Te Taumata - Te Timata
The Pinnacle - The First Step

By

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**Original Artwork
by
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Inset of Chevron

Preface

In August 2006 I first met sitting member of the Waitangi Tribunal and Tohunga Ringatu, Joseph Tuahine Northover MNZM (Ngati Porou, Ngati Hine, Ngati Kahungunu), one of the Kaumatua for the Eastern Institute of Technology, in Taradale, Napier. He was teaching a group of advanced level Te Reo Maori learners who were discovering, among other things, the meanings of old words for use in this New World.

Over the next three years, with his consent, I digitally recorded discussions with Tuahine about my PhD research in progress, seeking his advice for an appropriate title for this thesis, and learning more about poutama, a sacred taonga (treasure) of our tipuna (ancestors). Eventually, from the basis of matauranga Maori knowledge shared by Tuahine, the learning poutama became core to the structure and philosophy of my thesis. In one of many email exchanges, on 22 October 2008, Tuahine clarified the learning poutama...

In reference to the 5 steps of the learning poutama, it is something that I put in place for the students to aim for. They are:

Kua Timata, The first step.

Kua Mārama, Enlightened.

Kua Mōhio, Knowledge.

Kua Kaha, kua Pakari, Kua Tino Matau, Confident.

Ko te Taumata, Te Tihi o Manono, Te Tohungatanga, The Pinnacle.

These can be applied to whatever the kaupapa.

i.e. Mohiotanga, Knowledge.

Whakaputa whakaaro, Communication.

Rangahau, Research.

Te Hanganga, nāna ake, Creativity.

Whakahaere, Management and others.

Here is an example for step 5 of Whakahaere; Kua tae te Akonga ki te taumata o tōna mōhiotanga ki ngā mahi whakahaere.

Mō tenei wa, noho ora mai.

Tuahine

From Tuahine I learnt that the mana of a person is enhanced when they share their knowledge with others, as is the mana of those who can then learn from that knowledge. I am humbled by the generosity and sharing of knowledge by Tuahine and all of the people who appear in my research which makes up the main body of this thesis. What the individual learners did with their knowledge of learning and Information Technologies is the subject of the thesis Post Script.

Abstract

Maori with Bachelors degrees in Information Technologies (IT) have specialist knowledge and skills far in advance of the general population of Aotearoa/New Zealand. Problematically, this point is lost in dominant higher education discourses that marginalise and position Maori negatively. The 'silence of the archives' with regard to Maori narratives of higher education is a compounding factor. While the largest proportions of Maori pursue tertiary education in the New Zealand Institutes of Technology and Polytechnics (ITP), very little is known about them.

Kaupapa Maori theorising and research practices enabled a new approach in an 'insurrection of suppressed knowledges' to identify and inform issues that are problematic for Maori in particular. A traditional Maori metaphor of poutama is used as a heuristic to illuminate core values and foundations of a Maori worldview and philosophy, to generate a 'reversal discourse' that gives a Maori perspective of the problems. Computer Graphic technologies portray the spirals of learning implied by the multi-levelled, multi stepped poutama; two heuristically separated worlds of Te Ao Maori and Te Ao Pakeha and their integration into Te Ao Hou, The New World.

Re-interpreting a traditional role of Pae Arahi (Guides) as a Kaupapa Maori research approach, respected members of tangata whenua, the indigenous people of the land the ITPs are built on, facilitated appropriate entry into fieldwork. Semi-structured face-to-face interviews conducted in 2006-2007 with 17 tauira Maori (students and graduates), 7 IT staff and 12 Maori staff from three ITPs are the basis of narratives that 'positively image' Maori who gained IT qualifications in the ITPs. A re-presentation of poutama as whakapapa or genealogy explains the significance of foundational Maori values of wairuatanga (spirituality), whenua (land), tangata (people) and whanau (family), in academic success. A Maori worldview offers new perspectives of what success is and challenges of being Maori in the tertiary academy that are not commonly understood or acknowledged by non-Maori.

Five steps on a learning poutama follow the tauira Maori in their first introductions to IT and prior education; enlightenment to the value of higher education for whanau and openness to new understandings in the IT field;

increasing confidence in their abilities to learn, to apply and share IT knowledges; mastering the requirements of degrees in the academy and the challenges of the virtually mono-cultural IT field and ITP environments; their achievement of a pinnacle of IT degrees and other qualifications, and their first steps into work.

Te Taumata, Te Timata expresses potentials for 'Maori Ways' to be combined with 'IT Ways' and for more Maori voices to be heard in the higher education discourse. Centrally it celebrates 17 unique individuals who are role models, and inspirations for other Maori to follow to their own successes.

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Ko Hikurangi te maunga

Ko Waiapu te awa

Ko Te Whanau O Ruataupare te hapu

Ko Te Ariuru te marae

Ko Ngati Porou te Iwi

Ko Puhanga Tahora te maunga

Ko Hokianga te moana

Ko Ngati Pakau te hapu

Ko Tahekeroa te marae

Ko Ngapuhi te Iwi

Ko Margaret Wilkie taku ingoa

I use the first two percent of my thesis to acknowledge the many people who have supported my doctoral journey. My progress to this stage is based on these relationships and consistent with my research findings, they are a factor essential to my completion of studies. My deepest thanks go to my doctoral Supervisors in the Faculty of Education at Victoria University of Wellington. Thank you Dr Rob Strathdee, for insight into Pakeha worldviews and theorising, for constantly challenging me to think how what I do and write advances the argument of the thesis. Particular thanks to my Primary Supervisor Dr Hazel Phillips (Taranaki) for your constant aroha, guidance, advice and tautoko, creating safe spaces for my pursuit of Kaupapa Maori knowledge, for my learning about the craft of academic writing, and for walking ahead of me inside the Academy to the completion of this PhD journey.

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My learning then was 'interrupted' by the chronic and terminal illnesses of my much loved father Frank Desmond Wilkie (1921 – 1998) and mother Mona Ellen Wilkie (1924 – 1999). That whanau is the first of all considerations is the epitaph of their lives. I am essentially who I am because of them and the eleven siblings they gifted me. Thanks Frances, Richard, Judith, Peter, Stephen, Colin, Trevor, Gary, Douglas, Kevin and Kaye for your love and support, and for the precious treasures of our children, grandchildren and partners. Francie, thanks for talking me through the long years and reminding me 'it's not long to go now' when I most needed it. Wolf thanks for keeping things real always dropping in when you are in town to thrash me mercilessly in backgammon, you are the champion. To my brother Trevor (1956-2007) see La I kept my promise to finish my PhD. Michelle Bare, thanks for looking after me when I was too busy looking after everything else, you can see what a difference you made.

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Taking his advice and 'one step at a time' in July 2002 I joined the second hui of MAI ki Poneke www.vuw.ac.nz/mai the Maori and Indigenous post graduate students support network in Wellington. There I learned of a vision, of 500 Maori PhDs in 5 years, conceptualised by Nga Pae o te Maramatanga (Horizons of Insight) www.maramatanga.ac.nz The National Institute of Research Excellence in Maori Development and Advancement. My goal became to be one of what I call the 'Nga Pae 500'.

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Chapter 1. Te Timata - The First Step

He Whakatauki

E tipu e rea mo nga ra o to ao.
Ko to ringaringa ki nga rakau a te Pakeha hei oranga mo to tinana.
Ko to ngakau ki nga taonga o o tipuna hei tikitiki mo to mahunga.
Ko to wairua ki te Atua nana nga mea katoa.

Grow tender shoot for the days of your world.
Turn your hand to the tools of the Pakeha for the wellbeing of your body.
Turn your heart to the treasures of your ancestors as a crown for your head.
Give your soul unto God the author of all things.

Ta Apirana Turupa Ngata (Ngati Porou)

Introduction

Sir Apirana Ngata is an illustrious ancestor of Ngati Porou iwi and a pioneering Maori early twentieth century scholar, politician, and academic. In the words of his biographer, Ranginui Walker (Whakatohea), Ngata ‘exhorted future generations to educate themselves for the new world’ (2001, p. 397). Almost one hundred years later, I explore the educational successes of Maori (indigenous people) who have chosen to turn their hands to Computing and Information Technology (IT), one of the ‘tools of the Pakeha’, early in the 21st century, in Aotearoa/New Zealand.

My thesis is primarily informed by Maturanga Maori (knowledge and education), Kaupapa Maori (theory and philosophy) and Kaupapa Maori research practice. I draw on the poutama, a traditional multi-levelled metaphor from Te Ao Maori (The Maori World) as my theoretical basis. From here I explore the ‘successes’ of Maori students within a context of contemporary tertiary education structures, policies and practices. My understanding is drawn primarily from information and knowledge shared by Maori who are leading contemporary academics, and Maori who participate in governance, management and teaching, and as tauira Maori (graduates and students) of IT in the Institutes of Technology and Polytechnics (ITPs).

Rationale

Kaupapa Maori protagonist Graham Hingangaroa Smith (Ngati Apa ki Wanganui, Te Aitanga a Hauiti, Ngai Tumapuhia a Rangi) described Kaupapa Maori as the ‘philosophy and practice of “being Maori” that has a valid and

legitimate social, political, historical, philosophical, intellectual and cultural authenticity' (Smith, 1992, p.1). He later described Kaupapa Maori as 'both a theory and transformative praxis which has been organically derived from within Maori communities' (Smith, 1997, p. 483). He wrote of the significant disparities of Maori participation and achievement in higher education and that Maori were forced to choose either to participate in Pakeha dominant institutional frameworks, where they are required to conform to the 'taken for granted' structures, or not participating at all' (Smith, 1992, p. 9). The crisis of low Maori participation in tertiary study has been alleviated over the past decade by the development of Wananga (Kaupapa Maori based degree conferring tertiary institutes), in 2007, 27 percent (23,155) of all Maori in tertiary study in 2007 enrolled with the Wananga. In that same year though, the largest group 40 percent (33,586) of Maori chose to enrol with the ITPs (Ministry of Education, 2008, ENR 16), a jump from the 26 percent that were enrolled there in 2003 (Ministry of Education, 2004a). Beyond statistics, very little is known about the tauira Maori in ITPs.

Problematically, statistics show the higher the level of education, the fewer Maori study there. For example, in 2007, 17 percent of tauira Maori enrolled at degree Level 7 compared with 29 percent of all tertiary students (Ministry of Education, 2008, ENR 16). A further 14 percent of Maori were enrolled in Level 5-7 Diplomas and the significance of this is discussed in following chapters. My particular focus is on Maori studying in the ITPs at Degree levels in the field of IT to see how more Maori could participate and achieve there.

The Aotearoa/New Zealand Ministry of Economic Development formulated a Growth and Innovation Framework that identified Information and Communication Technologies as one of three sectors that have a high growth potential and can enable growth in other sectors of the economy (Ministry of Economic Development, 2005, p. 15). With IT considered central in the access to knowledge and the knowledge economy, it is critical that Maori increase both capacity (numbers) and capability (skills and knowledge) with the field. Essentially, we need to understand more about how this can be achieved. Just less than 7 percent of all Maori students in 2007 studied IT at tertiary institutes (Ministry of Education, 2008, ENR 16). My thesis presents the stories of some of them and other Maori graduates from the years 2004-2006.

Aotearoa/New Zealand educationists and Kaupapa Maori theorists and researchers Russell Bishop (Tainui, Ngati Awa) and Ted Glynn wrote of 'the current crisis in Maori education ...characterised by under-representation of Maori in 'success' indices and over-representation in the 'failure' indices' (1999, p. 27). Ten years later the discourse continues to negatively emphasise disparities in 'success' outcomes between Maori and almost all other students in tertiary studies. My thesis deliberately reverses the discourse (Foucault, 1980) and explores the potential of positively imaging Maori (Cooper, 1999). I focus on IT graduates, most of whom have IT knowledge far in excess of my own and most of the national population.

Against the too real context of few Maori participating and achieving higher level IT qualifications, I consider the broader implications for whanau (extended family) and Aotearoa/New Zealand society as a whole. I do not intend to indulge in what Postcolonial theorist Edward Said terms a 'rhetoric of blame' (1994, p. 18), rather my focus is to address the current lack of information about Maori in the ITPs and gain understanding of why and how Maori do succeed with academic qualifications there.

Colonised in the 19th century, Aotearoa/New Zealand is now subject to 'Western rule'. The implications of this for Maori are evident in the narratives that follow. Of value are the thoughts of Postcolonial theorist Leela Gandhi who asked 'Who gets known in and as history?', or 'Who are the groups and events of whom "colonial" history is ignorant?' (Gandhi, 1998, p. 172). As I show, we are largely ignorant about the stories and views of Maori in our ITPs, part of what Gandhi terms 'the silences in the archives'.

Post-Structuralist Michel Foucault argued for 'an insurrection of knowledges that are opposed ... to the effects of the centralising powers that are linked to the institution' (Foucault, 1980, p. 84). The institution of interest here is the Aotearoa/New Zealand Tertiary Education System, particularly as it is represented by the Institutes of Technology and Polytechnics. The knowledge of a Kaupapa Maori standpoint is embedded in the methodology and method of my empirical research. This has influenced the way I approached the literature and my responses to the issues raised there. The way Maori are positioned by the dominant Pakeha discourses, is based on

‘common knowledge’ described by McCreanor (2005, p. 55) as ‘a standard story’ of how Pakeha talk about Maori, particularly through media, that results in ‘the seemingly effortless reproduction of the status quo of social relations, it also implies the existence of competing, alternative but marginalised discourses.’ My thesis challenges the discourse that positions Maori negatively and predominantly excludes a Maori worldview.

Educationist Wally Penetito (Tainui, Ngati Haua, Ngati Raukawa, Ngati Tamatera) succinctly stated the ongoing difficulties faced by Maori in education was that ‘the New Zealand education system has always operated as though its clients were either Pakeha or wanted to become Pakeha; Maori had much to learn from Pakeha but Pakeha had little to learn from Maori’ (Penetito, 2001, p. 18). Professor Mason Durie (Rangitane, Ngati Kauwhata, Ngati Raukawa) argued that the structure of the education system denied Maori participation ‘on any but assimilationist terms: that is Maori have to leave their identity at the gate’ (M. Durie, 2004, p. 15).

My thesis points to much that can be learned about Maori, from a Maori philosophical basis, that shows that we are Maori and able to succeed in tertiary education drawing on the strengths and values of our own culture and knowledge base. I explore Maori ‘cultural capital’ and identity through relationships with whanau, hapu (sub-tribe) and iwi as foundational to Maori success in tertiary studies. Wairuatanga (spirituality), whakapapa (genealogies) and connection with the whenua (land) are implicit in the narratives that follow. Kaupapa and tikanga Maori (philosophy and protocols) create contexts for the practices of manaakitanga (hospitality), awhina (care, help) and tautoko (support), Maturanga Maori and Ako Maori (learning and teaching) processes that encompass sharing of knowledge through tuakana-teina (elder-younger sibling) relationships are also explored. All of these elements are part of Maori cultural values systems. The extent to which this is understood or accommodated in tertiary education is questioned by this research.

Research Questions

My research aims to understand why and how it is that some Maori in the Aotearoa/New Zealand ITPs are successful in IT studies against a standard story of educational disparities. I discuss the literature relevant to this viewpoint in future chapters. I was looking for the important elements that are key to Maori succeeding in IT degrees. I considered what part does their identity as Maori; their connections with whanau and whanau support, marae and Maori communities; Maori staff; Maori role models and mentors; Maori aspirations; and the relationships between tangata whenua and the ITPs have in the success of tauira Maori in IT studies?

Thesis Outline

My thesis is structured into 10 chapters that I list below. A truer image of the structure is a spiral that begins with Te Timata, my own first steps with this doctoral study. An effect of spiral progression expressed two dimensionally with words is that elements appear repeatedly and this is the case with my thesis. This process also resonates as a Maori narrative pedagogical device employed by, among others, G Smith in his 1997 doctoral thesis.

Chapter 2 Success and Failure, a Kaupapa Maori Critique

Success is a contested term and became a key issue in my research. Chapter 2 offers a Kaupapa Maori critique of the concepts of success and failure from two worldviews, firstly from a Maori worldview, informed by centuries of traditional thinking that gives the basis of Maori understandings of success substantially missing in the tertiary education environment. Reliance on empirical measures that position Maori in deficit against non-Maori entirely misses the elements that are significant from a Maori perspective. Pakeha concepts determine what counts as success in tertiary education, and the educational strategies and policies that normalise the Pakeha worldview of success. The marginalisation of Maori in tertiary education is also explored here. Deficit theorising negatively positions Maori in the dominant Pakeha system, and Kaupapa Maori theorising creates an alternative.

I introduce my use of a traditional Maori concept of a double poutama for a heuristic method to separate two worldviews of success into that of Te Ao Maori and Te Ao Pakeha (the Pakeha world). In fact, there is not one monolithic worldview that is Pakeha, nor one that is Maori. Reality is more complex; there are multiple views in both worlds. The poutama discussed in more detail in chapter 3 is a tool that can represent multiple realities from both worlds. A foldout image of Te Ao Hou (The New World) that represents both worldviews is attached as the back cover to this thesis, useful for reference. My research shows how Maori individuals view success in the context of the dominant Pakeha education system, and their shared Maori values and worldviews that filter or mediate the Pakeha view of success.

Chapter 3 Poutama, Whakapapa, Spirals and Theories

In chapter 3, I present a central metaphor of the poutama as the theoretical basis of my thesis. This pattern of multi levelled steps represents essentially whakapapa or genealogies. In contemporary times, the poutama is used to represent the pursuit of knowledge through higher education, learning and research. My thesis shows that beneath the common understandings of poutama is much deeper sacred and esoteric philosophy.

I use poutama as a metaphor of success, as a theoretical tool framed by a Maori worldview applied to the problematic representation of Maori in higher education. I use the poutama to analyse multiple factors that are parts of two worldviews. The tension of prioritising values that are different in Maori and Pakeha worldviews is an important thread in my analysis.

