremarkable for people to speak the minority language unselfconsciously in public (Lysaght, 2012). The ubiquitous and domestic nature of television can contribute to the image normalisation of the language, and media presence legitimises a language. This can be applied to the ubiquitous nature of m-learning devices and their potential contribution towards a positive image for the minority language, which is important as argued by Grin (1990) who states:

Any language policy that provides money, but avoids sincere commitment to boosting the image of the language, is therefore likely to fail. There seems to be no way around this: for a minority language to survive, its image must be positive. (p. 71)

This is also recognised by Cooper (1989) who outlines “like all marketers, language planners must recognise, identify, or design products which the potential consumer will find attractive” (p. 73). Language can be planned in a marketing framework to enhance its status, and if the language is marketed, both the speaking population and the general population may be more encouraged to commit (Nicholson & Garland, 1991, as cited in Nicholson, 2007). Nicholson (2007) discusses how any advertising or promotional material used in marketing Māori language intergenerational transmission needs to be liked by Māori and non-Māori and appeal to their “heart or emotions” (p.212). This brings to attention attitudes towards the language and how they affect its maintenance and survival. The successful revitalisation depends somewhat on “the attitudes and commitment of Māori speakers as a whole to maintaining and revitalising the language in the home, in the neighbourhood, in the community, and beyond” (Nicholson, 2007, p. 207). This further reinforces the important role of the community for language revitalisation.

According to Margie Hohepa (2001), “A major claim is that language and culture cannot be regenerated or maintained at a societal level if there is no supportive actions at the family and local community levels” (p.5). When communities do work on revitalisation projects it can be a difficult task deciding where to commit limited energy and resources. De Korne (2009) outlines how “there may be a need to document language, create learning materials, and facilitate language learning, all as rapidly as possible. In these contexts the efficient allocation of resources to meet holistic needs is crucial” (p.141). Small-scale social life must be focused on in order to effect language shift and nurture a threatened language and that the most difficult arenas in which to intervene are always the qualitative emphases of daily informal life (Fishman, 1991, p.8). Other views on factors for successful revitalisation of a threatened language to occur include that of Hohepa (2001) who states: “effort needs to be strategically expended at all levels, spanning public and personal domains” (p.6). What these statements suggest is that the language needs to be established and spoken in not only the home and community, but also in all different domains and situations.

Another essential mechanism of language maintenance or revivalisation is immersion education which also enhances and maintains indigenous culture (Keegan, 1996). The revitalisation of language is one of the “most cogent benefits of immersion education” (Keegan, 1996, p.9). Many groups believe that when maintaining and reviving language, culture and economy it is crucial and beneficial if children are immersed in the target indigenous language in early childhood (Keegan, 1996). De Korne (2009) states that “immersion education is now widely considered the best pedagogical approach to language revitalisation” (p.143). The full immersion Māori language settings of Te Kōhanga Reo and Kura Kaupapa Māori have “come to epitomise Māori language revitalisation” (Hohepa, 2001, p.4) and these key settings have assisted Māori parents regenerating the language within their own whānau. These are important, as for a language to survive and regenerate the linguistic development of adults, particularly parents must develop along with the child. (R, Benton 1993 cited in Hohepa, 1999). An onset of the degree of support shown by Māori parents for the existence of Te Kōhanga Reo and Kura Kaupapa Māori has “substantially influenced legislation, policy, and educational practices” (Hohepa, 2001, p.4), all influential in the survival of an endangered language.

Te Kōhanga Reo and full immersion settings have a powerful influence, however it must be noted that due to the nature of these environments there is only a limited amount of time the children spend there. Approximately 25% of a child’s waking time is spent in these educational environments, such as Te Kōhanga Reo or other immersion settings. Therefore, there are risks in relying on these immersion settings to teach children to speak Māori as it only constitutes “one quarter of the potential opportunities available” (Te Puni Kōkiri, 2001, p.14) to raise children speaking Māori and English.

In reference to learning both Māori and English, Toko (1982, as cited in Pere, 1982) states “Ko te wawata nui ke ko ngā reo rua nei kia rite tonu te haere tētahi ki tētahi. Kia kore te reo Māori e mahue ki muri rāno” (p.29). Pere (1982) provides the translation: “*The earnest desire is to have both languages developing together in the same level alongside each other. This will ensure that Māori language is not left entirely in the background*” (p.95). In discussing the exposure children have to the English language in the general environment, Toko (1982) places emphasis on the importance of effort towards fostering the growth of Māori language in the home, the place the greater part of their education will occur. Literature suggests that bilingualism can have benefits, (Te Puni Kōkiri, 2001 p. 8) and that it is the preference of many, however as outlined by

The Ministry of Education (2007b) “...one's understanding of tikanga Māori is informed and mediated by the language of communication. One's understanding through te reo Māori is different from one obtained through the English language” (p.2). This reinforces the notion that cultural paradigms and societal mores are transmitted authentically and accurately through the language and that tikanga and te reo Māori are inseparable.

It would appear from the literature that the intergenerational transmission of the language, which was once normal, is the key component for Māori language revitalisation. In critiquing the literature, an assumption is that intergenerational transmission would occur only in the Māori language. That is, there is a suggestion that these households would be monolingual, and no other language apart from the Māori language would be spoken. Ideally, this transmission would occur across situations where the natural transmission of the language no longer exists including domestic, community, educational and societal settings and situations. What is obvious from the literature is that the breakdown of intergenerational transmission means current generations often need to learn the language or ‘refamiliarise’ themselves with the language in order to transmit it. For this to occur, they need to see value in the language, their perspectives and attitudes towards the language therefore are a vital determinant towards whether their individual role in the revitalisation process is active, passive or non-existent. The image of the language then must be positive and attractive to ‘potential consumers’ to help normalise the language and encourage commitment to the language for future generations.

2. KO TE HANGARAU: *TECHNOLOGY AND M-LEARNING*

Ko tō ringa ki ngā rākau a te Pākehā

Using the “rākau a te Pākehā” referring to the tools of non-Māori, including technology (Keelan, 2001)

Hollings (1991) once stated, “the desire to retain Māori language and culture has intensified as technology, industry, and international communication have become increasingly oppressive” (p. 56) and the pressure to secure the Māori language led to a strong desire to express Māori identity, culture and language through the medium of broadcasting. The use of technologies as a means for facilitating Māori language transmission and exposure is a useful and in many instances, a successful means for

transmitting the language and consequently, aiding in its revitalisation and maintenance. Globalisation has since encouraged the shift towards utilising 21st century technologies as a means to communicate and strengthen the language. This includes utilising tools such as m-learning resources which, like television and radio, have become ubiquitous in New Zealand society. The availability of the Māori language through everyday activities such as radio and television in the home can foster the process of intergenerational language transmission and plays an important role in increasing Māori language acquisition, use and status (Te Puni Kōkiri, 2006). Through watching and listening to Māori language broadcasts, people can develop and use their Māori language skills, especially their listening skills. These observations can be attributed to the potential role m-learning devices can have for the language. Cormack (2007) explains how there are three possible ways in which television might have an impact and affect the language behaviours of the audience. These are:

- ❖ Didactic (showing new vocabulary and information, extending the corpus),
- ❖ Encouraging (motivating learners and speakers through educational material and debate); and
- ❖ Overt (direct promotion of language use) (Cormack, 2007, p. 60).

As m-learning technologies, tools and resources become increasingly ubiquitous, the role and responsibilities they may take on will be very similar to those of the television.

Sutherland (2004) explains that “all human activity is mediated by tools” (p. 6). Tools such as software, hardware and the internet have in recent years become more user-friendly for the transmission of te reo Māori. Initiatives related to software and the internet include the development of Māori language versions of some of Microsoft’s products, the launch of a Māori language version of Google in July 2008, and also, surveys show a great increase by Māori in the use of Māori language in e-mails (Te Rito, 2008). These advancements can be related to the inclusion of common te reo Māori words by Telecom in the dictionary for the predictive text message function on two new phones (New Zealand Press Association, 2009). Te Taura Whiri i te Reo Māori were instrumental in the creation of the list of words, and the function is now being adopted by other mobile companies. The then Chief Executive, Huhana Rokx, supported the initiative, stating that it “ensures that te reo Māori remains a valid form of texting discourse” (Rokx, 2009, as cited in New Zealand Press Association, 2009). Rokx further comments “our young people who are growing up as bilingual Māori language speakers are also active mobile users and expect the same immediate service that

predictive texting offers in the English language”(ibid). AUT University’s Tumuaki (*Dean*) of Te Ara Poutama, the Faculty of Māori Development, Dr. Pare Keiha states, “With the convergence of telephony, mobility and access to the Web, the opportunities for educators to deliver learning resources effectively and efficiently are increasing at an astonishing rate” (Keiha, 2005). Content can now be created, distributed and consumed in various ways. Enabled by new technologies, the environment is changing rapidly and m-learning is currently at the forefront” (de Bonnaire, Falloon & Taylor, 2008).

In 2008, Te Puni Kōkiri (2010b) conducted qualitative research aimed to understand the broadcasting and e-media content and devices preferred by young Māori today and in the future. The research revealed a few key points of interest, that are:

- Māori, particularly the younger generation are over represented amongst a group on New Zealanders who are heavy and extensive users of the new emerging mobile devices such as cell phones, PDAs, iPods/MP3 players and are more likely to have access to or own these technologies
- Television continues to be the main device used (and is appropriate to note here that most television programmes are becoming more and more accessible via mobile devices)
- Young Māori possess an appetite for Māori language and culture content now and in the future, and want to see more Māori language content on new and emerging media devices and platforms,
- 72% of Māori used cell phones everyday, 31% used MP3 players daily, and 85% used social networking daily.

The research also explains how these young Māori are not only using these devices and resources, but are creating their own content, including generating their own content in the Māori language through social networking sites and texting, and that they expect remarkable technological advancements to occur in the years ahead. Te Puni Kōkiri (2010b) summarises their findings with the following statement:

...the continued presence of Māori language and culture content in a digital environment promises positive language gains. This is particularly the case as converging technology promises a level of interactivity between the consumer and transmitter that could strengthen Māori language use and proficiency. (p.8)

He riri anō tā te tawa uho, he riri anō tā te tawa para

A reminder that every genre of reo or domain in which that reo is used has a purpose, as might different facets of technology, tools or facilities that can be used to transmit the Māori language.

Mobile learning technologies and media are part of the evolving landscape of how we access information, communicate and learn. Despite this there is limited information on m-learning as a tool for language transmission; however there is extensive coverage on mobile learning pedagogies. Therefore, the inclusion criteria for the following paragraph include the benefits and disadvantages of m-learning, m-technologies, m-resources as they could relate to facilitating Māori language transmission.

The word mobile is not just a qualifying adjective to learning. It represents a whole new approach to learning. It can be conceptualized in terms of mobile learning and devices the mobility of learners and learning, or the experiences of the learner. Think of it as the ability to learn independently of time or place using mobile devices. (Mlearning4Me, 2011)

As outlined by Stead (2012), “You know that mobile learning has hit the mainstream when the big guys start to get it ... and 2012 is the year that this happened.” It is predicted that there will be 35 billion connected mobile devices by 2020, which is more than four times the current population (Rossett, 2010). What is highlighted here is that the phenomenon that is m-learning has only just been embraced globally, and also that it is a mainstream product or tool that has become a ubiquitous and useful learning tool that has a certain place in the future of the developed world.

Resources and facilities offered by mobile learning technologies include:

- ❖ SMS (short message service), which allows the transmission of simple text messages
- ❖ MMS (multimedia messaging service), which allows the integration of visual, audio, and text.
- ❖ Applications such as Java and Brew allow the creation of sophisticated content with art, animation, rich audio, and more (Valarmathi, 2011, p.2).
- ❖ Audiovisual material such as video content
- ❖ Audio such as mp3
- ❖ E-books (electronic books)
- ❖ Podcasts

These features can assist in transmitting the language visually and aurally. In addition, the environments in which mobile learning occurs can include distant learning, online learning or face-to-face learning. “Technologies, mobile or otherwise, can be instrumental in language instruction” (Chinnery, 2006, p.9) however are instructional tools rather than instructors. Once again it is necessary to highlight that the literature is primarily in reference to language learning, as opposed to language transmission. This is relevant because as mentioned earlier language learning is now a necessary contribution towards natural language transmission.

Mobile Assisted Language Learning (MALL) can be a primary source of language education and a support system for the retention and utilisation of newly acquired language skills. Valarmathi (2011) identifies the following in relation to language learning: content can facilitate receptive skills, productive skills, listening, reading skills, short dialogues. A number of interactive features were noted but are not yet available and include:

- ❖ Ability to integrate a wider variety of media, including animation and short video.
- ❖ Ability to submit sound files for evaluation of pronunciation and speaking, including automated evaluation.
- ❖ Establishment of learner communities for interactive learning using shared tools and content. (p.4)

An example of a system that already utilises many of these elements is the Reo Online Language Systems. The system is currently in the prototype phase and is part of a large project, which has come about after extended research to determine the best solution for creating an online language-learning framework that can be customised to work for any indigenous language. It is a unique system designed to help support efforts to revitalise endangered languages. The system encourages self-directed learning as well as supporting teachers and classroom activity through exercises and online activities. Learners are offered functions to interact with other users and language experts, and can view their learning progress. There are currently four indigenous groups from around the globe who are already part of the project working towards a customised version for other indigenous languages that will function much like that of the Te Ara Poutama interface, which facilitates Māori language learning using the Te Whanake resources. The teacher, however, still plays a vital role in that the platform is supplementary to

classroom learning, and any responses submitted need to be reviewed by the teacher, who then becomes the facilitator and the moderator of the platform.

The numerous practical uses mobile technologies have for language learning are often readily available (Chinnery, 2006). The key benefits most relevant to the transmission of the language include low cost, portability, convenience, accessibility, communication (Norman, 2011; Chinnery, 2006) and as outlined by Chinnery (2006) indicate the potential MALL has in “expanding social inclusion in language learning” (p.13). Social inclusion and interaction is important as language is to be spoken and transmitted between speakers. McMahon (2012) supports this view, but with a negative reflection on mobile technologies and interfaces stating:

The holy grail of interfaces is natural language. Being able to interact by speaking in our own words is the most intuitive form of communication...We understand the world through language; it mediates our thought processes, develops social connections and allows us to work as teams. (p.18)

The advantages should be looked at in relation to the disadvantages m-learning has in reference to the transmission of a language. These limitations include potential limited social interaction, limited nonverbal communications, a lack of cultural context and a lack of context and syntax (Chinnery, 2006; McMahon, 2012).

de Bonnaire, Falloon and Taylor’s 2008 report on current and future broadcasting and e-media preferences for Māori youth highlights some key factors that can be also applied to m-learning. The participants, who were young Māori, expressed their excitement regarding the possibilities associated with future communications and media technology; however “this is overshadowed by concerns about the potential negative (especially social) impacts (de Bonnaire, Fallon, & Taylor, 2008, p.22). The concerns expressed by Māori youth in the report regarding the potential impact that broadcasting and e-media will have on the Māori language and culture in the future include:

- ❖ loss of identity and dependency on technology
- ❖ loss of personal contact as technology replaces the face-to-face contact so important to Māori culture
- ❖ loss of privacy and security issues, including the possibility of misinterpretation and inappropriate representation of sacred/tapu material
- ❖ environmental damage (de Bonnaire et al., 2008, p.22)

These concerns then become important considerations when m-learning devices house and facilitate the transmission of the language. These concerns reflect the Māori world-view, which is discussed in the following section of the review.

The report further outlines the future preferences for Māori language and cultural broadcasting and e-media content in maximising interest in the language and culture. The youth would “like to see more content targeting a range of Māori language proficiency levels, across a wider range of broadcasting and e-media devices including:

- ❖ Increasing content exclusively in the Māori language, while making sure it represents different iwi and includes traditional as well as modern language
- ❖ Increasing Māori language and cultural content available through mainstream broadcasting channels (e.g. mainstream channels at peak viewing times) and e-media devices (e.g. iPods/ MP3 players) (de Bonnaire et al., 2008, p.22)

The report further discusses the future for the protection and also promotion of the language, outlining that so long as the potential downsides (as outlined above) are managed, the role young Māori see broadcasting and e-media playing in the future is to:

- ❖ Increase exposure to Māori language
- ❖ Stimulate interest in learning to speak Māori and about tikanga Māori
- ❖ Raise the profile of the Māori language and culture and reinforcing its status
- ❖ Preserve Māori history, customs and traditions for future generations (de Bonnaire et al., 2008, pp. 22-23)

These concerns and recommendations are directly related to the role m-learning can have in facilitating Māori language transmission. Therefore, mobile learning content that facilitates the transmission and the subsequent revitalisation of the language should consider these recommendations as outlined above. Hohepa (2001) states, “Cultures are dynamic. A culture has the capacity to change, to integrate new knowledge, technology and ideas while still maintaining its integrity” (Hohepa, 2001, p.8). If the integrity of the language and culture are treated with respect and protection, the integrity will remain intact when facilitated in the m-learning arena. Potaua Biasiny-Tule (2011) asks “How can we use these new tools and techniques to keep our culture alive, our language in use and our whānau connected?” (p.52). All these considerations are important when the Māori language is facilitated in the m-learning arena. Sally Pewhairangi (2002) in discussing cultural safety of Maori information on the internet states: “Maori information on the internet is also more vulnerable than it has been in any other format”

(p.140). She then outlines areas of concerns for its integrity noting it is threatened by the dilemmas of intellectual and cultural property rights, control, or lack of control, accuracy and authority, commodification, unacceptable content and inaccuracies including the Māori language used without appropriate macrons. These and other important considerations are outlined in the following section.

3. KO NGĀ KAUPAPA HEI WHAKAARO: CONSIDERATIONS TO BE MADE

Ka koekoe te kōkō, ka ketekete te kākā, ka kūkū te kererū

Differences and diversities exist. The following section aims to explore, as the whakataukī above suggests, considerations that should be made for the diversity of the target audience of m-learning resources that facilitate Māori language transmission.

“Language revitalisation efforts can benefit from more active use of computer resources” (Miyashita and Moll, 1999, as cited in De Korne, 2009, p.142), however proper consideration must be made to the format and the intended audience (De Korne, 2009). When creating resources for the m-learning platform that facilitate the transmission of the language, considerations must be made for the target audience. This includes respecting the cultural values and preferred learning styles of different individuals, learners and receivers of the language, usability and user friendliness (Galla, 2009, p.177). This can also include ‘affordances’ which is in reference to things such as the design features, visual layout and content in relation to Information and Communications Technology (ICT) facilities. As outlined by Wright (2010), “A webpage deemed to have good affordances, is one that users can navigate easily and quickly discover what symbols/icons/graphics or text can do that helps complete a task or make progress” (p.9). As well as this, the proficiency levels, age and literacy levels (including digital literacy) of the receiver and different pedagogical learning styles must be considered. This can also be related to the type of receiver, e.g. their proficiency level, whether they are a native speaker or a second language learner, their age, their literacy skills in not only reading and writing but also in technology.

Ko tō ngākau ki ngā taonga a ō tīpuna Māori

Your heart or spirit to the treasured possessions of your Māori ancestors. These taonga include the language and whakataukī, the wisdom and guidance provided by those messages and the values which are present within te Ao Māori, the Māori world.

Consideration for respecting and protecting the Māori language in the m-learning environment. Ka whakaritea ana, ka whakamahia ana rānei ngā rauemi m-learning hei whāngai i te reo, me pēhea e tiakina ai te reo Māori?

This section highlights some considerations that should be made in order to respect and protect the language. It is headed: Ko tō ngākau ki ngā taonga a ō tīpuna Māori, because if the language is treated in alignment with those values and perspectives of the Māori ancestors, then the language will be respected and protected. Māori have their own ways of looking at and relating to the world and to each other and within this world-view, which is often described as being a holistic one, Māori theories and concepts about development and learning exist (Hohepa, 2001, p.7). Within this Māori world-view are kaupapa and tikanga which are “juxtaposed and interconnected in Māori thinking” (Marsden, 2003a, p.66). Marsden defines kaupapa as being “ground rules, first principles, general principles” and tikanga to mean “method, plan, reason, custom, the right way of doing things.”

The following paragraphs of the review highlight and define kaupapa Māori and tikanga Māori concepts and values that have significance or relevance to m-learning as a medium for facilitating Māori language transmission and revitalisation, and that are anticipated to be addressed by interviewees. Patterson (1992) discusses that the concept of ‘tika’, to be *correct or right*, can be translated as ‘*customary*’. “We must remember that many aspects of Māori values are tribal rather than universal” (p. 34) and that what is deemed customary or right varies from tribe to tribe. With this in mind, the following list does not serve to be exhaustive. It serves only as an attempt to summarise the concepts as they apply to the presented research, but not to summarise them in their entirety. Therefore, they have been contextualised for m-learning, revitalisation and transmission of the Māori language and “it is important to recognise that Māori values exist in very context-specific settings” (Keown, Parker & Tiakiwai, 2005, pp.17-18). It is also important to recognise that these values are very complex, and the intention of the following descriptions is to draw attention to the existence of these values and their relation to the Māori language and m-learning by providing descriptions based on the explanations of these values by others. The Māori world-view is a holistic one. The tikanga and philosophies are based on relationships that occur within this holistic world-view and are linked together through whakapapa (*genealogy*). Māori cultural concepts, philosophies and practices are all intertwined and each hold their own significant role

within the Māori world-view and they inform this Māori world-view and the way we do things, or kaupapa Māori.

Ako, a relevant concept to the research embraces the Māori perspective of learning and development (Metge, 1984; Pere, 1994; Hohepa, 2001). “It means to learn as well as to teach, contains the dual principles of these two concepts (Hemara, 2000, p.45)” and is related to the transmission of the language. Ako “acknowledges teaching and learning practices that are inherent and unique to Māori, as well as practices that may not be traditionally derived but are preferred by Māori” (Rautaki Ltd., & Ngā Pae o Te Māramatanga, n.d.b). Within traditional contexts, Māori teaching styles involve a range of media/curricula including:

- ❖ whakapapa (genealogy)
- ❖ waiata (song/poetry)
- ❖ whakataukī (proverbs)
- ❖ kōrero tawhito (histories)
- ❖ whaikōrero (speech making). (Hemara, 2000, p.6)

The “spiritual, intellectual, social and physical wellbeing of the community and individual” (Hemara, 2000, p.40) were closely related to the traditional curricula. The spiritual wellbeing is related to the metaphysical concepts that are within the Māori world-view. These concepts which “are also used to express a range of important values” (Patterson, 1992, p.28) include wairua (*spirit, soul, quintessence*) which “accepts the reality of a spiritual presence or influence” and that there is “more to life than its physical manifestation” (Scott, 1986, p.28). Tapu also accepts this reality; it is a complex term, which is commonly understood or translated as ‘sacred’. Tapu describes the “sacred state or condition of a person or thing placed under the patronage of the gods” (Marsden, 2003b, p.6) and has “both religious and legal connotations” (Marsden, 2003b, p.5). Moorfield (2013e) defines tapu as:

- ❖ 1. (*stative*) *be sacred, prohibited, restricted, set apart, forbidden, under atua protection...*
- ❖ 2. (*noun*) *restriction - a supernatural condition*”

With tapu, the concept of noa or common must be acknowledged as it means to be “*free from the extensions of tapu, ordinary, unrestricted*”. The language has elements of both tapu and noa, depending on the language genre or the domains in which they are used. This must be considered important as anything regarded tapu should be treated

accordingly. It is not to say that all things are prohibited, however understanding that there are restrictions and boundaries allows for the creation of Māori resources with an informed lens.

Another metaphysical concept is mauri, which is intrinsic within all creations and can refer to a *power, force, life-force or essence* (Scott, 1986, Marsden, 2003). Mauri can also be conferred upon or mediated to objects both animate and inanimate and shares the intangible property of 'life' with that inanimate object (Scott, 1986, p. 28; Marsden, 2003, p.44). Puketapu-Hetet, in reference to her weaving says she must "give another dimension" to the mauri of what she is working with (1986, p.40; 1989, p.5 as cited in Patterson, 1992). This dimension is a positive aspect contributed or injected by the worker; it is "something of your self, or your own life and energy, of your personal mauri, into your work" (Patterson, 1992, p.35). This occurs when you create something, for example an art piece, or resource, part of your mauri is transferred to your creation.

In reference to language learning, Duder (2010) explains based on the findings of her research that "...it is the mauri of the language, inherent in the relationship between teacher and learner that is most critical in the learning of te reo Māori (p.73)". The interaction that happens between the teachers and the learners, or the transmitters and the receivers is prioritised as the most important aspect in language learning. One of the participants in her research discusses how digital resources cannot transfer or carry mauri, and therefore those resources "can never replace the role of Māori language teachers" (Duder, 2010, p.131). This concept of mauri is important in that the language is a living taonga, it has a mauri, a life-force which needs to be acknowledged and protected.

Taonga is a term already featured in the research in the whakataukāki of Sir Apirana Ngata that is "Ko tō ngākau ki ngā taonga a ō tīpuna Māori". As explained by Marsden (2003), taonga is an inclusive holistic term meaning - *treasure, something precious; hence an object of good or value that may be tangible, intangible, material or spiritual* (p. 38). This is supported by Paul Keown, Lisa Parker and Sarah Tiakiwai (2005) who state, "a misconception of taonga, which is often defined as treasure, is that it is an object thus implying notions of belonging and/or ownership. For Māori, taonga is more about their role in the safekeeping of all things precious and particularly highly prized resources" (p.27) and there is a bond and responsibility for protecting those taonga. Marsden (2003) further explains taonga as a value, and that in that context:

...the whole range of cultural elements bequeathed by their forebears to their descendants as legacy or birth rights are classified as:

- ❖ Ngā taonga a ngā tūpuna: *ancestral treasures*
- ❖ Taonga tuku iho: *treasures bequeathed*
- ❖ Ohaakī [sic⁴] a ngā tūpuna: *guidelines, maxims of the ancestors*

These taonga refer to the cultural tradition, lore, history; corpus of knowledge etc. (p.38)

Taonga tuku iho, or treasures bequeathed can refer to Māori understanding of the world, of knowing and doing, Māori language, culture, knowledge and values being taken for granted, because they are legitimate and valid (Rautaki Ltd., & Ngā Pae o Te Māramatanga, n.d.b; Smith, 1992). “In acknowledging their validity and relevance it also allows spiritual and cultural awareness and other considerations to be taken into account” (Rautaki Ltd., & Ngā Pae o Te Māramatanga, n.d.b, para 3). The language and supporting resources therefore can be referred to as taonga tuku iho, as can whakataukī and the messages contained within can be considered “Ohaakī a ngā tūpuna – guidelines, maxims of the ancestors” (Marsden, 2003c, p.38) and therefore are all taonga that should be protected.

This protection can be viewed as kaitiakitanga, which is defined as “*guardianship, preservation, conservation, fostering, protecting and sheltering*” (Marsden 2003a, p.67). It can relate to the protection of environment, resources and the Māori language and culture. Being the ‘kaitiaki’ or guardian of such taonga can involve leaving that taonga, for example the language, in a better condition than it was in when you found it. This can include upholding mana, which can be described as spiritual authority and power (Marsden, 2003b, p.4). Mana is recognised widely as the *status, reputation or authoritative power one or something can acquire through leadership, prominence or being held in high regard*. Mana essentially means “that which manifests the power of the gods” (Marsden, 2003b, p.4). The language has a mana of its own, te mana o te reo and it must be protected to ensure its integrity is upheld. This involves treating the language with respect, knowing its history, and recognising its importance, and strengthening its mana to ensure its future. A value or practice that is associated with

⁴ See ‘ōhākī’ in glossary

this and can be related to exercising the rights over taonga, including te reo Māori is the practice of rangatiratanga.

Moorfield (2013d) in his Te Aka Dictionary provides the definition of rangatiratanga as: “(noun) *sovereignty, chieftainship, right to exercise authority, chiefly autonomy, self-determination, self-management, ownership, leadership of a social group, domain of the rangatira, noble birth.*” Rangatiratanga is about taking responsibility and exercising authoritative ownership over taonga such as learning and reclaiming ancestral languages, practices, lands and economic bases (Hohepa, 2001) and therefore can be concerned with the authenticity and commodification of those taonga by outsiders. In relation to the environment of technology and online teaching, Duder (2010) discusses commodification in more depth stating:

How Māori knowledge, language and tikanga are accessed and viewed in this environment is challenging and needs consideration so that their integrity and authority remain with Māori, especially if the Internet is seen to perpetuate the idea of knowledge as a commodity. Questions are being raised about how the Māori view of knowledge as a taonga and tapu can be protected within online environments... (p.27)

Ryan (1997) discusses preserving and promoting cultural authenticity and avoiding the commodification and commercialisation of Māori taonga by those who lack cultural entitlement. Although his statements are related to the tourism industry, the message is still relevant to Māori culture and language. Recognising that what is relevant to one iwi may not be to another, he discusses that Māori need to seek control and ownership. To avoid commercialisation of their culture they needed to take control and be the controllers and regulators of their taonga (namely culture). Māori, collectively or tribally need to receive acknowledgement for their culture, the holistic world-view of the Māori needs to be taken into consideration and the values and principles of Māori ethics must be practiced (Ryan, 1997). This highlights the importance of respecting and protecting the language involves acknowledgement of the Māori people, their culture, customs and world-view.