Poutama is more commonly used as a representation of the whakapapa or genealogy of Maori. Linking whakapapa to the genealogy and discourse theories of French philosopher Michel Foucault positions Kaupapa Maori and Maturanga Maori as 'suppressed knowledges' in Aotearoa/New Zealand. Whakapapa and genealogy are useful critical tools to look at relationships for Maori in the ITPs, as a 'site of struggle' and as a context for their academic success in the field of IT. The tensions between two worldviews of success become apparent in the stories of the taurira Maori in this study.

Poutama represents whakapapa which has been used as a tool by Maori academics for research and theorising. As a metaphor of a Maori worldview based on whakapapa it also embodies the many threads in the lives of Maori individuals who experience the separate but contiguous worlds of Te Ao Maori and Te Ao Pakeha

My thesis suggests potentials offered by 21st century Information Technologies to share Maori knowledge in visual form. Ironically, one mainstay of Maori transmission of knowledge over centuries is art, not academic writings. Poutama is one of our material artefacts, a visual image that endures through centuries. The multi-dimensioned knowledge it contains is expressed by original artworks that interpret poutama and the spirals of learning it implies, created by artist Brian Samuels.

Chapter 4 Mahi a Ngakau, Mahi a Hinengaro - Work of Heart, Work of Mind

This chapter shows the methodology behind my research which I present as work of both the heart and the mind for myself as a Maori. As noted above, this doctoral study is centred by Kaupapa Maori. Here a Maori worldview frames some of *our* 'common knowledge'. To be Maori is the norm of this discourse and my research questions arose from this basis. I signal my own identity and position by locating myself in my research. I also position the Maori academics, authors and advisors I cited in my thesis, by acknowledging their iwi affiliations the first time I refer to them.

It is important to understand that Maori are not one homogenous group. Iwi Maori throughout the country have unique histories and whakapapa and while we have a collective culture, there is always a place for the individual to belong and grow. A problem shared by other indigenous researchers, is if my voice is taken to speak for Maori collectively (Weber-Pillwax, 1999, p.34). I do not speak for Maoridom; I speak for myself and take responsibility for including every word of this thesis. Here I present voices of some Maori in the hope that their experiences and knowledge will help us to understand more about how Maori can achieve academic success with IT degrees.

Kaupapa Maori describes the educational institutions from pre-school through to post graduate levels of study, created by Maori in response to the failures of the mainstream educational system to reflect Maori educational aspirations and to adequately educate Maori learners. The philosophy underpinning their approaches and practices is called Kaupapa Maori, and the indigenous research discipline developed from this knowledge base is also named Kaupapa Maori. There is a lack of research into the Maori experience of tertiary education from a Kaupapa Maori theoretical base. Kaupapa Maori is the basis of the methodology and my research processes.

Tensions exist between a clash of values and protocols of Te Ao Maori with the processes of the academy in Te Ao Pakeha. I worked in the disciplines and knowledge bases of both worlds aiming to fulfil the tikanga of both. An echo of the experiences of the tauira Maori (Maori students and graduates) who are at the heart of this thesis. Kaupapa Maori is the basis of the tikanga of the approaches I made to engage with Maori for my research. The ethical protocols of the academy have determined the paperwork that accompanied it.

Literature on Kaupapa Maori research gives evidence of an eclectic mix of theory, much of it critical, that made use of 'the tools of the Pakeha', including elegant and powerful use of the English language. My own lack of fluency in te reo Maori limited my access to information and determined in part my decision to not macronise any of the kupu Maori (words) in my thesis. I relied on knowledgeable pukenga (advisors), kaumatua/kuia (male/female elders) and 'Nga Pae Arahi' (The Guides) of the three iwi for their insight and generous sharing of knowledge and advice. I used a mixed method of qualitative methodology with Kaupapa Maori research praxis. On reflection I see my research went through a spiral process, much like a poutama with steps and stages of my own learning journey.

Chapter 5 Contexts from Te Ao Pakeha

I use poutama to show the experiences of Maori Information Technology (IT) students and graduates divided into two worlds; Te Ao Maori alongside Te Ao Pakeha. This chapter has a focus in Te Ao Pakeha where the structures and policies of the Aotearoa/New Zealand tertiary education system give

one context for the stories of my Maori participants. In the system, Pakeha viewpoints, processes and pedagogies are 'taken for granted' and Maori worldviews and practices, if represented at all, appear on the margins. Maori interests and aspirations are represented in the system by what I see as an elusive Maori Tertiary Education Strategy, developed in a process of a national 'consultation' and following political trends and policy directives, is subject to change.

Statistically with a 'free choice' of tertiary education provider, Maori prefer to undertake IT Diploma and Degree studies with the Institutes of Technology and Polytechnics. In fact it is limited choice that results in more Maori studying IT from Level 1 up to degree Level 7 in the ITPs than within any other provider. The New Zealand ITPs are a significant site of Maori tertiary education and have designated regional roles to play in the broader tertiary system. There is a dearth of information about the Maori experiences in the ITPs, and little research from a Maori perspective about the entire sub-sector. My research was conducted with three of the twenty NZITPs offering degrees in IT, and each has a unique regional profile.

Chapter 6 | Te Timatanga - The Beginnings

For some, Maori spiritual elements are as important as the more noa or mundane realities of the modern world. I signal this with a poroporo (purple) strand in Poutama o Te Ao Maori, representing Papatuanuku, the Earth Mother. Alienation from traditional connections or whakapapa to the lands of our people results in a negative spiral of effects as featured in claims before the Waitangi Tribunal. Chapter 6 reverses the discourse to image the start of positively spiralling effects when connection with the land and identity as Maori is maintained. As I argue in the thesis, there is evidence and reason to believe that one positive effect is success with academic qualifications in non-Maori environments, in this case for Maori qualified by the ITPs.

I use three coloured strands of Poutama o Te Ao Maori to represent foundational values of a Maori worldview; parauri (brown) represents whenua (land); where (red) represents blood with mauri (life force) for te tangata (the people) and; the cream colours of koiwi (bone of humans)

represents whanau. These core values are an essential part of our identities as Maori and the foundations of the cultural capital Maori take with them into the ITPs.

In chapter 6, Nga Papa, introduces the tribal lands of three iwi; Ngapuhi, Ngati Kahungunu, and Ngati Rangatira Toa who are the tangata whenua of the three ITP sites of my research. I show images of Nga Pae Arahi, my guides who worked in the ITPs. I go on to introduce 17 Maori contributors to my research who were students or graduates of IT Degrees, Diplomas and Certificates.

Te Timata is the First Step represented by a kowhai (yellow) strand of the poutama. Foundational experiences from education before their entry into the ITPs helped shape identities as learners for these tauira Maori. Each recalled their first contact with computers and their first steps into work before formal IT studies. Little is known of the motivations and pathways Maori take to engage with higher level IT studies, this chapter considers this issue.

Chapter 7 Te Maramatanga - Enlightenment

Universally, these tauira Maori recounted a time in their life stories when they realised they had potentials to undertake higher education. Most experienced a moment of no return with increasing understanding of what they did not know, and that they had to do something about that. I term these experiences as maramatanga, enlightenment that others would interpret as insight. This concept is represented on the Poutama o Te Ao Maori by a pounamu (greenstone) strand.

What motivates Maori to pursue Information Technology studies and what obstacles do they overcome to get there? Few had whanau knowledgeable in this field and all but two were the first in their whanau to formally acquire IT expertise. However, these students persevered to gain IT qualifications, or success, in the ITPs. The focus of this chapter is to begin to understand how and why.

These tauira Maori chose to enter IT studies where they were in a marked minority, more so for females nationally, and the 'small steps' taken in their

approaches to IT qualifications. I report on their understanding of the value of higher education for the advancement of their own whanau. I explore the parts played in their academic successes by help from peers, mentors, IT staff and Maori staff in the ITPs and centrally the support of whanau.

Chapter 8 Kua Kaha, Kua Pakari, Kua Tino Matau -Strong, Capable and Confident

As tauira Maori gained experience and developed their skills in their studies they became more confident as learners and active agents in their own successes. Kua Kaha, Kua Pakari, Kua Tino Matau images the tauira Maori as strong, capable and confident represented by the mawhero (white, red) strand of Poutama o Te Ao Maori. This step of the learning poutama was described by Pae Arahi Tuahine Northover, for his own students of advanced te reo Maori at EIT, as visible in the way the student stands, their bearing with humility about their own learning and a demonstrated willingness to support others.

This chapter gives voice to the tauira Maori to speak of the constraints and challenges of IT studies, and what they enjoyed the most about it. They describe their perseverance through difficulties; conflicting priorities between their responsibilities to whanau and their studies; the financial costs of tertiary study, Student Loan debt and limited income; and sacrifices and efforts made by whanau in support of the learners. The tauira Maori are confident here in their skills with IT and academic skills that result in the qualifications that mark them as a 'success' in the ITP and the Aotearoa/New Zealand tertiary education system. When asked why they were successful with their studies, most gave combinations of factors and once again whanau featured.

Chapter 9 Mohiotanga me Te Taumatatanga - Knowledgeable and The Pinnacle

Knowledge is accumulated by each of us in the learning journeys that are our lives. This chapter is concerned with the particular knowledges gained by these tauira Maori in their pursuit of IT qualifications. My thesis positions tauira Maori as knowledgeable in 'IT ways' with the potential to create their own access to and participation in the 21st Century global world. These tauira Maori negotiated their way through IT studies in the ITPs of Te Ao Pakeha, gathering knowledge and expertise in both tertiary study skills and

Information Technology. They also demonstrate the values and tikanga of Te Ao Maori.

Success is a dynamic construct that alters with time, context and perception. I suggest that what success means is contestable. This chapter shows Maori viewpoints of success founded on values from Te Ao Maori e.g. the notions of whanau and whanaungatanga, (developing relationships). Importantly for these tauira Maori success is relational, with their whanau, with peers, with tutors and with the Education System in the ITPs.

A Pakeha concept of success emphasises the outcome of education and the achievement of IT qualifications. However, for Maori the qualifications are not necessarily a sign of success. Having 'that little bit of paper' the qualification, does enable new potentials after graduation. Tuauri the indigo strand of the poutama represents a fifth learning step, Te Taumata, The Pinnacle, representing here their achievement of Bachelors' degrees in Information Technology and the Certificates and Diplomas that lead onto the degrees. The metaphor of the learning poutama shows that implicit in reaching a pinnacle of Te Taumata is the next first step Te Timata.

Chapter 10 Conclusions: Te Ao Hou - The New World

Throughout my thesis I have used images of the poutama, marking the threads of my findings and analysis which aim to answer my question; why it is, when faced with barriers, that some tauira Maori in the ITPs are successful in their IT studies and qualifications? I was interested to know what elements are common in the stories of successful tauira Maori, meaning students and graduates of IT, particularly with Bachelors Degrees. Cultural capital in the form of identity as Maori; whanau support; connections with marae and Maori communities and Maori worldviews, values and aspirations are an important part of the narratives. Also, Maori staff; Maori role models and mentors; and the relationships between Maori as students and tangata whenua with the ITPs, are all important elements. A fundamental issue is the difference in Maori worldviews of what success is, and those that operate within the tertiary academy, including the ITPs. While achievement of academic qualifications could be agreed as a signifier of success in tertiary education and for Maori, perceptions of the way to reach that goal are different from two worldviews.

I present Te Ao Hou, The New World, as a time when Maori knowledge and Pakeha knowledge together creates new understandings and potentials for ways to understand Maori success. A foldout of Te Ao Hou is attached to the back cover as a guide to the structure of my thesis. I conclude with suggestions for future research and potentials for use of the poutama in other fields and disciplines.

Chapter 2: Success and Failure, a Kaupapa Maori Critique.

He Whakatauki

Ehara taku toa i te toa takitahi engari he toa takitini

My strength is not that of the individual but of the many

Introduction

Success is a central concept of my thesis. At the beginning of my doctoral journey, I planned to pursue the stories of Maori students who had been successful in achieving their IT degrees in the Aotearoa/New Zealand Institutes of Technology and Polytechnics (ITPs). In the middle of my journey, I found that all but one of the Maori graduates I met did not initially consider this qualification completion a measure of success. My own construction of success was based on the criteria of the current tertiary education policies that determined what constituted success; the completion of qualifications. I was thinking like a Pakeha.

I use the word Pakeha to represent both the descendants of non-Maori who colonised Aotearoa/New Zealand, of which I am one, and for the contemporary dominant European population group. I use a heuristic that separates two worldviews of success into that of Te Ao Pakeha (the Pakeha world) and that of Te Ao Maori (the Maori world). In fact, there is not one monolithic worldview that is Pakeha, nor one that is Maori. Reality is more complex; there are multiple views within both worlds. This research shows how Maori individuals viewed success in the context of the dominant Pakeha education system, and their shared Maori worldviews and values that filter or mediate the Pakeha view of success.

From a Maori viewpoint, success as we know it in Aotearoa/New Zealand is a contested term. There is a conflict caused by the fundamental differences of two worldviews, Maori 'collectivist culture where groups are the basic units of social perception', as expressed in the centuries old whakatauki that heads this chapter, and Pakeha individualist culture where 'individuals are the basic units of perception' (Hughes and Trang 2005, p. 41). Triandis (1994) said that 'most cultures are a composite of individualistic and collectivist elements' (cited in Hughes & Trang, 2005, p. 42) and that is the case in Aotearoa/New Zealand. This thesis heuristically creates two

composite positions, as Maori living simultaneously in both cultures of Te Ao Maori and Te Ao Pakeha, and as Pakeha living in a own dominant culture with Maori on the margins (L. Smith 2006, T. McIntosh, 2006). A Kaupapa Maori methodology and bias in for example the questions I asked enabled me to feature voices and stories of Maori individuals in this thesis that deliberately position Maori in the centre of the narratives.

While there are many criteria of what success means in the various arenas of Te Ao Pakeha, this thesis is concerned with only one; the official view of the tertiary education system where success is the pass or fail of academic qualifications. Where an individual achieves qualifications within a competitive education environment, the benefits such as access to well paid professions and career paths are understood to accrue to the individual. For the tertiary institutions collectively, students completing qualifications helps secure continuation of government funding. Student failure to complete negatively affects income through Student Achievement Component Funding to the institutions (Tertiary Education Commission, 2007). Finance, both to the institutions and to individual students is an important element in the understanding of success in Te Ao Pakeha with evidence drawn primarily from contemporary funding policies and the literature, as discussed further below. As I will show in chapter 10, many Maori place a different priority on finance, behind that of whanau.

From a Maori viewpoint, qualification completion could be viewed as success, when it benefits the collectivities of whanau, hapu and iwi. As M. Durie pointed out 'individual pursuits or achievements are often given little importance unless they are seen as part of the wider group's aspirations' (1997 p. 7). At the same time whanau have the capacity to empower individual members to realise competitive goals and to enhance individual standing. Ironically, the collective is only as strong as the individuals within it, so individual academic achievement strengthens the entire group.

The development of capacity (skills and knowledge) for Maoridom is upheld as of benefit to the whole country by the Ministries of Education (2005, 2007f), Economic Development (2004), and Maori Development (Te Puni Kokiri) (2002). There are perceived benefits to the nation from the qualification of its citizens. One current intention of tertiary education policy is to increase the capacity of our workforce in order to compete in the global

arena of knowledge based economies. In effect this worldview in Aotearoa/New Zealand advantageously positions Pakeha, and others who can master the skills based on individual competitiveness, in both education and in the workplace. The issues are complex but considering the context within which this research is situated, i.e. Aotearoa/New Zealand the preference of many Maori for a collaborative or collective approach has been consistently marginalised by the process of tertiary education based on individual competition and the marketisation of education as discussed by Smith (1997) and Marsden and Royal, (2003).

The dominant discourse of success is based on concepts that shape our education system from the Pakeha worldview. Heuristically there is a different traditional Maori worldview of success and my thesis explores a third position that arises from the tension between these two; where Maori respond to the Pakeha system from a complex, multi-levelled and holistic worldview. Little is known of how Maori students gain 'success' and at the same time 'live as Maori' in the Pakeha institutions. As such this is a problem of interest to Maori, the institutions, and the nation. Ironically, higher education offers the potential to alert us to the conflict of the two worldviews and to offer a critical understanding of a third position.

This chapter offers a Kaupapa Maori critique of the concepts of success and failure from two worldviews, firstly from a Maori worldview, informed by centuries of traditional thinking that provides the basis of Maori understandings of success substantially missing in the tertiary education environment. Pakeha concepts of success determine the factors contributing to success within tertiary education, and the educational strategies and policies that normalise a Pakeha worldview of success. The marginalisation of Maori within tertiary education is also explored here. Deficit theorising negatively positions Maori within the dominant Pakeha system, and Kaupapa Maori theorising creates an alternative that is discussed further in the next chapter.

Success and Failure from Te Ao Maori

The purpose of this section of the chapter is to articulate Maori viewpoints and understandings of the concept success.

Te Taumata

Te Taumata (the pinnacle) is a metaphor from Te Ao Maori that embodies traditional concepts of success including their application to learning and education. Te Taumata celebrates the attainment of any goal, and the hard work and perseverance required to make it a material reality. Beyond the notion of perseverance, is the striving for excellence, to achieve Te Taumata, the pinnacle. This concept of striving is encapsulated by the poutama, discussed in depth in the following chapter. Esteemed kaumatua Tuahine Joseph Northover, MNZM, (Ngati porou, Ngati Hine, Ngati Kahungunu) talked about a learning poutama with stepwise progressions.

There are only five steps on the learning poutama; Kua Timata, the first step; Kua Marama, enlightened; Kua Kaha, confident; Kua Mohio, knowledgeable; Ko Te Taumata, the pinnacle. (Personal Communication, Tuahine Northover, 16 January 2007)

Te Taumata as a pinnacle is achievement of one step of the learning journey, but not a completion. Learning continues beyond the pinnacle with a first step into the next level. Traditionally there is no concept of either success or failure in Te Ao Maori. Those who 'never aim to be successful also never fail; they just don't reach the taumata, they don't fail'. (Tuahine Northover, personal communication 16 January 2007).

Te Taumata is also the 'seat of authority' of the seers and sages, those responsible for gathering and passing on their knowledge to guide and strengthen the future generations. The title was deliberately given to the 'Hui Taumata', the periodic national meetings initiated by paramount chief Iwikau Te Heuheu of Ngati Tuwharetoa in November 1856 that continue to this day and follow a kaupapa to advance Maori (M Durie, 2006). In February 2001 the Hui Taumata Matauranga considered the present and future improvement of Maori education. The English translation of the Hui title is 'Maori Education Summit' an image that echoes the concept of Taumata as a pinnacle.

Three visions for Maori advancement were presented by Mason Durie (2002) in a keynote address to the Hui Taumata Matauranga in August 2001; 'To live as Maori; to enjoy good health and a high standard of living; and to actively participate as citizens of the world.' These aspirational visions apply equally to each individual and Maori collectively. Although their validity is contested they appear in current policy documents relating to Maori in the education system as discussed further in chapter 5. Achievement of these visions could be understood as success in Te Ao Maori.

At the 2001 Hui Taumata, specific attention was given to 'academic success with zero tolerance to educational failure of institutions, teachers, students and whanau' and the opportunity 'to set Maori benchmarks based on our own vision and experience to measure our successes' (Hui Taumata Matauranga, 2001). In reality, zero tolerance to failure is beyond the vision of present educational policies (e.g. Ministry of Education Strategy, 2007d) and it appears there is no place for this viewpoint within the dominant discourse of Maori as the failing others. In 2004 the focus of the Hui Taumata Matauranga was educational success, discussed by three generations of Maori. Important themes for the debates about success from a Maori worldview were the relationships for learning; enthusiasm for learning; balanced outcomes for learning; preparing for the future; and being Maori.

Though eager to succeed and to enter rewarding careers, learners were also adamant that being Maori was integral to success. Kaumatua recalled with regret the requirement that they leave a Maori identity at the school gates. Education then was about transforming Maori into Pakeha. (M. Durie, 2004, p. 15)

In 2005, the Prime Minister, Hon. Helen Clarke addressed the Hui Taumata 'I believe we all understand that Maori success is crucial to New Zealand's success.' Versions of this statement appear in policy documents from government agencies as shown below. What is not clear is that we all understand what Maori success is.

Traditional Maori views of success

Maori worldviews of success are based on traditional thinking, encapsulated in stories and songs, orally passed down through generations. The stories from our ancestors are there to tell us something, and allow insight into the

way in which older Maori thought about a whole range of social issues and what mattered to them. This includes their sense of what success means.

Traditional narratives of Tane, the child of Ranginui the Sky Father and Papatuanuku the Earth Mother, credit him with many achievements. Tane's exploits epitomise success and the work required to attain it, within a totally Maori framework. One story relevant for higher learning tells of how Tane brought knowledge to the world. The story is a metaphor on one level of the perseverance needed to attain goals, and the progression made in the acquisition of knowledge. The version below of the mythical Tane's ascent to the heavens and his return with knowledge for humans is abridged from the writings of twentieth century Ngapuhi Kaumatua (elder) and tohunga (priest), Reverend Maori Marsden.

The legend of Tane ascending to the highest heaven in a bid to obtain the Baskets of Knowledge from Io, the creator... relates how Tane... was ... allowed ... entrance into the twelfth heaven, the abode of Io. There he received the three Baskets of Knowledge... He descended to the seventh heaven where his brothers had completed the Whare Wananga (House of Learning or Wisdom)... Tane entered the Whare Wananga named Wharekura and deposited the three baskets of Knowledge named Tauri, Aronui, and Tua-atea above the taumata - the seat of authority where the seers and sages sat... (Marsden and Royal, 2003, pp. 56-57)

Marsden explained that myths such as Tane's exploits had a deeper purpose. The deliberately constructed stories, encapsulate world views in condensed, easy to understand and remember forms (Marsden and Royal, 2003, p 59). The sages and seers were ensuring the transmission of knowledge and the multi levels of deeper understandings, with relevance and application for the world today (Royal 2002)

In the first half of the twentieth century Sir Apirana Ngata was one the first Maori to gain a university qualification. Among his achievements, he spent many years in a self funded pursuit to create written records of traditional waiata (songs) and oriori (chanted narratives) to preserve the knowledge that was dying out with the elders around the country. His work, for which he was awarded an honorary Doctor of Literature from University College of Canterbury, (R. Walker, 2001, p. 379), was titled *Nga Moteatea* (song, chants, lullabies). Tane is mentioned in Moteatea Vol III 201 'He Oriori mo Tuteremoana'. It is used as a karakia (prayer) for a ceremony dedicating a child to achieve the ultimate in life skills including knowledge to ensure good health of the body, and directs the child's thoughts towards attaining

sacred knowledge held in te kete tuauri (Te Reo Rangatira Trust, 1998, p 13).

Ka whakawhenua nga hiringa i konei	On the earth is implanted all knowledge
e tama e!	o son!
Haraemai,	Come
e maua to ringa ki te kete tuauri,	grasp the kit of sacred knowledge,
Ki te kete tuatea,	The kit of ancestral knowledge
Ki te kete aronui	The kit of life's knowledge,
I pikitia e Tane-nui-a-rangi	Procured when Tane of the heavens
ascended	
I te ara tauwhaiti,	By the tenuous pathway
I te Pu-motomoto o Tikitiki-o-rangi.	Thro' the entrance to the upper most
heaven.	

(Te Reo Rangatira Trust, 1998, p. 14)

There are several interpretations of what each of the three baskets represents. Marsden suggests that te kete tuauri, the basket of darkness, is things unknown; te kete tuatea, the basket of light, is present knowledge; and te kete aronui, the basket of pursuit, is the knowledge humans currently seek (after Taonui, 2007). Esteemed academic Sir Peter Buck/Te Rangi Hiroa (Ngati Mutunga) was in 1904 the first Maori to qualify at Otago University as a doctor of medicine, and later developed a deep interest in anthropology. Buck wrote of the symbolic contents of the three 'kete wananga' retrieved by Tane to be in kete tuauri – peace, goodness and love; kete tuatea – prayers incantations and ritual; and kete aronui – war, agriculture, wood-work, stone-work and earth-work (Buck, 1977 [1949], p. 449).

According to Huia Tomlins-Jahnke (Ngati Kahungunu, Ngati Toa Rangatira, Ngai Tahu) the knowledge available for all people to live everyday lives was contained in te kete aronui and te kete tuauri. This knowledge was acquired through observation, practice and the guidance of kuia and kaumatua and recognised as the collective property of whanau and hapu (Tomlins-Jahnke, 2005, p 14). While most people had access to the karakia and prayers that supported their daily lives, the third kete tuatea held the karakia and knowledge of rituals that connected the everyday world with the divine, traditionally taught in closed wananga to selected learners.

At all levels accuracy, accountability and correct usage were important. At an individual level, specialised knowledge contributed to a person's mana and therefore it was unlikely that a kuia or kaumatua would give away too much at once, since knowledge in this context was considered a taonga. On a collective level, to make mistakes and misuse the information would lessen the mana of the entire whanau, hapu or iwi. (Tomlins-Jahnke, 2005, p 15).

At our second meeting, Tuahine Northover recounted his own process of learning within a closed wananga (place or learning event), conducted orally and in the dark, to gain the sacred karakia of the Ringatu Church of Aotearoa/New Zealand. Months later I observed Tuahine and other Ringatu ministers recite karakia at the pre-dawn opening of a new marae, Pukemokimoki, in Napier. I noticed the other ministers holding torches to read the karakia. At a subsequent meeting, Tuahine reflected on the modern day reliance on books and the written word to ensure accuracy in the rituals. These props were not used by people who were the tauira or graduates of traditional wananga dealing with the contents of Nga Kete.

In our discussion of the link between Tane and the modern day pursuit of knowledge Kaumatua Te Taite Cooper (Ngati Kahungunu, Te Atiawa) gave me insight from Ngati Kahungunu understandings that described the fierce competition Tane faced to gain the right to pursue knowledge.

In the analogy of Tane ascending to the heavens to find the knowledge and return with it to share with mankind, before he left Tane fought 24 battles for the right to go. There were many other people who wanted to go and some tried to follow him. Using some of the knowledge he had gained he learnt of the huge winds that he would face on the ascent, so he prayed to Tawhirimatea (God of the Winds) for his support on the journey. The story is told of Tane climbing the vines to heaven and Tawhirimatea blowing all of the others climbing with Tane off the vine, leaving him to continue onwards solo. (Personal communication Te Taite Cooper 3 March 2007)

This analogy is relevant to the stories of the tauira Maori, recounted in some detail in chapter 7, with many having to overcome multiple challenges before they could start their tertiary studies. I expand on this analogy in chapter 3 where I present the poutama as a metaphor of the pursuit of knowledge that orders the narratives of my participants' stories.

In the stories from different iwi Tane ascends to the heavens by climbing a vine or a spiders' web, he travels by kite or is blown by the winds (Orbell, 1996), yet essentially his journey is one of the mind.

Kotahi tonu te hiringa
I kake ai Tane ki Tikitiki-o-rangi

There is only one implanting
That transported Tane to the
uppermost heaven

Ko te hiringa i te mahara

It was the implanting of the mind

(Te Reo Rangatira Trust, 1998, p. 14)

A significant aspect of the story is that Tane returns with the knowledge to share with others. The outcome of his individual pursuit was of benefit to all

Maori (and humans) collectively. Knowledge is achievable for humans because Tane brought it into the physical realms of the wananga. Traditionally access to some knowledge was limited to a carefully selected few, in contemporary settings, and with the advent of Information Technology (IT), knowledge is increasingly available for those who seek it. The rights of access to traditional knowledge, its protection and perpetuation are debated in Te Ao Maori (A. Mead, 1993, 2003, 2004).

Contemporary Maori views of success from literature

An example of how Maori views differ from Pakeha is on first meeting; Maori will ask 'where are you from?' understood to mean 'who are your iwi and where are they from?' For Pakeha the one of the first questions asked is 'what do you do?' Maori Marsden described the 'basic orientation of metropole' where 'we no longer ask *who* a person is but what is he in his work/calling/status/ position' (Marsden and Royal, 2003, p. 90). He pointed out that 'Western man attempts to realise himself through his own achievements. By achieving something he 'is' something - work/career/earning /money/producing/expanding/consuming; growth/efficiency/ improvements in living standards; - this is the meaning of life' (ibid, p. 37). While a majority of Maori have 'achieved' within the education system and may have adopted some of the values held up in the dominant Pakeha worldview, many also retain the values of a Maori worldview, for example the sense of social obligation to the collectivities of whanau and iwi. Marsden presented culture as 'the most powerful medium patterning a person's mind' and points out the tension for Maori attending education devised from another culture where success is achievement in exams for qualifications.

In western culture, in which achievement/work/career/status/success/efficiency are the cardinal virtues, promoted by the educational system whose major emphasis is upon the achievement of exams; to be labelled a failure, according to arbitrary criteria, dooms a person to a future with no prospects. The resultant trauma is easy to imagine. Estrangement breeds despair, the encounter with nothingness. (Marsden and Royal, 2003, p. 91).

The concept of an 'encounter with nothingness' was demonstrated for me in a recent conversation with my nephew who had dropped out of education aged 15, when I asked him what he was doing, 'nothing'; when I asked what he wants to do in the future, the same reply 'nothing'.

In 2002, Te Puni Kokiri (TPK) published a report prepared by the International Research Institute for Maori and Indigenous Education (IRI). Research was based on 'interviews with successful iwi and Maori providers and government agencies' across six sectors - housing, health, employment and training, social services, justice, and education (Te Puni Kokiri, 2002, p. i). Seeking to understand the providers' views on success they found there is no 'all-embracing definition of what success is' and most often the measurement of success was based solely on outcome reporting against contracted performance (ibid, pp.77-78). In summary, Maori viewed the facilitators of success to include; being guided by the vision handed down by ancestors or nga taonga tuku iho (ibid, p. 96); being able to determine your own future; the operationalisation of Maori values and practices; respectful equal relationships (ibid, p. 79); and collaboration with others to avoid competition. Iwi and Maori providers 'measured their success by the positive changes that they observed in individuals and whanau (ibid, p. 72)' and these are outcomes not recognised by formalised reporting. These elements and issues appear again in the viewpoints of the Maori participants in my research about what success is, presented in Chapter 9.

Maori Success in Tertiary Education in the Literature

Maori academics have researched various aspects of the success and failure of Maori in tertiary education institutions. This research is predominantly qualitative, and as such rich in detail and glimpses of both matauranga Maori and Kaupapa Maori (philosophy). These details are missed almost entirely by the quantitative analyses that proliferate in the evidence-based educational policy environment.

Research with a focus on Maori in tertiary study includes Gorinsky and Abernethy (2003), who considered the impacts from curriculum, pedagogy and relationships on Maori student retention and success; Goulton (1998) who looked at the academic and cultural experiences of Maori student teachers; Hawke & Ah-Loo (2002) who describe the MAIA model of support for Maori students at UNITEC one of the largest ITPs in Aotearoa/New Zealand; Joanna Kidman (Te Arawa, Te Aupouri) explored Maori experiences of university and stated that 'Success in tertiary education is linked to more than simply the students own individual effort, the quality of learning is

influenced by the environment of the university and its staff (1994, p. 21); Pelling (2003) offered a case study of Maori retention and success at Massey University and Pullan (2003) considered the reciprocity between Maori students as it supports their academic achievement in the university.

Academic, educator Rachael Selby (Ngati Raukawa) used a critical approach to look at the factors contributing to success for Maori women in tertiary education. Her decision to 'focus on success factors is in part a response to the frustration felt by Maori at the concentration on failure, underachievement and barriers to success evident in much of the research which has been sponsored and supported over the past three decades' (Selby, 1996, p. i). See also Bishop & Glynn, 1999; McIntosh, 2006; L. Mead; 1996; Pihama, 2001; G. Smith, 1991, 1992, 1997; L. Smith, 1999; Wilkie, 2001, 2005, 2006. Selby theorises Maori education with a research focus on barriers to educational success, at the personal and interpersonal level for Maori women and girls.

Selby found from her own research into the academic success of Maori women that having opportunities to succeed and being expected to succeed by key people who are, at the same time, strongly supportive in a number of ways (ibid, p. 95) are important. Selby highlights the critical importance of whanau in the success of her participants.

The whanau expected us to succeed from an early age, whanau in the broadest sense: those with whom we lived; the communities which supported and prepared us for school... whanau who provided shelter in both the physical and emotional senses while we struggled within the tertiary institutions to succeed within Te Ao Pakeha. Whanau who continue to support us in our tertiary studies by caring for us, our tamariki and mokopuna and in supporting us within our workplaces today, many of which remain places entrenched in Te Ao Pakeha. (Selby, 1996, p. 109)

Given she was writing in the mid 1990s, Selby raised an important point that 'to date our tertiary institutions have taken little account of being situated within a country which has a rich tangata whenua tradition...Tertiary education has too often required students to ignore their Maoriness at best, and to deny it at worst' (Selby, 1996, p. 28). She states that 'tertiary institutions which are controlled by Pakeha and where being Pakeha is the norm are alienating for Maori and within these environments Maori find success only with difficulty' (ibid, p. 29). Selby found that 'these successful women had clear goals, challenges and learned to live in both worlds with

confidence. They are also lifelong learners' (ibid, p. 101). She stated further that 'Discipline is a pre-requisite for attainment in Te Ao Maori and Te Ao Pakeha. At times the discourses from each world are in conflict. These women navigated their way through both successfully... learning to recognise the disciplines that lead to survival in each world are a key' (ibid, pp. 106 -107).

Maori academic and educationist Helen Clothier (Te Aupouri, Ngapuhi, Ngai te Rangi) has also written of Maori who had developed skills to succeed in the two worlds which were part of their experience of tertiary education. She explored 'the way in which our identity as Maori and our success or failure was constituted by and for each of us, through our experiences in educational institutions (Clothier, 1993, p. 4). '...our educational pasts had been powerful indicators of our reality as Maori women. This seems an inevitable consequence, given educational institutions are highly influential in the socialisation of a dominant society's attitudes and values' (ibid, p. 5). She found insights that 'tell of experiences of alienation, trauma, isolation and confusion within and out of educational institutions' (ibid, p. 8). Her sample was four Maori women 'each woman was for a majority of their schooling lives either the only Maori pupil/student in their classroom or among a very small minority. This isolation in class peer terms enforces the notion of "otherness" ', (ibid, p. 24). Two of the women saw 'they were being taught to 'succeed' by measures formulated by outside agencies that were Pakeha in origin and Pakeha supported' (ibid, p. 25). The women spoke of the 'different approaches that parents believe are necessary to exist in a mono-cultural society; having a determined work ethic, recognizing your minority status, accepting the dominant discourse and working with it' (ibid, p. 34). In the words of one of Clothier's participants Celia, 'Things have changed now but it was like I wasn't meant to succeed ... my father told me 'it's a Pakeha world. Now live in it!'

Marginalisation of Maori in Education

Within the dominant discourses of Te Ao Pakeha, Maori are arguably relegated to the margins. The marginalisation of Maori in education features in literature from the early 1900s through to the present time. That this occurred in the policy making institutions was suggested by critics such as Bishop & Glynn, 1999, L.T. Mead 1996; Pihama 2001; G. Smith

1992, 1997; L.T. Smith 2006; and Marshall who wrote that, 'Within the Ministry [of Education] Maori educators have been "pepper-potted" throughout the structures - individualised and potentially marginalised' (Marshall, 1991 p.28). Marshall also considered that 'policy towards education of Maori in New Zealand has been ethnocentric in its approach and based on unexamined assumptions of the cultural superiority of the Pakeha. This "ethos" has extended similarly into the related areas of research and evaluation in education.' (Marshall, 1991, p. 12)

Aotearoa/New Zealand sociologist and academic Tracey McIntosh (Tuhoe) theorised marginality and Maori experiences of the process of marginalisation. Citing Hall, Stevens and Meleis 1994 she writes that 'Marginalisation, a socio-political process, is the peripheralisation of individuals and groups from a dominant, central majority' (McIntosh, 2006, p. 48). She uses the properties of marginalisation after Hall et al to show that the consequences of marginalisation are linked to the inequalities of income, health and educational achievement for Maori. Citing Fanon (1967) and his notion of 'over determined identity' McIntosh argues that while Maori are not as distinctly black as Negro, and have a range of colouring 'from fair to dark, with all the combinations in between' that we still endure the complex experience of racism as another extreme form of marginalisation (ibid, p. 61).