Within the Māori culture and world-view are three fundamental ingredients, language, whānau and whenua (*land*). They “are sustained and linked by the essential beliefs and wairua which underpin the culture” (Jackson, 1988, p. 90). Māori have a spiritual and physical connection to the land. This is based on the creative narratives of Ranginui

(*Sky-father*) and Papatūānuku whose representations “provide a physical reminder to Māori of their connection to the environment and the world around them” (Keown, Parker & Tiakiwai, 2005, p.22). The offspring of Ranginui and Papatūānuku are considered the guardians of different environmental elements, and aligned with their connection to the environment “is a sense of responsibility that Māori ensure the protection of these elements” (Keown, Parker & Tiakiwai, 2005, p.22). The different environmental elements and their guardians include Tangaroa, god of the sea; Tāne-Māhuta, God of the forest and all who dwell within; Tāwhirimātea, God of winds; Haumiatiketike, God of cultivation and wild foods; Tūmatauenga, God of war and Rongomātāne, God of agriculture and peace. An important understanding of the Māori world-view is that these guardians, or atua (*god*) also have mana, which is mana atua (*power of the gods*). Their mana is attributed to each individual atua or domain they govern. Potaua Biasiny-Tule (2011), a leader in the field of digital communication for Māori explores mana atua in relation to the mauri of the technology used at a hui he attended, stating:

...the power behind the computer came from electricity, which itself was powered by water flowing down from the mountains: mana moana [*mana of the sea*]; the cell phones we used had wireless capabilities carried by Tāwhirimātea the machines themselves were made from elements of Papatūānuku, not to mention the frequencies which are carried up from the Earth into the realm of Ranginui and back down to us. All mana atua. All taonga that we needed to respect and protect. (p.52)

This highlights and reminds Māori of the responsibility they have as the kaitiaki of the language, the whenua and their responsibilities to protect and respect the mana and the taonga of the atua. Biasiny-Tule (2011) concludes by saying, “...and to our atua whose gifts we are blessed with, we are learning more as we go and promise to gently look to the future without compromising on the past” (p.52).

HE AHA TE MEA NUI O TE AO? HE TANGATA, HE TANGATA, HE TANGATA.

What is the most important thing in this world? It is people, people, people

The above whakataukī centralises people as the most important aspect in this world. Any human interaction that may occur during the development of m-learning resources that facilitate the Māori language, or any kaupapa Māori should be done with awareness and consideration to the following values. This will help to ensure tikanga is adhered to and the mana of all people and taonga involved is respected as outlined below.

Aroha provides an all-embracing term for many human qualities – *love, compassion, concern, sympathy, gratitude, affection*. (Scott, 1986, p.18). “It is an important virtue” (Patterson, 1992, p.88) that can manifest in the form of tolerance, caring, contact, warmth, and the way in which one interacts with others. “We give aroha not only by the actions which we choose to make, but also in the ways in which actions are performed” (Scott, 1986, p.17). This can be considered manaakitanga.

Manaakitanga (*hospitality*), concerned with caring for others is “the caring quality that is the fruit of the spirit aroha” (p.19). For example, if the spirit of aroha and caring for one another is adopted, a place (e.g. school) “automatically acquires many characteristics of a good family” (Scott, 1986, p.19). Family as outlined previously is one of the key fundamental elements of Māori culture; it is closely related to whanaungatanga, which is the concept or practice of kinship. Scott (1986) expresses that, “while it has much to do in common with the idea of family, it appears more all-embracing and to extend beyond the confines of immediate family as a unifying force” (p.20). These connections or relationships are established through genealogy, tribal ties, subtribes and families and define the ways in which interaction occurs (Patterson, 1992).

Whakawhanaungatanga is *the process of establishing relationships in a Māori context* (Bishop and Glynn, 1999). Penetito (1997) discusses the connectedness that exists between the spiritual and the material and of an “individual person with the outside world and the larger whānau” (p.56). Connectedness in this way aligns to the value of whakawhanaungatanga, in that it links Māori knowledge and Māori ways of knowing and doing things. Present in whakawhanaungatanga is kanohi ki te kanohi (*face-to-face*), which expresses the cultural value of kanohi kitea (*being seen in person, where one’s face is seen and presence is noted*). This method is a cultural concept highly valued and

recognised by Māori in terms of research being undertaken involving their world, but is also significant for the reciprocal relationship that is developed between teacher and learner, or transmitter and receiver of the language. In a study conducted by Duder (2010), findings revealed that tikanga, viewed by Māori language teachers as “an inherent, essential and critical part of their teaching” (p.90) could only be taught in person. Duder (2010) further explains, “a resource could only support the role of the language teacher rather than replace or substitute it” (p.90). That is kano ki te kano, face to face interaction and an important method of transmitting knowledge and skills (Bright, 1999, p. 38).

In reviewing literature regarding Māori values, it is evident that the Māori world-view, and those taonga or concepts as practiced by the ancestors belong together in a holistic whole, they are all intertwining and inform the Māori way of doing things, and likewise the way in which Māori taonga, including the Māori language should be treated with respect and protected. What the brief description of each concept also highlight is that acknowledgement should be made to these values should someone choose to create resources that facilitate Māori taonga, including knowledge, language and information.

He rākau taumatua, he huihuinga manu

A brief summary providing the ‘hua’ or useful insights gained are outlined as a reflection of the review.

The Māori language has a mauri, a wairua. Like all languages, it has mana; it is a taonga, a vehicle in which knowledge, societal mores and cultural concepts are communicated. Kaitiakitanga needs to be in place to ensure the language is protected and respected in any domain, including m-learning and this includes taking into consideration the various kaupapa Māori values and tikanga practices highlighted in this section of the review. As expressed by the participants in the research conducted by Duder (2010) any teaching and learning of te reo Māori needs to be anchored in tikanga for the language learning experience to be valid and “digital resources that support the teaching and learning of te reo Māori need to be based on language of a high quality” (p.138).

The history of te reo Māori married to technology places the technology or tool in a support role, and although technology and tools provide more authentic ways for communication and interaction using the language, they are “by no means the most important means to produce speakers” (Galla, 2009, p.176). However, in the Review of

the Māori Language Sector and the Māori Language Strategy (2011), the recommendation to “embrace technology as modern tools in the revitalisation of the Māori language” (p.23) is provided as one of the many major outcomes of the review.

This is where mobile learning as a tool can play a significant role in facilitating Māori language transmission and subsequently contributing to the intervention process. At the 2012 Foundation for Endangered Languages XVI Conference: *Language Endangerment in the 21st Century: Globalisation, Technology and New Media* Ghil’ad Zuckermann⁵ quoted during his presentation, “If your language is endangered, do not allow it to fall asleep!” (Zuckermann & Monaghan, 2012). These words of warning are encouraging for Māori and iwi to take control and exercise rangatiratanga over their language, and m-learning technologies can be a new avenue to do so. As summarised by Galla (2010):

The use of technology has become a fact of life. Therefore, it is difficult to expect that the languages of Indigenous people will be able to survive in the 21st century without being supplemented by multimedia technology in this culturally diverse and technological enhanced world. Currently there are two choices: Indigenous people can either resist these tools and allow their language to continue down its natural pathway to extinction, or choose to embrace and use these tools for language documentation and revitalization. (Pp.46-47).

Evident through the literature is the fact that the transmission of the Māori language no longer occurs naturally for most. What this means for the survival of the language is that those who were not fortunate enough to be brought up speaking the language will need to learn should they wish to. This reflects the importance that every individual can play in the revitalisation of an indigenous language, and therefore the need for the language to be attractive for them to want to learn it, engage in it. It is then important for individuals and families to see value in learning the language and transmitting it so it survives for future generations. This may be a reflection of attitudes towards the language, and in turn highlights how important the image, promotion and attitudes towards the language are for its survival, as this contributes to the normalisation of the language and also to the motivation of Māori and the general public to learning the language.

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This is where the role of m-learning can be a significant one. M-learning resources can assist those factors critical for the revitalisation of an endangered language. If created with respect to the cultural values associated with the language and acknowledging the considerations and concerns as outlined above, mobile learning will play an important role in facilitating Māori language transmission and revitalisation. As a support tool, it can assist in the intergenerational transmission of the language, the learning of the language, the speaking of the language, promoting and contributing to a positive image of the language, encouraging and motivating speakers and ‘potential consumers’ and accordingly contributing towards a healthier future for the Māori language.

WĀHANGA III

TE HUARAHĪ

CHAPTER III: METHODOLOGY

E tipu, e rea mō ngā rā o tōu ao.
Ko tō ringa ki ngā rākau a te Pākehā,
hei ora mō te tinana.
Ko tō ngākau ki ngā taonga a ō tīpuna Māori,
hei tikitiki mō tō mahuna, ā,
ko tō wairua ki tō Atua,
nāna nei ngā mea katoa.
(Ngata, 1949)

He tīmatanga kōrero: *Introduction*

This chapter presents the theories that drove the research including the philosophical and methodological approaches that were applied. The guiding principles for the study come from a Māori perspective with reference to some principles of Kaupapa Māori Research Theory. Kaupapa Māori research, as noted previously, “focuses on Māori – Māori culture, language, values, history, people and contemporary realities” (Rautaki Ltd & Ngā Pae o Te Māramatanga, n.d.a, para. 9) and provided a foundation for the present research. Kaupapa Māori research, ethics and principles and their significance to the research are discussed further below. The qualitative methodologies used in obtaining and analysing the data, the pre-field research preparation and the ethical considerations regarding the research are also discussed.

Ngā whāinga o te rangahau: *Aims of the study*

The research aims to situate m-learning within the contexts of Māori language revitalisation and Māori language transmission with reference to kaupapa Māori values and whakataukī. The purpose is to assess m-learning's role in the future facilitation of Māori language transmission and revitalisation and to highlight the considerations that should be made to protect the language and deliver it responsibly when facilitated on an m-learning platform. The analysis will draw on primary data sourced from qualitative in-depth interviews with key informants, and secondary data such as existing literature including academic writing, journals, surveys and government publications and reports.

Ngā tūmomo rangahau: *Qualitative research*

Why do we do research? Alzheimer Europe (2009) explains that, “research enables researchers to test and compare different theories and approaches, explore different methods and learn from other people’s experience” (para.3). For these reasons it assists in solving existing problems and can inform decision making, and consequently impacts our future (Samuels, 2009). All these factors are evidently expressed in the provided definition of research. “There are two main types of research, qualitative and quantitative, and the two are very different in both purpose and execution” (Hillyer, 2010). Qualitative data deals with descriptions and can be observed but not measured where as quantitative data deals with numbers and can be measured (Roberts, 2010). The following provides an understanding of qualitative research and its position within the research presented.

Qualitative research provides more ‘rich’ data, as it is subjective due to individuals’ responses, and is in the form of "words, pictures or objects” (Neill, 2007). Due to this, the data becomes hard to generalise (Neill, 2007). It also means that qualitative data research is more time consuming. Qualitative research methods involve the researcher being the primary “data gathering instrument” (Neill, 2007). According to Mack, Woodsong, MacQueen, Guest, & Namey (2005), qualitative research:

...seeks to understand a given research problem or topic from the perspectives of the local population it involves. Qualitative research is especially effective in obtaining culturally specific information about the values, opinions, behaviors, and social contexts of particular populations. (p.1)

In the case of the presented research, culturally specific information about the values and opinions regarding the transmission of the Māori language using m-learning will be gathered using qualitative in-depth research interviews.

Ngā uiuinga: *In-depth interviews*

The qualitative research interview seeks to describe and investigate the meanings of central themes in the life world of the subjects. The main task in interviewing is to understand the meaning of what the interviewees say (Kvale, 1996). Taylor and Bogdan (1984) define the qualitative interview as “repeated face-to-face encounters between the researcher and informants directed toward understanding informants’ perspectives on their lives, experiences, or situations as expressed in their own words” (p.77).

Table 2 below outlines the strengths and weaknesses of the interview as a research method according to Sekaran (1992, p.197):

Table 2: *Strengths and weaknesses of in-depth interviews*

Strengths	Weaknesses
<ul style="list-style-type: none"> ❖ Questions can be adapted as necessary during the interview, ❖ Doubts can be clarified, ❖ Responses are properly understood by repeating and rephrasing questions, ❖ The researcher can observe non-verbal cues, ❖ Any discomfort or stress can be detected immediately. 	<ul style="list-style-type: none"> ❖ Geographical limitations to access interviewees, ❖ Take longer time, therefore more costly, ❖ Interviewers need relevant training, ❖ No anonymity for interviewees, so there may be ethical issues.

Ngā matatika hei whakaaro: *Ethical considerations*

As stated by Canadian Institutes of Health Research Natural Sciences, Engineering Research Council of Canada Social Sciences & Humanities Research Council of Canada (2010), “There can be no doubt that research has greatly enriched and improved our lives... Research is a step into the unknown. Because it seeks to understand something not yet revealed, research often entails risks to participants and others” (p.7). This is where ethics becomes involved. Unfortunate examples of unnecessary harm caused to participants have occurred in the past (Interagency Advisory Panel on Research Ethics, 2010). As a result, where human participation is involved the need to protect the rights and interests of people taking part in research is now observed internationally (University of Tasmania, 2009).

Respect and safety is what ethical research is based on. All communities, cultures and individuals have different beliefs, standards, morals and principles and are all related to what is considered to be ethical. Therefore, as an individual, as a researcher from within an institution, and as a Māori, the ethical considerations that influence the research I conduct stem from a variety of facets. The communities I work alongside when conducting research, and the cultural ethics prescribed by them also influence the ethical considerations. These communities include the participants who were involved, their respective employment environments (including the whānau and staff associated with those environments), the networks that assisted with the development of the

kaupapa and the recruitment of participants, the supervisors and academic staff who assisted in the shaping and completion of the thesis, and the iwi (*tribal*) and hapū (*sub-tribe*) affiliations of all involved. In addition to personal beliefs are the standards prescribed by the Auckland University of Technologies Ethics Committee (AUTEC), the ethical morals of the communities involved and the acknowledgement that research with Māori requires consideration of tikanga and kawa (*marae protocol*) (Rautaki Ltd & Ngā Pae o Te Māramatanga, n.d.e) Below is a figure that highlights the ethical dimensions of research for Māori, before a discussion that elaborates on the ethical considerations.

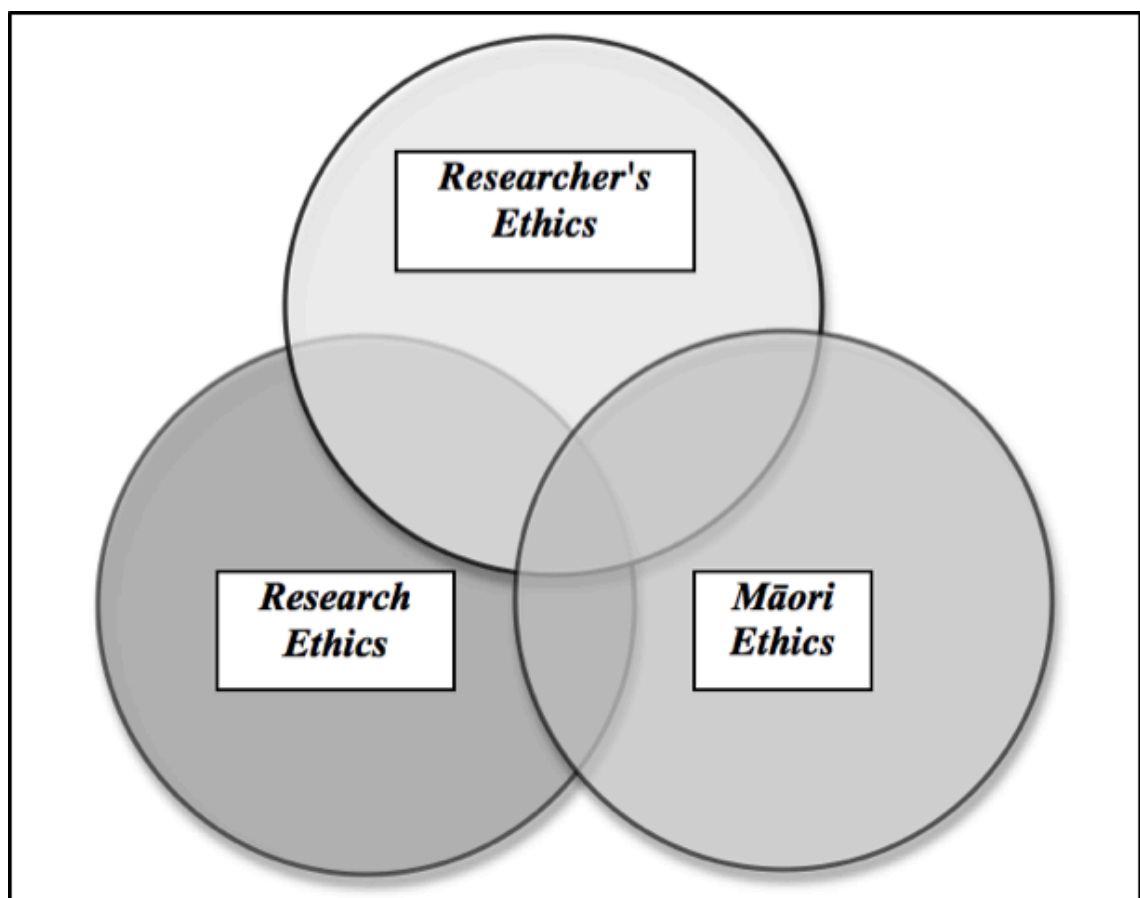


Figure 1: The Ethical Dimensions of Research for Māori
(Rautaki Ltd & Ngā Pae o Te Māramatanga, n.d.d).

Some kaupapa that come under the titles of the three separate but layered dimensions in this visual representation are outlined below, before a discussion is provided to highlight what is at the intersection of these dimensions generally for research conducted for Māori. A brief summary of how these dimensions and intersections relate directly to the presented research is included in the reflection section of p. 115.

Table 3: *The Ethical Dimensions of Research for Māori*

Māori Ethics	Researcher's Ethics	Research ethics
<ul style="list-style-type: none"> • Customary obligations • Iwi, hapū and whānau obligations • Māori values and practices • Kaupapa Māori 	<ul style="list-style-type: none"> • Own personal beliefs • Own perspectives and behavior • Personal morals and principles • Religious obligations • Family obligations 	<ul style="list-style-type: none"> • Institutional requirements • Legalities

Table 4: *Intersections of Ethical Dimensions in Figure 1*

Māori ethics	Researcher's Ethics
At this intersection, it is the understanding of the researcher that these two dimensions govern not only the way in which research is undertaken, but also reflects the way in which one lives, a personal practice.	
Researcher's Ethics	Research Ethics
There may be conflicts at this intersection where personal views and beliefs do not marry well with the requirements of the institution or community which governs the research. This intersection, as with the previous would be based on the individual researcher themselves, and determined by their personal ethics.	
Research Ethics	Māori ethics
It is at this intersection where the most tension lies, as the research ethics of the institute and wider society often clash with Māori cultural values and practice. For example, issues such as impartiality and anonymity that are viewed as good practice under the title research ethics conflict with Māori values such as whakawhanaungatanga (<i>relationship building</i>) and kanohi ki te kanohi (<i>face to face</i>) where the seen face is appreciated. Another example is when operating in a kaupapa Māori context, a Māori researcher is an insider, and therefore will have a somewhat subjective view although research ethics promote objectivity. Therein lies some tension in which researchers may find themselves torn between cultural beliefs and obligations as a researcher who's practice is governed by an institute.	

Māori ethics	Researcher's Ethics	Research Ethics
<p>The centre, where all three dimensions overlap is where the researcher needs to be grounded in integrity as informed by their morals, cultural values and practices and any institutional, religious or community obligations as a representative of those parties. It is at this junction where the research is conducted.</p> <p>If the researcher favours one dimension over another, they run the risk of jeopardising their integrity, the integrity of the research or the parties involved, losing respect as a researcher and member of the relative community and possibly putting the well-being and safety of those involved at risk.</p>		

Kaupapa Māori: *Māori ideology*

The following highlights some principles of Kaupapa Māori research which were considered to be of importance, before explaining the intersections of the above diagram.

Maori World-view

Kaupapa Māori is basically the Māori way of doing things. Kaupapa Māori relates to how Māori view the world, reflects Māori values, morals and is grounded in tikanga Māori. *Te Aka Online Dictionary* provides the definition of kaupapa Māori as “Māori ideology - a philosophical doctrine, incorporating the knowledge, skills, attitudes and values of Māori society” (Moorfield, 2013b.). An interesting concept that springs to mind is the definition of the word "māori" itself. The term ‘māori’ simply means ‘normal’ or ‘ordinary’. Kaupapa Māori therefore takes for granted what Māori deem to be ordinary, the language, culture, epistemology, customary practices, knowledge, values, morals and a world-view that is unique to the Māori people (Smith, G. H., 1992; Smith, L.T. 1999). According to Smith (1992), Kaupapa Māori is the “philosophy and practice of being Maori” (p.1), and as a philosophical approach it privileges the ‘Māori way’ of conducting research (Smith, 1992).

The Principle of Rangatiratanga

Rangatiratanga (*autonomy*) can be related to Māori desires to shape their own research processes. Historically, research that involved indigenous communities had no positive outcomes for those communities (Smith, 1999). Māori history reflects this, and many Māori communities remain cautious about research involving them. Māori resistance,

questioning of non-Māori notions of knowledge, culture and research and their desires for self-determination and autonomy have shaped Kaupapa Māori as a research theory. Kaupapa Māori research has been used as a methodological strategy to conceive, develop and carry out research beneficial for Māori (Walker, Eketone & Gibbs, 2006), and some critical questions that need to be considered have been outlined by L Smith (1996, pp. 217-218 as cited in Rautaki Ltd., & Ngā Pae o Te Māramatanga, n.d.c) and are as follows:

- ❖ What research do we want to carry out?
- ❖ Who is that research for?
- ❖ What difference will it make?
- ❖ Who will carry out this research?
- ❖ How do we want the research to be done?
- ❖ How will we know it is a worthwhile piece of research?
- ❖ Who will own the research?
- ❖ Who will benefit? (para. 5)

“The research approach also has to address seriously the cultural ground rules of respect, of working with communities, of sharing processes and knowledge” (Smith, 1999, p.190). The Kaupapa Māori approach involves using processes such as networking and consulting with communities and whānau to focus on the research problems (Smith, 1999).

Kaupapa Māori is distinctively different from non-Maori philosophies in that its epistemological and metaphysical foundations and traditions are different (Nepe, 1991). Therefore, Kaupapa Māori is not only derived from Māori desires for self-determination or history under colonialism. The “different epistemological tradition frames the way we see the world, the way we organise ourselves in it, the questions we ask and the solutions which we seek” (Smith, 1999, p. 188).

Social Justice

The Principle of Socio-Economic Mediation asserts the importance of conducting research that sets out to make a positive difference for the communities or individuals being researched. Kaupapa Māori is “larger than the individuals in it and the specific ‘moment’ in which we are currently living” (Smith, 1999, p.188). Short-term or long-term benefits need to be considered when defining and designing the research (Smith, 1999, p.190). These benefits do not need to be of direct or immediate benefit, but needs

to “mediate and assist in the alleviation of negative pressures and disadvantages experienced by Māori communities” (Pihama, Smith, Taki & Lee, 2004, p.47).

Whakapapa and Relationships

Whakapapa, or genealogy encompasses how Māori see the world; it is a “way of thinking of learning and storing and debating knowledge” (Rautaki Ltd & Ngā Pae o Te Māramatanga, n.d.c, para. 1). Whakapapa is integral for Kaupapa Māori research as it allows for the positioning and contextualising of “relationships between people, communities, participants, landscape, and the universe as a whole” (Rautaki Ltd & Ngā Pae o Te Māramatanga, n.d.c, para. 1). According to the Māori world-view, everything has a whakapapa, even the universe, the atua Māori (*Māori gods*); the heavens, the skies have a lineage. Everything is connected and linked.

Whakawhanaungatanga (*relationship building*) is important in Kaupapa Māori research because it allows whakapapa to inform and strengthen relationships and connections with those involved in the research. The recruitment of the participants was based on this concept of whakawhanaungatanga by establishing relationships with those communities of interest.

Te Reo Māori

Kaupapa Maori research “aims to encourage the revitalisation of te reo Māori” (Walker, Eketone & Gibbs, 2006, p.334). The revitalisation of the Māori language is a huge component of the presented thesis, and guidance was sought throughout all stages of the research to maintain high levels of proficiency and accuracy wherever the Māori language was used.

All the information sheets, consent forms and interview questions were offered in both te reo Māori and English. By providing these in both languages, the participants had the option of choosing the language in which they preferred to engage with the research. Whakataukī were also incorporated as the guiding philosophy for the thesis. They offer a constant thread which reminds the reader that the purpose of this research is derived from the fact that the Māori language and its well-being are important and language revitalisation initiatives and efforts play an important and necessary role in its maintenance. The incorporation of te reo Māori is important for me as a bilingual researcher, and as an advocate for te reo Māori revitalisation, because I believe the Māori language should be used and offered wherever possible.

Tikanga Maori

To navigate, operate, and make judgments and decisions appropriately within a Māori context, tikanga Māori must be considered and adhered to. Tikanga Māori encompasses customary practices, protocols, ethics, cultural behaviours, considerations and obligations and is an important component of any research that involves Māori.

Kaupapa Māori Ethics

Inherent in Kaupapa Māori methodology are Māori ethics, as Kaupapa Māori is “based on culturally appropriate engagement and research specifically targeted at Maori” (Rautaki Ltd & Ngā Pae o Te Māramatanga, n.d.d, para.4) Knowledge is tapu and “cannot be asked for without respecting those who choose to share” (Barnes, 2000, p.2). We do not own knowledge, but we are kaitiaki of it, guardians, protectors and repositories so that we may pass it on for the benefit of future generations. Therefore researchers must be responsible and accountable; they must respect knowledge and those repositories of knowledge at all times.

During all stages of this project, particularly the data collection phase, Kaupapa Māori ethics were practiced to ensure that tikanga Māori was upheld at all times. Some of these ethics are outlined by Smith (1999, p.120) and are as follows:

Table 5: Kaupapa Māori Ethics

Kaupapa Māori Ethic	<i>Interpretation</i>
Aroha ki te tangata	<i>Be respectful</i>
Kanohi kitea	<i>The seen face is appreciated; face to face</i>
Titiro, whakarongo, kōrero	<i>Look, listen and speak</i>
Manaaki ki te tangata	<i>Share and host people; be generous</i>
Kia tūpato	<i>Be cautious</i>
Kaua e takahia te mana o te tangata	<i>Do not trample over the mana of people</i>
Kaua e mahaki	<i>Don't flaunt your knowledge</i>

In summary, Kaupapa Māori research:

- ❖ Is related to being Māori
- ❖ Is connected to Māori philosophies and principles
- ❖ Takes for granted the validity and legitimacy of Māori, the importance of Māori language and culture; and
- ❖ Is connected with the “struggle for autonomy over our own cultural being” (Smith, 1990, as cited in Smith, 1999, p. 185).

Kaupapa Māori is not only a solid foundation for the presented research but has also strengthened my own personal world-view, and embedded it in Māori thought. The personal journey of deepening my knowledge of Kaupapa Māori has enriched my understanding of the Māori world-view and tikanga Māori and I have also come to realise the role of Kaupapa Māori in my everyday life and for the future aspirations I will pursue.

Ngā tikanga matatika: *Ethics approval*

Ethics approval was sought by and gained from the AUTC on the 14/05/2012 (see Appendix F). A key ethical consideration that was addressed in the research was that the identity of each of the participants was known to the researcher. Although they weren't anonymous, their privacy and confidentiality is protected. This includes the participants being offered the choice to be named in the research, or to alternatively be assigned a pseudonym.