Being Maori, being perceived as Maori, and having a sense of Maoriness may all be quite distinct things. What is clear is that many Maori experience different forms of racism and that this marks them socially, psychologically and spiritually in very real ways. (McIntosh 2006, p. 61)

McIntosh listed from Fanon some of the practices of racism, that would be recognised by Maori in our own experiences to varying degrees; *infantilization*, where we are thought of and treated as children; *denigration*, the assumption that Maori are defective, dishonest or incompetent; *distrust*, Maori as unworthy of trust; *ridicule*, assumed incompetence of Maori invites ridicule; *exclusion*, a vicious form of racism that excludes Maori without any reasons or 'thoroughly reprehensible' reasons; *rendering invisible*, where Maori as the excluded become invisible; *scapegoating*, Maori are the most visible face in Aotearoa/New Zealand prisons and in perceptions of criminality; and *violence* 'the invisible have no moral claims' (McIntosh 2006, pp. 61-62). Of relevance to this thesis is the exclusion and rendering

invisible of Maori worldviews through the dominant Pakeha discourse of success and failure.

Contrary to my own research that has a positive focus; Jennifer Reid (Te Rarara, Aupouri) explored the barriers to Maori student success in at the University of Canterbury. She provided an account of the theory of marginalisation and developed her thesis by use of the properties of; *Intermediacy*, or the 'tendency of human boundaries to act as both barriers and connections' (Reid 2006, p. 13); *Differentiation*, 'the maintenance of distinct identities through boundary maintenance' (ibid, p. 14); *Power*, attained by marginalized individuals if they conceal 'their differences from mainstream culture and minimizing manifestations of their own personal power. (ibid, p. 17)'; *Economics*, including the access to resources of all kinds such as 'class status, income and the cost related to education (ibid, p. 17); *Exteriority*, for Maori being outside the dominant system (ibid, p. 18); *Liminality*, the altered perceptions resulting from being marginalized and in Reid's findings leading some Maori to 'determined manifestations of resistance' (ibid, p. 18); *Reflectiveness*, or 'the fragmenting and conflicting psychic effects' experienced by marginalized people, with reflectiveness an intrinsic part of 'political conscientization' after G. Smith 1999 (Reid, 2006, p. 19); *Eurocentricism*, and Maori resistance against 'the ongoing dissemination of Eurocentric knowledge in the tertiary sector' (ibid, p.20); *Voice* the 'languages and forms of expression characterising marginalization' that also enables positive powerful expression from the margins (ibid, pp.20–21); and *Secrecy* with its 'oppositional possibilities of protection or exclusion, particularly relevant for Maori entering tertiary institutions (ibid, p. 21).

Reid considered the issues caused for Maori by 'entrenched monoculturalism' were still to be resolved and agreed with Hall et al (1994, p. 34) that although Maori as marginalized students are constructed as 'at risk' they are also the most resilient. She found that;

Support structures that are necessary for and conducive to positive and successful tertiary educational experience are either Maori centred initiatives devoid of the deficit ideology that underpins mainstream assimilationist interventions, or institutional provisions that incorporate power sharing, enabling Maori student participation in decision making' (Reid 2006, p. 138).

Reid argues that marginalisation of Maori in the university is 'legitimized by and actioned through policies and practices of the state' (Reid, 2006, p. 32). In the following chapters the marginalisation of things Maori within the pakeha ITPs and the IT curriculum is reoriented to become central to the narrative.

Success and Failure for Maori from Te Ao Pakeha

The predominance of white/black, right/wrong, and usual/other dichotomies is part of a Pakeha worldview. In the words of English sociologists Bradford and Hey (2007, p. 598) '... success like excellence is a relational and dynamic concept that can only be understood as coming from the shadow of it's 'other': failure.' The focus on 'success' found in tertiary education policy in Aotearoa/New Zealand is discussed in detail by Zepke & Leach (2005, pp 25-31). More recent policy statements include the Tertiary Education Strategy (TES) published in 2007 that states the central role of tertiary education organisations is educational success. 'Educational success is achieved when engaged, effective students receive quality teaching in quality learning environments (whether that be in the classroom or the workplace)' (Ministry of Education, 2007c, p. 18).

Broadly 'the Strategy recognises the specific responsibility that tertiary education has for contributing to the achievement of Maori aspirations and development' (Ministry of Education, 2007c, p.4). Strategy Two 'Te Rautaki Maturanga Maori - Contribute to the Achievement of Maori Development' has been retained for the most recent version of the Strategy (ibid, p.22). It signals that 'tertiary education organisations need to ensure that they have in place the necessary systems and structures to support Maori educational success' (ibid, p.32).

The dominant policy perspective is that the improvement in Maori educational outcomes will impact positively on the entire nation as promoted in *Ka Hikitia - Managing for Success. The Draft Maori Education Strategy 2008-2012*.

Maori success is Aotearoa New Zealand's success. Maori enjoying educational success today provides the basis for Maori and Aotearoa New Zealand's success tomorrow. (Ministry of Education, 2007d, p. 7)

The failure within our system that leads to a disparity in outcomes for Maori is raised in the draft Maori Education Strategy 2008 – 2012, and challenges for the education system to improve success outcomes for Maori

When this happens, Maori are able to contribute to a more enterprising and sustainable knowledge economy and build success in their own communities... it means stepping up the performance of the education system to ensure Maori are enjoying educational success as Maori. (Ministry of Education, 2007d, p. 7)

The limitations of the use of success outcome measurements based on quantitative data as 'evidence-based accountability' where 'what matters is what works' is discussed by Zepke & Leach 2005. They suggest that 'both statistical modelling and research syntheses must be treated with healthy scepticism. Regimes that punish institutions for not meeting evidence-based outcomes may be unfair' (ibid p. 33) and further that 'such policies may run counter to achieving improved student outcomes such as retention and achievement, because they ignore individual institutional factors' (ibid, p.35). They contend after Lather (2004, p. 767) that a critical qualitative presence is needed in the evaluations and analyses used to develop policy and that evidence should be sought from a variety of research paradigms (Zepke & Leach, 2005, p. 37). While both students and iwi Maori are considered as stakeholders of the institutions and engage with them in a 'dialogic relationship' to improve student outcomes, there is little in policy to suggest that the views and knowledge of what matters from these two sources have been researched and taken into account.

International literature has been used by New Zealand researchers to inform the discussion on key determinants and experiences of success within tertiary education (Ministry of Education, 2007e; Prebble, Hargraves, Leach, Naidoo, Suddaby and Zepke 2005; Scott, 2004, 2005; Scott & Smart, 2005; Wilson, 2002; Zepke, Leach & Prebble 2002; Zepke, Leach, Prebble, Campbell, Coltman, Dewart, Gibson, Henderson, Leadbeater, Purnell, Rowan, Solomon, and Wilson (2005); Zepke et al, 2008. Scott & Smart, 2005, include a comprehensive summary of factors that contribute to attrition and qualification completion (or success) linked to references of publications from their literature review. They identified factors relating to student ability, background/ demographic, transition, engagement and integration, satisfaction, subject choice, commitment and motivation, external commitments, opportunity, resources and support. Factors from

the institutions included among others the style and quality of teaching, the types of institutions, peer tutoring, mentors and supplemental instruction.

The institutional factors of student support and the development of academic staff impacting on student retention were considered in a literature review by Prebble et al, 2005. Retention beyond the first year is critical to the completion of courses, without which there can be no success outcomes. Their analysis grouped findings into two themes of assimilation and adaptation. In a development of this thinking, Zepke and Leach (2005) analysed international literature on the retention of tertiary students. They delineate two discourses from the literature. The first they term an integrationist discourse such as Tinto's (1993) focus on students' integration academically and socially into the institutions, and secondly the adaptive discourse where the institutions adapt their way of doing things to meet the needs of students who do not integrate well into the learning culture of the institution.

Zepke et al (2005) found that a significant factor in the success or otherwise of students concerned types of relationships between individual students and frontline administrative staff, student support staff, tutors, mentors, fellow students, and significant others outside the institutions such as family, friends and employers.

The notion of relationships as a retention factor is particularly pertinent in Aotearoa New Zealand, with its Maori population. The data discovered here agree that the answer to a rhetorical question often asked by Maori—"what is the most important thing in the world?"—should be answered with "he tangata, he tangata, he tangata"—it is people, it is people, it is people. (Zepke et al 2005, p 17)

Ironically, despite the use of the Maori whakatauki in their text, Zepke et al acknowledge (2005, p. 11) that sub populations within the institutions, such as Maori and Pacific Islands, were missed by their research method which used written questionnaires. Maori are least likely to respond to questions on paper from people who are not known to them (Bishop & Glynn, 1999; L. Smith, 1998, 1999; Te Puni Kokiri, 2002; Wilkie, 2001). With only statistical descriptions of the non-Pakeha groups available, Zepke et al compensated to some extent with Maori responses to student interviews and focus groups.

More recently, Zepke, Leach & Isaacs (2008), investigated what learners at Foundation Levels 1-3 in the ITPs 'consider to be success; what personal experiences enabled them to identify such success and how institutional and non-institutional factors contribute to their sense of success' (2008, p. 1). Their findings showed that students saw their own successes in terms of 'soft outcomes' including; work skills such as team work and learning to learn; attitudinal skills such as motivation and self esteem; personal skills such as self-awareness and relationship building, and practical skills of time management and self organisation (Zepke et al, 2008, p. 10). None of these outcomes are measured in the formal reporting of success from the ITPs. While Maori students at foundation level were included in this research, the findings do not delineate Maori responses from those of any other students.

In 2007, the Ministry of Education published in *Te whai i nga taumata atakura Supporting Maori achievement in bachelors degrees*, the findings of their joint project with Te Tapuae o Rehua, a joint venture company based in the south Island a collaboration between local iwi Ngai Tahu and five tertiary institutions including one ITP. Their project examined 'what makes a difference for success of first-year, first-time degree students' and aimed to 'build understanding about how to increase the number of Maori attaining bachelors degrees or higher.' (Ministry of Education, 2007a, p.1). The research used logistic regression models and descriptive data from the Ministry's records of tertiary education in Aotearoa/New Zealand. Their analysis was based on factors identified through international literature review leading to the conclusion that 'Maori degree students experience barriers to, and enablers for, success similar to other degree students worldwide' (ibid, p.2). The study agreed with international findings of factors impacting on student success in tertiary study.

There is a complex set of factors, institutional, personal and external, which influence student success. These include readiness for degree study, goal commitment, ability of the student to fit into the institution and ability of the institution to adapt to the student.... (Ministry of Education, 2007a, p.3)

However, as their study points out the factors found in external literature and locations have limited value for application for Maori. The factors applicable to Maori in particular are highlighted as maintenance of cultural identity, access to social and support networks outside of the institutions, and the extent to which they feel their experiences are valued within the institutions (Ministry of Education, 2007a, p 3). The report also notes that

‘students who have one or more iwi affiliations are slightly more likely to continue in study than those who do not. This may be a result of stronger cultural and social capital and/or access to social and financial resources’ or an improved reporting system (ibid, p. 25).

A majority of Maori identify themselves with ‘one or more iwi’ as found in the 2006 Census, where 643,980 people declared they are Maori by descent, and of these 565,326 (88%) reported their ethnicity as Maori. Of the ethnic Maori group 102,366 (18%) did not know their iwi (Statistics New Zealand, 2007). From personal experience I am aware that Maori students who do not know their iwi affiliations do not enrol as Maori. All enrolments or applications for e.g. student loans and allowances require iwi to be named by people who indicate they are Maori. Some argue that this discourse fuels a new kind of elitism arising, between Maori who know and name their iwi affiliations and those unable to do so, in effect a form of second class or marginalised Maori (L. Smith, 1999; McIntosh, 2006).

Previous New Zealand studies (Bennett 2001, 2002; Bennett and Flett, 2001; Clothier, 1993; M. Durie, 1998, 2001; Hirini and Flett, 1999; S. Mead 1999; Tilly Reedy, 1979; Scott and Smart, 2005; Selby, 1996) identified a strong cultural identity as an ‘empowering resource’ that increases Maori student resilience to academic challenges and is a significant factor in their achievement or success. Gavala and Flett (2005) in a study of 122 Maori psychology students at Massey University found that there were no moderating effects of cultural identity on perceptions of stress and discomfort in the university environment which contributed to student attrition. My research looks at identity and cultural capital alongside other elements that are part of the resilience that helped IT students to achieve degree qualifications.

Barriers to success for Maori in education

The barriers to success in education for Maori appear in the research literature from the past two decades (Chapple, Jeffries & Walker, 1997; Corscadden, 2003; De Silva, 1993; A. Durie, 2000; Johnston, 1999; Leach & Zepke, 2003; L.T. McKenzie, 1992; L. Mead 1996; T.M. Reedy, 1992; Reid, 2006; Ritchie, 1998; C. Smith, 2000; G. Smith, 1991, 1992, 1997; L. Smith, 1999; Te Ahu Poata-Smith, 1996; Wilkie, 2001, 2003, 2005). Maori academic and educationist Tamati Reedy (Ngati Porou) wrote a report for Te

Puni Kokiri: Ministry of Maori Development (TPK) that looked at the “barriers and constraints that affect Maori educational outcomes (1992, p.1) these included ‘assimilationist policies, lack of political will, intergenerational inequities and the rejection of Maori values and beliefs.’ He concluded that the current system would never empower Maori and recommended a “revolutionary approach to attack the continued failure to empower Maori to develop their own systems in education. Since Reedy wrote this the rise of wananga as an alternative system of tertiary education has resulted in Maori having the highest rate of tertiary enrolment of all ethnic groups in Aotearoa/New Zealand (Ministry of Education 2007f, p. 26). Obviously accessing and enrolling in tertiary education is a first step to completing courses resulting in qualified Maori that are part of positive educational outcomes.

In a later report, based on a literature review for TPK, the Ministry of Education and Treasury, economists Chapple, Jeffries and Walker found that ‘Maori as a group perform less well on average than the rest of society on almost all measurable dimensions (Chapple et al 1997, p. x)’ this research did not consider dimensions from Te Ao Maori that are not empirically measurable.

The domestic and overseas empirical literature suggests that resources are significant determinants of educational performance. Controlling for socio-economic factors, some but not all New Zealand studies show there is a residual negative effect on educational performance on average from being Maori. (Chapple et al 1997, p. xi)

Or more simply, if you are Maori you are already on the back foot and more likely to fail in education. Considering reasons for the differences between Maori and non-Maori demand for education and performance to include; differences in tastes and preferences for education, rational under-investment (although they find little evidence for either hypothesis), a shortfall in family resources, or peer pressure factors. They go on to consider the ‘supply-side barriers in the education system’ that include a lack of cultural relevance, low teacher expectations, racism by pupils and teachers and the related limited opportunities for Maori to control the mode of delivery’ (ibid, p. ix). Chapple et al contribute their view to the disparity discourse that lack of resources and being Maori impacts on academic success.

Evidence that the relative family resource position of Maori is a significant and substantial cause of educational disparities is strong. First, it is indisputable that Maori families have fewer material resources on average than non-Maori in terms of income and housing. For many years, Maori have had to spread those fewer resources over more children than other groups in society. In addition, Maori parents have lower educational and literacy levels themselves to pass on to their children (Chapple et al 1997, p. xi)

Deficit theorising

The Chapple et al, 1997 report is part of the 'disparity and gaps' literature that attributes the 'blame' for educational failure primarily to the lack of family resources e.g. financial and intergenerational lack of skills and understanding of the education system (Chapple et al 1997, p. 5). While acknowledging that the majority of Maori students do achieve well in education and that 'uni-causal explanations of the participation and performance gap are unlikely to be correct' they 'guess' that 'a minimum of two thirds of the gap can be put down to family resource factors' (ibid 1997, p. xi). Reid (2006) critiqued the concomitant deficit thinking (after Valencia 1997) to describe the six characteristics fundamental to the deficit thinking model; Blaming the Victim, Oppression, Pseudoscience, Temporal Changes, Educability, Heterodoxy (ibid pp. 22-25) whereby 'educational underachievement is attributed to alleged deficits of the victims, and institutional structures and processes are held exculpable' (Reid 2006, p. 32). Reid's research confirms the Ministry of Education (2001) findings that the barriers to educational success include personal and family issues, financial difficulties, negative schooling experiences, lack of secondary qualifications, transition difficulties, isolation, unwelcoming tertiary environments and lack of appropriate support structures.

If 'family resource factors' are the primary cause of 'failure', financial disparities have to be addressed. A vicious circle is apparent when the lack of educational success in compulsory education leads to failure in education at tertiary level and results in lack of access to higher paid professional careers or for some any form of employment. This pattern is compounded for Maori whanau who have experienced inter-generational educational failure. Tertiary education policy in Aotearoa/New Zealand aims to improve 'success as qualifications' rates for Maori, and by what Jeffries et al call 'signalling theory' this will lead to increased income through higher level employment of the qualified graduates.

Educational policy now takes a 'Maori Potential Approach' that seeks to 'shift the focus from addressing problems and disparities to expanding on the successes.' Here we are assured that 'all Maori learners have unlimited potential', that 'all Maori have an asset by virtue of who they are- being Maori is an asset; not a problem', and that 'all Maori are inherently capable of achieving success' (Ministry of Education, 2007f p 19). Ironically, the language of this framework is a reaction to the reported deficits and as will be shown a new way to approach the potentials for Maori successes could be of greater value.