All of the potential participants were provided with an information sheet (Copy of Information Sheet for Participant attached as Appendix C). The purpose of this sheet was to inform the potential participants about the research and what it entailed. In alignment with AUT ethical principles, other ethical considerations included that no deception was involved, and to guarantee the research would be vigorous and responsible the researcher endeavoured to remain impartial and adhere to tikanga Māori practices during the collection of the information. Also in alignment with AUT ethical principles, all forms and research notes will be retained by the researcher and/or the supervisor and will be locked away when they are no longer required. The consent forms will be kept in a separate cupboard from the research notes, and will be destroyed after six years.

Any potential breaches of confidentiality and privacy were minimised by the procedures set in place. All participants were made aware both verbally and in the written information sheet that they had the opportunity to terminate the interview at any stage and were informed of this both at the beginning and throughout the interview. Participants were made aware that they did not need to answer a question they considered embarrassing and they could request that the recorder be turned off at anytime. Subsequent to the interview they were given the option of withdrawing any information they provided by reviewing the transcript for comment and confirmation before it was used in the final thesis.

Once ethical approval was granted, the initial focus of contact was with those who had already expressed their support for this research. Those included key informants from networks within areas of broadcasting, education and Māori language revitalisation. Attached to each information sheet was a consent form, which required the signature of each of the participants. Written consent was only obtained after the participants had been fully informed of the intent, purpose and procedures of this research and the research did not begin until the participants had completed their consent forms.

Ngā paearu mō ngā kaiwhakauru: *Criteria for participants*

Key informants were those who could provide a valuable contribution to this research project, including recognised repositories of knowledge of the Māori language, tikanga Māori, and Māori world view. The criteria for selecting participants was those who were recognised, nominated or identified from within the researcher's own networks as key informants who belonged to at least one of the following categories. The participants were those who had an understanding of m-learning and:

- ❖ Had a sound knowledge and understanding of the Māori language, Māori values and te ao Māori (the Māori world),
- ❖ Had produced products that facilitate in the transmission of Māori language (e.g. Māori language learning resources, Māori language television programming etc.),
- ❖ Had already developed an m-learning resource that facilitates Māori language transmission,
- ❖ Were in the process of developing m-learning resources that facilitate Māori language transmission,
- ❖ Create m-learning resources and are employed within the industry of technology and innovation,
- ❖ Had conducted research involving digital language learning and transmission; and/or
- ❖ Had researched and/or work in the areas of Māori language transmission or revitalisation.

Because the criteria for the participants as outlined above was quite specific, purposive sampling was used in selecting participants from respective networks. Purposive sampling is when participants are chosen with explicit attributes in mind and the sample is "selected in a deliberative and non-random fashion" (Simon, 2005, para 1). In the case of the presented research, purposive sampling was used to ensure that the participants selected belonged to at least one of the categories as outlined above.

Because purposive sampling was used, the exclusion of any potential participants was avoided.

Whakawhanaungatanga: *Sample recruitment for participants*

Adhering to the cultural value of *kanohi kitea*, potential participants were approached in person by the researcher. They were further informed about what the research involved and given participant information sheets and consent forms (see Appendices C & D). They were also asked if they could refer any other key informants. Once this information sheet was read and I had answered any queries they had, they were then able to sign the consent forms. Those who needed more time to consider the project were given a further week to consider the invitation before I contacted them again or asked them for their consent forms. Participants were then chosen based on their level of interest in the topic, their willingness to be included in the research and their availability for interviews throughout the duration of the research. Those selected were the participants who agreed to the boundaries of the research and gave official consent to participate.

Ko ngā uiuinga: *The interview process*

In accordance with the requirements of AUTEK regarding researcher safety and minimisation of risk, the researcher endeavoured to adhere to the following guidelines during all interviews:

- ❖ Informing supervisors of interview schedules and travel plans.
- ❖ Use of cell phone to maintain contact networks while working in the field.
- ❖ Alerting supervisor or family members to confirm appointments (before and upon conclusion of each interview).
- ❖ Acting in culturally and socially sensitive ways. Including:
 - Acknowledging that the interviewee's time is precious and being punctual for all scheduled appointments.
 - Acknowledging that other hui (meetings/gatherings), especially tangihanga (funeral/mourning rites) take precedence over interviews and appointments may need to be rescheduled
 - As manuhiri (having guest status) within the interviewee's home or workplace, the researcher followed suitable protocols including:
 - Acknowledging the other members of the interviewee's family appropriately with hongi (formal Māori greeting) and hariru (shaking hands in greeting)
 - Taking food to share with the interviewee and their family/colleagues
 - Respecting interviewee's preferences regarding the transmission of knowledge (e.g. no food to be partaken during the interviews, use of karakia (prayer and incantation))
 - Adhering to tikanga Māori as appropriate

The primary method for gathering information from the interviews was kanohi ki te kanohi. This form of data collection expresses the cultural value of kanohi kitea. Through one's physical presence, relationships are fostered and nurtured (whanaungatanga). The interviews were guided by set, open-ended questions and participants were able to use both English or Māori as they preferred, and the venue where the interview was conducted.

The qualitative research approach of the in-depth interview used conventional methods of data collection and interview techniques. The interviews were semi-structured in nature (Davidson & Tolich, 2007) and were one-on-one interviews based on the guideline questions. Information was gathered using these in-depth interviews to seek a comprehensive exploration and clarification of the chosen research topic (Davidson & Tolich, 2007; Oishi, 2003). They were audio-recorded and written notes were also taken. The guideline questions were a list of questions or issues that were to be explored (see Appendix E) and were open-ended to allow for the understanding of the interviewees' perceptions and experiences in relation to the research topic. The following identifies the interview phases.

Preparation

Developed an open-ended questionnaire (Please refer to Appendix E)

Developed an Interviewing protocol (Please refer to Appendix B)

Secured a time and venue to conduct the interview.

Interview

The researcher used the guideline questions to guide the interview, and adhered to Kaupapa Māori ethics at all times.

The data collection methods applied during the in-depth interview included taking notes and an audio recording.

Post-Interview

All data was transcribed.

Transcripts were offered to the participants to read so that they could omit any part before it was added to the thesis.

Common themes were identified and categorised.

An analysis of the data started

Te tātaritanga: *Data analysis and interpretation*

When interpreting the information, the focus was to identify common themes and differences within each interview. The data was then manually coded based on categories or themes that emerged from the interviews. The coded data was analysed and interpreted in its relation to the research, the content of the literature review, and the contexts of Māori language revitalisation and Māori language transmission. Common themes that emerged were also critically analysed against the essence of the whakataukī that are outlined in the introductory chapter.

The procedures for data analysis were conducted according to the recommendations of Richards (2005) and Davidson & Tolich (1999) and are outlined below:

- ❖ Collect data using the questionnaire as guidelines. Then, using the transcribed data (that has been approved by the relative participant):
- ❖ Generate categories using the proposed questions as guidelines
- ❖ Collate and analyse by identifying themes, links and patterns – this includes looking for similarities and differences
- ❖ Writing the report – highlight and discuss emerging themes and patterns

He kōrero whakatepe: *Summary of chapter*

This chapter outlines the aims of the study before discussing the philosophical, ethical and methodological approaches that were employed to see those aims to fruition. Of particular focus were the ethical considerations, as the nature of the study and the methodologies that were employed required that the research observed respectful and safe practices at all times, with all who are involved. This included looking at the ethical dimensions for Māori doing research, and how those dimensions influenced this research, including Kaupapa Māori research and ethics and the prescribed ethics of AUTECH. An overview of processes involved in recruiting participants, conducting the interviews and the subsequent data analysis and interpretation that will be presented in the Findings Chapter and the Analysis of Findings Chapter was also outlined. Whakataukī, as discussed in depth in the introductory chapter also played a key role as a method to enrich the presented research. All these methods, complemented by the use of existing literature, including academic writing, government publications and personal experiences were the research procedures and methods that were used to complete the thesis. They all served to provide an assessment of m-learning resources as they are situated within the contexts of Māori language transmission and Māori language revitalisation with reference to Kaupapa Māori values and whakataukī.

WĀHANGA IV

TE PUNA KŌRERO

FINDINGS

Ka koekoe te kōkō, ka ketekete te kākā, ka kūkū e kererū

The tūi chatters, the kākā cackles and the kererū coos.

He tīmatanga kōrero: *Introduction*

This chapter is a presentation of the research findings. The chapter is organised into the following main themes: Introducing the kaiwhakauru (*participants*), the Māori language, Māori language revitalisation and transmission, m-learning's role in Māori language transmission and revitalisation and the final section highlights the considerations that should be made to protect the language and deliver it responsibly when facilitated on an m-learning platform.

The whakataukī that heads the chapter 'Ka koekoe te kōkō, ka ketekete te kākā, ka kūkū te kererū', which literally means 'the tūi chatters, the kākā cackles and the kererū coos' reminds the reader that the reo, or *voices* used to express the opinions and experiences of the participants are each unique to that individual. Their views and the reo and kupu (*words*), which they used to express themselves, are unique to them. The figurative more in-depth philosophy or underpinning kaupapa of the whakataukī celebrates diversity and difference, and this chapter allows their voices to be heard. Whakataukī provided by the participants are also used throughout to convey messages related to the presented research. Here are their voices.

Ngā kaiwhakauru: *The participants*

The following tables identify the majority of the participants were Māori, and male. All the interviews were bilingual, using both the English and Māori languages. Therefore, where the participant's responded in Māori, an interpretation of the researcher is provided only when an English equivalent is not provided by the participant. The criteria the participants had to meet before they participated in the study is outlined in the previous chapter (refer to section titled "Ngā paearu mō ngā kaiwhakauru: Criteria for participants"). It was crucial they satisfied the requirements for inclusion in that they were engaged with the language in terms of their ability to be considered part of the Māori speaking community and not commentators or observers of it. The following tables provide information on the six kaiwhakauru as documented during the data collection stage of the research.

Table 6: The participants: Self assessed criteria for inclusion in presented research

	Self assessed criteria for presented research					
	John Moorfield Kaiwhakauru 1	Jason King Kaiwhakauru 2	Jen Martin Kaiwhakauru 3	Dean Mahuta Kaiwhakauru 4	Elisa Duder Kaiwhakauru 5	Robert Pouwhare Kaiwhakauru 6
Had a sound knowledge and understanding of the Māori language, Māori values and te ao Māori (the Māori world).	✓	✓	✓	✓		✓
Had produced products that facilitate in the transmission of Māori language (e.g. Māori language learning resources, Māori language television programming etc.).	✓	✓		✓	✓	✓
Had already developed an m-learning resource that facilitates Māori language transmission.	✓					✓
Were in the process of developing m-learning resources that facilitate Māori language transmission.						✓
Create m-learning resources and are employed within the industry of technology and innovation.						✓
Had conducted research involving digital language learning and transmission.		✓		✓	✓	✓
Had researched and/or work in the areas of Māori language transmission or revitalisation.	✓	✓	✓	✓	✓	✓

Table 7: Kaiwhakauru 1: Participant 1

Kaiwhakauru 1:	John Cornelius Moorfield
Gender:	Tāne (<i>Male</i>)
Ethnicity:	NZ Pākehā
Current employment position:	Professor of Māori Innovation and Development, Te Ipukarea and Te Ara Poutama, AUT University.
Fields of interest:	Māori language, Māori culture, Māori history, developing hard copy and digital Māori language resources, including dictionaries. Collection of Māori language loanwords.
Research areas:	Māori language, Māori culture, Māori history, developing hard copy and digital Māori language resources, including dictionaries.
Qualifications:	BA (Auckland), MEd (Wales), DipTchg (Auckland), CTEFLA, LittD (Otago).
Mahi currently being undertaken:	Working on adding example sentences, with translations, for each entry and separate meanings of the Te Aka online dictionary. Also continuing to add new entries and photographs to the online dictionary. Overseeing Te Whanake Animations. Editing and submission of 'Kia Rōnaki: The Māori Performing Arts' book to Pearson.

Table 8: Kaiwhakauru 2: Participant 2

Kaiwhakauru 2:	Jason King
Gender:	Tāne
Ethnicity:	NZ Māori
Iwi:	Waikato
Current employment position:	Senior Lecturer - AUT University
Fields of interest:	Te Reo Māori Leadership Policing
Research areas:	Tribal Histories, Oral Narratives of my Ngāti Mahuta ki te Hauāuru
Qualifications:	MA, B.Ed., DipT pursuing PhD in te reo Māori
Mahi currently being undertaken:	1st draft of PhD to be completed by Dec 2012

Table 9: Kaiwhakauru 3: Participant 3

Kaiwhakauru 3:	Jen Martin
Gender:	Wahine (<i>Female</i>)
Ethnicity:	NZ Māori/NZ Pākehā
Iwi:	Te Rarawa
Current employment position:	Kei AUT e mahi ana. He pūkenga reo Māori ahau. [<i>Māori language lecturer at AUT</i>]
Fields of interest:	Ko te reo Māori (i ōna tini whakatinanatanga) te matua i root i aku mahi, i aku whāinga katoa - Kāore i tua atu. [<i>The Māori language is paramount in my work and all that I pursue</i>]
Research areas:	E ngana ana ahau ki te whakaoti i taku tuhinga kairangi, e hāngai ana ki te KKM. Ko te pātai matua, 'Me pēhea e kīia ai kua puta te ihu o tētahi ākonga KKM'. [<i>I am currently completing my PHD thesis. The focus of the research is Māori expressions of educational success in the context of Kura Kaupapa Māori.</i>]
Qualifications:	BCOM/BA (Hons) - Te Whare Wānanga o Tāmaki (<i>Auckland University</i>) E whai ana i te Tohu Kairangi i tēnei wā (AUT) (<i>Currently pursuing a PHD at AUT University</i>)
Mahi currently being undertaken:	Kua rima tau ahau e whakaako ana i te reo i te wānanga nei (AUT), ka mutu, mō te tau e tū mai nei tukuna atu ai taku tuhinga whakapae mō te tohu kairangi. [<i>I have been teaching the language here (AUT) for the past five years, and also, my PHD thesis is due for submission next year</i>].

Table 10: Kaiwhakauru 4: Participant 4

Kaiwhakauru 4:	Dean Mahuta
Gender:	Male
Ethnicity:	NZ Māori
Iwi:	Waikato
Current employment position:	He pūkenga ahau ki roto o Te Ara Poutama, ana, he kaimahi hoki ahau mō Te Ipukarea. <i>[Lecturer – Te Ara Poutama Researcher in Te Ipukarea – The National Māori Language Institute]</i>
Fields of interest:	Ko ngāku rangahau katoa e hāngai ana ki ngā taputapu hangarau me ngō rātou āhuatanga i te ao o te reo Māori. <i>[My current research relates to technologies and their with the Māori language.]</i>
Research areas:	Traditional Māori knowledge systems, language and history. My primary passion is digital animation, with particular interest in 3D animation, for Indigenous peoples to begin occupying digital spaces, and taking ownership of their own ‘digital identity’.
Qualifications:	BA (Hons), MA (Hons) Otago, PhD Auck. UT
Mahi currently being undertaken:	Currently researching the representation of Māori customs, language and lore in video games. Other areas of research include the need for Indigenous peoples to begin occupying digital spaces, and taking ownership of their own ‘digital identity’.

Table 11: Kaiwhakauru 5: Participant 5

Kaiwhakauru 5:	Elisa Duder
Gender:	Wahine
Ethnicity:	NZ Pākeha
Current employment position:	Full time PhD student at AUT University
Fields of interest:	Maori language revitalisation, second language acquisition of Te Reo Maori
Research areas:	Second language acquisition of Te Reo Maori
Qualifications:	MA in Maori Development, now working towards a PhD.
Mahi currently being undertaken:	Initial stages of PHD programme

Table 12: Kaiwhakauru 6: Participant 6

Kaiwhakauru 6:	Robert Pouwhare
Gender:	Tāne
Ethnicity:	NZ Māori
Iwi:	Tūhoe Ngāti Haka
Current employment position:	PRODUCER Tangata Whenua Television Senior Lecturer - Auckland University Maori Studies
Fields of interest:	Television production documentaries; Maori Language and cultural programmes; animation; children's programmes - have produced 100s of hours of TV programming
Research areas:	Gaming and apps for e-books
Qualifications:	TVNZ trained director studio and field Dip Teaching; Dip Business; BA currently finishing MEd thesis
Mahi currently being undertaken:	Currently exploring language revitalisation strategies using TV and emerging technologies

Ngā kōrero: *The discussions*

To set premise for the findings, the following identifies each participant's understanding of m-learning through their individual responses to the pātai (*question*), 'What is your understanding of m-learning?'

Kaiwhakauru 1

Access to the learning through media that is mobile, through the Internet, through mobile phones, iPads, iPods and android phones.

Kaiwhakauru 2

M-learning is the ability to carry information around and basically be at the touch of a button away into accessing repositories of knowledge. That's basically it; it's a new and emerging way that hooked up with technology we have access to our repositories of knowledge, in this case Māori knowledge readily available whenever we want and basically the onus lies not on the teacher but on the learner.

Kaiwhakauru 3

I guess it's finding ways where the learning can still occur outside of your conventional classroom settings. Doesn't need to occur in a school or anywhere so it's something that can be taken into many different contexts, you know, can be utilised at different times.

Kaiwhakauru 4

M-learning is using mobile devices like phones, iPads, any small device that has Wi-Fi capability and using those devices to teach.

Kaiwhakauru 5

M-learning for me, the 'm' means mobile, so mobile learning is learning that is mobile. So the student is mobile, the tutor is mobile, the class is mobile, the kaupapa is mobile and I guess also for me mobile means accessible.

Kaiwhakauru 6

For me, mobile learning is the use of emerging technologies as vehicles to transmit ancient information and knowledge, particularly to delivering reo to young people in this highly pressurised environment that we find ourselves, particularly young people, the pressures of living, the cost of living, globalisation and the competition in tertiary institutions and driving that all is the need to secure our language and to also reinforce the language and tikanga. It's not just language, it's our values as well. So reo and tikanga are inseparable, so within the values you know we see the Māori epistemology, the Māori world-view. So for me this phenomenon that we're facing at the moment is the use of modern and emerging technologies in the pursuit of securing and revitalising our reo and making it available to as many of our kids as possible, in their context.

Te reo Māori: *The Māori language*

As discussed by the participants, there are many reasons why it is vital we protect and respect the mana and the mauri of the language. These include not being able to understand the real depth of the culture, cultural values and tikanga without knowing the language and that it is the language that makes Māori people and culture unique.

It's not just a body of words but it holds a whole lot of history, it holds whakapapa, it explains the world that we know as Māori. So if we don't strive to look after that, if we disregard that then we will lose it. (Kaiwhakauru 3)

...because if we don't protect our language then we will lose a large part of who we are...to completely lose a language is to lose your sense of identity. (Kaiwhakauru 4)

Kaiwhakauru 6 supported these ideas stating “it is a really important for future generations. It's the key, which makes us different to everyone else. It's the key to understanding the world”. Kaiwhakauru 6 then offers another perspective...

...it's the window onto the soul, it's the world view of the ancestors. It forms our epistemology, it's not just communication...there are many reasons why we should protect the reo, engage with the reo quite apart from communications. It's like retrieving ancient information. It provides us with a blueprint for our survival. It was in that old language, in that old world-view.

The example provided refers to the messages contained in the Māori creation narratives, and the language and the knowledge within which is “the key to the transmission of this blueprint” (Kaiwhakauru 6), for the survival of humankind as we face the huge challenges the future will present.

The state of the language as discussed by participants revealed the language is unhealthy and the flow on effects from the decline of the language are still present. These effects include struggling communities and marae with no kaikōrero (*speakers*), or kaikaranga (*callers*).

Population loss, land loss and language loss were all intricately woven, and as a race Māori almost became extinct.

That's what prompted One Tree Hill, when they put up the memorial there to smooth the pillow of a dying race. That was in memory of us. (Kaiwhakauru 6)

Participants discussed how the language is still vulnerable.

I firmly believe that our language is still in trouble and that we can't rest now and think that it's ok, because it's not. (Kaiwhakauru 3)

I think it has a very uneven status in NZ culture. On the one hand I think NZ culture values the Māori language incredibly highly, but they're not prepared to place a value on that in monetary terms in the sense that they will support money being poured into the language, they won't...I think there's a lot of ignorance around what it's actually going to take. (Kaiwhakauru 5)

Evolution and growth of culture, communities and language was a common theme throughout the interviews. The participants discussed how the language and culture is always changing, growing and evolving all the time.

...culture is always evolving. We can't remain static, or else the life in the culture and in the people sort of diminishes. So identity and culture is ever evolving. In a modern context we lessen certain tikanga, but give new tikanga to other things, but still within a Māori world-view. (Kaiwhakauru 4)

One participant discussed how even though evolution is inevitable, it's important to preserve the authenticity and correctness of the language because "in essence it's the language of our ancestors" (Kaiwhakauru 2).

Another participant discussed how the different types of languages which emanate from an ancient language source have developed over time.

No matter what the language is we are speaking today, however it's changed in its form, nuance, shape, permutations or complexions in the modern context essentially...it still none the less remains the Māori language. (Kaiwhakauru 6)

As with the evolution and change of language and culture, resources too must evolve and grow. A participant discussed how Māori focused resources, particularly Māori language resources forever need attention in order to grow alongside the culture. It is also highlighted that in the view of Māori there is almost an obligation to continually update and attend that resource.

In a way we kind of attribute a sense of mauri on it because it is imbued with our knowledge. (Kaiwhakauru 4)

Participants also discussed “looking into the past with our foot in the future” (Kaiwhakauru 2) in reference to looking at how the ancestors passed on knowledge and what can we take from that which still applies today.

I think what we have to realise is āe, he ao hurihuri tēnei and things change, world views change and so on and so forth. Ka taea tonu te hoki whakamuri, ki te tiki atu i ngā āhuatanga o te ao o tērā wā hei oranga mō ngā whakareanga o tēnei wā, ōtira hei ārahi me kī, i a tātou hei ngā wā o anamata. So there’s no reason why we can’t go back into traditional times, look back and reflect on those times and take from it the things that can be useful now but still realise that we have to move forward and that we have to roll with the times. Me ānga whakamuri, kia ānga whakamua. (Kaiwhakauru 3)

Different language genre, domains and contexts where different types of language exist were discussed by the majority of participants. Some of these were expressed metaphorically and included formal and informal situations and colloquial settings. One participant expressed concern for the language being restricted and outlined the importance of ensuring that people’s language is such that they can cope in all situations and contexts. Kaiwhakauru 1 described different types of language for family, community, education, whaikōrero, karanga, waiata, even a type of language used when playing cards and outlines:

...It’s important that the language is used in the right way, in the right context. It’s ensuring that the language is used in all those different situations, so that it doesn’t just become a formal language that people use and learn off rote for whaikōrero...Those contexts are all important and if you don’t have all of them you will end up with a language that’s restricted in its use, because people can’t communicate in all situations in the language.

Kaiwhakauru 1 then spoke about the loss of some types of language and described different genre of Māori language transmission as cogs in a wheel. Those cogs represent the language being used in the family, at school, in the community, in religious contexts like church, when tutoring kapa haka (*Māori cultural performing arts group*), etc. and “each of those things are cogs and if you’ve got enough of those cogs the wheel still turns. You can have one or two missing but not too many”.

Another kaiwhakauru referred to m-learning as a mode for Māori language transmission being “like an octopus, you know, it’s legs of an octopus but not all of them” (Kaiwhakauru 2). Another kaiwhakauru who in support of Māori going digital explains that “Māori always think there are many paths to the same goal, and digital is just one of them: (Kaiwhakauru 4).

Also in relation to language change, one participant highlighted how language change also includes using ‘dialect’ that is not of your region or iwi, stating:

Colloquialisms and things like that tend to be tribal specific. Using ‘ehē’ [*no*] all the time when it’s really only Tūhoe [*tribal group of the Bay of Plenty*] that used it, but its starting to spread everywhere. But I guess that’s language change. It’s really nice to listen to someone speaking in dialect. (Kaiwhakauru 1)

The majority of the participants agreed that dialect is important and should be maintained, spoken, acknowledged and used where possible. One of these kaiwhakauru expressed their view on the importance of using your particular dialect when you’re from a certain area, particularly when you’re amongst yourselves. Another kaiwhakauru warns against homogenising and standardising language, likening dialects to species in nature noting:

As species become endangered and go into extinction, what it means is the greatest tragedy because there is no variety, no diversity, and there’s no points of differences within culture... having the variety having our own reo adds to the total sum of experience for humans... My biggest fear is in standardising the language. (Kaiwhakauru 6)

One participant discussed the importance of dialect, noting that there is nothing stopping individual iwi producing m-learning resources in their own dialects, however argued:

I think at this stage our language is in such an endangered state that my main focus would be to revitalise the language first, and then once that’s stronger perhaps looking at dialects. (Kaiwhakauru 3)

It was also expressed by participants that they would like to see individual iwi initiate and engage with created reo resources for their own dialects.

Ko te whakahaumanutanga me te tukunga o te reo Māori: Māori language revitalisation and transmission

Revitalisation, as outlined by the participants, means a number of things such as bringing a language to a point where it is living and sustained, establishing it as an everyday

language and that it is important a critical percentage of the population need to be speaking the language.

Language revitalisation is an act by the peoples of that particular language who have a foresight in the future that the language is going to die. Language revitalisation is all about the actual word...the word revitalise, it's not to say it's dead, to revitalise it, to renew, to give it birth in new arenas...it's all about finding other avenues where our reo can walk. (Kaiwhakauru 2)

It's maintenance of the language more than revitalisation, but also with a lot of indigenous languages it's a matter of revitalising it. Recapturing what's been lost. Developing really fluent speakers. (Kaiwhakauru 1)

Revitalisation efforts were also highlighted as important for not only Māori but other indigenous cultures:

Other cultures look to us as being at the vanguard of language revitalisation, trying to save a language from extinction. (Kaiwhakauru 6)

One participant discussed how connected to the language is tikanga, culture and histories and Māori language revitalisation is not just about keeping the words alive, but also about revitalising community and culture:

I am extremely fortunate to have reo, knowing that my mother was deprived of that by her parents for fear that she was going to be treated as they were. A lot of them became really disconnected from everything, so revitalising that language is also revitalising their connections to who they are and where they're from so it's not just about a language but it's revitalising a people I guess. (Kaiwhakauru 3)

It's interesting to note that three of the six participants mentioned that an indicator that the language has reached a safety level was when it is spoken at the shops or supermarkets, a common everyday language in a normal public setting. Kaiwhakauru 2 expressed that some of the indicators that will reveal the language has reached a safe existence is when the street signs are solely in Māori, when Māori is the medium of instruction in all NZ schools, when you hear children speaking it at the shops.

Ka mutu ehake i te mea he tamariki Māori anake, he tamariki Pākehā, Hainamana, Hapanihi. Ko te reo Māori tō rātou reo tuatahi. Ki reira kitea ai e tātou te oranga o te reo Māori. (Kaiwhakauru 2)

[That is, not to say the children are only Māori, but all ethnicities. When Māori is their first language, that's when we'll see the language is alive and safe.]

This view is supported by Kaiwhakauru 3:

... the dream is that te reo Māori will one day become the first language or the main language for most of us as Māori and I guess any initiatives that are working towards that goal have to be good.

Immersion education was also another theme frequently spoken of:

Kōhanga changed the linguistic landscape forever. It meant that kids were being totally immersed in the reo where English was forbidden. That's very very powerful...it remains a very powerful and potent force. (Kaiwhakauru 6)

The advantage of immersion education, ensuring that people are communicating in the language. (Kaiwhakauru 1)

Kaiwhakauru 1 outlined how a lot of the language has been lost as a result of not using Māori as the medium of teaching in the education system, and certain language genre such as mathematics did not develop. Speaking from personal experience as a previous student of immersion education, Kaiwhakauru 3 outlined:

I'm a strong advocate for Kōhanga and for immersion education in all its forms, because I firmly believe...it's one thing to be able to speak the language fluently, but to actually think in that language as well, which is a problem for many of us.

Although an advocate for immersion education, Kaiwhakauru 3 discussed intergenerational transmission as important, stating:

...nothing beats speaking it in the home...If there was a parent, or a grandparent in the home who only spoke Māori to the kids. But that's a dream for most at the moment, so next best thing, immersion education.

The 'dream' and importance of language transmission from generation to generation was highlighted and supported by Kaiwhakauru 2 who describes the 'luxury' of intergenerational transmission as 'almost gone':

In order to protect the language, and I'm not being rude or anything, but we needa [sic] make more babies, and teach them te reo.

In discussing what needs to happen for the language to reach these safety levels, participants had various and numerous responses, outlining the language is not safe and Māori need to be vigilant in their pursuit of revitalising the language and also maintaining

the quality. This includes the need for Māori to occupy and populate digital spaces such as the Internet, with resources to control the flow of information, noting there are ways to restrict and manage access to sensitive information and combat misappropriation of information.

A challenge to those of us who can speak [is] that maybe it's time to sit down and start considering this avenue as something that we need to sort of focus on and tautoko [*support*]. (Kaiwhakauru 3)

This is supported by Kaiwhakauru 4 who discusses the Māori world view is maintained inherently in the way Māori do things, and that allows Māori to navigate certain spaces, “whether it's a physical marae atea [*courtyard, public forum – open area in front of the meeting house where formal welcomes to visitors take place and issues are debated*] space, or that m-learning space” outlining:

With m-learning we can now control the flow of traffic in and out of our whare...but attached to that we have our own tikanga that allow easy flow.

Kaiwhakauru 4 expressed that even though a certain level of protest should be maintained, Māori need to ‘stop moaning, provide solutions, do something about it’. Namely encouraging Māori and iwi to create digital resources whether language culture or history. Māori creating their own resources can be viewed as exercising the value of kaitiakitanga:

...We still need to be keepers, kaitiaki of our languages and tikanga and the information that is being put up in those digital spaces like through m-learning because its not something physical now. We're not at the marae but we still retain that role of being kaitiaki of our tikanga no matter which arena it is. (Kaiwhakauru 4)

Participants also highlighted the role non-Māori can have too, so long as they're devoted, they are doing it for the right reasons and have love for the language, they can make a valuable contribution to Māori language revitalisation.

Me aroha te tangata ki tōna reo. (Kaiwhakauru 3)
[*The person should have love for their language*]

People need to love the language for it to grow. This is expressed as a key component towards its survival and Kaiwhakauru 3 explained that when developing the Māori language in beginners:

At the same time what we're really trying to do is instil in them this real love for the language, because only then will they continue to strive for it in the future. So whether m-learning can help foster that aroha for the reo..?

Another important aspect is attitudes and apathy toward the language. As outlined by one participant, attitudes towards things Māori need to change and be themselves revitalised, and that the Māori language is one of those matters that needs to be valued by all. Kaiwhakauru 6 discussed how attitudes towards the language have changed. This participant spoke from personal experience, who as an advocate and activist for the Māori language was physically abused when trying to get the petition around for Māori language in schools in the 70s. “Trying to get this concept through to governments, National and Labour was like pushing the proverbial uphill”. Forty years later this participant expressed their shock and disbelief that a National Party minister, Minister of Trade, Tim Grosser, announced that it was his personal view, that all children in primary schools should learn the Māori language. Even attitudes of Māori towards the language need to change, and the struggle of past activists understood. Kaiwhakauru 2 stated “We’re really lazy” in terms of the current generations having it handed to them on a plate and growing up not fully understanding the fight and struggle that the likes of Sir Apirana Ngata, Sir Peter Buck and Te Rangihau went through “...we only read about it and therefore it’s not as important to us.”

Pictured on the following page is a symbol of love from the Whānau-a-Pokai for Sir Apirana Turupa Ngata in acknowledgement of his contribution and significance to the Māori people.



Photograph 2: A symbol of love from the Whānau-a-Pokai for Sir Apirana Turupa Ngata.

Kua hinga koe te totara whakaruru o te iwi, te Kai-Hautu o te Waka o te Iwi Maori”
You have fallen, the totara tree of shelter of the tribe, the leader of the Māori people.

Wāhi: Photograph taken in Pohatu, the wharekai of Tikapa marae. Sir Apirana Ngata has affiliations to Waiomatatini Marae (see photograph 3, p.109), which is a neighbouring marae of Tikapa Marae.

When discussing a time of struggle experienced whilst trying to establish a presence on the ubiquitous technology of television, Kaiwhakauru 6 discussed the resistance to the advancement of the Māori language by merging of technology and reo, namely television:

...The massive resistance on the part of the technocrats within TV trying to block every effort for Māori trying to advance the reo. Because there was a resistance also to the reo and the bringing together of both technology and the reo. Because we knew how powerful and persuasive and pervasive television could be and it was a way we could reach all of our people all in one hit.

The importance of becoming involved in and utilising the most powerful technology of the time for the survival of the language was further discussed by Kaiwhakauru 6 before M-learning technologies were identified by the participant as the new and emerging technologies.

Ko te wāhi o te m-learning: *M-learning's role in Māori language transmission and revitalisation*

Benefits of m-learning as a mode of learning as outlined by participants included:

- ❖ Accessibility
- ❖ Advantages over print media such as the ability to include different media such as graphics, voice recordings, video, no restrictions on font size, resources can be amended or updated instantly,
- ❖ It's timely
- ❖ It appeals to the generations of now

All participants mentioned the word 'tool' noting m-learning as but one tool for accessing, learning, supporting the language, complementing face to face teaching keeping whānau connected, and:

It'll be a vehicle in which to carry the generation of today to the whare of learning te reo...it would be one of the vehicles of ensuring the transmission. (Kaiwhakauru 2)

...this kind of technology will be essential, important and could be dynamic and revolutionary in the rejuvenation of the reo. (Kaiwhakauru 6)

As a tool it can also facilitate relationships building and maintenance. Relationships were highlighted as important for language learning, and m-learning that facilitates interaction and whanaungatanga between users and learners could create a cohesive cohort of speakers who utilise these technologies.

[M-learning] could have very positive effects for the transmission of language because the minute you have you know, there's strength in numbers. (Kaiwhakauru 3)

The importance of wānanga (*a forum for discussion*) facilitated at tribal bases was highlighted as important for the language and its speakers. However, the 'reality' is that most Māori live outside of their tribal boundaries. The potential m-learning and its technologies have for facilitating whakawhanaungatanga and maintaining connections between home, the language and whānau was a key theme that emerged. It was highlighted that it can reach those who live away from Aotearoa, who are isolated and don't have access to communities with language speakers. In relation to setting up websites and digital resources for those living away from home Kaiwhakauru 4 expressed:

... you could almost say there's this emerging new form of ahi kā [*keeping the home fires burning*]. The ahi [*fire*] is spreading and is gaining strength. The fire is gaining strength by people staying connected to home through the use of digital technology.

Participants discussed m-learning as a tool that can:

...ignite that hiahia [*desire*] to learn. (Kaiwhakauru 3)

...give you tools, definitely give you a kick-start. It'll put you in the right step...(Kaiwhakauru 2)

Participants were asked how they felt about the statement "A spoken language is a living language, and therefore how might m-learning facilitate or jeopardise the spoken transmission?" The participants expressed that as long as the strength is in the oral transmission, and the quality is high, m-learning will serve as a complementary tool for reinforcement and learning of the language; it shouldn't jeopardise it as a spoken language. The importance of the language being spoken was then reinforced.

E ora ai te reo me kōrero. The language needs to be spoken for it to be alive. The challenge for m-learning is to create resources where it still facilitates that interaction, ā-waha nei [*by mouth*]...to find ways that still facilitates and encourages the language to still be spoken. (Kaiwhakauru 3)

There was concern expressed for the restrictive nature of m-learning due to the absence of non-verbal communication that occurs through body language and facial expressions. The importance of maintaining that kanohi ki te kanohi interaction was highlighted as m-learning cannot adequately substitute any of that.

...something that is alive has a mauri, an essence that you can feel. That's why when we're listening to whaikōrero a lot of it is when you're listening to a great speaker ...you hear within the reo itself and that's the mauri. That's the life of the reo and when it comes through a great speaker you sense it completely. (Kaiwhakauru 4)

All six participants referred to listening to the reo being transmitted through these devices by listening to recordings of fluent speakers, many of whom have passed on and had their voices, stories and reo recorded, captured for future generations “and we're grateful for those [recordings]” (Kaiwhakauru 6). There was also apprehension regarding whether one would feel their ancestors' presence or feel the importance of the language through m-learning.

Receptive skills and productive skills were highlighted as important. 'Titiro, whakarongo, kōrero' (*look, listen and speak*) was mentioned by one participant who highlighted that in order to speak, you must first refine your listening skills:

...Building off the concept of Wharehuia, taking it away from the written and speaking it. Putting it to the tongue... so the secret to that is actually to listen. (Kaiwhakauru 6)

Ngā kaupapa hei whakaaro: *Considerations to be made*

The following outlines considerations to be made towards respecting and protecting the language when making an m-learning resource that facilitates Māori language transmission.

High quality language, understanding the history of the language and having the right intention for creating resources, was important highlighted as important.

We need to make sure that the resources are culturally appropriate and that kāore i te takahi i ngā tikanga, kāore i te whakaparahako i ngā āhuatanga o te ao Māori [*Tikanga is not transgressed, and those things Māori are not belittled*]. So there's a bit of responsibility there to ensure that the integrity of the language is maintained and so whether that comes down to being really careful about what we decide to make available on these resources... Keeping in the back of your mind that this is being done for future generations because the survival of our language is not in our hands, it's in the hands of those younger ones who are coming through. (Kaiwhakauru 3)

Tapu and noa were addressed in that the language has different variations of tapu and it also has elements of noa but in its base form is still a mode of communication between people. It is highlighted that when dealing with these sorts of tapu genre, such as karakia, occupying our own digital spaces provides opportunity to safely exchange information. A participant cautiously explains:

There are certain things that are tapu and might offend people because of their values. (Kaiwhakauru 1)

Participant 5 discussed a culturally inappropriate image that was published in a book before outlining how there should have been a process in place to avoid the misappropriation of things Māori. This can be remedied by doing adequate research and having an awareness and respect of things Māori. Another participant expressed that misappropriation, misuse and incorrectness of the language is demeaning; disrespects the “mana of the language” (Kaiwhakauru 4) and can cause Māori to become angry. In relation to the misappropriation of Māori content online, one participant warns:

Online information has to be used with discretion. One has to be a bit critical about it. (Kaiwhakauru 1)

‘Protecting’ the language because it’s a ‘taonga’ was addressed by participants.

It’s vital to protect the language, and by protect I mean revitalise. I mean use it. I mean teach it. I mean keep it alive. I don't mean restrict its use...you know, protect it from other people. We need to protect it in terms of te reo being a taonga. (Kaiwhakauru 4)

He taonga te reo. Āe, Nā reira, me tiaki. (Kaiwhakauru 3)
[*The language is a treasure. Yes. Therefore it needs to be looked after.*]

High quality language was identified as extremely important for protecting and respecting the language.

E ora ai te reo me kōrero. E rangatira ai te reo me kouna. (Kaiwhakauru 3)
[For the language to be alive, it must be spoken, for the language to be respected, it must be of quality.]

This is supported by Kaiwhakauru 6 who outlined this from a different perspective:

If I can stop being a purist, I actually don't mind the kids making mistakes...If they speak Māori. For me, the fact that they are speaking it, kei te kōrero Māori rātou, I'm happy... But you know at a certain level we have to have exemplars of excellence...Kia rere te reo, kia tika te reo. That the language flows but it must be correct.

It was outlined that speakers and resources need to be 'exemplars of excellence' and be of high quality. This includes the importance of having access to recordings of fluent speakers and ensuring the resources are correct and do not perpetuate mistakes for the future generations who will emulate, understand and explore the resources. As a means to avoid poor quality reo resources in the m-learning arena, the conventions and guidelines of Te Taura Whiri i te Reo Māori are suggested as representing a high enough standard. Another participant discussed that quality assurance could be established and enforced by Te Taura Whiri i Te Reo Māori. There could be a similar system to the heart check system where a symbol would indicate if a resource was of high quality. "It would be very much in companies' interests to have that tick" (Kaiwhakauru 5). Tika, to be correct was mentioned frequently and would also be another way of expressing quality. Tika was in reference to using correct language, conducting yourself in a correct manner, acknowledging where your sources are from and being mindful of cultural values and tikanga.

Tikanga was highlighted as an important component in protecting the language:

I think so long as it's carefully crafted, carefully produced, taking into consideration, respecting and acknowledging manaakitanga, manaaki [*support, take care of, protect*], tiaki [*to look after, conserve*], kaitiakitanga. (Kaiwhakauru 2)

Resources are only as valid as the tikanga that they are based on. So if the tikanga is not right then the resource itself is not going to be right and I would

assume, by extension, the language is not going to be right either. It's all about the protection of the mauri of the reo. (Kaiwhakauru 5)

Also explained is that the mauri within the language manifests when it is being used between speakers. This reflects the concept that if the reo is no longer alive, it no longer has a mauri. This was supported by Kaiwhakauru 6 who stated:

He mauri tō te reo. I haumate, i ngoikore te reo, nā te mea te nuinga o tātou, kāre i kōrero i te reo, tata tonu, ka mate te reo. Tata tonu.

[The language has a mauri. It became unhealthy, weak because the majority of us weren't speaking the language. It still remains close to dying.]

Kaiwhakauru 6 then explained that the language is still fragile and if attempts are not made to strengthen it and "if we don't be vigilant about its well being, its mauri, its life essence then we will definitely lose it". This vigilance includes ensuring it is spoken everywhere and strengthening it using these technologies. Mauri, particularly the mauri of the language was considered important by all the participants.

To an extent everything has mauri...Using m-learning to give life to our reo in some respects then perhaps yes it does have mauri because it's a working thing. They'll be working things. They'll be living things. (Kaiwhakauru 3)

Mauri was discussed as being instilled or "i whakatō i te mauri" (Kaiwhakauru 3) One participant explained how you create a mauri when you pour your heart and soul into a resource. It generates mauri within your creation and it sits there and when accessed by someone:

...they will either invoke or stir things up inside them that brings mauri and then they create a different mauri so yes I think m-learning tools will have mauri, it will have different variants of mauri. (Kaiwhakauru 2)

Kaiwhakauru 4 contrasted this view, expressing machines do not have mauri stating:

The medium in which it's presented you know it's just a tool, but doesn't mean you don't have a connection through the reo that's coming from it and the content itself.

Kaiwhakauru 6 disagreed, highlighting that machines have a life-force, because if they cease to work, then the life-force has died. From experience with machinery, Kaiwhakauru 6 signaled that you can't rely on technology.

At the most critical times it breaks down. So the biggest and the most important piece of machinery is the human mind. That is the mauri that we must exercise - we must exercise the mind. We must train the mind to remember.

Another participant highlighted how when the European arrived, the Māori brain was highly developed and could remember things:

...but because we rely on the written word so much, everybody's lost that facility. (Kaiwhakauru 1)

Wharehuia Milroy's grandfather who recited genealogy in the land court for three days was then offered as an example. "I mean that's amazing" (Kaiwhakauru 1). Due to the entrepreneurial nature of Māori, the written word was readily adopted and embraced, and likens this to the acceptance of all new technologies. It was noted, however that there is still an important need for balance. Technologies are useful tools but not the be-all and end-all. "It's a justifiable way of transferring knowledge". (Kaiwhakauru 1)

M-learning was described as not only a tool to transmit language, but as a tool to facilitate learning knowledge. In reference to seeking knowledge Tāne Māhuta, an atua Māori was mentioned.

You know there's Tāne. I piki atu ki te rangi tūhāhā. I kimi i te mātauranga, te rapu i ngā kete o te wānanga [*Tāne climbed to the heavens to search for knowledge, the baskets of tribal lore*] and m-learning can be seen as that same sort of thing. Those that are hungry to learn or are searching for that same sort of knowledge are essentially doing that and m-learning can be a facilitator of that. (Kaiwhakauru 3)

Atua Māori were often referred to.

The reo itself is our hono [*connection*] to atua. Everything we know about our atua, everything we believe about our atua is embedded within te reo Māori. We can't explain these things in te reo Pākehā and so of course there is that element of our atua Māori and anything that we do with the reo and m-learning is nothing different. I believe. (Kaiwhakauru 3)

One participant contextualised these connections through an m-learning lens, discussing how Māori have Treaty rights over the realm and space of Tāwhirimātea [*God of the*

winds who lives in the sky] through our connection of whakapapa to him. That is the airways and radio signals and Wi-fi as the means that facilitates connections through m-learning. Kaiwhakauru 4 then highlighted that Māori can occupy that space through Tāwhirimātea, through Papatūānuku, through hard lines and mentions that Tāwhirimātea again is not only the air but he is also ‘hiko’ (Kaiwhakauru 4) which is *lightening, electricity, power*, which powers m-learning devices.

Tāwhirimātea was also mentioned in the whakataukī ‘E hoki ki tō maunga, kia purea e ngā hau a Tāwhirimātea’ (Kaiwhakauru 4) which loosely translates to ‘*Return home to your mountain so that you may be rejuvenated by the winds of Tāwhirimātea*’. The whakataukī speaks to potential opportunities mobile devices have to establish instant connection between not only people and language, teacher and learner, content and learner but also connections to place of origin. Those connections have the ability to rejuvenate those physically living away from their maunga (*mountain*) or kāinga (*home*).

A common suggestion, if not a ‘must’ prescribed by all the participants was protecting and respecting the language through appropriate and adequate consultation with cultural or language advisors during the development of a resource facilitating the language.

It’s being a little bit cautious and asking the right people if what you are wanting to do is acceptable culturally. (Kaiwhakauru 1)

Acknowledgement and respect from where the stories or the reo derives from. Also being connected to a wealth of repositories of knowledge who could be used as advisors. I would assume that is essential as well. You need to have that care and respect because Māori language can be very fragile as well. Care and respect are the fundamental values. (Kaiwhakauru 2)

This consultation includes practicing kanohi kitea, whanaungatanga, and allowing space for collaboration between creators and those who have the skills in terms of reo would ensure m-learning resources were populated with high quality reo. Highlighted by a participant was the fact that those who do have the reo and would like to create and publish resources in new domains but don’t necessarily have the skills to work with the technology need to ask, consult and collaborate with others who do. In reference to experts in the domain of gaming, Kaiwhakauru 6 outlined:

We have to put ourselves out there amongst them and that’s another world. You know that’s another world, another experience, but you know it just forces you

into other domains, and other realms and other areas that you've never ever thought about.

Also in reference to collaboration, a participant offers the following whakataukī:

Ko koe ki tēnā, ko au ki tēnei kīwai o te kete... *You at that and I at this handle of the basket.* (Kaiwhakauru 1)

This whakataukī is in reference to cooperation, and can be likened to the cooperation needed amongst communities to achieve language revitalisation. To carry a heavy basket, there is the connotation that you both need to be stepping in unison and also of similar stature otherwise it becomes difficult to carry. Through cooperation, different groups, ethnicities or people working together to carry the load more easily.

In relation to intellectual property, concerns were expressed regarding the different tribes of Aotearoa, and their different 'reo' and that there needs to be an awareness that those differences exist, and how you generally wouldn't create resources for a tribal grouping you didn't belong to.

...You know how culture goes, you don't do anyone else's, you know because it's not yours. (Kaiwhakauru 2)

The considerations of the dialect or language you are going to use require some enquiry into a range of issues. Those include but are not limited to; is it tribal specific, has the correct permission been sought and who is the audience? Incorporating different dialects was encouraged by Kaiwhakauru 6 to help avoid 'standardising' the language:

To include as many different dialects, different ways of speaking, to hearing as many different voices as possible. (Kaiwhakauru 6)

Creators should also be mindful of the audience the resource is intended for. (Kaiwhakauru 3)

Like having diversity in species, in nature we also have to have diversity in humanity and that diversity extends to our language. (Kaiwhakauru 6)

As discussed by participants this can include format, engaging imagery, colours, ensuring the resource is user friendly and not displayed poorly and is presented in a culturally appropriate way informed by tikanga. This reflects the view that the resource needs to be anchored in tikanga for it to be viable. Pedagogy was also highlighted in that m-learning

can assist 21st century skills and education should be considered for learners, namely the four ‘Cs’ that are critical thinking, creativity, collaboration and communication (Kaiwhakauru 5).

Participants encouraged utilising new technologies and mobile learning as a facility for the language because it’s inevitable that that is the way the world is heading. This included mention that all students have a cell phone and “that alone means that it’s an untapped but vital tool because they’ve all got one”(Kaiwhakauru 5).

He ao hurihuri tēnei ao, [*this is an evolved world*] and we have a whole new generation of Māori...The world we know is totally different to the world that our ancestors knew... At the end of the day, m-learning’s not going to replace speakers. (Kaiwhakauru 3)

We’ve got to make use of all the tools we possibly can...But realise that not one on its own can do the job; it’s a combination of a lot of things to ensure that the language survives. (Kaiwhakauru 1)

He kōrero whakatepe: *Summary of chapter*

This chapter allowed for the key themes and messages that came out of the kōrero to be highlighted, compared and discussed from the perspectives of the kaiwhakauru. The four major themes addressed were the Māori language, Māori language revitalisation and transmission, m-learning’s role in Māori language transmission and revitalisation and also a section which highlighted the considerations that should be made to protect the language and deliver it responsibly when facilitated on an m-learning platform. The following chapter is an analysis of the findings, which aligns the participants’ responses and ‘voices’ with those expressed in the literature review.

WĀHANGA V

TE TĀTARITANGA

CHAPTER V: ANALYSIS OF FINDINGS

Iti rearea teitei, kahikatea ka taea

*One of the smallest birds in the forest that is said to scale one of the tallest trees
(kahikatea) by hopping from one branch to the next.*

He tīmatanga kōrero: Introduction

An interpretation of the findings is presented here with supporting evidence to situate m-learning within the contexts of Māori language revitalisation and transmission with reference to kaupapa Māori values and whakataukī. As in the previous chapter, the analysis will be presented in four main sections, the Māori language, Māori language revitalisation and transmission, m-learning's role in Māori language transmission and revitalisation and also a section which will highlight the considerations that should be made to protect the language and deliver it responsibly when facilitated on an m-learning platform. The analysis is then followed by a section which highlights kaupapa that emerged that were unanticipated and then reviews them in the context of the research.

As a general overview before the analysis, I believe the interviewees' responses indicate their understanding or reference to m-learning was in fact on a broader scope, referring to m-media, m-devices, e-learning, the Internet, m-technologies and the content they are able to facilitate. The findings therefore suggest that the focus of the participants' responses were directed towards the term 'mobile' in a more general sense as opposed to the specific area of 'mobile learning'.

Te reo Māori: The Māori language

All participants agreed the language is in an unhealthy state and that it holds an important role for Māori. "He taonga te reo matatini ki tōku ao, hei ara rērere ki te ao whānui: The treasure of my world is literacy, a pathway to knowledge and understanding" (Ministry of Education, 2007b, Pp.2-3). This quote reflects the views of the participants, in that they referred to the language as key to understanding things Māori, including that tikanga and language are inseparable and it is through the language that deeper understanding and connections to things Māori occur.

Evolution was a prominent kaupapa, and can be reflected in, ‘E tipu e rea mō ngā rā o tōu ao’ referring to “*Growing forth for the days of your world*”. This is reflective of the natural evolution of language and culture and encouraging adaptation to the current ‘world’. Each generation of language speakers will be speaking a different language from the previous. This evolution can be related to the outer most ring of the concentric circles of a tree as referred to in Chapter 1 (see p. 19). Learning from the values of the ancestors and giving it a contemporary application embracing the technologies of this world. Participants discussed the importance of utilising the most powerful technology of the time, of ‘now’, to hold fast to the language and not be left behind, whilst looking back to the past for guidance. This is relevant to the current position of m-learning as it is becoming more and more ubiquitous. As the literature suggests m-learning is mainstream and expected to grow, it is now, it is timely and it is relevant to today’s generation.

The metaphorical ‘cogs’ and ‘legs of an octopus’ which are referred to as different genre of reo, and avenues for transmission of the language can be likened to the philosophy of the concentric circles of the tree, and the whakataukī ‘He riri tā te tawa uho’. These expressions related not only to the concentric circles and different genre of language and settings, but also in alignment with the literature in regards to the language being spoken in all different social settings. What these metaphorical images highlight is that there are many genre of reo, and there are many different ways to facilitate the transmission of those reo. They are part of the bigger picture. In a holistic view, those different ways of transmitting the language all play a role towards the maintenance and not one on its own is sufficient to bring the language back to health.

The whakataukī ‘Te piko o te māhuri, tērā te tupu o te rākau’ can be related to *the way in which the language is nurtured determines how it will grow*, and can refer to the types of transmission and environments the seed of language is exposed to. This includes the environment of immersion education, which in alignment with Keegan (1996) was identified as playing a key role in nurturing language growth. The benefits of Māori language being the primary language of instruction in school and also the main language used to raise children in the home was highlighted including that it ensures the language is being used, and that Māori language is taken for granted. This highlights yet another ‘cog’ or context in which language transmission can occur. Also reinforced was that there are ‘genre’ within language genre, such as mathematics within the genre of

language of the school. These can all be related back to the discussion regarding the cogs, and the concentric circles (see pages 19 & 72)

Ko te whakahaumanutanga me te tukunga o te reo Māori: *Māori language transmission and revitalisation*

Revitalisation was identified as bringing the language back to strength, giving it new life. The importance of the language was so apparent throughout the literature and feedback, and was continually referenced as a living, spoken language. Language transmitted through generations was identified as normal language transference, and of importance, reinforced by a participant stating that “we need to make more babies and teach them the language”, because it is that home environment, and the nature of intergenerational language transmission that exposes the children to the language and makes the parents the ‘first teachers’ of the language. This can be related to not only extending the corpus of language speakers, but also to the fact of establishing a healthy reo situation within the next generation.

Training new speakers and learning the language in new situations as outlined by Hinton (2003) are important towards saving a language. This was reinforced by the participants who recognised intergenerational transmission as a vital component to regenerate the language. The reality, however is that is a ‘luxury’ because of the breakdown of natural transmission. This now requires people to learn the language in order to transmit it. Therefore, intergenerational, although highlighted as important by participants, was not a prominent theme discussed, but teaching and learning the language was. In this respect participants kept referring to Māori language learning, as opposed to transmission and most responses leaned towards the mobile learning tools as ‘language learning tools’, in contrast to tools that transmit the language. This occurrence can also be somewhat attributed to the choice of words, or articulation of the questions.

Due to this climate of language learners and speakers, refamiliarisation was a strong notion in the feedback. The participants spoke about ‘revitalising a people’ and their connections to the language reflects that of De Korne (2009) who speaks about refamiliarisation, and also that of Selby (1999) who outlined how the effects for defying the ban of te reo had far reaching effects that still affect generations of today. It was evident that the continued transmission of the language requires many Māori to ‘refamiliarise’ themselves or learn the language.

It was mentioned by three participants that hearing the language spoken at the shops would indicate the language had reached a healthy state of existence. Hearing the language spoken in common places such as the shops would mean ‘normalisation’ had occurred and the language was deemed ‘unremarkable.’

Ko te wāhi o te m-learning: *M-learning’s role in Māori language transmission and revitalisation*

M-learning’s role as a valuable ‘tool’ can supplement Māori language learning and transmission and has various potential roles in the promotion of the language and creating connections. For example, the overt or direct promotion of language use as outlined by Cormack (2007) as one of the ways in which television might affect the behaviours of users can be likened to participants’ feedback regarding m-learning technologies as tools to ‘ignite the desire’ to learn and kick-start one’s journey towards learning. Attitudes and apathy towards the language were identified as key determinants for the health of the language. This relates to ‘marketing’ the language to attract potential ‘consumers’ by promoting a positive status or image. This also supports the study conducted by de Bonnaire, Falloon & Taylor, (2008) where the participants identified technologies can stimulate interest and raise the profile of the language.

Some facilities of mobile learning such as applications, e-books and text messaging were referenced however the most prominent suggestion was providing access to listen to fluent speakers who have been recorded speaking the language. It was also acknowledged that m-learning could play an important role in facilitating receptive and productive skills for language learning and could encouraging face to face communication.

The potential expansion of social inclusion and interaction relates to the connections between user and content, learner and teacher and between speakers. This also encapsulates the values of whanaungatanga and the process of ‘Kia purea e ngā hau a Tāwhirimātea – to be rejuvenated by the winds of Tāwhirimātea’. Those connections through m-learning were viewed as a temporary substitute, or a supplementary source of communicating the language until kanohi ki te kanohi interactions and learning environments arise. The participants outlined however that m-learning technologies and resources are just tools, and cannot replace a speaker or a teacher. This supports the view of Chinnery (2006) who outlines that “technologies, mobile or otherwise, can be

instrumental in language instruction” (p.9) however are instructional tools rather than instructors.