The intention of my own research is to distance myself from deficit theorising and to positively image (after Cooper, 1999), Maori who have succeeded in their IT studies attaining Diplomas and Degrees from the ITPs. In one sense using a reversal discourse (after Foucault 1984) and using the languages of the dominant discourse to focus on factors that contribute to Maori success in the ITPs appears to be a default to the success/failure dichotomy. This dilemma is discussed in more detail in chapter 3 where I propose a new philosophical space for a new way of thinking about success.

Conclusions

Within the literature from a Kaupapa Maori viewpoint, there is an argument that Maori success in tertiary education has primarily been captured by Pakeha and framed by what Pakeha think. In this chapter, I have focused on the Maori views in this debate. Much Maori discussion of success has been framed as a response or reaction to a Pakeha concept of success. This thesis aims to provide different ways of thinking about it that considers both Maori views and Pakeha views.

From Te Ao Pakeha success is understood within a duality of its opposite; failure. Success is part of the dominant educational discourse in both the Tertiary Education Strategy and the Maori Education Strategy (Ministry of Education, 2007d). In the realm of our educational policy makers, informed by evidence based research that relies on quantitative measurement and reporting, 'what matters is what works'. This hard evidence shows that the education system does not work for an unacceptably large number of Maori. Problematically the most commonly funded research into this situation includes 'statistical modelling and research syntheses' or surveys and

questionnaires that virtually exclude Maori participation and result in a lack of Maori voice.

In the discourses throughout the literature, Maori, if included at all, are positioned as the losers or failures across all of the indicators. While relationships are found to be important to Maori, an understanding of the nature of those relationships, and those extending within Maori cultural frameworks, such as whanau and iwi, are missed. The 'soft outcomes' of success are most often not quantified so missed from evidence based policies and reporting. International literature doesn't reflect Maori realities, but still Maori are found to face the same barriers to and enablers for success as other degree students worldwide.

Success in tertiary study has been linked statistically to Maori students with one or more iwi affiliation (Ministry of Education, 2007a). Affiliation has been found as an effect in a quantitative measurement through recent logistic regression modelling of Maori success outcomes from the Aotearoa/New Zealand tertiary sector. There is a danger in this Pakeha based discourse that supports the potential rise of a new elitism based on iwi affiliation, where those who are unsure of their own iwi may become marginalised within our wider Maori society and culture (McIntosh, 2006; L. Smith, 2006). The meaning and depth of this iwi connection for Maori is missed in the tertiary specific literature to date and is discussed more fully in Chapter 6.

The failure within Te Ao Pakeha to deliver equitable outcomes of success through tertiary qualification to Maori is evident from the same quantitative analyses. Reporting this information is done predominantly through a focus on barriers, using a negative lens where there is no surprise that Maori are portrayed as failed, and most frequently disregarding the majority of Maori who do after all complete the qualifications. Deficit theorising where being Maori leads to 'a residual negative effect in educational performance on average' (Chapple et al, 1997) avoids discussion on the impacts of racism on Maori educational performance. Rather, Maori are positioned as victims where our own perceived deficits explain underachievement.

From a Maori viewpoint, there is no all-embracing definition of what success is. In terms of government funding for services and educational provision,

contractual performance is negotiated usually on quantitative outcomes that miss dimensions from the Maori worldview. For example reporting misses the value placed on 'nga taonga tuku iho', tino rangatiratanga, respectful equal relationships and 'collaboration with others to avoid competition'. The clash of Maori values with those in the arena of the competitive tertiary institutions is problematic for Maori. The potential of IT to engage a global audience will involve collective and collaborative enterprise, using the skill set which is highly valued amongst Maori.

From Te Ao Maori an individual takes their identity and culture from within a collective. The rich cultural tradition of tangata whenua has been found to be essentially ignored in the tertiary sector. Within the Pakeha virtues of success through qualifications, too many Maori are marginalised, estranged or excluded leading for some to 'the encounter with nothingness'. That experience within tertiary institutions for Maori commonly includes alienation and isolation, being 'othered' as a minority and having to adapt to work within the dominant discourse of success where Maori represent the failures. Racism within the institutions has been challenged by Kaupapa Maori theorists and researchers (Cram, 2001; IRI, 2002; L. Mead, 1996; Pihama, 2001; McIntosh, 2006; G. Smith, 1991, 1997). Marginalisation of Maori is reported as common in tertiary institutions where monoculturalism is entrenched. Maori are positioned as at risk of failure that leads to a greater resiliency in the students to persevere.

Maori academics have undertaken qualitative research that shows educational success with qualifications for Maori results from having opportunities to succeed and the expectations of success with tautoko (support) for individuals particularly from whanau. Success in tertiary education for Maori means mastering the disciplines of two worlds using goal setting and discipline to achieve in the Pakeha world and balance the conflicts between essentially different cultural worldviews.

A conscientisation through exposure of major contradictions between individualism and the collective, and the unacceptable failure of the educational systems to deliver equitable outcomes has led to Maori resistance and development of our own educational structures as traced by Simon, 1990; G. Smith, 1997; and L. Smith, 1999. As discussed in more detail in chapter 4, the development of Kaupapa Maori across three decades

enables a space for Maori to theorise from within our own cultural traditions, understandings, and philosophy (G. Smith, 1997). This space supports the reframing of the experiences of Maori students and graduates, to develop our understanding of how against a discourse of disparities Maori continue to achieve or succeed. There is little research or literature about Maori experiences of the ITPs, and even less from a Kaupapa Maori theoretical perspective. One purpose of this thesis is to address this issue.

My decision to focus on the 'success' of Maori graduates in the ITPs was in part to address the dearth of information available about Maori who achieve undergraduate degrees there. Another purpose is to focus a critical lens on the debates of what success is and to aim for understanding of what constitutes success particularly from a Maori worldview. Because the Maori and Pakeha worldviews uphold different values and concepts our definitions of success are also different.

Relatively little research has looked at Maori success in tertiary education, and what is available has resonance with Maori concepts of success from other arenas, such as health and compulsory education. Research points to the importance of whakapapa as connectedness and belongingness for Maori. From a Maori worldview success relating to whakapapa is about knowing it and being able to experience it. More dimensions of these relationships are discussed in the following chapter.

The traditional stories of Tane epitomise the Maori worldview of success, with perseverance a significant factor. Other facilitators of success for Maori concern the continued connection with and regard for 'nga taonga tuku iho' where the taonga or treasures include knowledge passed down through generations, alongside self determination, operationalisation of Maori values and practices, and respectful equal relationships.

I became aware that I had originally used a Pakeha understanding of success as qualification completion to approach my research. Over the process I came to understand an entirely different set of values and meanings for what could equate to success within Te Ao Maori. In the next chapter I re-introduce poutama, and theorise it as a metaphor from traditional Maori knowledge encapsulating the processes and

understandings around Maori concepts of learning and success and as the structure of the analysis of my research.

Chapter 3: Poutama, Whakapapa, Spirals and Theories

He Whakatauki

Ko te manu e kai ana i te hua o te ngahere, nona te ngahere,
Ko te manu e kai ana i te hua o te matauranga, nona te ao
The bird who partakes of the fruit of the tree, theirs is the forest.
The bird who partakes of the fruit of knowledge, theirs is the world

Introduction

There is tension between diverse worldviews of what success is and what it means in different contexts. This chapter explores concepts from Te Ao Maori and presents a new way of thinking about success in relation to Maori in IT studies. My theorising is based on a central metaphor of the poutama. I use poutama as a device to show Maori understandings of success in contexts that are traditional and contemporary, individual and relational, in learning experiences and wider society. In this thesis, I use the poutama as a metaphor of success; and as a theoretical tool from a Maori worldview applied to the problematic negative representations of Maori in higher education. I use the poutama as a heuristic device to analyse multiple factors that are parts of two artificially composited worldviews.

On one level, poutama is a pattern of multi levelled steps to represent whakapapa, or genealogy, a symbolic record of ancestry and descent. Traditionally, Maori and all beings are descended from the progenitors Papatuanuku (Earth Mother) and Ranginui (Sky Father). As Te Taite Cooper (Ngati Kahungunu, Te Atiawa) points out 'the Maori archetypes do not predetermine the whakapapa we speak of, but rather they predetermine the limits within which whakapapa can be spoken' (1999, p.43).

On another level, poutama represents the path taken by the archetypal Tane who ascended to the uppermost heavens. There he was required to pass tests to perform tasks accurately before he was given knowledge, and permission to bring it back to Earth. Derived from the traditional stories of Tane the poutama represents progression upwards and achievement of tasks and goals as one form of success. It also signals the sharing of knowledge with others as a core Maori value and a collective success. In modern times the poutama is used to represent the pursuit of knowledge for example through higher education, learning and research. In this form it is

pursuit of 'instant formal education' like degrees, where students have goals in mind and comply with curriculum and assessments within institutional statutes, such as time limits, to achieve qualifications. In contrast, my thesis draws on a traditional concept of poutama to represent 'life cycles' of learning that depend on the individual growing their knowledge in the context of their own life. Behind the common understandings of poutama is sacred and much deeper abstract thinking.

The pattern of poutama is an abstraction in two dimensions of multi dimensioned spirals that are consistent, for example, with the form of the galaxy we live in, the DNA double helix that structures our bodies, and a pattern of learning humans experience as we go through life cycles. The spiral and the poutama have the capacity to express the complex nature of relationships as understood from a Maori worldview where the spiritual, mental and physical realities co-exist eternally. Poutama represents learning that begins before birth, and continues through life and beyond death. Poutama represents the aspirations of the people building on those of their ancestors in the past, their experiences in their lives today and their hopes and dreams for future generations.

This chapter begins with descriptions and images of poutama as they appear in the lower and most common level of physical manifestation. I explore the use of poutama to represent whakapapa, genealogy of descent from common ancestors, and the critical impacts of its loss on the identity and knowledge base of Maori today. Poutama represents whakapapa which has been used as a tool by Maori academics for research and theorising. I draw on knowledge about the many meanings and uses of poutama including linguistic and discourse analysis. Poutama, as a metaphor of a Maori worldview based on whakapapa, also embodies some of the many threads in the lives of Maori individuals who experience the separate but contiguous worlds of Te Ao Maori and Te Ao Pakeha. I use poutama as a heuristic that underpins the theoretical basis of my thesis, to unpick and present the elements or strands that are common to the stories of Maori graduates of IT in the NZITPs. In the next chapter, I reflect on poutama and the spiral process of my own research and learning.

Poutama

Poutama is a design of multi-layered steps, found in tukutuku (woven) panels on the walls of Maori wharenui (meeting houses), and in the weaving of kete (baskets) and korowai (cloaks). There are many forms of the poutama pattern used throughout Aotearoa/New Zealand that signals widespread knowledge of poutama held by many iwi (tribes). Below are three kete patterns from a strip of 10 made in 1899 by Te Ikapuhi of Ngati Pikiao. The first pattern called poutama uses an alternating line of weaving and is not stepped. The 'zig zag' patterns include Takitahi-whakakoki, called 'the sacred step design of Te Arawa' (Maori Affairs Department (1961) *Te Ao Hou /The New World* (6), 38). The stepped poutama has been used to portray both the ascent of Tane and later the Christian concept of ascent to heaven.

Poutama
whakakoki

Kowhiti-whakakoki

Takitahi-
whakakoki

Fig 3.1 Traditional Woven Basket Patterns

The variations of poutama patterns are significant to the iwi who hold the knowledge and skills to create each unique design. The image below is one of two tukutuku panels called Poutama on the rear wall of the Ngati Kahungunu wharenui named Omio at Pukemokimoki Marae, Maraenui, Napier. I was privileged to be present when Omio became the most recently opened wharenui in Aotearoa/New Zealand, at the start of October 2007, and was given permission of the Marae trustees to take this image and use it in my thesis. This poutama uses the colours of the Maori Women's Welfare League and represents their work in the Napier area.

Fig 3.2 Poutama on rear wall of Pukemokimoki Marae
(Image M Wilkie October 2007)

The examples below are on the walls of Nga Pounamu Maori Centre in the Christchurch Public Library, in the takiwa (tribal area) of Kai Tahu. There are many tribal variations of the most common single poutama design. Poutama Ahurewa is an example of the less common double poutama that may portray the ascent and descent of Tane. Poutama Porourangi designed by Sir Apirana Ngata is unique, and could be interpreted as a spiral representation of whakapapa.

Single Poutama

Poutama Ahurewa

Poutama

Porourangi

Fig.3.3 Examples of Poutama Patterns

In the process of my research, covered in more detail in chapter 4, I sought out people knowledgeable about poutama. One pakeke (advisor), Rawiri

Toia (Ngapuhi) pointed out that contemporary 'raw' tukutuku panels have pre-drilled equidistant holes, restricting the elements in their design.

The designs that are depicted within the wharenui are restricted because of the way that tukutuku is set out ... in terms of the lateral and horizontal lines they were the main parts when we look at tukutuku. They are crosses, we go this way across, or we go up and down. So a lot of what we are calling now traditional images on the tukutuku panels are restricted because of the way the holes are drilled. (Rawiri Toia, Personal Communication 23 March 2007)

Patterns for kete, the woven baskets, are limited across two dimensions lateral and horizontal in the same way, however the process of creating tukutuku and kete involves the third dimension of strands passing from the front to the back and the results are three dimensional in form. Within these parameters are the iwi variations and artistic expression and creativity that are the hallmark of Maori weavers. As I show later the parameters and limitations of weaving can be drastically altered through use of Information Technologies, in this case Computer Graphic Imaging tools.

The placement of the poutama designs within wharenui is a matter decided by the knowledgeable kaumatua and advisors to the people that build the most often hapu based house. The use of the panels and whakairo (carving) as prompts for sharing knowledge and stories of the hapu determines the placement of the tukutuku in some houses. Where poutama is used to evoke whakapapa from the sacred deities to their Maori descendants of today, it may be placed at the rear of the house.

So poutama may for some be in the middle section of the whare on the side. Others see it in terms of some of the stories around Tane and ko eke ki te taumata, ki te toi huarewa, ki te taumata tiketike (his journey to the sacred skies, the pinnacle) and so they have it in the back - the centre of the back. (Rawiri Toia, Personal Communication 23 March 2007)

Marsden wrote of this place where Tane 'deposited the stones Hukutai and Rehutai one on either side of the rear ridge pole' (Marsden and Royal, 2003, p. 57) that signals the significance of poutama to knowledge and learning. This interpretation of poutama representative of learning and acquisition of knowledge is an important focus of my thesis.

Another advisor, Aotearoa/New Zealander artist and educator Peter Boyd explained how linguistically the meanings of the word poutama had changed over time. We discussed poutama representing life cycles of learning.

Poutama has obvious whakapapa things, the structure, it is a stylised whakapapa. You have your upstanding man. The word poutama is made up from pou which is literally a post. Also pou means to fix, metaphorically to 'fix in my mind', pou is to support that fixing. Then tama not just a son or daughter, but the oldest son or daughter, because of what that person had to learn over their life if they were going to play their role in the whanau, within the hapu and later on within the iwi.

So really poutama is talking about a life-cycle. This one person moving through their particular learning, they are constructed in a sense by their community, biological whakapapa, plus parents, plus grandparents plus the wider group. All openly and indirectly make decisions about and contribute as that person is going through that cycle. (P. Boyd, personal communication, January 21, 2008).

My research involved people who participated in IT programmes and I portray them as upstanding poutama in their own right, as those with IT bachelor degrees, certificates and diplomas, and more significantly as mentors and role models within their own whanau and for all Maori. Their stories have a focus on one stage in their lives, where they pursued and attained higher learning and IT knowledge, within the pattern of their broader learning and life cycles. In this research I am writing of one period of time in the story of Maori in IT education, as such it is a form of marker, or pou.

The Many Purposes of Whakapapa

I mindfully follow in the footsteps of outstanding Maori academics who left much of their knowledge behind for our use. From the middle of the twentieth century, Sir Apirana Ngata instituted the Porourangi Maori Cultural School, 'to promote interest in the culture of the Maori people with special reference to the history and traditions of the East Coast Tribes' (Ngata, 1972). In 1944, in a lecture that traced 'the connection between the Maori and the polynesian peoples', Ngata showed that 'Whakapapa serve many purposes. They supply the dates for our story and they help us at stages in the unfolding of history to check the order of events.' He defined whakapapa as 'the process of laying one thing upon another. If you visualise the foundation ancestors as the first generation the next and succeeding generations are placed on them in ordered layers'. Importantly as pointed out by Peter Boyd citing Williams (2001, p. 259) whakapapa is to place one layer *upon* another, that is from the bottom up. This process of building upon what and who has gone before is central to Te Ao Maori, for example in whaikorero (formal speeches) where ancestors from the furthest

past are named and the linking through time of their connections with the people living today made explicit. Translating this knowledge into text brought a change as Ngata pointed out 'the Pakeha equivalent, genealogical tree' along with whakapapa, when in print, turned upside down with 'the foundation ancestors at the top and the descending lines traced downwards.'

Ngata (1972, p. 7) gave five technical terms relating to whakapapa; Taotahi; Whakamoe; the most commonly used form, Tarere showing a single line of descent from an ancestor without any other kin; Tahu and; Whakapiri, 'literally to seek to establish connection with.' The latter includes the concepts of tuakana and teina, the elder branch of a lineage or sibling, and the younger. The tuakana-teina concept is now used widely in Ako Maori (learning and teaching) where a learner is assisted by a person who has greater experience or knowledge, not necessarily the Kaiako (teacher), (Pere, 1994). This process is clearly evident in the stories of these Taura Maori as discussed in chapter 8.

Poutama as Whakapapa and Identity

Poutama as a pattern represents whakapapa as a genealogy, an abstract symbol of ancestry and descent. Tania Ka'ai (Ngati Porou, Hawai'i, Samoa, Cook Islands) used the poutama tukutuku to show the whakapapa for the offspring of Papatuanuku and Ranginui, including Tane represented as the atua or spiritual power of the forests and the birds. 'They were the ancestors of all parts of nature, including people, birds, forests, fish, winds, and water' (Ka'ai, 2004, p 3). From this viewpoint Maori considered people to be divine in origin, descended from the atua Tane, Papatuanuku and Ranginui.

On a more mundane level, many people identify as Maori through their descent from Maori ancestors, and these connections can be expressed in the form of the two dimensional poutama. For many Maori descent from ancestry is a core determinant of belonging and identity. It is common for Maori to introduce ourselves in formal and informal hui with a pepeha, a saying that declares our belonging to particular iwi. I used the following pepeha to introduce myself to the people who are the heart of my research;

Ko Hikurangi te maunga	Ko Puhanga Tahora te maunga
Ko Waiapu te awa	Ko Taheke te awa
Ko Te Whanau O Ruataupare te hapu	Ko Ngati Pakau te hapu
Ko Te Ariuru te marae	Ko Tahekeroa te marae
Ko Ngati Porou te Iwi	Ko Ngapuhi te Iwi
Ko Margaret Wilkie taku ingoa	

Here I name the mountains (maunga), rivers (awa), hapu and marae that I whakapapa to in Ngati Porou and Ngapuhi iwi. It is from this whakapapa that I know myself as Maori, and through Ngata's process of whakapiri, establish with other Maori how we are connected with each other.

In his article 'Whakapapa: A framework for understanding identity', Dr Joseph Te Rito (Ngati Kahungunu) presents whakapapa as both a methodology and a framework. Employing Ngata's tarere form of whakapapa, Te Rito (2007a) shows his own direct line of descent from the mythical Papatuanuku, through the tipuna of traditional times starting with Kupe, and on through those of recent history, the five generations that result in Te Rito himself (2007a, p.7). In a subsequent article, Te Rito (2007b) shows how European colonisation and alienation from land impacted on one hapu. The loss by his people of whakapapa links and identity that lead to 'severe marginalisation', and 'membership in the lowest socio-economic grouping in New Zealand society.'

Many other contemporary Maori academics have written about the negative impacts on Maori identity by the process of colonisation (Bishop & Glynn, 1999; Cooper, 1999; A. Durie, 1997; M. Durie, 1994; C. Houkamau, 2006; Karetu, 1979, 1990; Kupenga, Rata & Nepe, 1993; H. Mead, 1999; Pere 1979, 1994; Pihama, 2001; Puketapu-Andrews, 1997; Royal, 2003; G.H. Smith, 1997; L.T Smith, 1999, 2006; Te Hoe Nuku Roa Research Team, 1999; Te Rito, 2007c; S. Walker, 1996; Williams, 2000). In her 2006 doctoral study, 'exploring the socio-historical changes in identity among Maori', Carla Houkamau (Ngati Kahungunu, Ngati Porou) looked at 'why Maori differ in their expressions and interpretations of their Maori identity and the factors that shape their identities' (2006 p xiv). Houkamau states that 'people's identities are socially constructed – that is they reflect the broad social, cultural, ideological and historical conditions in which people live' (ibid, p 19). Houkamau used theories of identity from Baldwin, Cooley, and Mead who see 'the self as primarily a social construction, socialized in familial networks through communicative activity in close interpersonal groups'

(ibid, p. 7). This is consistent with a Maori discourse of the self as relative to the wider whanau. Erik Erikson (1996, 1968, 1974, 1987 cited in Houkamau 2006, p. 11.) suggested that identity relates to how one is situated relative to others and comprises a person's self-labels and group memberships'.

Houkamau (2006) analysed the life stories of 35 Maori women in three age cohorts using grounded theory, a narrative view of identity and qualitative analysis to focus on how women defined and described their own identities as Maori and their own self views. She used three age cohorts to show differences in experience and the meanings of identity as Maori with marked differences between those born prior to the Maori political activism of the 1970's and those born after. Citing Atkinson, Brunner and Polkinghorne, Houkamau agrees that 'the ordering of one's life meaningfully ... is achieved through the weaving of an internal narrative or 'inner story' that amalgamates the person's self-knowledge, associates that knowledge to life experiences they have and orders those experiences within an intelligible autobiography' (ibid p. 33). Taking the lead of American theorist Dan McAdams, who argued 'that identity should be seen as taking the form of a personal life-story in which life phases may be considered 'chapters' in the individuals evolving biography.' (ibid p. 34), Houkamau 'embraced the life-story model of identity as a theoretical position' (ibid p. 35). My own research explores the life stories of IT graduates who did identify themselves as Maori with a focus on significant relationships that contributed to their higher academic learning and successes.

Whakapapa describes the relationships and connections between Maori people and others and the connections between people and the wider world. In Aotearoa/New Zealand today individuals choose their own 'self-label'. For some this may be as a 'kiwi' or 'New Zealander' regardless of Maori ancestry. In his analysis of data from the *New Zealand Study of Values* (1998) psychologist Alan Webster (2001) identified two distinct groups within the 152 'ethnic Maori' respondents. Half who saw themselves as 'above all, Maori' he called Maori-Maori or M-M, and the other half who considered themselves as 'above all, a New Zealander' he called Maori New Zealanders or M-NZ. He found that the M-M group was more likely than the M-NZ group to be in the 21-30 years age group, and to hold a university degree (9%) or other tertiary qualification (20%), 'consistent with the

general concept that stronger identity as Maori is a positive motivation for achievement' (Webster 2001, p. 132).

Marxist theorist Madan Sarup suggested that identity is constructed as a result of interactions between humans and institutions and that behaviour is limited by defined cultural boundaries.

That identity is a construction, a consequence of a process of interaction between people, institutions and practices and that, because the range of human behaviour is so wide, groups maintain boundaries to limit the type of behaviour within a defined cultural territory. (Sarup, 1996, p. 11)

Sarup saw that each narrative has two parts; 'a story (*histoire*) and a discourse. The story is the content, or chain of events. The story is the 'what' in a narrative; the discourse is the 'how'. The discourse is rather like a plot, how the reader becomes aware of what happened, the order of appearance of events (Sarup, 1996, p. 16). This has relevance for my thesis, as it is a narrative, showing a genealogy that is the combination of the lives of the individual Maori graduates leading to their academic success, against the dominant discourse that, at worst, positions Maori as failures within the tertiary system of higher education, and at best ignores Maori entirely (Selby, 1996).

Whakapapa, Genealogy and Discourse Theories

My search for parallels to our traditional Maori knowledge of whakapapa amongst non-Maori Western writers yielded the work of twentieth century French philosopher, historian, critic and sociologist Michel Foucault. His own theories of genealogy were developed from the original ideas of German philosopher Friedrich Nietzsche. Resembling the complexities of Maori whakapapa Nietzsche used the concept *herkunft* as;

the equivalent of stock or descent; it is the ancient affiliation to a group, sustained by bonds of blood, tradition or social class....it seeks the subtle, singular and subindividual marks that might intersect in them to form a network that is difficult to unravel. (Foucault, 1977, p. 145)

Beyond the work of recording descent lines, Foucault proposed an emancipatory task for genealogy to 'separate out, from the contingency that has made us what we are, do or think ... It seeks to give new impetus, as far and as wide as possible, to the undefined work of freedom' (1984, p.46). He proposed genealogy as his own critical approach; an alternative to traditional historical practice where the dominant group of any society

will determine the official version of its own history. Exploring disparities in a genealogy of sexuality, Foucault (1978) developed his own discourse theory, a critical approach to the common knowledge of beliefs that form a discourse on what is right or wrong, and normal or deviant. In an almost imperceptible way, unchallenged, the dominant discourse will determine what is known as 'the truth', affirming in turn the hegemony of its own 'common knowledge.' My study aims to add Maori viewpoints to the discourse on tertiary education, to share some of the knowledge that is common in Te Ao Maori, and to explore ways to make use of this knowledge to support Maori achievement in IT and degree studies.

Foucault proposed an alternative to the white and black of hegemonic discourse and excluded ideas and extended it to multiple elements used in various ways. 'Instead of visualizing a world of discourse divided between accepted discourse and excluded discourse, we must imagine a multiplicity of discursive elements that can come into play in various strategies' (Foucault, 1978, p. 101). Foucault discussed the domains for the historical ontology of genealogy as truth, ethics and power; 'Discourse transmits and produces power: it reinforces it, but also undermines and exposes it, renders it fragile and makes it possible to thwart it' (ibid p.101). Foucault commentator Ransom suggested that;

The critical effect of genealogy does not consist in revealing the presence of power – coercive, repressive or otherwise – in our institutions and practices. Instead it is designed to transform what was, in Heidegger's terms, 'ready to hand' and thus unexamined into something that 'present-to-hand' and a proper subject for critical reflection. (Ransom, 1997, p.81)

Writing of a 'political genealogy', Ransom (1997, p.96) interpreted it as 'a response to a problem in the present, where a history is narrated that makes possible... the formation of a community of action that will address the issue at hand.' I promote the predominantly excluded knowledge of poutama as a discursive element and bring present attention to reflect on Maori worldviews and success. Foucault disdains claims of objectivity in that genealogy is 'explicit in its perspective and acknowledges its system of injustice' (Foucault, 1977, pp. 156-157). Importantly, both genealogy and whakapapa, represented here by the poutama, position researchers subjectively.

Nietzsche termed '*Entstehung* an *emergence*, the moment of arising. It stands as the principle and the singular law of an apparition' (cited in Foucault, 1977, p. 149). Foucault saw 'Emergence is thus the entry of forces; it is their eruption, the leap from the wings to centre stage, each in its useful strength (ibid pp. 149-150). For Maori the term kau of kaupapa is used to describe the 'coming into view or appearing for the first time' (Taki, 1996). Rather than a leap into centre stage, the concept of the poutama as a two dimensioned representation of the many dimensioned spiral of whakapapa and learning is now emerging from the work of contemporary academics. This is knowledge which has existed within the Maori world for centuries, but at this time is coming into view.

Theorising links between knowledge and power, Foucault argued for an indirect or unseen power that works through people not necessarily on them. This power for example in the subtle effects of the 'hegemony' of 'common knowledge' leading to discourses based on 'truths' that are formalised and normalised within societies. In a resistance against this hegemony genealogy critiques and exposes what Foucault (1980a, p.81) called the 'insurrection of subjugated knowledges.' These are 'previously concealed historical material' and 'knowledges that have been disqualified';

'...a whole set of knowledges that have been disqualified as inadequate to their task or insufficiently elaborated; naïve knowledges, located low down on the hierarchy, beneath the required level of cognition or scientificity. I also believe that through the re-emergence of these low-ranking knowledges, these unqualified, even directly disqualified knowledges... that criticism performs its work. (Foucault, 1980, p. 82.)

I suggest that both Kaupapa Maori and Maturanga Maori (knowledge and education) are derived from the Maori worldview inherited from our own history, while official records are of prevailing non-Maori academic, political, social and common knowledges over time. Kaupapa Maori explains that all knowledge originates from spiritual sources, and so it has been readily dismissed as lacking in 'scientificity' and not valid by positivist writers. It is fair to say that both Kaupapa Maori and Maturanga Maori suffered from subjugation and it is an ongoing struggle for Maori to ensure their continuation.

T.A. Charles Royal (Ngati Raukawa, Ngati Tamatera, Nga Puhi) reports a widely held Maori view that 'Maori knowledge will not be renewed and

perpetuated when it remains within the confines of a knowledge system from another culture.’ (2002, p. 18). This belief is behind the development of Kaupapa Maori education as resistance to the dominant Pakeha knowledge system in Aotearoa/New Zealand (Smith, 1997). Foucault’s view was that previously discredited knowledge would not be ‘protected’ rather their production was ‘to establish a historical knowledge of struggles and to make use of this knowledge tactically today’ (Foucault, 1980, p. 83).

Among the cultural inventions of mankind there is a treasury of devices, techniques, ideas, procedures, and so on, that cannot exactly be reactivated, but at least constitute, or help to constitute, a certain point of view which can be a very useful tool for analysing what’s going on – and how to change it. (Foucault, 1983, p.236)

In this thesis I position the poutama as a suppressed knowledge that can be used as a metaphor of success, and as a theoretical tool framed within a Maori worldview applied to the problematic representation of Maori in higher education. I use the poutama to analyse multiple factors that are parts of two worldviews. The tension of prioritising values that are different in Maori and Pakeha worldviews is an important thread in my analysis.

James Paul Gee developed discourse analysis through linguistics, and defines Discourses (his capitalisation) as;

ways of behaving, interacting, valuing, thinking, believing, speaking and often reading and writing that are accepted as instantiations of particular roles (or ‘types of people’) by specific groups of people. ... Discourses are ways of being ‘people like us’. They are ‘ways of being in the world’; they are ‘forms of life’. They are, thus, always and everywhere social and products of social history. (Gee, 1996, p. viii)

My research is about Maori who are ‘people like us’. We have our own ways of being in the world and endless potentials to interact with the global world, particularly through mastery of Information Technologies.

In a modern day vernacular Gee (1996, pp. ix - x) develops Michel Foucault’s theories on discourses, when he explained that each Discourse includes the ‘usually taken for granted and tacit ‘theory’ of what counts as a ‘normal’ person and the ‘right’ ways to think, feel, and behave.’ Gee goes on to give an example of the school that ‘says’ that certain children ‘ – often minority children and those from lower socioeconomic groups – are not suited for higher education and professional careers.’ Gee also makes an overt claim ‘that all practice (human social action) is inherently caught up

with usually tacit theories that empower or disempower people, and groups of people. He describes the 'primary Discourse' where the individual is subsumed within the ordering of a collective, in conflict with the 'secondary Discourse'; the 'dominant Discourse', of success in higher level tertiary education (Gee, 1996, p. 137).

If positioned as members of a minority, and from lower socio-economic groups, Maori may seem pre-destined to be under represented in degree level learning, and particularly so in the relatively high paid technical professions using IT. Here I position Maori centred in Te Ao Maori by identity and belonging, and their experiences of tertiary level IT studies and their entry into the IT professions.

Ransom (1997, p.85) highlighted Foucault's 'reversal tactic' where he used the language and labels of the dominant discourse as 'reversal genealogy' that aimed to 'change the way the rules of discourse are given effect'. Ransom defined this as 'the attempts to turn elements of a governing discourse around, to revalue some or all of them in such a way that what was previously disqualified or marginalized in a discourse is instead valorized and legitimated, often using the same terms and categories as the discourse that previously disqualified it'. It is my intention to outline the discourse surrounding Maori in higher tertiary education which has predominantly a 'deficit' approach to explain disparities found there, see chapter 5. Then in a 'reversal' of the discourse to focus on Maori who have succeeded by gaining under-graduate academic qualifications in IT, a field of study where Maori currently are even more of a rarity and minority.

Whakapapa as Discourse of a Maori Worldview

A worldview is a discourse, for Maori there is not one single view, rather many views that have evolved from a common source of knowledge, that of the creation theories, the beginning of all whakapapa. In his doctoral study of Maori resource management in the South Island of Aotearoa/ New Zealand prior to colonisation, Jim Williams (Ngai Tahu) cites Overholt and Calicott (1982, p. 1) in their definition of a worldview 'understood as a set of conceptual presuppositions, both conscious and unconscious, articulate and inarticulate, shared by members of a culture' (Williams, 2004, p. 75). Williams goes on to say that;

According to the Maori world-view, all things animate and inanimate have a whakapapa and all whakapapa descend from the one extended family. Whakapapa is not merely a genealogical framework, it 'an organising principle and charter, everything within the universe is ordered into layers ... [it is a] time and space mapping paradigm (Kawharu 2000, p 352). Whakapapa is also the link to the future; one's duty to parents, siblings, children and other kin is reflected, temporally as well as spatially, in one's duty to generations to come since all are related. (Williams, 2004, p. 76)

Maori academic Charles Royal shared his learning about whakapapa as a key Maori tool.

I came to learn that genealogy is the key Maori tool, whereby the universe is ordered, explained and understood. All things possess a genealogy in the Maori worldview... As my knowledge of whakapapa grew, I came to understand that the various genealogies all eventually lead to an originating point in the so called 'creation' of the world. A significant discovery was to learn that 'creation' traditions are not explanations concerning an 'historical' creation of the world but rather they are complex image statements about reality as we presently experience it. (Royal, 2002, p. 21)

Peter Boyd, in his own doctoral exploration of Maori Art (forthcoming 2010), used discourse analysis and semantics to analyse the meanings underlying the use of the word whakapapa over time, its changing meanings and changing applications. Essentially whakapapa is about relationships;

... whakapapa is important, some people have said it is the basis of Maori worldview....I've had a kaumatua working with me for years; we spent about 18 months, once a week, unpicking not the meanings of the words so much as the underlying meaning of the words, what it said it was. Out from this came all these terms for different kinds of relationships. If there was one word about whakapapa, relationships is what it is all about, and the nature of relationships. (Peter Boyd personal communication, January 21, 2008).

My thesis places particular importance on the different kinds of relationships tauira Maori were part of during their pursuit of academic qualifications.

Discovering well over 200 linked kupu (words) relating to whakapapa, Boyd saw clusters of meaning around five main mata pono (principles). These are expressed and function 'in all sorts of ways... they all overlap but they've all got something in particular that they are clustering.' His five principles are Te Hononga (connection); Te Putieketanga (positioning); Taneutuutanga (reciprocity); Te Panonitanga (transformation); and Te Titaratanga 'which is about structuring.'

Maori know the world through a worldview of lots of different kinds. That world view is based on whakapapa, that's what people find. I've gone one further step and said, underneath ... are five processes, desires, or principles

driving whakapapa. So if this is the case ... whakapapa underlies the way we see the world, and the way to do things. (Peter Boyd, personal communication, January 21, 2008).

It is from this turangawaewae (place to stand) of a Maori worldview, that I use the strands of whakapapa, or the network of the relationships, formed by the graduates of IT degrees in the ITPs, to frame an understanding of their 'successes'. At another level my process of Kaupapa Maori research reveals a genealogy of relationships formed for the purpose of completing my own qualification, as discussed in the following chapter.