The importance of the reo being spoken was addressed by all participants. A participant referenced Dr. Wharehuia Milroy’s concept (see page 81) which is outlined below in the opening lines⁶ of a ngeri (*a type of haka with no set movements and usually performed without weapons*) written by Tīmoti Kāretu:

“Kī mai nei a Te Wharehuia, ‘Whakahokia mai! Whakahokia mai
Mai i te mata o te pene ki te mata o te arero
Kei noho kau noa hei reo mō te pepa, te pene
Tē titi kē ai ki te poho, ki te ngākau aroha...

*Dr Milroy has issued the dictum,’ Return the language to its rightful position
From the tip of the pen to the tip of the tongue
Lest it remain a language destined solely for pen and paper
Rather than finding its niche in the hearts and soul of all us all...”* (Kāretu, 2012, p. 5)

This warns against merely documenting the language, and writing it down. Instead it is about encouraging a spoken language. This also supports the discussion that the Māori mind is a tool which we should exercise. “Memory is still the most important vessel for the survival of Māori culture and traditions” (Ka’ai-Māhuta, 2012, p.28). Face to face ‘kōrero’ (*speaking*) was highlighted as important by the participants, and as suggested by the findings of the study conducted by de Bonnaire, Falloon & Taylor (2008) there is concern kanohi ki te kanohi interactions would be replaced by technology. As outlined by participants, however, m-learning and resources will never replace speakers. One participant expressed that they don’t mind hearing the language being spoken incorrectly by children, that it is still important that it is being spoken and they can refer to exemplars later on in life. This is contrasted by Dr. Tīmoti Kāretu who admits being labelled a ‘language purist,’ who states: “I see no point in exposing people to blatantly incorrect usage which someone else has to correct at a later stage in the acquisition process. It does nothing for the mana, the ethos of the language...” (Kāretu, 2012, p.6). This supports the common theme that language resources should be ‘tika’ or correct. Ko te reo kia tika – *Let the language be correct.*

Also considered ‘tika’ was that research and consultation during the development stages of creating a Māori language resource is necessary, and that includes the

⁶ See Appendix A for full ngeri

way in which one conducts oneself when interacting with others during the development of such a resource. This includes expressing aroha, manaakitanga and the value of kanohe kitea, being there in person. Also highlighted was the fact that it is necessary when creating resources that facilitate the language to network or whakawhanaunga (*to have a relationship, get together, get to know one another*) with cultural advisors and repositories of knowledge. These practices based on tikanga are deemed 'tika' and conducting research and accessing those repositories of knowledge serves to protect the language, culture and knowledge.

Ngā kaupapa hei whakaaro: *Considerations to be made*

The following discusses considerations to be made to respect and protect the language when making an m-learning resource that facilitates Māori language transmission.

It was a common theme that Māori speakers need to be vigilant by speaking the language everywhere and occupying our own digital spaces which provides opportunity to safely exchange information. These practices can relate to Māori exercising rangatiratanga and taking responsibility as kaitiaki for their taonga. This was also targeted at tribes to create their own resources and be kaitiaki for their own language, dialect, history and content. This supports the findings of de Bonnaire, Falloon & Taylor (2008) which encourage iwi to take responsibility for their own language. This also fits into the philosophy of 'Kei hea taku manatawa, taku manapou' as the encouragement for Māori to be vigilant and encourages contribution towards language revitalisation.

Dialects as a key theme emerged in the findings, especially to draw attention to the fact that those differences exist and must be considered. This highlights the consideration that there are different tribal groupings, and with each is a dialect that needs consideration. If creating a resource that facilitates a particular dialect the correct permissions from specific tribal groupings must be sought thus respecting the 'rangatiratanga' of that particular grouping.

The dialects likened to 'species' fits within the philosophy of 'Ka koekoe te kōkō...' in that each dialect is unique and important, and the species were also expressed to convey different human characteristics. As addressed by participants, when creating a resource that facilitates the Māori language, these differences should be taken into account. It

was also noted that the majority of the receivers would be second language learners as that is the reality of the current Māori language situation. Affordances such as layout, design and colour were identified as important considerations for reaching the target audience, and being culturally appropriate. This would involve conducting research to discover what is appropriate for a particular target audience.

High quality and correct Māori language was a kaupapa addressed as of high importance when creating resources that facilitate the language, not only on m-learning but in all respects. This can be likened to the philosophy of creating a resource that stands as a 'rākau taumatua', that has value and stands as an 'exemplar of excellence', of language and quality. Producing high quality language resources was considered 'protecting and respecting' the mauri and the mana of the language. It was also highlighted that in order to protect the mauri of the language it must be spoken all the time.

There was a general consensus that the language has a mauri and a mana, and that 'protecting' the language means protecting these elements within the language. Not all the participants, however, agreed that a machine facilitating the language had mauri, but rather that the resources created have a sort of mauri instilled within them by their creator(s), and when accessed and a connection is made to that resource by its user, a new type of mauri may be generated. This is contrasted by the kōrero that the mauri of the language only manifests between speakers of the language, and cannot be manifest through interaction with a machine. It is from this perspective that reinforces the language must be spoken, lest the mauri becomes weak or dies.

The kōrero around tapu, noa and mauri were all in support of what the literature tells us. It should be noted that a lot of comments were made regarding the misappropriation or representation of tapu material, noting that if tikanga is respected and observed then the integrity of the language and culture will remain intact. Wairua, was not mentioned directly, however relevant metaphysical concepts and reference to the spiritual realm, such as atua Māori were discussed. This included the physical and spiritual connection Māori have to the land. The belief that language, land and family are the three 'fundamental ingredients' of what it means to be Māori and "are sustained and linked by the essential beliefs and wairua which underpin the culture" (Jackson, 1988, p. 90) was reinforced through discussion regarding the atua Māori; especially the realm of Tāwhirimātea and the reference of returning to ones mountain, home and family.

The language was not only frequently referred to as being a taonga but the passion in which some of the participants expressed their thoughts and feelings regarding the language made it very apparent how special it is for their identity and wellbeing.

He kaupapa atu anō: *Other findings and a review*

The following paragraphs review other kaupapa or themes that emerged and their relationship to the research.

21st Century Learning

The ‘four Cs of 21st century learning’ were mentioned by a participant as a key consideration for creating m-learning resources. Those four Cs are:

1. Communication
 2. Collaboration
 3. Creativity and innovation
 4. Critical thinking and problem solving
- (Partnership for 21st Century Skills, 2011b).

These are important considerations for the 21st century learner and are discussed in depth in the following chapter.

Standardisation of reo

Dialects were anticipated as an important component for the research however the fear of the language becoming standardised was not. The process of standardisation or of ‘simplification’ is often at the expense of dialectal differences, and we start to see “a limiting of those aspects [of] language usually associated with dialect-like proverbs and idiom” (O’ Regan, 2012, p. 30). This is encouraging once more for iwi to take responsibility of their unique tongue.

Tahuna te ahi: *Igniting the fire*

One theme that emerged was the ‘transformation’ that one might experience through acquiring te reo Māori. As mentioned in the preface to the thesis, learning te reo Māori for me was one of enlightenment, and that it is a wawata (*desire*) of mine to instil this passion into others so they too may share in the enlightenment experienced through the Māori language.

King (2009) states:

Second-language adult speakers of Māori form the large bulk of proficient speakers of the language. The engagement these adults have with the Māori language is motivated by a strongly-held worldview centered on personal transformation which enables them to engage with and maintain a relationship with the Māori language. (p.97)

King's research that explores the personal transformation that one might experience through acquiring the reo included the following statement as expressed by a participant:

Āe, i whakatō i te kākano. I tahuna te ahi. Kei te kirikā tonu te ahi. Āe, te ahi kā roa, me kī, mō te reo.

Yes, the seed was planted. The fire was lit. The fire is still burning. Yes, it's a long burning fire, let's say, for the language. (p.101)

This expression features the metaphor of both the seed and growth, and the ignition of a fire in relation to stirring the passion, or igniting the passion in someone to want to speak the language. This concept of encouraging growth or ignition of the language was highlighted by more than one of the participants in the research. Kaiwhakauru 4 spoke of the cultural concept 'ahi kā'. Ahi kā means to keep the home fires burning, and it is related to the role m-learning could have in sparking the fire within someone, to make them interested in the language. This can also be related back to the appropriate 'advertising' of the language to encourage others to learn it. Kaiwhakauru 3 explains how if an individual doesn't have that real desire for the language, their language won't grow, and that the role of a Māori language teacher is not only to teach the language, but is also to ignite the fire and instil within the learners a real love for the language. Hana O'Regan, in reference to saving the Māori language stated "The biggest challenge we have is the apathy of the people" (H. O'Regan, personal communication, Sep 12, 2012) and how "When you ask them, generally the response is they want their tribe to speak the language, but they don't do anything about it" (H. O'Regan, personal communication, Sep 12, 2012). On this note she expressed that we need to spark the interest, that is, ignite the fire. If m-learning resources are used as status-raising or advocacy tools then their role in igniting the fire can make a significant contribution towards the revitalisation of the language. As each speaker plays a significant role in the "ultimate success or otherwise of revitalisation efforts" (King, 2009), each new speaker interested in the language is a significant step towards a healthier state for the language.

Knowledge, knowing or having awareness and understanding emerged as an unanticipated kaupapa. Knowledge is power. “This might be expressed in Maori by saying that it is a taonga - a treasured possession, not to be passed on lightly” (Patterson, 1992, p. 31). Michael King (1978a as cited in Patterson, 1992, pp.30-31) discusses that knowledge was regarded as having a mauri of its own, “and as capable of contributing to the life force of the person who absorbed it (p.12)” This particularly applied to the knowledge of ritual and whakapapa, which is considered tapu and should be treated as such. “When you pass on tapu information, you thereby shed part of your mauri” (Rangihau, 1977, p.12 as cited in Patterson, 1992, p. 31). In discussing Māori values and attitudes towards knowledge, Graham Smith (1992) highlights how:

...in a Maori world view, knowledge is often perceived as belonging to the group; individuals are only repositories of knowledge in so far as to benefit the whole group; knowledge ought to be shared; individuals have a responsibility to use knowledge to benefit others...

Knowledge has power, especially if there are tapu elements within that knowledge. This is a reminder to the value of kaitiakitanga, and that knowledge, language and culture must be protected and looked after for the future generations.

Ngā kete wānanga or ngā kete mātauranga *the baskets of knowledge* were also mentioned. Creative narratives inform Māori that Tāne-nui-te-rangi, (*Tāne who ascended the heavens: an atua Māori*), in his quest for knowledge was gifted three baskets of knowledge, which represent the origins of mātauranga in the physical world (Pihama, Smith, Taki, & Lee, 2004).

The baskets were called Te Kete Tuatea, which contained knowledge of makutu or evil, Te Kete Tuauri that contained the knowledge of ritual, memory and karakia and Te Kete Aronui that held all the knowledge that could help human kind. (Edwards, 2009, p.222).

The kōrero of this creation narrative relates to the presented research in several ways. Firstly, searching for knowledge is not new for Māori but according to creative narratives has been practiced since before the creation of humans. Secondly, Kete

Aronui is often referred to as the basket of technology, those tools that can be used to assist humankind, tools such as m-learning technologies and ‘ngā rākau a te Pākehā’.

Last but not least, Tāne-nui-a-Rangi, who has many different names, is also Tāne-Māhuta who governs the forest and all who dwell within, namely the trees and the birds. He is personified as a tree and therefore is a significant atua to this research topic and the kōrero regarding the growth of trees and the birds that feast on the fruits.

Walking backwards into the future

Walking backwards into the future was an unanticipated and important kaupapa for Māori language development, as reinforced by Anaru (2011):

Looking into the past for guidance into the future is by no means a new notion for Māori, but rather, part of a Māori context that encourages and embraces aspects of its past that allows the Māori language and culture to thrive into the future. (p.42)

For those who desire to create m-learning resources for Māori language transmission, walking backwards into the future can refer to researching the language’s history and origins. This includes having an awareness of the struggles and achievements of activists to secure a safer future for the language and understanding what has worked in the past that may be applicable to this era and the tech savvy generation of 21st century learners.

Kāinga

Kāinga, or *home* was a major theme that presented itself, and within this theme were four major concepts. They are ahi kā, hoki ki tō maunga, whanaungatanga and wānanga. Ahi kā defined as “burning fires of occupation” (Moorfield, 2013a) refers to those who stay and maintain the wā kāinga (*home base*) and keep the fires burning. Responsibilities include looking after the marae, and with the demands of today’s world, many Māori do not live at home anymore. Therefore those outside the rohe (*district*) are denied the rights of ahi kā. One participant highlighted a new emerging type of ahi kā, which may manifest through m-learning where the source of the fire is at the home base. For example, an iwi made resource ignited at the kāinga can spread the ahi or fire through the connections the resource facilitates. There is potential to share the responsibilities of ahi kā with those living away from their kāinga by establishing and cementing relationships between them, their language and their wā kāinga, like in the

whakataukī: Hoki ki ō maunga, kia purea e te hau a Tāwhirimātea. Nostalgia, diaspora and urbanisation leave many Māori feeling empty, and returning home to where their mountain is, the remedy. M-learning can therefore keep those who have moved away from home connected to their language, their ancestors and their people through and provide opportunities to relieve the longing for home, to be rejuvenated by the familiar presence of what it means to be home. Wānanga (*forum for discussion*), especially iwi based wānanga were mentioned by more than one participant as a necessity for the language, for listening and interacting in the language.

Whare

Whare (*house*) was referred to in a number of contexts by participants and can be used metaphorically to capture the essence of both ‘kāinga’ and ‘walking backwards into the future’. The whare of learning or the whare of m-learning represent those ‘spaces’ that Māori should occupy, and through tikanga Māori, Māori can control the flow of information in and out of the whare. The wharenui (*meeting house*) was a traditional context in which teaching would take place. M-learning can serve as a space to create a new whare, as outlined by a participant who refers to the meaning of a kupu tongi (*prophetic saying by a charismatic leader - Tainui⁷ dialect*) (Moorfield, 2013f) from King Tāwhiao, the 2nd Māori king:

Māku anō e hanga i tōku nei whare. Ko te tāhuhu he hīnau ko ngā poupou he māhoe, patatē. Me whakatupu ki te hua o te rengarenga, me whakapakari ki te hua o te kawariki.

I shall build my house. The ridge-pole will be of hīnau and the supporting posts of māhoe and patatē. Raise the people with the fruit of the rengarenga, strengthened [sic] them with the fruits of the kawariki.

The first line refers to how we are our own destiny and we create our own things. We build our own whare and “its all about creating new things and not being afraid to use new things” whilst remembering your past. M-learning represents building your own whare of learning “but never forgetting the poupou inside” (Kaiwhakauru 3). Those poupou (*carved wall figures*) inside represent ancestors, and the knowledge they hold.

⁷ Crew of this canoe from Hawaiki are claimed as ancestors by tribes of the Waikato, King Country and Tauranga area



Photograph 3: Ko tōku kuia e tirotiro ana ki te kōrero a te pātū.
(My Nana absorbing the knowledge held with the walls of the wharenui.)

Wāhi: Ko Waiomatatini te marae nei. Ko Porourangi te whare tipuna.
(Location: Waiomatatini marae. Porourangi meeting house.)

‘Me whakapakari ki te hua o te rengarenga’ means:

We should learn from trials and tribulations of our efforts, so, through thick and thin we should learn. So we should lavish the sweetness that comes from it and also we should learn from the sourness that we get from it, from our mistakes. (2).

It is interesting that whare kept appearing throughout the kōrero, as they were traditionally made of rākau (*wood* or *trees*), children of Tāne-Māhuta and constructed with the knowledge and tools of the three kete mātauranga.

The m-learning environment can be likened to a wharenui, a meeting house which is a repository of knowledge, timeless and spaceless knowledge, because the values within are not time specific. With the expansion of m-learning technologies and capabilities the information also becomes timeless.

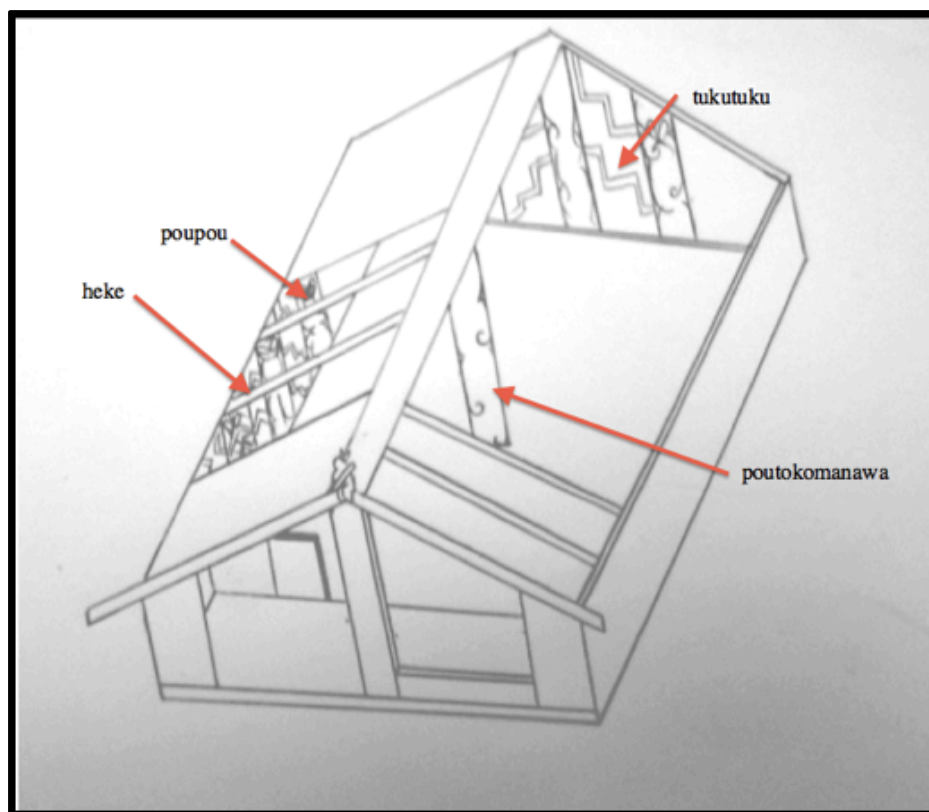


Figure 2: Ngā wāhanga o te wharenui: *The parts of the wharenui.*

Each part of the whare is analogous of the aspects of m-learning. The pou or *carved figures* can represent the people who helped make the resource, they are the ancestors, the walls and tukutuku panels represent the content, the spiritual realm and Ranginui can be likened to cloud storage systems (e.g. Skydrive, iCloud) that store digital

information online. The information is then transmitted down through the heke (*rafters*) to the poupou, *the ancestors*. What this also means is that because the environment of m-learning has created a new whare, it is accessible to those who can not return home to their ahi kā, and do not have opportunities to learn the language from their home. M-learning provides an accessible method of delivering content, information and transmitting the language. The take, or *purpose* of the wharenui is not only to house the people, but it represents home, and the histories of home are captured in the carvings, the tukutuku panels and the kōwhaiwhai patterns. It is a place that brings people together and m-learning represents a new whare of learning. If this whare is built on a solid foundation namely tikanga Māori principles, it will play an important role in the survival of the Māori language.

He kōrero whakatepe: *Chapter summary*

There was a general consensus amongst participants that m-learning will provide a useful and valuable tool or avenue to supplement any transmission or learning of the Māori language. Another prominent theme was that tikanga, language, and the values within are all intertwined as part of the Māori-world view and therefore need to be considered when creating not only m-learning resources, but any resources that facilitate any of these kaupapa.

Interestingly, most participants highlighted that if anything, these m-learning resources provide opportunities for speakers or potential speakers, namely Māori, to stay connected to ‘home’ and the ‘language’ until they are able to access Māori language speaking communities and face to face learning opportunities. Learning the language was a key theme; with the reality being that the natural transmission is a ‘luxury’ or a ‘dream’ and for most, transmitting the language requires learning the language.

As kaitiaki, Māori need to be vigilant and take a proactive stance towards language revitalisation, using all the available means to do so but with respect and acknowledgement to those considerations as outlined. There must be aroha and desire to learn and transmit the language and therefore positive attitudes and active contribution towards revitalisation efforts are essential for the language’s future.

“M-learning will definitely give you the tools, but then again it’s still up to the people or the persons, who learn, to transmit that knowledge and to use it, practice it. Bring it from a digital repository into practice” (Kaiwhakauru 2).

WĀHANGA VI

HE KŌRERO WHAKATEPE

REFLECTION & INTERPRETATION

He rākau taumatua, he huihuinga manu

The birds flocked there because of the sweetness of the tree's fruits and nectar

He kōrero tīmatanga: *Introduction*

The aims of the study were to situate mobile-learning within the contexts of Māori language revitalisation and Māori language transmission with reference to kaupapa Māori values and whakataukī. The purpose was to assess m-learning's role in the facilitation of Māori language transmission and revitalisation and also to highlight the considerations that should be made to protect the language and deliver it responsibly when facilitated on an m-learning platform.

The whakataukī selected for this chapter speaks of the richness and sustenance that a person adorned with proficient language skills and experience has. This metaphor is also likened to any Māori language resource that is produced. It should have esteemed language, correct and authentic, grounded in tikanga Māori and offer 'fruits' to those birds that come to feast on the value provided within the resource. It is also hoped that the 'fruits' this research has to offer are of interest to Māori, other indigenous communities and other relevant communities. The concluding remarks summarise the findings by listing the main results, discussing the limitations of the study, some possible areas for further research and any recommendations, as well as the researcher's own interpretation of what must be considered or observed for an m-learning resource to become a 'rākau taumatua' in its own right. It is hoped the 'fruits' are beneficial and of value for the Māori language, culture and development, all who were involved in bringing this project into fruition and in turn contribute to the knowledge base that is Kaupapa Māori.

He whakarāpopototanga: *Summary of results*

A general consensus amongst participants was that the language is a taonga and must be treated as such. It should be protected and treated respectfully and that includes protecting the mauri and the mana of the language. It was also highlighted that the

language is alive; it grows, changes and is constantly evolving. “Ko te reo kia tika, ko te reo kia rere, ko te reo kia ora”. The language needs to be correct, the language needs to be flowing or used, and it needs to be alive and sustained. This saying encapsulates a lot of the discussion expressing that the language needs to be correct and of high quality and needs to be spoken and used. ‘Knowledge’, ‘culture’ and ‘tikanga’ were frequently referred when discussing transmitting the language, which highlighted the intertwining relationship these have with one another.

Those wanting to create resources to facilitate Māori language transmission need to be aware of the responsibilities and be culturally responsible and appropriate. This includes having an understanding that there are certain things that maybe are not meant for mobile devices. e.g. tapu material. Communication, consultation and collaboration with appropriate advisors to inform the development of the resource is essential.

Revitalisation efforts including the creation of resources need to be relevant to ‘now’, that is the current generation and utilising the emerging technologies and what is relevant for this time. The fact that m-learning devices are appealing to the current generations can be viewed as a marketing tool to create spaces to present the language in a positive light. The presented research tells us that mobile learning and associated technologies are valued highly as a ‘tool’ to aid in the transmission and revitalisation of the language. The main points expressed in relation to m-learning’s role were how m-learning can be utilised to:

- ❖ Facilitate connections through whanaungatanga through the resources, especially in providing accessibility where there is a lack of access to native speakers or speaking communities, for example, keeping whānau overseas connected.
- ❖ Attract and ‘ignite’ the desire to learn and transmit the language
- ❖ Instil aroha for the language
- ❖ Support and embellish any learning and transmission already in place
- ❖ Incorporate productive and receptive skills that model normal modes of communication and encourage a spoken language
- ❖ Complement, supplement or facilitate kanohi ki te kanohi interaction

These key roles that m-learning can play in language maintenance and revitalisation could be of interest to the Ministry of Education, Te Taura Whiri i te reo Māori and also Te Māngai Pāho, who may use these findings to inform public policy or funding allocations and opportunities towards resources that facilitate not only language content but also the potential opportunities that m-learning technologies can offer for the

language as outlined above. Another recommendation would be that a system that maintains quality control and assurance for Māori language resources available in the m-learning arena be considered, as a way to identify and signal to users their quality and also to encourage creators to produce high standard resources.

Another key finding was that Māori, collectively and tribally need to be vigilant and proactive towards sustaining a healthier future for the Māori language, and therefore these opportunities and recommendations can also inform and guide Māori and iwi in their pursuit of strengthening the language through such resources.

Ngā wero: *Limitations and implications*

The topics considered are as follows: sample, a reflection of the methodologies, decision to write in English and also possible areas for future research.

Sample

Only six interviews were conducted, and participants were selected using the method of purposive sampling. An understanding the processes involved when researching within a kaupapa Māori context is that it is entirely appropriate to respect boundaries around knowledge. This may include targeting specific people to the exclusion of others, as exercised when using purposive sampling. Furthermore, this could also be acceptable in qualitative research method terms in focusing on the collection of quality kōrero, rather than the quantity. There must also be an acknowledgement that the Māori speaking community is a very small, and although the participants were all willing to be known in the research, anonymity could have been an issue if this wasn't the case.

Of these participants, 2 were female. Although all were familiar with m-learning technologies, none of them were experts in the area. Also, none of these participants were who I would consider kuia (*elderly women*) or koroua (*elderly men*). This was a recommendation from one of the participants, that I conduct interviews with kaumātua (*elderly people*) to gain insight into their views of mobile learning from their perspective. It was suggested that these views would offer a more traditional perspective of these m-technologies from a generation whom aren't as reliant them. Due to the time constraints on the research, it was not possible to interview this demographic, or any others that were suggested, such as today's youth who have evolved alongside the development of these mobile tools and all their capabilities.

Despite the time constraints, the recruitment of six participant remains an appropriate sample size for qualitative research of this nature within the context of a master's thesis. The participants' responses and contribution to not only this thesis but also the emerging field were valuable and informative, and the journey also provided valuable learning experiences that enriched my own understanding of the language, Māori values, language transmission and revitalisation and the m-learning environment.

A reflection of the methodologies and the intersections of the ethical dimensions for Māori research

As Duder (2010) so articulately points out in reference to her own research:

The research process drew out tensions between academic ethical requirements and research conducted from within a Māori framework. The tension between confidentiality, anonymity and impartiality and concepts such as *kanohi ki te kanohi*, *kanohi kitea* (being there in person) and *manaakitanga* is neither helpful nor necessary. The two methodologies of Western research methodologies and methods and kaupapa Māori research do not need to be mutually exclusive. (p.136)

Remaining impartial during the interview process proved difficult as it was a normal development that the research interviews were conducted more like a conversation (reciprocal in nature) as opposed to the question/answer process normally adhered to in a semi-constructed interview. Impartiality, while not ruled out, is not obligatory in the kaupapa Māori process. This may also be related to the *kōrero* regarding subjectivity and the position of the researcher, and is part of the reason the researcher is located within research context at the outset of the thesis (see pp. xiv-xv). As outlined by Duder (2010), there is tension between academic ethical requirements and conducting research in a kaupapa Māori way,

Decision to write in English

As noted earlier, although an advocate for the Māori language to be used as often as possible, the target audience does not only focus on those fluent in the Māori language, but also targets a wide audience of potential readers from those quite proficient in the language, to non-speakers of the language. The thesis therefore is bilingual, mostly written in English to accommodate the target readers. Despite delivering the research and findings in the English language, it is a personal aspiration of mine to write a Māori equivalent of the presented thesis.

Reflection

The following outline possible areas for future research:

- ❖ Interviews with kaumātua for their perspectives.
- ❖ Survey users and creators of Māori language m-learning resources and record the behaviour and usage of users. This would include monitoring what they are doing with the resources educationally and for social interaction and communication.
- ❖ Survey other indigenous peoples for their view on using m-learning to transmit their languages.
- ❖ Survey the efficiency and value of a particular app (possibly one created by me)
- ❖ Create an m-learning resource that facilitates the Māori language to use in a trial or study, which provides measurable outcomes.
- ❖ Indicate the relationship between fiscal matters and the language including limitations that may affect language learning or access to language such as affordability of m-technologies, cost to create or access resources, funding etc.
- ❖ Review the high percentage of mobile device ownership and its relationship to the language.
- ❖ Conduct a study which explores the link between the high percentage of mobile device ownership and their greater use by young people in modern New Zealand society to establish their relevance in the future of learning and the language.
- ❖ Contrasted the opinions of youth with those of other generations to gage the importance of m-learning.
- ❖ Facilitate a focus group of participants which encourages discussion
- ❖ Consider ways to securely and respectfully share tapu information and language
- ❖ Look more in-depth at the Māori values presented and their relationship to both m-learning and the Māori language.
- ❖ Explore 'how' the use of m-technologies for language learning may contribute to language transmission and revitalisation.