Nga Torino (The Spirals) and Whakapapa

Maori are one of many cultures worldwide that use the symbol of a spiral. Russian psychiatrist, Olga Kharatidi M.D., discovered from ancient Siberian wisdom;

That the search for understanding actually follows a series of circles joined together to form an ascending spiral. As soon as we have completed each turn and it has become whole within us, forming an integral part of our experience, we are immediately exposed to the outer boundary of the next circle. Then we are ready to take the spiral path leading to the next level. (Kharatidi, 1997, p. 220).

American social psychologist Clare Graves developed his theory of 'Spiral Dynamics' where humanity evolved as 'an effect of a DNA-like interaction, a 'double-helix' of two forces, the individual human organism, and his/her conditions of existence. From the spiral of organismic needs and conditions the rainbow of cultures emerged' (cited in Webster 2001, p. 63). 'The patterns of the spiral are not isolated individual systems. They exist in the worldviews of whole social collectives with their cultures and their concrete, existential realities' (ibid, p. 67).

New Zealand academic, theologian and Catholic priest Father Michael Shirres wrote *He Tangata the human person* (1997) presenting over twenty years of his research with Maori manuscripts of the 1840s, 1850s and 1860s, with advice from Maori Marsden, into Maori understandings of the world and of the universe. He reported the whakapapa of a Maori creation theory and its perpetual movement '*I te kore, ki te poo, ki te ao Marama* - From the nothingness, to the night, to the full daylight' (Shirres, 1997, p. 119). Shirres used 'the double spiral as a symbol of light and knowledge' and included an untitled image drawn by woodcarver, instrument maker,

Bernard Makoare (Ngati Whatua) to represent elements of duality that recur throughout the book. The opposing spirals depict the embrace of Rangi (Sky Father) and Papa (Earth Mother) before their separation, 'the light between is the glimmer of enlightenment' (Shirres 1997, p. 131).

Fig 3.4 Untitled Double Spiral image

Source: Shirres, M. (1997) *He Tangata the human person*. Artist Bernard Makoare

Shirres writes of three levels of the double spiral symbol representing 'lo, the universe and the human person.' At the human person level, both individually and for all people he wrote;

We each begin from the centre of the spiral, from the nothingness, and as our lives expand and unfold, each section of the spiral represents some stage of our lives. The stages take place over space and time. Yet in our consciousness and memory we hold them together. We are our present stage and we are our past. (Shirres, 1997 p 118)

The multi dimensional, moving, double spiral is first depicting duality, the parting of Ranginui and Papatuanuku which allowed enlightenment into the world of potential humans and the stages of life over space and time. The stepped poutama was used to portray the whakapapa of descent from these primeval spiritual powers, and also this growth over time 'the stages of man' evoking the perpetual motion of the spiral and continuation of the learning and journeys of individuals and of the people. Producing his own art work from his doctoral thesis, Peter Boyd explained how he visualised the knowledge of whakapapa as an image of a three dimensional spiral. His hand drawn graphic design has been rendered with Computer Graphic Imaging by Brian Samuels.

**Fig. 3.5 Te Putitara Torino Visual Paradigm
Artist Peter Boyd**

If you take the bottom of a three dimensional spiral, you pull it up, you cut through it and you have your steps. This is space ... coming up through time, so two or more elements you want to see in relationship to each other, this is how it works. As each one spins off and connects to another, others are always connecting back. So each time you go round it is different, it's not a circle it's a cycle. A circle just repeats itself but whakapapa is not repeating itself. The space in between is the 4th dimension. The spiral has got built in that intangible, the immaterial dimension, that's there all the time with relationships... the other dimension that the Maori world is always in relationship with, that the physical world, is always in relationship with. It's a way of trying to visualise how whakapapa work. (Peter Boyd, personal communication, January 21, 2008).

Here is a critical point of difference, whakapapa as a spiral is developing, growing, and changing over time. It is not limited to be circular or repeating. In our discussion of how the spiral shows the whakapapa of relationships developing and changing over time, Peter Boyd explained:

The nature of whakapapa is a way of structuring what you know and what happens... It's a way of structuring that will come back in time and be reflected in how things work. So you have your past, present, future, the whole concept of time is built in there as well. The past is always present because we've always got these connections with the other things that have been happening, or the other person in the other part of the relationship. (Peter Boyd, personal communication, January 21, 2008).

Ngata wrote of whakapapa that 'traditions and historical notes woven round them illumine and are illuminated by them'. Ngata also said 'you can take

the whakapapas to pieces, arrange & re arrange them... and from the dissection get at the scheme or schemes of Maori social life' (Ngata in Sorrenson, 1986, p. 114). I use my own interpretation of poutama representing whakapapa that is arranged and modified, and rearranged, the purpose being to understand more about how Maori students already succeeded with degree level studies in IT, and to lay aspects of their stories down as a record.

By abstraction the pattern of the stepped poutama can be drawn from the spiral nature of growth and development towards understanding and increasing knowledge. Poutama, as a two dimensional expression of a multi-levelled and spiralling pattern of growth, also reflects the challenge of translating the oral stories from the taura Maori and advisers into the linear flow of the narrative of this thesis.

I am privileged to have collaborated with artist Brian Samuels who generated a series of original Computer Generated Image (CGI) artworks to illustrate my thesis and my theorising about the poutama. The process of the collaboration and the technical details of the artworks are the subject of other publications and IT resources. The image that follows titled 'Koru' is a next generation of a spiral that moves beyond two dimensional representations. It is half of a stereographic image that can be viewed as three dimensional. Taken collectively all three of the spiral images in this chapter are a re-interpretation of a whakapapa or genealogy of events, considered from a holistic worldview, common to Maori.

Fig 3.6 Koru
Inset from 'Koru'

Artist: Brian Samuels

Whakapapa as a tool for research

Poutama carries the archetypal story of Tane who ascended to the uppermost heavens to retrieve and return knowledge to the world. Like the students in the narratives that follow he underwent tests and demonstrated his mastery of skills, before he was given permission to return with knowledge to share with others. In both traditional and contemporary times, poutama represents on one level the acquisition of knowledge. Charles Royal (1998, p. 237) proposed his early thinking of whakapapa as a tool for research. He contrasts the western mode of thinking that 'knowledge + experience = wisdom' with a Maori view that 'matauranga + tohu = maramatanga' or that Maori knowledge (matauranga Maori) + signs/experience (tohu) = enlightenment (maramatanga). In a discussion between Charles and myself in 2005, I asked if his early thoughts on whakapapa as a research tool had developed further. I was left with the imperative of whakapapa or genealogy as a lens that reveals any subject of enquiry as originating from at least two precedent subjects that should be taken into account. I later applied this thinking in my thesis to consider two heuristically based precedent worlds, Te Ao Maori and Te Ao Pakeha, and the impact on individual Maori who studied and graduated at the interface of these two worlds.

At a deeper level then, poutama can represent a whakapapa of antecedent events, circumstances and experiences that together create a genealogy of sorts. The purpose of narrating such a genealogy is to shed light and understanding of the precedent conditions that lead to and explain the experiences of people today.

In 2005, Dr Huia Tomlins-Jahnke (Ngati Kahungunu, Ngati Toa Rangatira, Ngai Tahu), completed her doctoral thesis that looks at the politics of tribal agency provider services within two tribal areas and one multi region provider. Huia follows Ngata's (1944) whakapapa of the histories of Ngati Kahungunu and Ngati Raukawa as the basis of her iwi case studies and proposes a genealogical method as a framework for studying customary social organisations adapted from the work of Ngata (1944), Ngata (1988) and Sorrenson (1986). She identified seven components of the method and their applications to include; tribal narrative and historical literature; trans-

tribal linkages; geographical boundaries; social customs including traits, language, art & craft, and symbols such as marae; time and space to include dimensions of the past present and future; etymology and nomenclature such as use of technical terms like whakapapa; and, of most interest from a Kaupapa Maori theoretical perspective, the component of change, where Maori adapt, manage change, modify customary institutions (e.g. whanau) and the change that leads to 'attainment of Maori standards of comfort and happiness' (Tomlins-Jahnke, 2005, p. 57).

In a critical study of the social construction of Maori through images and film, Te Taite Cooper extended his own concept of whakapapa as 'functionality connections'.

Because whakapapa is dependent on what I term as connections i.e., when one person or thing connects with another, they have the potential to produce the next genealogical line (Cooper, 1999, p. 42).

Examining the concepts from the Maori creation traditions, also mentioned by Shirres above, Cooper expands on the connections between the three phases at the beginning of Te Ao Maori;

Te Kore – a state of nothingness and unlimited potential that connects with
Te Po – a state of confusion and an experience of potential, connecting with
Te Ao Marama – a state of enlightenment and a realisation for infinite potentiality (Cooper, 1999, p 45).

He critiques the imaging of Maori in film, with whakapapa as a method 'that increases scope and knowledge through genealogical connections; its effectiveness enables Maori with each link to experience their potential; its influence that enlightens Maori in their realisation for infinite or unlimited potential.' He goes further to suggest that Maori evolved knowledge through whakapapa.

Whakapapa constitutes an evolutionary process whereby traditional Maori were able to actively participate in the evolution of knowledge and identity, and represents a radical shift in the fundamental formation of knowledge mediation as we know it from western processes. (Cooper, 1999, p. 42)

Traditional Maori definitions of culture and identity, although formulated through whakapapa or 'functionality connections' includes the 'identity chain' that has been weakened by exposure to modern social and colonial connections (Cooper, 1999, p. 49). Further that 'we are exposed to the infinite potentiality of negative imaging of Maori that has actively shaped the social identity of Maori today' (ibid, p. 46). Introducing his own 'image

theory' as a theory of enlightenment, Cooper suggests there is 'infinite potentiality of positive imaging' (of Maori). My own positioning to focus on the success of Maori students in the IT bachelors degrees is a deliberate form of positive imaging.

Poutama as a Heuristic Device

Poutama evokes the pursuit of knowledge and higher learning. I use it as a heuristic, as a paradigm from indigenous Kaupapa Maori theory, to prompt new learning. As pointed out to me by Professor Wally Penetito (personal communication, June 2010), Anthony Pare (2007) described the notion of the heuristic that 'not only expresses meaning but is also an aid to 'making' meaning and knowledge, a language device that James Britton describes as "the exposed edge of thought".' In computing terms a heuristic searches a space of possible solutions to problems. The low proportions of Maori either graduating with Information Technology degrees, or found in IT workplaces was part of the problem I address with my research. My use of the poutama offers a way to explore the stories of Maori success with IT degrees and to understand the worldviews of Maori as learners and graduates. In this way I use poutama as a heuristic to 'make' knowledge about this problem that is meaningful for Maori, and for others.

Tukutuku panels depict stepped poutama on walls of wharehenui throughout Aotearoa/New Zealand. I bring the poutama into the 21st century for contemporary interpretation in the same way that it may have been used as a metaphor by Maori across centuries before us. The poutama can meaningfully represent the pursuit of learning and knowledge epitomised by Tane's ascent to the heavens, it shows the steps of progressive learning and achievement of stages of knowledge, that continue through lifetimes from a Maori viewpoint.

In effect I use a double poutama that artificially separates philosophies, worldviews and practices into two worlds; on the right is Te Ao Maori (The Maori World) and on the left Te Ao Pakeha (The Pakeha World). As discussed in the previous chapter, in Te Ao Pakeha academic achievement equates to success. In the academy national qualifications are in a system of steps through 10 levels and students can gain academic success in IT

qualifications at each level. The metaphor of poutama as steps can represent success in either or both worlds.

The synthesis of information from two worlds is expressed in a further image Poutama o Te Ao Hou, found in chapter 10 and as a foldout at the back of this thesis. An obvious criticism arises about theorising or policies that attempt synthesis from two separate worlds.

The drawing together of Maori and Pakeha worldviews and thus creating a new and different worldview is much easier to say than to do... Historically, several policies have been implemented to try and produce this positive synthesis but from the Maori perspective they are always flawed because the change required is usually uni-directional. Policies like accommodation, assimilation, integration, incorporation, biculturalism and multiculturalism have all been tried and all failed. (Personal Communication Professor Wally Penetito, June, 2010).

From a Maori view policies written by predominantly Pakeha government servants were fatally flawed by minimal Maori input or use of kaupapa Maori knowledge in their creation. Poutama is a metaphor arising from Maori philosophy (kaupapa) and theorising. One strength is the potential it has for application in Aotearoa/New Zealand as a problem solving tool that can be understood from both Maori and Pakeha viewpoints. While poutama is essentially a Maori construct, a taonga or treasure passed down by our ancestors, engagement by both Maori and Pakeha or the 'changes required' would involve movement from both directions.

The images created by artist Brian Samuels that illustrate my thesis use CGI as both 'a tool of the Pakeha' and as a medium to express large amounts of information visually. The metaphor of the poutama is drawn from Te Ao Maori and used to represent core values from Maori worldviews then further adapted to structure in elements of relevance to my research from Te Ao Pakeha. The CGI medium enabled high resolution depiction of the great depths of knowledge and the multi-dimensional aspects of poutama, graphically visible under magnification, and appropriately used here as Information Technologies is one focus of my research. The artworks themselves are examples of Maori knowledge or content expressed innovatively with high level mastery of IT.

The foundation of the three CG poutama images are scans of actual harakeke (flax) fibres. The fibre images were twisted, folded or woven together, in much the same way that kete are created. The woven strands are a foundation element in all of the poutama inspired images in my thesis, and fundamentally represent the interconnection between people, philosophies and practices that can be found throughout Te Ao Maori.

In Poutama o Te Ao Maori, colours adapted from aniwaniwa (rainbow) were developed to express visually the heuristic separation of the values and steps of the learning poutama. Each strand is textured uniquely as a context of elements of my research and thesis. Like the spirals a rainbow offers potential of universality. Importantly the apparently separate strands are connected by being presented within a single context, from their shared base of woven strands, and with the spill of lighting and shadows. This effect continues in the image of Poutama o Te Ao Pakeha with colours chosen to complement those of Poutama o Te Ao Maori. Both of these poutama have empty spaces on a background of harakeke fibres that signify the myriad of elements and strands not considered in my research.

I am attempting to bring the poutama out of the one dimensional context of the written word to add further dimensions to the depth and width of the relationships and connections Maori make in their learning journeys that in this case resulted in success with IT degrees. I use poutama as a heuristic device that has the power to represent historical and contemporary, relational and individual, classroom based and societal contexts of what's going on for Maori students engaged in pursuit of IT qualifications.

Poutama o Te Ao Maori

The poutama has a long whakapapa and its use continues into contemporary times with an example in the theoretical framework of this thesis. Representing whakapapa it shows the connections between Maori and a pattern for relationships based on fundamental knowledges and practices from Te Ao Maori. I use poutama as a record of elements that affect Maori learning in tertiary classrooms and also the elements outside of the institutions that are part of these narratives of academic successes.

The first of two sides of a double poutama, the right hand side is Poutama o Te Ao Maori represented in Fig 3.7, followed by a legend in Fig.3.8 that labels the individual steps in the poutama. The images are followed by a brief description of what each step represents.

Fig. 3.7 Poutama o Te Ao Maori
Artist Brian Samuels

Ranginui - Sky Father

Archetypal male progenitor of all things
Hihi Katikati/Ultra- Violet Wairuatanga
Spirituality

Te Taumata - The Pinnacle

Completion of stages of learning
Tuauri/ Indigo with Matariki/ Pleiades

Kua Mohio - Knowledgeable

About Information Technology
Kikorangi/ Blue.

Kua Kaha, Kua Pakari, Kua Tino Matau

Strong, Capable and Confident
Mawhero/White - Red

Te Maramatanga - Enlightenment

Personal realisation leads to understanding.
Pounamu/greenstone

Te Timata - The First Step

Earlier learning experiences 1st IT contact
Kowhai/yellow

Whanau - Family

Fundamental group in Te Ao Maori.
Koiwi/ bone of humans

Tangata - People Foundational cornerstone

of Maori worldviews.
Whero/ red of blood with mauri (life force)

Whenua - Land

A foundation of Maori identity and belonging.
Parauri / Brown of soil and living roots

Papatuanuku - Earth Mother

Archetypal female progenitor of all things. *Waiporoporo/ Purple*
Wairuatanga Spirituality

Fig. 3.8 Te Ao Maori - Legend
Insets from Poutama o Te Ao Maori

After Cooper (1999) I limit the poutama of Te Ao Maori between Ranginui, the Sky Father, above, and Papatuanuku the Earth Mother below that also signifies the encompassing nature of Wairuatanga or spiritual realities in a Maori worldview. The elements I explore in some detail are depicted as eight further individual strands. Of these the foundational Maori values placed on whenua (land), tangata (Maori people) including iwi (tribes), and whanau (family) as core concepts discussed in the success stories that follow (M Durie, 1997; Mead, 2003; Pere, 1991, Royal, 2002). Arguably all iwi Maori share these values as part of common knowledge. For example this truism from my advisor Tuahine Northover; 'Maori is whanau orientated, it doesn't matter what he does, where he is, he is always talking about the family; it's the whanau. This whanau thing is part of a Maori way of life'. The reason the values are represented here is to address the lack of understanding in the education system, and much of the literature, of their importance to Maori people, how these influence our motivations and approaches to experiences of tertiary education.

The five remaining strands are developed from the five steps of a learning poutama, described by Tuahine Northover in our discussions in 2007 and 2008. 'There are only five steps on the learning poutama; Kua Timata, the first step; Te Maramatanga, enlightenment ; Kua Kaha, Kua Pakari, Kua Tino Matau, Strong, Capable and Confident; Kua Mohio, knowledgeable; Ko Te Taumata, for the pinnacle.' In the narrative that follows, I represent these five steps to analyse the stories of the graduates and show how their identity as Maori shaped their identities as learners and focus on their first steps into tertiary education and into the IT field of study. All of the student participants described a moment of intrapersonal 'enlightenment' where they made decisions then changed their lives to undertake further study. At another level enlightenment here refers to mastering the processes of learning and skills acquisition in tertiary studies.