These areas could be explored to further enrich and develop the presented research.

NZ Census

Another kaupapa that I would like to discuss is the NZ Census. Due to unfortunate circumstances⁸, the last census and its relative findings date back to 2006. For this reason there are no census statistics to indicate the total population of Māori or the current population of Māori language speakers. It is nonetheless obvious that the language has not reached an ideal existence and other indicators such as the information provided in the report of Te Paepae Motuhake (2011) and Te Puni Kōkiri (2010a). My thoughts and aroha for all those affected by the Christchurch earthquakes.

⁸ The 2011 Census was not held on 8 March 2011 as planned, due to the Christchurch earthquake on 22 February 2011. At that time the 2011 Census could not have been successfully completed given the national state of emergency and the probable impact on census results. (Statistics New Zealand, n.d)

Despite the latest NZ Census statistics being unavailable for review at this time, it remains obvious te reo Māori has not reached a safety level. Therefore, the Māori language presented on resources contributing meaningfully to Māori language transmission and revitalisation must be respected and protected, to ensure that not only does it survive, but it does so with its mana intact. The following section of the research explains ‘He rākau’, which is a model. He rākau expresses the researcher’s interpretation of the analysis and considers the appropriate approach to protect and respect the Māori language if it is being transmitted using m-learning as a development of the research findings. Although the model aims to be comprehensive and holistic, there are limitations as it is only based on the presented research. Because of this, I offer the following as an *indication or proposal* of what the model will encapsulate.

HE RĀKAU: A MODEL

The proposed model serves as a guide or a reference point for those who are creating m-learning resources. This is not to suggest that the intended audience of the model is only those who are non-Māori. The focus however is on those who wish to create such an m-learning resource, which facilitates the Māori language in a respectful way, which protects the mana and the mauri of the language. The interpretation is that of the writer’s based on literature, and responses gathered during the interviews and does not attempt or intend to provide an exhaustive list of considerations that should be made, but intends to provide a guideline for initial reference to create awareness of these considerations. It is not to say that all m-learning resources that facilitate the Māori language should be made in this way, but merely provides guidance based on the research.

It must be addressed that the following represents a resource that would be available to its intended audience, which is those who wish to create an m-learning resource that facilitates Māori language transmission. It is my personal aspiration that the model can one day be presented independently of the thesis in the format that will reach its target audience most effectively, the mobile learning arena. To be more specific, as part of a downloadable e-book or application, which will allow for the model to be viewed more holistically and interactively and offered bilingually, which will serve audience with the command of either English or Māori. It is also anticipated that sitting within this tool

will be access to the thesis. This interactive m-learning tool will then be accessible for consumption by its intended audience who are those wishing to create m-learning resources that facilitate Māori language. With this in mind, the explanation below is lengthy, as it is not presented in its intended format. It is also bilingual as opposed to being offered in both the English and Māori languages.

The aims of the research as outlined in chapter 1 are presented here to set a premise for the following section:

Ngā whāinga o te rangahau: *The aims of the research*

It is evident that revitalisation initiatives towards facilitating the continued transmission of the Māori language are crucial for its survival and maintenance. It is also crucial to *protect* and *respect* the language. The research aims to situate m-learning within the contexts of Māori language revitalisation and Māori language transmission with reference to kaupapa Māori values and whakataukī. The purpose is to assess m-learning's role in the facilitation of Māori language transmission and revitalisation and also to highlight the *considerations* that should be made to *protect* the language and deliver it *responsibly* when facilitated on an m-learning platform.

For this section of the analysis, the four key words (italised in the previous paragraph) in relation to Māori language and m-learning platform are: **Protect, respect, consider** and **responsibly**. In terms of the presented analysis, these can be defined and interpreted as:

Protect

To look after and nurture the language, to exercise kaitiakitanga, manaakitanga, to document the language, to preserve and safe-keep the language for future generations.

Respect

Respecting rangatiratanga, respecting the language, showing respect for all those involved in making such a resource, kua e takahia te mana (*Do not trample over the mana*) and showing aroha and understanding. Patterson (1992) summarises the work of Puketapu-Hetet, who describes respect for life, as follows:

- ❖ Respect your working materials
- ❖ Respect your environment

- ❖ Respect the spiritual aspects of your work
- ❖ Respect all people (pp.34-35)

Patterson (1992) then provides a reminder that the environment is ‘all-living’ and each thing has its own mauri or life-force. “Everything has a mauri or a wairua and “simply amounts to saying that everything should be treated with respect” (p. 78). The ‘respect for life’ portrayed through respecting those kaupapa outlined above can apply to the ‘mountains, rivers, materials used in weaving or to seeking and passing on knowledge’, and also can be applied to the processes involved in creating an m-learning resource.

Consider

There are considerations to be aware of should you decide to take the responsibility of creating an m-learning resource that facilitates the transmission of the Māori language. These considerations are involved at all stages of the process in which a resource would be developed and includes values, tikanga, understanding through research and consultation and acknowledgement of tribal dialects and their relative iwi.

Responsibly

Recognising the responsibility you have to the language, to the people of that language, to its history and to its future.

As noted earlier, the following interpretation serves to highlight the considerations that should be made when creating resources that facilitate the Māori language, and is based on the kōrero that has come out of the research. The model and interpretation of that model is looking at the process of developing an m-learning resource that facilitates the transmission and subsequent revitalisation of the Māori language with a cultural/ Māori lens.

Four main kaupapa have been used in the model (see Model 1, p.123) derived from Sir Apirana Ngata’s whakatauāki. These are underlined below before they are further explained in the following paragraphs.

E tipu, e rea mō ngā rā o tōu ao

(Ko te Ao o te tipu: The realm of growth)

Ko tō ringa ki ngā rākau a te Pākehā, hei ora mō te tinana

(Ko te Ao Hou: The Modern world/21st century and technology)

Ko tō ngākau ki ngā taonga a ō tīpuna Māori, hei tikitiki mō tō mahuna,

(Ko te Ao Māori: The Māori World)

Ā, Ko tō wairua ki tō Atua, nāna nei ngā mea katoa (Ngata, 1949)

(Ko te ao wairua: the spiritual realm)

It must be noted that even though the whole whakataukāki has not been used and only the key kaupapa underlined are included in the model, the essence and its message still remains.

Te ao wairua: *The spiritual realm*

Wairua

The Ao Wairua, or the spiritual realm highlights and represent the fourth and final wāhanga of the whakataukāki ‘ko tō wairua ki te atua, nāna nei ngā mea katoa’. Including this ‘ao’ or realm is not only an acknowledgement of this section of the whakataukāki, or acknowledgement that there is a spiritual realm, but inherent in all things Māori is a whakapapa and a connection to the spiritual realm. From a Māori world view, te ao wairua is omnipresent and permeates all aspect of te ao Māori. Therefore, Te Ao wairua as an omnipresent realm is not visually displayed in the model, as wairua “accepts the reality of a spiritual presence or influence” and that there is “more to life than its physical manifestation” (Scott, 1986, p.28).

Within the realm of te ao wairua are the fundamental cultural concepts of wairua, tapu, mana and mauri and are included as a reminder that these fundamental cultural concepts help to guide and inform tikanga and are manifested in the customary practices when tikanga is adhered to. It is the knowledge of te ao wairua, that informs how we move within a kaupapa Māori world. Therefore this realm is extremely important, and is offered as a constant reminder that these concepts exist and should be considered.

These cultural concepts are present during all stages of the development process of not only creating an m-learning resource, or the growth of an individuals or collectives language proficiency, but in all resources or matters that involve facilitating the growth of the language. Therefore the spiritual realm must be considered.

Te whanaketanga: *Growth*

The model draws attention to growth and development. That is the growth of a tree, growth of language and growth of m-learning resources. This growth is reflected in the layout of the model, which is based on the kōrero that the language is a seed, te tawa uho, the centre of the tree, and each concentric circle represents a different stage of growth and development of evolution.

The term ‘He Rākau’ has been used as the title of the proposed model for three main reasons. Organic and growth was a theme throughout the thesis, and was expressed metaphorically through whakataukī, the development of a tree, or a rākau. Secondly, from within ‘rākau a te Pākehā’ in which rākau refers to tools or implements and the model serves a tool, a guideline for those who wish to create m-learning resources that facilitate the Māori language. Thirdly, the layout of the model or tool is based on the cross section of a tree, he rākau.

The model is presented before a breakdown of each of the four kaupapa and the relevance of each stage of development for those kaupapa. It must be noted that although these have been presented across different kaupapa and different concentric rings, the model is holistic and the philosophy of the concepts that are used within are in most cases applicable throughout the whole process involved in creating an m-learning resource. The development stages for all these four kaupapa evolve through five stages of growth as listed below:

Table 13: Stages of Growth

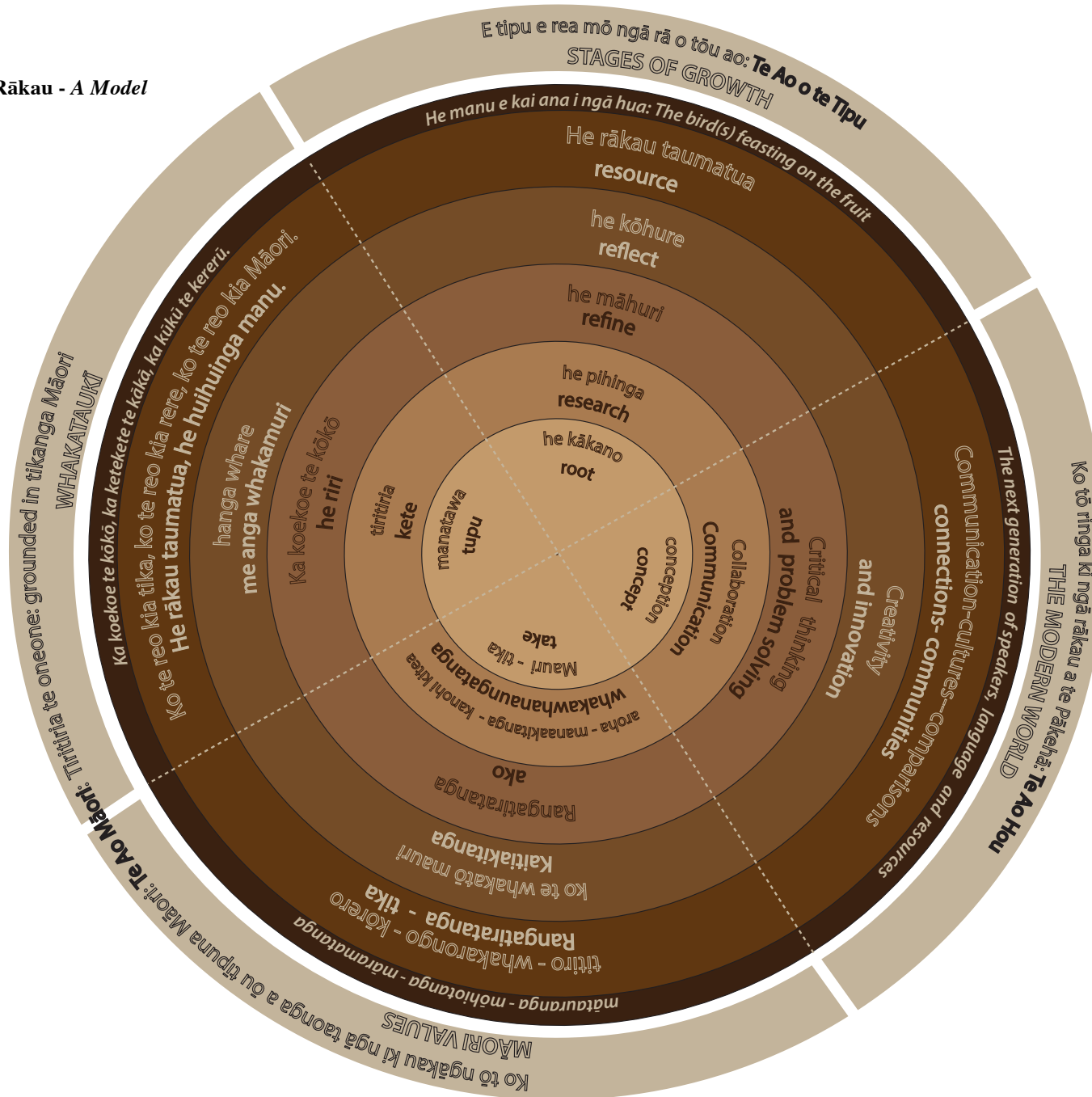
Growth of a Tree		Development of a resource
He kākano	<i>a seed</i>	Root
He pihinga	<i>a seedling</i>	Research
He māhuri	<i>a sapling</i>	Reflect
He kōhure	<i>a mature tree</i>	Refine
He rākau taumatua	<i>a tree in which birds were caught</i>	Resource

The sixth stage in the cyclic process is titled: ‘**He manu e kai ana i ngā hua**’ or *bird(s) that feast on the fruits, seeds or nectar*. This category refers to those who find value in the ‘hua’ (*fruits, produce*) and subsequently foster the growth of the seed to become

itself a rākau taumatua. For example, if an m-learning resource inspires a non-speaker to learn the language that is the 'hua' or seed of value they have gained from the resource, or the inspiration to foster the growth of their own seed of language. The process then starts again, and another generation of evolved language or of ideas and resources it created. Each new seed planted represents a new speaker, a new resource, a new generation in the cycle of evolution, and the outer ring of each new rākau represents the most evolved resources or language of that generation.

The model presented below encompasses all the kōrero from not only this section of the thesis, but from the research as a whole. The philosophy of the model is holistic, in that although separated into different ao (*realms*) all the considerations can be used throughout all stages of creating a resource that facilitates the transmission of the Māori language. The model has grown and developed alongside the thesis and research and it is hoped that it stands as a rākau taumatua in its own right and offers fruits to communities including Māori communities, m-learning communities and other indigenous communities who are considering m-learning as an avenue towards securing a future for their languages.

Model 1: He Rākau - A Model



The growth begins at the centre with the seed, the tawa uho. As development occurs, the concentric rings grow. Each new ring in the model is represented by a different colour which signifies a new stage of growth (see Table 5). The following section segments the model into the different realms. Each realm and the associated kōrero are then discussed, and tables describe and explain each of the terms or sayings used in He Rākau. Within these tables the terms used in He Rākau have been underlined for quick reference.

Te ao o te tipu: *The realm of growth*

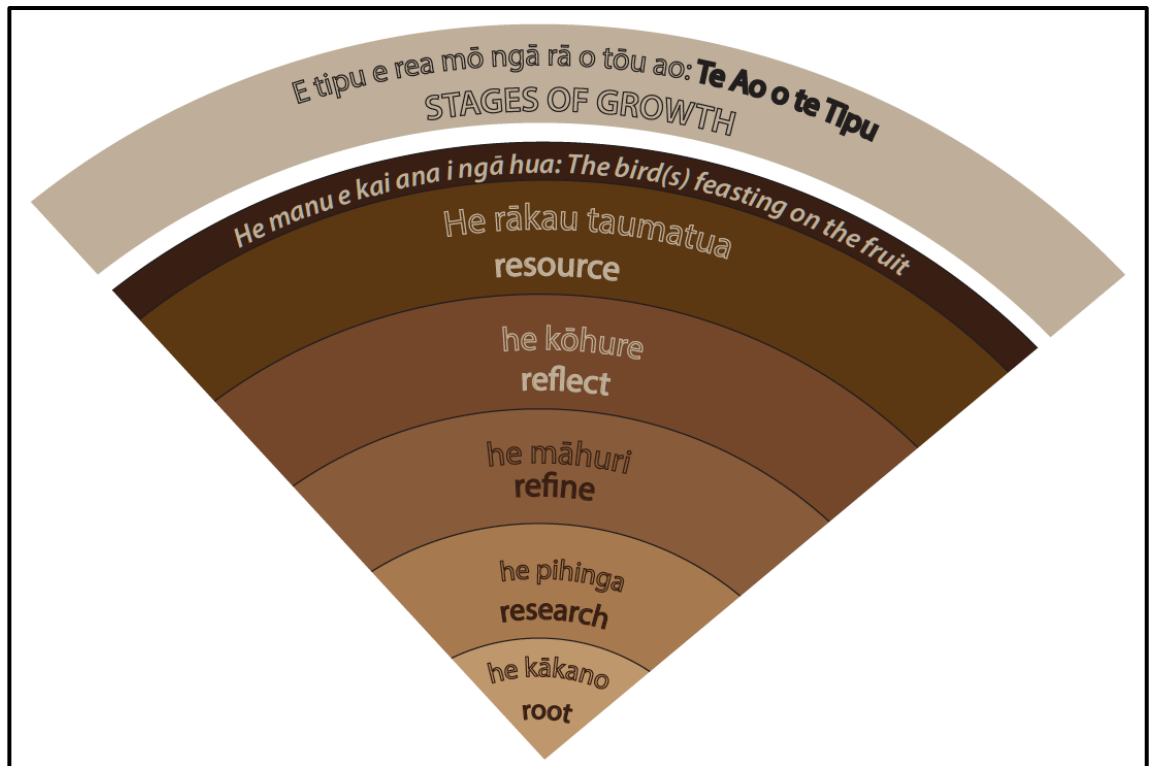
E tipu e rea...

The idea of growth has been so present in the research and the idea of the presented model started much in the same way. It was an idea which grew and became stronger and nourished throughout the research. In this context, the idea is ‘organic’ and is defined by Oxford British and World English dictionary as “characterized by gradual or natural development” (Organic, 2013). The metaphor that the language is organic and its growth must be fostered is addressed in another section of the ngeri written by Tīmoti Kāretu⁹:

Inā moe ko te tipu ki te whenua ka kore ko te pūāwai, te manahua
Inā toua ki te one haumako, ki te ngākau o te tangata
Me pēhea e kore ai e tūperepere, e pāhau tea, e rangona ai tō kakara, e tōku reo...

*(If a plant lies dormant in the ground it will never effloresce or reach full bloom
If planted, however, in fertile soil, in the heart of those who care
How could the growth not be vigorous or luxuriant and your bouquet savoured,
o my language)*
(Kāretu, 2012, p.5)

⁹ See Appendix A for full ngeri



Model 2: Te Ao o te Tipu - *The Realm of Growth*

The section of the model *Te Ao o te tipu*, the realm of growth as pictured in *Model 2* represents the growth of a tree, the growth of an individual's language and the growth of m-learning resources. It must also be remembered that growth must be encouraged, “Ki te kore ngā pūtake e mākūkūngia, e kore te rākau e tupu: If the roots of the tree are not watered, the tree will never grow “(Tepania-Palmer, 2007, p.i).

Table 14: Te Ao o te tipu - *The Realm of Growth*

Stage of growth	Tree	Speakers language development	M-learning resource
<u>He kākano</u> <u>Root</u>	The seed or ‘hua’ is planted in the soil, the root is starting to grow.	Has little or no reo, is bilingual.	The <u>root</u> represents the purpose, base and potentiality of the seed. An idea that will develop into a resource. It is where the seed or idea is first encouraged to grow and where the nourishment begins.
<u>He pihinga</u> <u>Research</u>	The sprout appears, growth is occurring, still needs manaaki and support at this stage.	An adolescent speaker.	This is where the necessary <u>research</u> takes place. This involves establishing and maintaining connections with repositories of knowledge as cultural and language advisors. This can include referring to the Māori language conventions as advised by Te Taura Whiri i Te Reo Māori.
<u>He māhuri</u> <u>Refine</u>	The tree has become stronger, it is maturing, growing strong to a point where it is becoming a stand alone entity and independent.	An independent speaker who still needs some guidance.	This stage is where the idea is <u>refined</u> as informed by the research conducted. This takes it to a point where it’s ready for producing.
<u>He kōhure</u> <u>Reflect</u>	A fully grown tree.	An independent fluent speaker who begins adorning their reo with colloquial expressions and eloquent metaphor	The stage in which the resource is created. The previous stages that informed the development of the research are <u>reflected</u> on to create the resource.
<u>He rākau taumatua</u> <u>Resource</u>	A tree bearing hua which the birds come to feast.	An adept speaker, orator.	The <u>resource</u> has been made and is ready for consumption. The goal is to create a resource of such a high quality and standard that it is a rākau taumatua.

<p><u>He manu e kai ana i ngā hua</u></p> <p>A new seed to be planted</p>	<p>The birds eat the hua and disseminate them. It is from here that there is potential for the seeds to be planted for another rākau to grow.</p>	<p>This is where the most opportunity lies to instil in others the desire to grow their language, the opportunity to instil a real aroha for the language within those who do not have it.</p>	<p>This represents those who have come along to feast on the fruits, those manu. They take the valuable fruits or seeds the rākau taumatua has to offer. There is then potential for those seeds to be planted, and the cycle starts again.</p>
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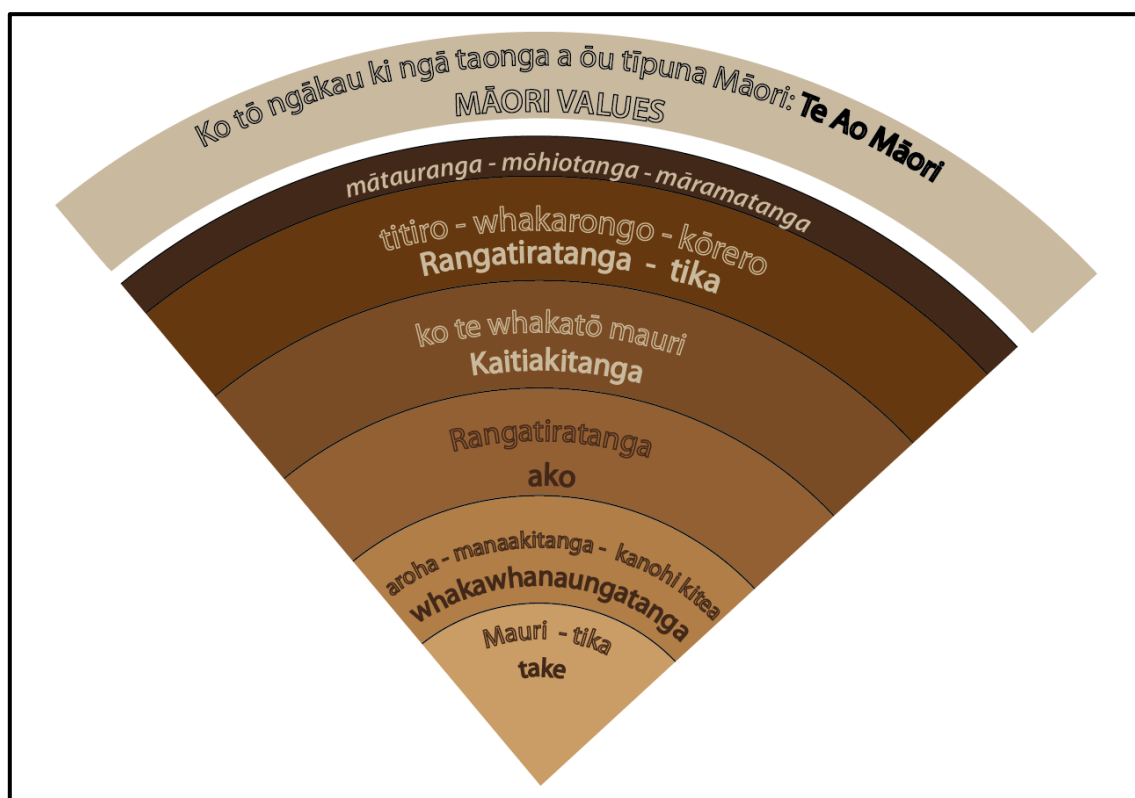
Te ao Māori: *The Māori world*

Ko tō ngākau ki ngā taonga a ō tīpuna

The following two sections of values and whakataukī are incorporated to create awareness of the Māori world-view.

Values

There is mātauranga, knowledge within the values and guiding philosophies that inform the Māori-world view. It is with caution that I have included the values in the model, with full understanding of the actual depth and complexities of the following values. A brief description of how the values may be considered during the production and development of an m-learning resource are outlined in Table 7.



Model 3: Te Ao Māori - The Māori World - Values

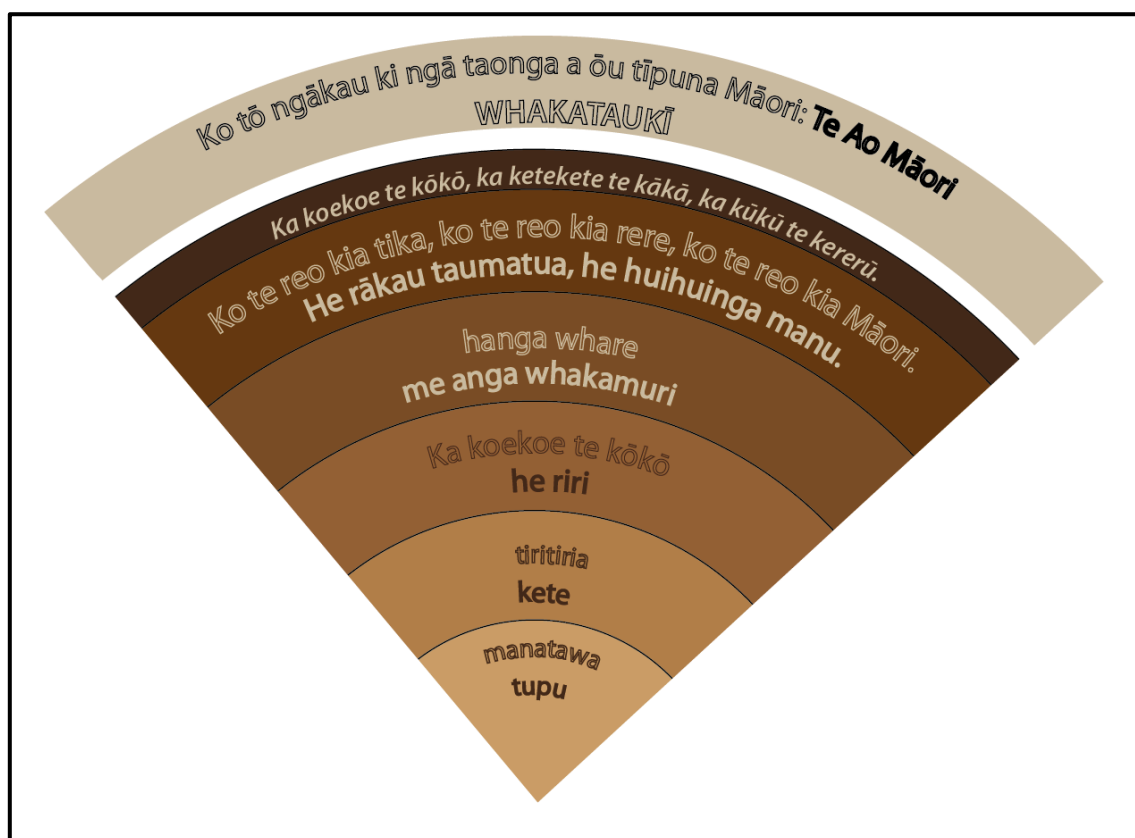
Table 15: Te Ao Māori: *The Māori world-view: Values and Interpretation*

Stage	Value	Interpretation
He kākano Root	<u>Take</u> <u>Mauri</u> <u>Tika</u>	<i>Purpose</i> The source, the concept, the purpose. Having the right intentions for the resource. <i>Life-force</i> At the centre, or the tawa uho is the life-force of the tree. <i>Correct</i> Things must be grounded in tikanga or done correctly.
He pihinga Research	<u>Aroha – manaakitanga</u> <u>Kanohi ki te kanohi/kanohi kitea</u> <u>Whakawhanaungatanga</u>	<i>Caring-compassion</i> The seed must be nurtured, cared for and maintained. This is the manifestation of aroha for the seed. Consider caring and compassion for not only those repositories of knowledge and the information they provide, but also for the language and for the kaupapa. This aroha will foster the growth of a healthy resource. <i>Face to face/the seen face</i> Interacting face to face, being known and transparent. <i>Relationship building</i> Establishing relationships with advisors and others involved in the development of the resource.
He māhuri Refine	<u>Rangatiratanga</u>	<i>Authoritative ownership</i> Who owns it? Who has customary rights over the resource? Have the appropriate persons/iwi/hapū (<i>sub-tribe</i>) whānau been consulted and acknowledged? Has permission been sought where necessary?

	<u>Ako</u>	<p><i>To learn/to teach</i></p> <p>Acknowledging the Māori way of doing things, and also the acknowledgement that ‘ako’ meaning to learn or to teach represents the learning that will happen on the journey of creating a resource, and the teaching that will occur when the recipient accesses the resource.</p>
<p>He kōhure Reflect</p>	<p><u>Ko te whakatō mauri</u></p> <p><u>Kaitiakitanga</u></p>	<p><i>Instilling mauri</i></p> <p>This concept refers again to the intentions and purpose of creating the resource. If it is being made for the right reasons, based on tikanga and treated with aroha and respect, a part of your mauri becomes instilled in the resource.</p> <p><i>Guardianship</i></p> <p>Protection of the mauri is important. A commitment has been made to that resource and has been imbued with your mauri. The aim is to create a resource which looks after the language for future generations.</p>
<p>He rākau taumatua Resource</p>	<p><u>Titiro-whakarongo-kōrero</u></p> <p><u>Rangatiratanga</u></p> <p><u>Tika</u></p>	<p><i>Look-listen-speak</i></p> <p>Does the resource facilitate or encourage real modes of communication?</p> <p><i>Authoritative ownership</i></p> <p>Have the appropriate people and iwi been acknowledged?</p> <p><i>Correct</i></p> <p>Is it all correct? Of a high standard and based on what is deemed ‘customary’ and in alignment with tikanga?</p>
<p>He manu e kai ana i ngā hua A new seed to be planted</p>	<u>Mātauranga-mōhiotanga-māramatanga</u>	<p><i>Knowledge, knowing, understanding</i></p> <p>Those who gain value from the resource will have a new understanding or investment of knowledge that they take away with them from the ‘rākau taumatua’. This may then perhaps encourage the growth of a resource to be passed to the next generation.</p>

Whakataukī

This section highlights the philosophies of those whakataukī, the guiding principles offered in those whakataukī and how those messages are transferable to creating the m-learning resource. **‘Tiritiria te oneone. Tautoroa o paiaka ki te ūkaipō, kia rongo tonu i te reka, i te haumakotanga, i te taurikuratanga nō tua, kia kore ai e titōhea:** *The soil is sown. Deepen your roots to Mother Earth, to feed on the sustenance and the richness from beyond, so that it does not become barren*’, this whakataukī can be relevant at all stages of development, in that it reflects the fact that the resource and its development should be rooted in tikanga. Each stage of growth in the model has specific terms or short sayings which are used to represent the whakataukī and their messages. The stages of growth, the terms, the relevant whakataukī and the interpretation for the model are explained below in Table 8.



Model 4: Te Ao Māori: The Māori World - Whakataukī

Table 16: Te Ao Māori - Māori world-view: Whakataukī and Interpretation

Stage	Term	Whakataukī	Interpretation for model
He kākano Root	<u>Tupu</u> <i>To grow</i>	Te piko o te māhuri, tērā te tupu o te rākau <i>The way in which the young sapling is nurtured, determines how the tree will grow.</i>	The way in which the seed of language, or the idea for a research project is nurtured will determine how the growth will occur.
	<u>Manatawa</u> <i>The seed</i>	Kei hea taku manatawa, taku manapou? <i>Where is my manatawa, my manapou?</i>	A reminder to purpose of creating the resource, the growth and maintenance of the language, the seed that is the language.
He pīhinga Research	<u>Tiritiria</u> <i>To plant</i>	Tiritiria te oneone. Tautoroa o paiaka ki te ūkaipō, kia rongo tonu i te reka, i te haumakotanga, i te taurikuratanga nō tua, kia kore ai e titōhea <i>The soil is sown. Deepen your roots to Mother Earth, to feed on the sustenance and the richness from beyond, so that it does not become barren.</i>	What research needs to be done? Refers to accessing those repositories of knowledge.
	<u>Kete</u> <i>Basket</i>	Ko koe ki tēnā, ko au ki tēnei kīwai o te kete <i>(You at that and I at this handle of the basket).</i>	Cooperation and working together is the message of this whakataukī. That is those designing the resource, the repositories of knowledge, the creators etc.
He māhuri Refine	<u>He riri</u> <i>A sound/genre</i>	He riri tā te tawa uho, he riri tā te tawa para. <i>The heart of the tawa tree has a sound, as does its flesh.</i>	Which genre of language will be included? Which resources will be utilised, which programs and technologies do you need to create the resource?
	<u>Ka koekoe te kōkō</u> <i>The tūi chatters</i>	Ka koekoe te kōkō, ka ketekete te kākā, ka kūkū te kererū. <i>The tūi chatters, the kākā cackles, the kererū coos.</i>	Who is the target audience? Which dialect is your focus?

<p>He kōhure Reflect</p>	<p><u>Me anga whakamuri</u></p>	<p>Me anga whakamuri, kia anga whakamua. <i>Looking to the past to look to the future.</i></p> <p>'Māku anō e hanga i tōku nei whare. Ko te tāhuhu he hīnau ko ngā poupou he māhoe, patatē. Me whakatupu ki te hua o te rengarenga, me whakapakari ki te hua o te kawariki. <i>I shall build my house. The ridge-pole will be of hīnau and the supporting posts of māhoe and patatē. Raise the people with the fruit of the rengarenga, strengthened them with the fruits of the kawariki.</i></p>	<p>Looking to the past to provide value for the future.</p> <p>The construction of the ‘whare’ of learning, build the whare with the ancestors and their messages, and learn from your mistakes.</p>
<p>He rākau taumatua Resource</p>	<p><u>He rākau taumatua, he huihuinga manu</u> <i>The birds flocked there because of the sweetness of the tree's fruits and nectar.</i></p> <p><u>Ko te reo kia tika, ko te reo kia rere, ko te reo kia Māori</u> <i>Let the language be correct, let the language flow, let the language be Māori.</i></p>	<p>The goal is to create a resource that is of high quality and standards, a ‘rākau taumatua’ and ignite a desire for the ‘fruits’ or seeds that are offered to themselves be taken and planted and develop into a rākau taumatua.</p> <p>Does the resource have language that is correct, that facilitates a spoken language that flows, that is Māori?</p>	
<p>He manu e kai ana i ngā hua</p> <p>A new seed to be planted</p>	<p><u>Ka koekoe te kōkō, ka ketekete te kākā, ka kūkū te kererū</u> <i>The tūi chatters, the kākā cackles, the kererū coos.</i></p>	<p>A reminder to the birds, and the diversity of their voices, and the beauty of each individual bird. This is to highlight the fact that ‘birds’ will come to ‘feast’ on a resource that has qualities of a ‘rākau taumatua’. Those birds will each travel forth with the fruits or seeds they have feasted on and their seed then becomes the centre, the concept, the take, the origin of their resource.</p>	

Te ao hou: *The modern world*

Ko tō ringa ki ngā rākau a te Pākehā

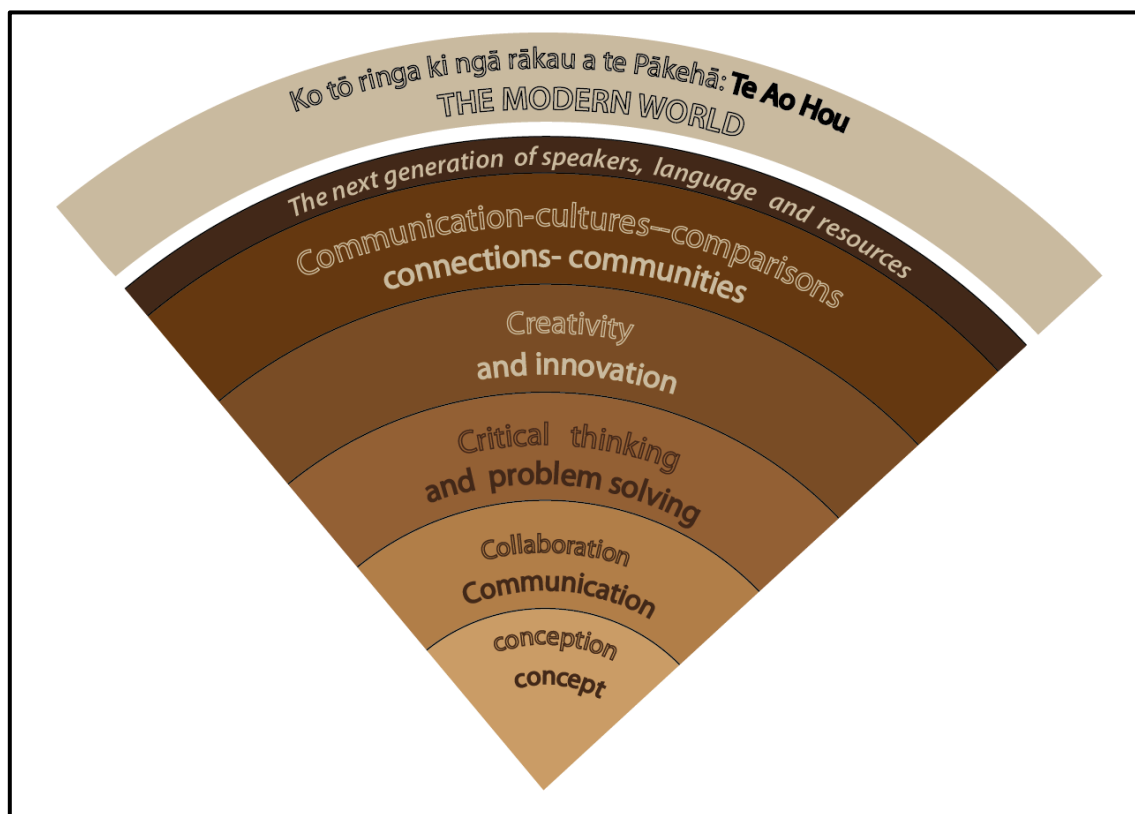
When Sir Apirana Ngata expressed the words ‘ngā rākau a te Pākehā’ he was referring to those things that were not of ‘te ao Māori’ such as new technologies and the Western education system that had been introduced to Aotearoa (Keelan, 2009). It must be explicitly outlined that the following is the interpretation of the author that te ao hou (*the modern world*) refers to new or modern technologies, theories and philosophies.

A key kaupapa that fits into this ‘ao’ is 21st century learning. In reference to m-learning as a learning tool. There are four ‘Cs’ that are skills under the heading Learning and information skills, they are commonly known as the 4 ‘Cs’ of 21st century learning and are:

- ❖ Communication
- ❖ Collaboration
- ❖ Creativity and innovation
- ❖ Critical thinking and problem solving

The Partnership for 21st Century Skills (P21) (2011a) in collaboration with key national organisations also developed the 21st Century Skills Maps which illustrates the integration of World Language and 21st Century skills. Developing students’ language proficiency around modes of communicative competence reflecting real life communication was identified as important by the language teaching community. As identified by P21, “the national standards are undergirded by five goals (the 5 Cs) that focus language learning on:

- ❖ Communication
- ❖ Cultures
- ❖ Connections
- ❖ Comparisons
- ❖ Communities. (P21, 2011)



Model 5: Te Ao Hou - The Modern world

As well as the word ‘concept’ these have all been incorporated into the model and the following table. These interpretations are adapted from the explanations as interpreted based on the research.

Table 17: Te Ao Hou: *The Modern world*

Stage	Learning and Innovation Skill (Partnership for 21 st Century Skills, 2011 <i>b</i>).	Interpretation for model
He kākano Root	Concept	An idea or <u>concept</u> has arisen, the planning takes place.
He pihinga Research	Communication and Collaboration	<u>Communication</u> with others who are a part of the process is an important skill. Communicating clearly and effectively by articulating thoughts & ideas, using oral written, listening and nonverbal communication skills is essential. <u>Collaboration</u> Working together effectively and respectfully, cooperating and sharing responsibilities and exercising flexibility, willingness and helpfulness to achieve the goal.
He māhuri Refine	Critical Thinking and Problem Solving	<u>Critical Thinking and Problem Solving</u> Reasoning, analysis, evaluation, synthesis, interpretation, drawing conclusions, reflecting critically on learning experiences, innovation, seeking clarification and finding solutions occurs at this stage.
He kōhure Reflect	Creativity and Innovation	<u>Creativity and Innovation</u> Using creative techniques towards originality and maximising creative efforts. This also includes being open and responsive to feedback and making a tangible and useful contribution to the field in which the innovation will occur. Any failure or mistakes are an opportunity to learn.

<p>He rākau taumatua Resource</p>	<p>Communication Cultures Connections Comparisons Communities</p>	<p>In this stage of development, the 5 ‘Cs’ that focus on language learning have been incorporated as it should be considered if the resource facilitates these skills.</p> <p><u>Communication:</u> Consider creating a resource that reflects the modes of how people communicate in real life. That is:</p> <ul style="list-style-type: none"> ❖ Interpersonal, or two-way interaction with someone else. ❖ Interpretive, the ability to understand and interpret a one-way aural or written text, and; ❖ Presentational, the ability to present information in either a written or oral format. <p><u>Cultures:</u> As the teaching of language and culture are inextricably intertwined, consider how the perspectives and practices and practices of the culture are incorporated to facilitate this understanding.</p> <p><u>Connections:</u> consider how the resource provides opportunities to access knowledge in other disciplines or domains to reinforce what is being learnt or facilitated on the resource. These connections may include consideration to how the resource facilitates connecting learners to other speakers, content, resources, language communities and language teachers.</p> <p><u>Comparisons:</u> consider that as students learn a new language and culture, they develop insight into their own language and culture, thus providing them with a deeper</p>
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		<p>understanding of how language works and how cultures reflect the perspectives, practices, and products of the people who speak that language.</p> <p><u>Communities:</u> Consider how the resource can facilitate application or usage beyond the learning environment offered, how can it supplement or provide opportunities to use the language in other domains.</p>
<p>He manu e kai ana i ngā hua</p> <p>A new seed to be planted</p>	Crop	<p>The crop or harvest that is collected, that is the seeds or value that others take from the resource can be encapsulated in the word crop which not only describes the harvest of such fruit or seeds. The cyclic process of planting a seed has started again.</p>

The exclusion of some skills are not to disregard the other recommended life-skills that are incorporated into the 21st Century Skills Map, but rather to contextualise the most relevant skills.

Ko te anga rangahau - he whakamārama: *Overview of model*

Although the aim of the research was to focus on m-learning as the medium of transmission and the subsequent revitalisation of the Māori language, the focus or general arguments and perspectives that arose can all be applied to all new technologies that can offer a new genre or method of exposure, preservation, dissemination and accessibility to a language. Therefore, regardless of the type of resource or tool, the guidelines and considerations that should be made when developing a resource that facilitates Māori language transmission should remain the same. The resource, its development and growth and the processes involved at all stages of creating and developing the resource should be grounded in tikanga Māori, which respects the practices, ideals, values and philosophies of the Māori world view. The philosophies of the whakataukī as outlined previously are relevant to this development and can also provide guidelines for the processes. The history of the Māori language, and the acknowledgement of each tribe with their unique dialects and structures and customary practices should be taken into consideration, as should the way one conducts themselves during all stages of the process. The protection and respect for the Māori language and should at all stages be the focus, or main concern/consideration, and if we move in a way grounded in tikanga Māori, the mauri and the mana of the language should be safe. This is an explanation of the analysis using all the information included in the thesis. As noted earlier it does not serve to be an exhaustive list of considerations and encompasses the main outcomes of the study. It is also possible that the model be used to assess existing m-learning resources – another avenue for future research.

He kōrero whakatepe: *Conclusion*

The importance and significance that the language holds for its people is evident when reviewing the struggles and journey that the language has endured in the past. The language is of great significance to its people to what it means to be Māori. This is reinforced by Sir James Henare (as cited in Waitangi Tribunal, 1989) who when giving evidence in 1986 for the Waitangi Tribunal claim relating to the Māori Language expressed:

... The language is the core of our Maori culture and mana. Ko te reo te mauri o te mana Maori (The language is the life force of the mana Maori). If the language dies, as some predict, what do we have left to us? Then, I ask our own people who are we? (6.1.21)

This statement would be echoed for years to come and puts into perspective the significance of the language to its people, and the concern of language activists that the death of the language was a possibility and its consequences would be devastating. In 1981, research by Benton revealed that Māori language death was imminent (Walker, 1996) and at the turn of the twentieth century the Māori birth rate was at an all time low and the population was considered to be dying. A memorial was erected on Maungakiekie - One Tree Hill - in Auckland in memory of the “dying race” (Selby, 1999, p.66). However, even though the language, in every-day use, is diverging more and more from the classical speech of pre-European times (Buck, 1977) the “Māori language did not die as predicted; it survived, and while still vulnerable is now coming to a state of regeneration. Its continued existence exemplifies Māori cultural persistence and positions of resistance taken against total assimilation” (Simon & Smith, 2001, p.173).

“Māori have been highly political in their struggles to save their language” (Te Rito, 2008, p.5), and “Māori resistance springs not from a desire to return to the past, but rather from a refusal to have the future dictated by others” (Hollings, 1991 p.56). Revitalisation efforts and attempts that have contributed to the maintenance and survival of the language created stepping stones and milestones for the language and its wellbeing and the continued persistence and initiatives of Māori have on many accounts promoted a brighter future for the Māori language, to a situation where it can be available, accessible and transmittable for future generations.

The efforts and struggles of the Māori language activists of the 1970s; of subsequent Māori language revivalists; of whānau, hapū and iwi; of non-Māori supporters; and of Government have contributed significantly to the maintenance and survival of the language and, “We have reason to look forward with optimism but there is no room for complacency” (Te Rito, 2008, p. 7). The current reality is that the Māori language is not in a healthy or safe existence with only approximately 25% of the Māori population identify themselves as being able to speak te reo to some degree (Ministry of Social Development, 2010), and “Not all of that 25% are committed to speaking te reo in the homes and use it as the language of communication with their children” (O’Regan, 2012, p. 30). That’s not even considering the other 75% of the Māori population. The challenges or ‘ngā wero’ presented in the research, namely targeted at Māori are that:

- ❖ The language needs to be spoken everywhere, by everyone.
- ❖ The language is a taonga that needs to be respected and protected, which includes being ‘kaitiaki’ of the language and ensuring its existence.
- ❖ Attitudes towards the language need to be positive. Apathy for the language needs to be changed to aroha.
- ❖ Each individual needs to understand the crucial role contribution they can make towards bringing the language to a healthier state, how can m-learning resources ‘spark the fire’ or encourage the growth of the seed of language within individuals, whānau, hapū and iwi and the nation?
- ❖ The mind is the most important tool we can utilise.

These challenges all contribute towards a common goal, which is articulated in the essence of the whakatauākī:

Ko te reo kia tika, ko te reo kia rere, ko te reo kia Māori.

Let the language be correct, let the language flow, let the language be Māori.

The essence of the whakatauākī represents a healthy existence for the language, where it’s correct, it’s spoken and it’s Māori. The term ‘māori’ as outlined previously can mean to be ‘normal’ and can be referenced here in relation to an indicator the language has reached a healthy state of existence. When te reo Māori becomes normalised and remarkable in public arenas, it will have become ‘māori’. Taking into consideration what it’s going to take for the language to reach this healthy state, the main challenge presented by the research is how m-learning as an avenue can facilitate growth of the language and address the presented challenges.

The role in language revitalisation that each person can play is a significant one, and it is not recognised by most. However each effort or struggle towards Māori language maintenance and revitalisation in all domains including utilising m-learning and respective technologies plays a significant contribution towards our reo reaching a healthier state. “Kaua tō mātou reo e tukua kia rite ki te ngaro o te moa. Do not allow our language to suffer the same fate as the moa” (Treaty 2U, 2007). With those words of warning in mind I would like to conclude with words of encouragement to all to take up the challenge, engage with Māori language revitalisation, foster the growth of language in yourself and your whānau so that te reo Māori is alive, healthy and spoken in the lives of our children and our mokopuna (*grandchildren, descendants*), and as articulated in the words as offered by a participant...

“Korikori ana tāua, ka taka tauira”

LET’S GET MOVING BECAUSE THE SUN IS SETTING.

RĀRANGI RAUEMI

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TE ĀPITIHINGA A

APPENDIX A

He ngeri mō te reo: Nā Tīmoti Kāretu

Kī mai nei a Te Wharehuia, ‘Whakahokia mai!
Whakahokia mai!’
Mai i te mata o te pene ki te mata o te arero
Kei noho kau noa hei reo mō te pepa, te pene
Tē titi kē ai ki te poho, ki te ngākau aroha
Inā moe ko te tipu ki te whenua, ka kore ko te pūāwai, te manahua
Inā toua ki te one haumako, ki te ngākau o te tangata
Me pēhea e kore ai e tūperepere, e pāhau tea, e rangona ai tō kakara, e tōku reo,
E ō iwi puta noa i Te Waka, i Te Ika a Māui-tikitiki-a-Taranga e takoto nei?
He aha te aha ka pahawa i te uapare? He kore! He kore! He kore!
He aha te aha ka pahawa i te hurikiko? He nui! He nui! He nui!
Tēnā kia whakatōrea ake kia whati mai ko te tai pari ki uta me pao
Waihoki kainga te kai kei ao ake te rā he tau nihoroa
Engari kē ia me tau hāwere, me tau pōike, tau atu, tau atu
Kei tōku reo auraki mai rā, waihape mai rā Ki tōku poho, ki tōku ngākau,
Ki tōku arero, ki tōku katoa Kia ora tonu ai koe i ngā tau tini, tau mano
Mō te ake, ake haere ake nei. Hei!

*(Dr Milroy has issued the dictum, ‘Return the language to its rightful position
From the tip of the pen to the tip of the tongue
Lest it remain a language destined solely for pen and paper
Rather than finding its niche in the hearts and soul of us all
If a plant lies dormant in the ground it will never effloresce or reach full bloom
If planted, however, in fertile soil, in the heart of those who care
How could the growth not be vigorous or luxuriant and your bouquet savoured, o my
language
By all your people throughout the South and North Islands of New Zealand
What can accrue from forever pointing the finger of blame? Absolutely nothing!
But what will aspiration and determination achieve?
An inordinate amount!
Let us, like the oyster catcher, avail ourselves of every opportunity offered
And enjoy the feast for tomorrow there could well be a famine
Ours then is to ensure that the years to come will be nothing but years of plenty
With those sentiments, o my language, return to where you should be
To my bosom, to my heart, to my total being
Where you will live on into the millenia to come)*



Auckland UNIVERSITY of Technology
Te Wānanga Aronui o Tāmaki Makau Rau

TE ARA POUTAMA - FACULTY OF MĀORI DEVELOPMENT

Interview Research Protocol

Time Period:	May/June 2012
Researcher:	Jamie Cowell
Supervisor:	Dr. Teorongonui Josie Keelan
Secondary Supervisor:	Erana Louise Foster
University:	Auckland University of Technology
Degree:	Masters of Arts: Māori Development

The purpose of this interview protocol is to identify how interviews will be conducted as part of my research. I am a student of AUT University currently completing my Masters Degree in Māori Development, and this observation will contribute towards my thesis titled, 'He riri tā te tawa uho, he riri tā te tawa para'.

During all stages of this project, particularly the data collection (*interview*) phase, Kaupapa Māori (*Māori ideology*) Research theories will be employed to ensure that tikanga Māori (*Māori customary practice*) is upheld at all times.

How people will be recruited.

Purposive sampling, which selects participants in a "deliberative and non-random fashion" (Simon, 2005, para1) will be used to ensure that the participants selected fall into at least one of the specified categories. The researcher has networks in the relative industry and will use these networks in order to recruit participants for the research. The initial focus of contact will be with those who have already expressed their support for this research.

Adhering to the cultural value of kanohi kitea (*being seen in person*), potential participants will be approached in person by the researcher. Information will be disseminated to each of them once they have expressed their interest. Those selected will be the participants who have agreed to the boundaries of the research and who have given official consent to participate. The initial focus of contact will be with those who have already expressed their support for this research.

How people will be informed about the interview.

The information and relevant documents will be delivered to participants in person; if this is not practical then it will be delivered via their preferred method. The information will be in the form of a participant information sheet. Once this information sheet has been read and I have answered any queries they may have, they may then sign the consent forms. Those who need more time to consider the project will have a further week to consider the invitation, following which I will again contact them or ask them for the consent forms.

How people will consent to the interview.

Written consent will only be obtained from the potential participants after they have been fully informed of the intent, purpose and procedures of this research and all queries have been answered sufficiently. Research will not begin until all participants have completed their consent forms.

How the data will be collected.

The study involves one-on-one interviews based on the guideline questions. These will be audio-recorded and written notes will also be taken.

The method used to conduct interviews will be semi-structured in nature. An interview guide including a list of questions or issues that are to be explored and suggested probes for following up on key topics will be utilised. Questions will be open-ended to understand the interviewees' perceptions and experiences in relation to the research topic. Interviews will be conducted face to face at the venue most convenient for the participant.

How any deception involved will be managed.

There will be no deception involved. To guarantee that the research is vigorous and responsible, the researcher will endeavor to remain impartial during the collection of the information.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Dr. Teorongonui Josie Keelan, jkeelan@unitec.ac.nz, Phone: +64 9 815 4321 ext 6201

Concerns regarding my conduct of the research should be notified to the Executive Secretary, AUTEC, Dr Rosemary Godbold, rosemary.godbold@aut.ac.nz, 921 9999 ext 8044.

Whom do I contact for further information about this research?

Researcher Contact Details:

Jamie Cowell
kqm3052@aut.ac.nz

Project Supervisor Contact Details:

Dr. Teorongonui Josie Keelan
jkeelan@unitec.ac.nz,
Phone: +64 9 815 4321 ext 6201

**Approved by the Auckland University of Technology Ethics Committee on
14/05/2012, AUTEC Reference number 12/115**

Participant Information Sheet: He whakamārama mā te Kaiwhakauru



Date Information Sheet Produced:

April 2012

Project Title:

He riri tā te tawa uho, he riri tā te tawa para

An Invitation:

Tēnā koe. My name is Jamie Cowell. I am a Master of Arts student enrolled at Auckland University of Technology. I extend an invitation for you to take part in this research project by participating in an in-depth interview.

Your participation in this research project is purely voluntary and would be greatly appreciated. Should you wish to not take part or withdraw at any time prior to the completion of the data collection, this will not reflect on you in any way.

How was I chosen to participate in the study?

You have been identified as someone who could provide a valuable contribution to this research project.

What is the purpose of this research?

The research is looking at how mobile-learning (m-learning) can help transmit the Māori language and help it to survive. I want to also find out what important things need to be considered to make sure the language is protected when it is used on an m-learning resource.

What will happen in this research?

For the purposes of gathering information for this project there will be an individual interview conducted face-to-face that will take approximately one hour. The interview will be facilitated by me. All interviews will be transcribed by me. A recorder will be used to record the discussion during the interviews and I will also take notes. You will receive a copy of the transcripts to amend or delete anything you wish before I use the information to report on the findings.

What are the discomforts and risks?

I don't think there will be any discomforts or risks because you can choose where the interviews take place and we will be talking about m-learning as a way to support te reo Māori.

How will these discomforts and risks be alleviated?

I will observe the principles of tika (*correct procedures*), pono (*integrity*) and aroha (*respect for your wellbeing*) during the interview process. However, if you feel uncomfortable or at risk at any time then you don't have to answer any of the questions asked. You also have the option of withdrawing from the interview at any time and there will definitely be no repercussions or ill feelings towards you or any others.

What are the benefits?

Your participation will be beneficial to the future development of Māori revitalisation initiatives and could also have benefits for Māori and non-Māori communities and other indigenous peoples. This research will also assist me to complete my Masters degree and that support is much appreciated. We (you and I) might also learn something new about m-learning from each other.

It is possible that part or all of this research could be published, this includes but is not limited to a summary of the findings, the thesis (which will be made available on completion).

How will my privacy be protected?

Individual responses will be confidential to the researcher. You have the option of being named however, if you wish to remain anonymous, another name will be assigned to you and I will be the only person who knows your identity. To protect your privacy, consent forms, audiotapes and transcripts will be retained at AUT in a locked cupboard. On completion of this research and after a period of six years, the data and documentation will be destroyed.

If you would like to remain anonymous please say so on the consent form. As stated earlier, you will receive a copy of the transcripts to amend or delete anything you wish before I use the information.

What are the costs of participating in this research?

The only cost to you is your time. Interviews will be conducted face-to-face for approximately an hour, but that will depend on the nature of the interview and your availability.

What opportunity do I have to consider this invitation?

You will be given a week to consider the invitation, then I will contact you again to see if you would like to participate.

How do I agree to their participation in this research?

In order to agree to participate in this research project you need to complete and sign the attached consent form.

Will I receive feedback on the results of this research?

As stated on the consent form, you will have the option of receiving a summary report of the findings.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Dr. Teorongonui Josie Keelan, jkeelan@unitec.ac.nz, Phone: +64 9 815 4321 ext 6201

Concerns regarding my conduct of the research should be notified to the Executive Secretary, AUTEK, Dr Rosemary Godbold, rosemary.godbold@aut.ac.nz, 921 9999 ext 8044.

Whom do I contact for further information about this research?

Researcher Contact Details:

Jamie Cowell
kqm3052@aut.ac.nz_

Project Supervisor Contact Details:

Dr. Teorongonui Josie Keelan
jkeelan@unitec.ac.nz
Phone: +64 9 815 4321 ext 6201

**Approved by the Auckland University of Technology Ethics Committee on
14/05/2012, AUTEK Reference number 12/115**

He whakamārama mā te kaiwhakauru



Te rā i puta ai tēnei pepa whakamārama:
Paenga-whāwhā, 2012

Te Ingoa o tēnei kaupapa rangahau:
He riri tā te tawa uho, he riri tā te tawa para

He tono:

Tēnā koe. Ko Jamie Cowell tōku ingoa. He ākonga ahau e whai ana i te Tohu Paerua kei te Wānanga Aronui o Tāmaki-makau-rau (AUT). He tono tēnei kia uru mai koe ki tēnei kaupapa rangahau. Kei a koe te tikanga mena ka uru mai, kāore rānei. Nō reira, mena he kore hiahia nōu ki tēnei tono, he hiahia rānei ki te puta i mua noa atu i te mutunga o ngā uiuinga, kāore he paku whiunga ka utaina ki runga i a koe.

Nā te aha koe i whiriwhiria ai mō tēnei tono?

Kua tohua koe hei kaikōrero mō tēnei kaupapa rangahau nō te mea kei a koe ētahi kōrero hei tāpiri atu, hei āwhina atu i tēnei kaupapa rangahau.

He aha te whāinga o tēnei rangahau?

Ko te whāinga o tēnei kaupapa ko te āta titiro ki te wāhi o tēnei mea te m-learning ki te tukunga iho, te whakahaumanutanga hoki o te reo Māori. Ka āta tātaritia hoki ngā kōrero kia whakautua ai te pātai 'Ka whakaritea ana, ka whakamahia ana rānei ngā rauemi m-learning hei whāngai i te reo, me pēhea e tiakina ai te reo Māori?'

He aha ngā whakaritenga o tēnei rangahau?

Mō ngā kōrero uiui ka kohia nei, ka tū he uiuinga takitahi. He uiuinga kanohi ki te kanohi, ā, kōtahi hāora pea te roa. Māku tonu ēnei uiui e whakahaere, ā, māku hoki ngā kōrero me ngā whakaaro e tuhituhi.

Ka whakamahia he mīhini hopu reo kia tōtika te mau o ngā kōrero. Tērā pea ka tuhia hoki e au ētahi pitopito kōrero. I muri mai o tērā, ka tāria ngā raraunga, ka tuhia ngā kitenga ki tētahi pūrongo tuhinga roa. Tērā pea ka tāia ngā kōrero, ā, ka puta ki te ao whānui.

He aha ngā raruraru, āwangawanga tērā pea ka puta ake?

Ka whakahaerehia ngā uiuinga me ngā mahi rangahau i raro i ngā tikanga Māori. Nō reira, ki ōku nei whakaaro, karekau he raruraru, he āwangawanga. Mena kāore e āta tau tō mauri ki ētahi o ngā pātai ka whakaaetia te noho wahangū. Ka taea hoki e koe te wehe atu i tēnei mahi rangahau.

Me pēhea te whakatikatika i ēnei raruraru, āwangawanga?

Mena kāore e āta tau tō mauri ki ētahi o ngā pātai ka taea e koe te noho wahangū. Ki te hiahia koe ki te whakamutu i te uiuitanga, ki te wehe atu hoki i tēnei mahi rangahau, ka whakaaetia tēnā.

He aha ngā hua?

Ko āu kōrero hei āwhina i te tātaritanga. Ko tētahi hua ka puta mai i tēnei rangahau ko te whanaketanga, otirā, he huarahi anō mō te oranga o tō tātou reo Māori. He oranga hoki tēnei rangahau mō te iwi Māori me ngā tāngata katoa o te motu. Ka whai pānga hoki ki ētahi atu hapori me ētahi atu iwi taketake o te ao. Mā ēnei uiuinga e taea ai e au te tuhinga roa te whakaoti, ā, ka tutuki ai aku mahi mō te Tohu Paerua. Nō reira, e kore e mutu ngā mihi ki ngā kaitau toko o tēnei mahi rangahau. He tika te kōrero e kī ana, 'Mā te huruhuru ka rere te manu'.

Me pēhea taku tūmataiti e tiakina ai?

Ka noho tapu āu kōrero i ngā wā katoa, kāore ērā kōrero e puta ake ki ētahi atu. Mena ka hiahia, ka noho muna āu kōrero. Ki te pēnei, ka whakamahia he ingoa kē mōu. Ko au anake ka mōhio nā wai ngā kōrero. Ka puritia rawatia ngā pepa whakaae, ngā rīpene kōrero me ngā tuhinga kōrero e au me taku kaiwhakahaere rangahau. Hei te mutunga o tēnei rangahau ka tiakina ki roto i tētahi rua e raka ana. Ka puritia mō te ono tau, kātahi ka whakangaromia aua mea katoa.

He aha te utu mō te whakauru mai ki roto i tēneki rangahau?

Ko te wā anake te mea ka whakapaua. Kōtahi haora pea te roanga o te uiuinga.

He pēwhea te roa hei whakatau i taku whakauru mai, kāore rānei?

Ka whakaritea tētahi wā i te wiki *kōtahi* e heke mai nei ki te tuku mai i te puka whakaae kua waitohungia e koe mehemea e pai ana ki a koe te whakauru mai ki tēnei kaupapa rangahau.

Me pēwhea te whakauru mai ki tēnei kaupapa rangahau?

Ki te pīrangi koe ki te whakauru mai ki roto i tēnei kaupapa rangahau, me waitohu e koe te puka whakaae.

Ka whakamōhio mai i ngā hua o te rangahau inā ka oti?

Ka kitea i te puka whakaae, ki te pīrangi koe ka tukuna tētahi kape o te ripoata me ngā tūhuratanga ki a koe.

Mehemea he āwangawanga nōku e pā ana ki tēnei rangahau, me aha au?

Mehemea he māharahara ōu e pā ana ki te āhua o tēnei rangahau me whakamōhio atu ki te Kaitohutohu o tēnei kaupapa rangahau, ki a Dr. Teorongonui Josie Keelan, jkeelan@unitec.ac.nz, Waea: +64 9 815 4321, rua waea 6201

Mehemea he māharahara ōu e pā ana ki te whakahaere o tēnei rangahau me whakamōhio atu ki te Kaiwhakahaere Matua, AUTEK, ki a Madeline Banda, madeline.banda@aut.ac.nz, 921 9999 rua waea 8044.

Me kōrero ahau ki a wai mehemea e whai ana ahau i ētahi atu whakamārama?

Kairangahau:

Jamie Cowell
kqm3052@aut.ac.nz

Kaitohutohu:

Dr. Teorongonui Josie Keelan
jkeelan@unitec.ac.nz
Waea: +64 9 815 4321 , rua waea 6201

**Nā te Komiti Tikanga Matatika o Te Wānanga Aronui o Tāmaki Makau Rau i te rā
14/05/2012, AUTEK Nama Tohu 12/115**

<h1>Consent Form</h1>	 AUT UNIVERSITY TE WĀNANGA ARONUI O TAMAKI MAKAU RAU
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Project title:
Project Supervisor:
Researcher:

He riri tā te tawa uho, he riri tā te tawa para
Dr. Teorongonui Josie Keelan
Jamie Cowell

- ☐ I have read and understood the information provided about this research project. That has been explained to my satisfaction by the researcher in the Information Sheet dated April 2012.
- ☐ I agree to participate in an individual interview.
- ☐ I understand that the interviews will be recorded and then transcribed. I agree to the interview being audio taped and subsequently transcribed for the purpose of this project.
- ☐ I agree to provide any information to the researcher on the understanding that my consent must be given for the use of my name or any other name given, and that any information will only be used for the purpose of this research project and any other subsequent publications that arise from this project.
- ☐ I am fully aware that I have the right to ask for the recorder to be turned off at any time throughout the interview. I also agree that all information remains confidential.
- ☐ I understand and agree that electronic data will be stored separate from hard copies of data in locked cupboards in WB424, Te Ara Poutama building, Wellesley Street, AUT University.
- ☐ I understand that I may withdraw from participating in this project at any time without explanation, and that all relevant information including recordings and transcripts, or parts thereof, will be destroyed.
- ☐ I have had all my questions answered.
- ☐ I also understand that I have the right to (please circle relevant choice)
- ☒ Request a copy of the recording and the written transcription for my own purposes **Yes/No**
- ☒ Request a summary of the findings **Yes/No**
- ☐ I agree to being identified in the research results. **Yes/No**

I have read all the above information and agree to take part in this research project under the conditions set out in this consent form.

Participant's signature:.....

Participant's name:.....

Participant contact details :

.....
.....

Date:

Approved by the Auckland University of Technology Ethics Committee on 14/05/2012,
AUTEC Reference number 12/115

Puka Whakaae



Take rangahau:
Kaitohutohu:
Kairangahau:

He riri tā te tawa uho, he riri tā te tawa para
Dr. Teorongonui Josie Keelan
Jamie Cowell

- Kua pānui, kua mārama hoki ki a au ngā kaupapa mō tēnei rangahau. E pai ana ki a au ngā whakamāramatanga a te kairangahau ki runga i te pepa whakamārama mō te kaiwhakauru, Paenga-whāwhā 2012.
- Ka whakaae kia uru atu ahau ki te uiuinga takitahi.
- E mātau ana ka hoputia ngā kōrero, kātahi ka patopatohia. **Ka whakaae ahau** kia hopukina, kia tuhia hoki aku kōrero ki te mīhini mō tēnei kaupapa rangahau.
- Kua whakaae ahau kia hoatu aku kōrero ki te kairangahau i runga i te mōhio māku kē e whakaae kia uru te ingoa kua hoatu. Kua whakaae hoki kia hoatu aku kōrero mō tēnei kaupapa rangahau noa iho me ngā kaupapa e hāngai ana ki te kaupapa nei.
- E mātau ana ka tāea ngā kōrero te aukati i mua noa atu i te otinga o te uiuitanga, ka whakakorengia ngā pārongo tae atu ki te rīpene me ngā kōrero i tāia, ā, ka whakahokia mai rānei ki ahau.
- Kua utua katoatia āku pātai.
- E mātau ana hoki kei ahau te mana kia: (porohitahia te kōrero tika)
 - ❖ tono atu kia tukuna mai ki a au tētehi kape o te rīpene me te pūrongo. **Āe/Kāo**
 - ❖ tono atu kia homai tētehi kape o te pūrongo whakarāpopototanga **Āe/Kāo**
- E whakaae ana ahau kia tuhia taku ingoa i roto i te pūrongo matua. **Āe/Kāo**

Kua pānuitia e au ngā whakamahuki kei mua ake nei, ā, e whakaae ana ahau ki te whakauru ki tēnei kaupapa rangahau i runga i ngā kōrero nei.

Waitohu:

.....

Ingoa:

Taku nōhoanga/wāaea/īmēra

.....

.....

Te rā:

**Nā te Komiti Tikanga Matatika o Te Wānanga Aronui o Tāmaki Makau Rau i te rā
14/05/2012, AUTEK Nama Tohu 12/115**

Indicative Questions for Interviews Ngā Pātai Hei Ārahi



HE RIRI TĀ TE TAWA UHO, HE RIRI TĀ TE TAWA PARA

TE AKO Ā-MĪHINI M-LEARNING

Tēnā koa, whakautua mai ēnei pātai.

Please answer these questions.

Ki ōu nā whakaaro, he aha tēnei mea te m-learning?

What is your understanding of m-learning?

Kei te whakamahi, kei te mōhio rānei koe i ngā momo rauemi m-learning?

What m-learning resources, if any, do you know of and use?

Ko ēhea ngā momo rauemi m-learning reo Māori nei e mōhiotia ana e koe?

What m-learning resources do you know of that facilitate Māori language content?

Tēnā, whakamāramatia mai ōu nā whakaaro mō te wāhi o tēnei mea te m-learning ki ngā mahi ako.

What are your thoughts about m-learning as a mode of learning?

Ka ea rānei i ngā momo hangarau nei te kawea, te tukuna hoki o te reo Māori?

Are mobile technologies capable of securely facilitating Māori language transmission?

TE KOUNGA O TE REO QUALITY CONTROL

Tēnā koa, whakautua mai ēnei pātai.

Please answer these questions.

He whakaaro ōu mō ngā rauemi m-learning (e mōhio nei koe) me te kounga o te reo o roto?

Would you care to comment on the Māori language quality in m-learning resources that you are aware of.

Āe rānei me whakarite ētehi tikanga arotake i te kounga o te reo e whakapāohotia ana?

To avoid poor quality Māori language resources being made available online, should there be a system that measures the quality of the language before it is made accessible?

TE REO MĀORI THE MĀORI LANGUAGE

Tēnā koa, whakautua mai ēnei pātai.

Please answer these questions.

Ka pēhea rānei te ora o te reo Māori?

What is the current state of the Māori language?

He aha i tika ai kia tiakina te reo Māori?

Why is it vital to protect the language?

Ka pēhea ngā mita o tēnā iwi o tēnā iwi?

What about the dialects?

He āwangawanga rānei ōu mō te tino rangatiratanga o te mātauranga?

If any, what are the concerns in relation to intellectual property?

TE WHAKAHAUMANUTANGA O TE REO MĀORI MĀORI LANGUAGE REVITALISATION

Tēnā koa, whakautua mai ēnei pātai.

Please answer these questions.

He aha tēnei mea te whakahaumanutanga o te reo?

What is language revitalisation?

He aha te wāhi o tēnei mea te m-learning i ngā mahi whakahaumanu i te reo Māori?

What is m-learning's role in Māori language revitalisation?

Me aha e tutuki pai ai ngā kaupapa whakahaumanu i te reo Māori?

What needs to be present for Māori language revitalisation efforts to be successful?

TE TUKUNGA O TE REO MĀORI MĀORI LANGUAGE TRANSMISSION

Tēnā koa, whakautua mai ēnei pātai.

Please answer these questions.

He aha te wāhi o tēnei mea te m-learning i te tukunga iho o te reo Māori?

What is m-learning's role in Māori language transmission?

Ka hāpai rānei te m-learning i te whāngaia o te reo ki ngā whakatipuranga?

How does m-learning assist or hinder intergenerational transmission?

ĒTAHI ĀHUATANGA O TE AO MĀORI CULTURAL CONCEPTS

Ka tukuna ana te reo Māori mā ngā rauemi m-learning me whai whakaaro rānei ki ngā tikanga Māori? Tēnā, whakamāramatia mai.

When facilitating Māori language transmission on an m-learning platform, what are the cultural concepts or kaupapa Māori values that need to be considered or observed in terms of respecting Māori principles and practices?

He aha i pēnei ai tō whakataū?

Why do you think this to be the case?

E pēhea ana ōu whakaaro ki ēnei kōrero?

What do you think about these statements?

He mana tō te reo

The language has mana.

He mauri tō te reo

The language has mauri.

He mauri tō te mīhini e tuku ana i te reo Māori

Machines that facilitate the transmission of the language have mauri.

Tēnā koa, whakautua mai ēnei pātai.

Please answer these questions.

He pānga rānei tō te m-learning ki ngā atua Māori?

If any, what are the connections between atua Māori and m-learning?

HE PĀTAI OTHER QUESTIONS

E pēhea ana ōu whakaaro ki ēnei kōrero?

What are your thoughts on the following statements?

Ko m-learning te ara hei whai mō te oranga me te tukunga iho o te reo Māori.

M-learning is the future for Māori language transmission.

Tē rangona ōku tīpuna ka whakamaua ana aku kawē rongo.

I can't hear my ancestors with headphones plugged in.

He reo e kōreretia ana, he reo ka ora.

A spoken language is a living language.

Ka hāpai rānei te m-learning i te kōrerotia o te reo?

Therefore, how might m-learning facilitate or jeopardise the spoken transmission of the language?

HE KŌRERO

DISCUSSION

Ka whakaritea ana, ka whakamahia ana rānei ngā rauemi m-learning hei whāngai i te reo, me pēhea e tiakina ai te reo Māori?

When creating m-learning resources, or using m-learning as the mode of delivery, what must be considered to protect the language?

WHAKATAUKĪ

PROVERBIAL SAYINGS

Ka toko ake rānei he whakataukī i roto i a koe mō te wāhi o te hangarau ki ngā mahi whakahaumanu i te reo?

Are there any whakataukī you can think of that are relevant to the place of technology in facilitating Māori language transmission and revitalisation? How would you interpret this in relation to the research?

HEI TĀPIRITANGA

FURTHER COMMENTS

He kōrero atu anō āu?

Do you have any further comments?



MEMORANDUM

Auckland University of Technology Ethics Committee (AUTEC)

To: Teorongonui Keelan
From: **Dr Rosemary Godbold** Executive Secretary, AUTEC
Date: 21 May 2012
Subject: Ethics Application Number 12/115 **He riri ta te tawa uho, he riri ta tawa para.**
A Maori proverb meaning: The heart of the tawa tree has a sound, as does its flesh.

Dear Teorongonui

I am pleased to advise that the Auckland University of Technology Ethics Committee (AUTEC) approved your ethics application at their meeting on 14 May 2012. Your application is now approved for a period of three years until 24 May 2015.

AUTEC wishes to commend the applicant and yourself on the quality of this application, in particular the use of Te Reo and the Researcher Safety Protocol.

I advise that as part of the ethics approval process, you are required to submit to AUTEC the following:

- A brief annual progress report using form EA2, which is available online through <http://www.aut.ac.nz/research/research-ethics/ethics>. When necessary this form may also be used to request an extension of the approval at least one month prior to its expiry on ;
- A brief report on the status of the project using form EA3, which is available online through <http://www.aut.ac.nz/research/research-ethics/ethics>. This report is to be submitted either when the approval expires on or on completion of the project, whichever comes sooner;

It is a condition of approval that AUTEC is notified of any adverse events or if the research does not commence. AUTEC approval needs to be sought for any alteration to the research, including any alteration of or addition to any documents that are provided to participants. You are reminded that, as applicant, you are responsible for ensuring that research undertaken under this approval occurs within the parameters outlined in the approved application.

Please note that AUTEC grants ethical approval only. If you require management approval from an institution or organisation for your research, then you will need to make the arrangements necessary to obtain this. Also, if your research is undertaken within a jurisdiction outside New Zealand, you will need to make the arrangements necessary to meet the legal and ethical requirements that apply within that jurisdiction.

To enable us to provide you with efficient service, we ask that you use the application number and study title in all written and verbal correspondence with us. Should you have any further enquiries regarding this matter, you are welcome to contact me by email at ethics@aut.ac.nz or by telephone on 921 9999 at extension 6902. Alternatively you may contact your AUTEC Faculty Representative (a list with contact details may be found in the Ethics Knowledge Base at <http://www.aut.ac.nz/research/research-ethics/ethics>).

On behalf of the AUTEC and myself, I wish you success with your research and look forward to reading about it in your reports.

Yours sincerely

Dr Rosemary Godbold
Executive Secretary
Auckland University of Technology Ethics Committee
Cc: Jamie Cowell kqm3052@aut.ac.nz, jkeelan@unitec.ac.nz

TE ĀPITI HANGA G

APPENDIX G

Ngā paetukutuku, rauemi rorohiko hoki: ICT resources and websites

The following offer an indication of some of the most significant accomplishments in the area of ICT and web, as outlined by Peter J Keegan, Te Taka Keegan and Mark Laws. In the following review:

Keegan, P.J., Keegan, Te T., & Laws, M. (2011). Online Māori resources and initiatives for teaching and learning: Current activities, successes and future directions. *MAI Review*, Issue 1. Retrieved from <http://www.review.mai.ac.nz/index.php/MR/issue/view/23/showToc>

The information in the following table is taken directly from the review and therefore all acknowledgments for the presented table should be made respectfully to the authors.

[1] Niupepa Māori www.nzdl.org/niupepa	(Over 17,700 Māori newspaper pages have been preserved and collated into the Niupepa Collection, available online with full text search facilities available for most pages).
[2] Māori Television www.maoritelevision.com	Māori TV channel established in 2003
[3] Māori Language Commission www.tetaurawhiri.govt.nz	The Māori Language Commission recognised the need for standardisation of orthography, new terminology development and the need for dissemination of information to the Māori language community. It has been aware of the role of ICT and new technologies in promoting Māori language development and subsequently makes available electronic resources from its bilingual website that include publications written in Māori, historic Māori language information, Māori language statistics, orthographic conventions (especially advocating marking long vowels in Māori using a bar or macron over the long vowel), keyboard drivers and links to other resources.
[4] Kōrero Māori www.korero.maori.nz	The Māori Language Commission also sponsored the Kōrero Māori website [4] to raise the awareness and to provide opportunities for people to learn and use the Māori language. This site provides lessons and history for learners of the Māori language, resources for fluent speakers, Māori language resources for businesses, and a Māori Language Club (that intends) to provide opportunities for Māori language speakers to converse.
[5] He Pātaka Kupu www.korero.maori.nz/forspeakers/patakakupu	During the Māori language week of 2008 (21–27 July), the Commission released the first monolingual Māori dictionary on this website called He Pātaka Kupu.

[6] Te Rauparaha www.tki.org.nz/r/maori/te_rauparaha	Māori language only Te Rauparaha website hosted on Te Kete Ipurangi where the information has been provided by Ngāti Toa Rangatira (a North Island Māori tribe).
[7] Te Kete Ipurangi www.tki.org.nz	Te Kete Ipurangi was one of the original websites funded by the New Zealand Government that were committed to a bilingual approach. The Māori education section of the website has links to many Māori language resources with a focus on materials that are relevant to teachers of Māori language.
[8] Kotahi Mano Kāika www.kmk.maori.nz	There appears to be only one tribal-based website, Kāi Tahu (sometimes spelt Ngai Tahu) in the South Island that offers significant Māori language lessons online. This is the Kotahi Mano Kāika (One Thousand Homes) website. The site's goal is to have 1,000 Kāi Tahu homes speaking Māori by the year 2025. It assists this by providing strategies, advice and Māori language lessons.
[9] Te Whanake www.tewhanake.maori.nz	Te Whanake (Māori language teaching) series originates from the work of Professor John Moorfield. John has taught Māori language to adult learners of Māori primarily in universities in New Zealand since the 1980s.
[10] Culture Flow www.cultureflow.co.nz	Culture Flow is an independent organisation that produces Māori language courses primarily for beginners.
[11] MāoriLanguage.Net www.maorilanguage.net	Māori language video lessons are online at MāoriLanguage.net
[12] MāoriOrg.Net www.maori.org.nz/Kotereo	The site offers a wide range of information and products to do with Māori culture and also some Māori language lessons through its te reo (language) section
[13] He Kupu o te Rā www.kupu.maori.net	He Kupu o Te Rā (Word of the Day) [13] provides registered users a word of the day via email, or through a news feed reader. The site also offers basic Māori language grammar lessons and some instructions on how to generate macrons.
[14] Te Wakareo-ā-Ipurangi www.reotupu.co.nz/wakareo/introduction.cfm	Te Wakareo-ā-ipurangi provides recognised Māori language dictionaries. Access is subscription based with the subscriptions costing \$144 per year for a single user.
[15] Williams at NZETC www.nzetc.org/tm/scholarly/tei-WillDict.html	The sixth edition of William's dictionary (1957) is available online, as a result of ongoing work of the New Zealand Electronic Text Centre
[16] Ngata at Learning Media www.learningmedia.co.nz/ngata	The Ngata dictionary (1993) is also available online for no cost as a result of Learning Media, an independent New Zealand educational resource provider
[17] Te Aka www.maoridictionary.co.nz	Te Whanake series previously mentioned provides a useful dictionary called Te Aka
[18]*English-Māori Word Translator (No longer active) http://www.translator.wananga.ac.nz	English-Māori word translator. Not only does this resource translate between English and Māori but many of the Māori keywords can be played so that correct pronunciation can be heard.
[19] Te Tai Tokerau Papakupu www.edesignz.co.nz/dictionary/index2.htm	Tai Tokerau is available at Te Papakupu o Te Tai Tokerau This dictionary focuses on words used by native speakers, words listed in manuscripts, and names, with all terms being peculiar to the Tai Tokerau area.

[20] Māori Mathematics Dictionary http://www2.nzmaths.co.nz/maori/Dictionary/	Specialist dictionary Te Reo Pāngarau: A Māori Language Dictionary of Mathematics
[21] Māori Sciences Dictionary www.putaiao.tki.org.nz/Papakupu-Putaiao	The (Māori) science equivalent to Te Reo Pāngarau - Te Reo Pūtaiao: A Māori Language Dictionary of Science.
[22] Microsoft Māori www.microsoft.com/nz/maori	The localisation of Microsoft Windows XP and Microsoft Office 2003 into Māori. This involved the translation of over 900,000 words in 180,000 separate strings. Windows Vista and Office (2007) have subsequently been localised and are available free from Microsoft. This software allows a computer user to interact totally with an operating system and some application software and only ever encounter the Māori language.
[23] Google in Māori www.google.co.nz	Google interface in Māori. Users of the New Zealand localised Google site are able to display the interface in te reo Māori.
[24] Google Translator Toolkit http://translate.google.com/toolkit	Google's translator toolkit to be used with Māori language translations, a free online tool that has the potential to radically reduce the time and subsequent costs of Māori to English and English to Māori translations.
[25] Te Ara www.teara.govt.nz	Te Ara – The Encyclopaedia of New Zealand provides a comprehensive guide to New Zealand, covering people, culture, environment, history, economy, and society. The Māori language portion of the website is distinctive in that the content isn't simply a translation of the English version, but rather its content is written from a Māori perspective in te reo Māori.
[26] Te Ngutu Kura www.maorispellchecker.net.nz	Te Ngutu Kura Māori Spell Checker provides a spell checker customised for the Māori language.
[27] Te Haemata Web Store http://reostore.haemata.co.nz	The Haemata Web Store specialises in selling Māori language products for use at home, at school, at work and during leisure times.
[28] Unicode www.unicode.org	The creation of Māori resources has been enhanced by the increasing acceptance of Unicode standard [28]. This standard defines encoding systems for characters of almost every language script known. It is used to ensure consistency of display across computer platforms, across computer programs and across languages.
[29] Te Whare Wānanga o Awanuiārangi: eWānanga Login http://ewa.wananga.ac.nz	The term eWānanga, or 'electronic Wānanga' is an English-Māori hybrid term used to represent the amalgamation of two concepts: one is based on ICT and the other on mātauranga and āhuatanga Māori (knowledge and traditional customs). The eWānanga term is now used in several different ways. In one approach, eWānanga depicts Te Whare Wānanga o Awanuiārangi (the indigenous-university of Awanuiārangi) within the online environment (a virtual Wānanga). In another context, eWānanga is the name of the online Learning Management System called the eWānanga LMS.
[30] WebSol Ltd is now owned by Intuto www.intuto.com	An early version of eWānanga using the 'Netaca System' developed by WebSol Ltd in 2003. Netaca already had multilingual functionality (Chinese, Japanese and English) and was later customised to incorporate Māori and a unique bilingual interface feature.

¹⁰ [36] Google Translate http://translate.google.com	Recently Google developed their 'Google translate website' to provide both novice and expert word, sentence and complete page translations supported by over 50 languages. The technology and techniques used by this website are based on Google's 'Translator Toolkit', a powerful language editor to help improve translators to develop their languages to be used in a range of search engines, plugins, toolbars and mobile communications.
[37] Moodle: Open Source Learning Tool www.moodle.org	in 2009, eWānanga migrated to Moodle. With Moodle's growing acceptance and use by the tertiary education sector, the available expertise, know-how, intellectual capability and related services, it has helped sustain and grow the new capability of the eWānanga LMS.
[40] Māori Language Info www.maorilanguage.info	Māori.Language.info claims to evaluate and provide feedback on some of the existing Māori language websites and resources.

¹⁰ Please note, websites [30-35], which are mostly related to Language Management Systems (LMS) have been omitted. Websites [38-39] have also been omitted, and if desired, can be viewed by directly accessing the reading which discusses LMS at depth.