The next step represents their development of increasing confidence, and skills to persevere in the system, and as I show most of my participants did not use formalised support systems in place in the ITPs. Following on is the next level of increasing knowledge about IT, which most shared with other learners at lower levels. I represent their successes in achieving their academic qualifications, as Te Taumata, The Pinnacle. However discussion about what success is expands the application into the Maori worldview that

is larger than simple qualifications. From here the spiral of learning returns to Te Timata, their first steps into the world of employment; making use of their IT knowledge in Te Ao Pakeha.

Poutama o Te Ao Pakeha

Heuristically, separated for the purpose of comparing the application of knowledges in practices from two worldviews, Poutama o Te Ao Pakeha that follows as Fig. 3.9 represents some of the elements that are part of the stories of Maori academic successes with IT degrees. The elements are titled in the legend in Fig 3.10 and both are preceded by this discussion of what each step represents. I have located my research to the top left of this image, the element furthest removed from the realities of my participants lives. By including this strand here I signal my subjectivity as a Kaupapa Maori researcher. My research is subject to the requirements of the academy and most of the elements represented here in Te Ao Pakeha.

I grouped the threads of my research in Te Ao Pakeha to five main themes exploring Pathways; Constraints; Policies; Practices and Relationships. The pathways I looked at include the links made through Information Technology to the context of our global knowledge economy. I explored the content and structure of contemporary IT qualifications, discovering the missing steps for Maori entry to degree level IT studies, and the links between IT teaching and learning and employment pathways for Maori graduates. Finance was one constraint impacting on students as they were learning with their use of Student Loans and Allowances and working part-time. Along side this the competing demands on their time from commitments to whanau and other Maori specific responsibilities, not necessarily well understood in Te Ao Pakeha. I look at the educational policies that are part of this context including the Aotearoa/New Zealand Tertiary Education System and Strategies and the National Qualifications Framework (NQF) that structures all formal tertiary learning. My main focus is at Levels 5-7, the bachelor's degrees. The implementation of policies determines in part the practices within the ITPs that shaped the experiences of the Maori learners. Of significance is the range of relationships the students had with staff who were lecturers, tutors and managers of IT, with Maori who were on staff, and with other students. I also explore the relationships developing between the ITPs and Tangata Whenua now overtly required by tertiary policy.

Fig. 3.9. Poutama o Te Ao Pakeha.

Artist: Brian Samuels

Fig 3.10 Te Ao Pakeha - Legend
Insets from Poutama o Te Ao Pakeha

Conclusions

Traditional Maori knowledge holds an ancient metaphor of the poutama, representing whakapapa. Its use as a valuable tool predates by centuries the theorising of 20th Century western philosophers Nietzsche and Foucault in their work with genealogies. In an 'insurrection of subjugated knowledges', I make use of traditional knowledge of poutama as it underpins contemporary Maori knowledge; to create new knowledge of use to Maori in particular; and follow the tikanga and emancipatory intention of Kaupapa Maori research and theorising. The 'emancipatory task for genealogy' aligns with the emancipatory aspirations of Kaupapa Maori as they both 'seek to give new impetus, as far and as wide as possible, to the undefined work of freedom' (Foucault 1984, p.46).

It is one intention of my research to find a way of understanding how to increase Maori academic success in tertiary education located in Te Ao Pakeha. I propose a new use of poutama from Te Ao Maori to theorise concepts of success from a Maori worldview and to structure and present my findings.

Discussed further in chapter 5, the way Maori are positioned by the dominant Pakeha discourses, is based on faulty but 'common knowledge'. One example is the focus on Maori lacks and failures in tertiary education with little attention paid to the majority of Maori who achieve well, complete courses and gain qualifications. This thesis challenges the authenticity of the discourse that positions Maori negatively and predominantly excludes a Maori view. In a 'reversal discourse' after Foucault, my research has a focus on the Maori students who are successful in their academic IT studies contrary to the socially constructed discourse that dismissed the students and graduates as a statistically underrepresented minority in the ITPs, and as tangata whenua, the indigenous peoples.

As an indigenous metaphor from Kaupapa Maori, poutama is an appropriate tool for use to express a broader Maori worldview of understanding the 'success' experiences of Maori in the NZITPs. Research links strong identification as Maori to academic achievement or success (Bennet, 2001, 2002; Bishop & Glynn, 1999; A. Durie, 1997, Reedy, 1992) and forms the discourse 'that stronger identity as Maori is a positive motivation for

achievement' (Webster 2001, p. 132). From a Maori viewpoint, the connection with whanau and whakapapa, whenua and spiritual dimensions is fundamental to all of life's experiences, a point most often overlooked by a Pakeha viewpoint. Maori academics have written of the impacts of European colonisation and alienation from land, and the loss of identity and links through whakapapa on the lives of Maori whanau and the individuals within them. The poutama can signify all of these elements.

Poutama consists of pou, an upright or upstanding pole, concept or person, and the process whereby information or learning is fixed into mind; and tama representing the eldest child upon whom the responsibilities of receiving knowledge and representing the whanau, hapu and iwi on important occasions. In one sense, poutama is a standing man, a role model or mentor, and in another sense it represents the process and stages of learning the individual goes through to achieve their goals.

Poutama also represents whakapapa as an evolutionary process of layer upon layer where Maori actively participate in the formation, evolution and mediation of knowledge and identity. This approach enables the 'infinite potentiality of positive imaging' of Maori (after Cooper 1999). It is not limited to Maori alone and the work of non-Maori academics such as Shirres (1997) and Boyd (2009) in the 'unpicking' of whakapapa has contributed to the Maori knowledge base.

CGI generated poutama represent the analysis of my research with Maori in the ITPs and as graduates. The potentials are yet to be fully explored of visual mediums generated by IT tools to share information, including knowledge that is Maori. A heuristic device separates two sides of poutama into Te Ao Pakeha and Te Ao Maori and these are synthesised visually into Poutama o te Ao Hou, the new World depicted as a fold out on the back cover of this thesis for visual referencing at any time. Threads or elements from both worlds are pursued in the narratives of IT graduates who epitomise one level of success in a Pakeha worldview. I use the five steps of a learning poutama to structure and analyse the information from the stories of these tauira Maori, to demonstrate the perseverance that results in achievement of goals in Te Ao Maori where traditionally there is no concept of success or failure. The research analyses the relationships between the graduates who succeeded with, their identity as Maori, their

engagement with the Maori world, their connection with other learners, their teachers, their whanau support systems, the ITPs, and the world of work.

In the next chapter, I outline the Kaupapa Maori methodology upon which my research is based. In the modern context of this research it became apparent that the processes of whakapiri, not in the sense of genealogical connections, but rather establishing and maintenance of connections, structured the research process itself.

Chapter 4 Mahi a Ngakau, Mahi a Hinengaro - Work of Heart, Work of Mind.

He Whakatauki

Ko to ringaringa ki nga rakau a te Pakeha hei oranga mo to tinana.

Ko to ngakau ki nga taonga o o tipuna hei tikitiki mo to mahunga.

Turn your hand to the tools of the Pakeha for the wellbeing of your body.

Turn your heart to the treasures of your ancestors as a crown for your head.
(Ta Apirana Ngata)

Introduction

As a Kaupapa Maori researcher I wondered how could my PhD research be of use to Maori and at the same time meet the scholarly rigour of the international academy? These two imperatives require resolution before I could consider my work to be a success. The solution is possible because Maori scholars have made a way in the academy for Maori and other scholars to follow. Kaupapa Maori research emerging in Aotearoa/New Zealand shares common ground with global indigenous research methodologies. As a kairangahau (researcher) I offer 'a piece of the heart in the body of growing indigenous knowledge' (Weber-Pillwax, 1999, p. 31). Kaupapa Maori has created space for my doctoral study where a Maori worldview frames some of *our* 'common knowledge' and contributes it to the world.

To be Maori is the norm within Kaupapa Maori and the intent of my research comes from this worldview. An early note on the formats I use throughout my thesis. I signal my position by giving primacy to Maori literature and include the iwi affiliations of the Maori academics, authors and advisors to my research the first time their words appear in my thesis.

In standalone quotes, those that are italicised are from my transcripts of spoken words and quotes in normal font are taken from literature or publications. Where several Maori authors share a common surname I include the initials of their first name each time I cite them. I make use of a form of 'Makeha' where kupu Maori and phrases are used in the Pakeha sentences in English. This practice may be irritating to people in both worlds, for some my use of traditional Maori concepts in a contemporary Pakeha context is nonsensical, and for others the 'foreign' words of te reo

Maori are incomprehensible and unpronounceable. I make no apology, rather to translate the kupu Maori when their use and meaning appear for the first time and include the Kupu Maori (Glossary of Maori words) for quick reference.

Tensions arise from the clash of values and protocols of Te Ao Maori with the processes of the academy; the degree conferring tertiary institutions of Te Ao Pakeha. In my research practice, I worked with disciplines and knowledge bases of both worlds aiming to fulfil the tikanga (correct practices) of both. This challenge is confronted by indigenous researchers globally (L. Smith, 1999; Weber-Pillwax, 1999, p. 40) and by Maori in the tertiary system. Of particular interest here are the experiences of some Maori IT students and graduates of three Institutes of Technology and Polytechnics (ITPs) of Aotearoa/New Zealand.

Ethical research practice in the academy has parallels in the protocols, ethics and guiding philosophies of Kaupapa Maori research practice. However, some tensions are yet to be resolved, such as the Pakeha ethical requirement for paper based informed consent and signed Consent Forms, (Appendix 3), from participants that clashes with and undermines the Maori value placed on the spoken word. Further my ethical responsibilities as the kairangahau extends perpetually past the end of the formal research project. Kaupapa Maori gave the basis of the tikanga or correct approaches I made to engage with Maori for my research and the ethical protocols of the academy determined the paperwork that accompanied it.

There is little on paper and a relative 'silence in the archives' (Gandhi, 1998; Matthews, 2001; S. Walker, 1996) about the Maori experiences of the ITPs that have existed in Aotearoa/New Zealand for over one hundred years. My research aims to address the present dearth of information or literature about Maori experiences of learning in the ITPs and as a secondary outcome, to inform the practices of those teaching Maori tertiary students. Equally, there is to date only a small amount of research based literature relevant to Kaupapa Maori methodology or Maori in the broader tertiary education system. My thesis addresses these issues.

Kaupapa Maori is emerging and evolving as theory and research practice in Aotearoa/New Zealand and resonates with indigenous research

internationally. Critics argue that Kaupapa Maori is not valid as theory and practice as it lacks verification from empirical or realist bases (Rata, 2004a, b; Marie and Haig, 2006). Some Maori view Kaupapa Maori as a construct from the academy that is not recognised in Te Ao Maori and that research itself is a Pakeha tool used against Maori, engendering distrust and resistance in Maori communities throughout the country (Irwin, 1992, 1994; Mahuika, 2008; G. Smith 1992, 1997; L. Smith 1998, 1999; Pihama, Cram, & Walker, 2002).

Literature on Kaupapa Maori research gives evidence of an eclectic mix of theory, much of it critical, that makes use of 'the tools of the Pakeha', including elegant and powerful use of the English language. My own lack of fluency in te reo Maori limited my access to information and deeper understandings of Kaupapa Maori philosophy and tikanga Maori. To compensate I relied on knowledgeable pukenga, kaumatua/kuia and 'Nga Pae Arahi' for their insight, generous sharing of knowledge from their iwi and their guidance on correct ways to engage and work with the tangata whenua at three research sites.

This chapter outlines the Kaupapa Maori theorising and research practice that underpins my approach. I describe key terms from Kaupapa Maori that arise in my research and the challenge of written ethical procedures of consent at odds with the oral mediums of tikanga Maori. I interpret my own experiences against the key practices of Kaupapa Maori research (L. Smith, 1999, 2006a; Cram, 2001) and research with Maori (Bevan-Brown, 1998). I go on to my contemporary use of Nga Pae Arahi to engage with tangata whenua in a way that upholds both tikanga and Kaupapa Maori.

As a Maori kairangahau I used Kaupapa Maori praxis that followed tikanga Maori with qualitative methods and research practices. On reflection I found that my research went through a spiral process to engage with the subject, the participants, and the processes of the academy, much like a poutama with steps and stages of my own learning.

Kaupapa Maori

Over the past twenty years Maori have created te reo Maori (language) based education that spans pre-school through to post-graduate levels of

learning (L. Mead 1996; Royal-Tangaere, 1997; Simon, 1990; G. Smith, 1997). Fundamental to these institutions is the philosophy that underpins their approaches and practices, and this philosophy is named Kaupapa Maori. Maori initiatives in education and other fields generated our own indigenous research discipline, also named Kaupapa Maori (L. Mead, 1996; Pihama, Cram, & Walker, 2002; G Smith, 1992, 1997; L. Smith, 2006a; S. Walker, 1996). Kaupapa Maori essentially determined the methodology of my approach and my research method.

Kaupapa Maori is described as an educational practice, a theory, a research paradigm and research practice. One of the earliest writers and leaders in the field of Kaupapa Maori, educationalist Professor Graham Hingangaroa Smith described Kaupapa Maori as the 'philosophy and practice of 'being Maori' that has a valid and legitimate social, political, historical, philosophical, intellectual and cultural authenticity' (Smith, 1992, p.1). He later described Kaupapa Maori as 'both a theory and transformative praxis which has been organically derived from within Maori communities' (Smith, 1997, p. 483).

Working in the field of Maori Education, academics Russell Bishop (Tainui, Ngati Awa) and Ted Glynn described 'a proactive Maori political discourse termed Kaupapa Maori (Maori philosophy and principles), (1999, p. 61).' Leonie Pihama (Taranaki), Fiona Cram (Ngati Kahungunu), and Sheilagh Walker (Ngati Pakahi) state that 'Kaupapa Maori captures Maori desires to affirm Maori cultural philosophies and practices. ... Kaupapa Maori is about being 'fully Maori...the desire of Maori to be Maori' and to 'know that being Maori is the norm' (2002, p.30). My own approach aims to both affirm and celebrate 'Maori being Maori' and at the same time succeeding in IT degrees.

Kaupapa Maori Theory

Regarded as an innovator and initiating protagonist in Kaupapa Maori theorising G. Smith (1991, p. 6) was among the first to call for the development of a uniquely New Zealand theory to counter what he termed 'racist ideologies and racist policies'. He argued that 'the emphasis of new right logic on individualism (Hayek, 1974) contradicts Maori concepts of collectivism such as iwi (tribe) hapu (sub-tribe) whanau (extended family) or

the values implied in utu (reciprocity) manaaki (hospitality) or aroha (respectfulness)'. This conflict of worldviews was to repeat significantly in the narratives of my Maori participants.

In a literature review of Kaupapa Maori, Pihama, Cram and Walker (2002, p. 30) argue that 'the intellectual validity of Kaupapa Maori has been established as a bona fide theory of transformation' and that 'the term theory has been deliberately co-opted by G. Smith (1997) and linked to Kaupapa Maori in order to develop a counter-hegemonic practice. 'Smith challenges the narrow, Eurocentric interpretation of theory as it has been applied in New Zealand education' (Pihama et al, 2002, p.33). S. Walker (1996) 'locates Kaupapa Maori in a distinctly theoretical terrain that is Maori initiated, defined, and controlled. Kaupapa Maori theory has had the dual effect of providing both the theoretical 'space' to support the academic writing of Maori scholars and to be subject of critical interrogation, analysis, and application' (cited in Pihama et al, 2002, p. 32). Pihama et al go on to state that Kaupapa Maori has emerged as a contemporary discourse and a reality, as a theory and a praxis directly from Maori lived realities and experiences.

Kaupapa Maori strategies question the right of Pakeha to dominate and exclude Maori preferred interests in education, and assert the validity of Maori knowledge, language, custom and practice, and its right to continue to flourish in the land of its origin, as the tangata whenua (Indigenous) culture. (Pihama et al, 2002, p.32)

While 'Kaupapa Maori theorising has ranged across a variety of educational sites and issues critiquing specific policies imposed on Maori' (Pihama et al, 2002, p.34), little critical attention has been focused on Maori in the ITPs in Aotearoa/New Zealand. Pihama et al warn that repositioning Maori as 'the norm in our own constructions ... acts as a challenge to Pakeha dominance. This is clearly an issue for Kaupapa Maori implementation in mainstream institutions and settings' (ibid 2002, p.36).

Earlier, G. Smith (1992) presented Kaupapa Maori as 'the central organising philosophical and practical basis of contemporary Maori educational resistance' employing the deconstruction of Pakeha hegemony that disempowered Maori from, among other things, controlling our own knowledge. 'Kaupapa Maori decodes the ideological interests of the dominant Pakeha society that permeate educational structures through a

capture of the meanings of curriculum, pedagogy, knowledge and evaluation' (1992, p.2). Smith presents the shift of Kaupapa Maori over time from 'the domain of "unofficial knowledge" to the legitimated domain of "official knowledge"; from the marginal position of the constructed 'other' to the more central position of 'inclusion' (ibid, p.2). Using Critical Theory after Gramsci, he described Kaupapa Maori theory and praxis as 'an influential and coherent philosophy and practice for Maori conscientisation, resistance and transformative praxis to advance Maori cultural capital and learning outcomes within education and schooling' (G. Smith, 1997, p.453).

Bishop and Glynn provide another view of Kaupapa Maori, which draws on Post-Colonial and Critical Theory, where relationships are key.

Kaupapa Maori educators focus on the power relationships that exist as a result of colonialism at all levels of society and in education. What is significantly different about a kaupapa Maori approach to theorising about education is seeing that the relationship is paramount, in fact more so than the individual components of the relationship. Therefore rather than the focus for development being on either party, it is the interaction patterns that result from the relationships that is the focus. (Bishop and Glynn, 1999, p.73)

The importance of relationships to the academic success of Maori tertiary students is another thread of my thesis, an element that permeates all of Te Ao Maori and appears to operate in Te Ao Pakeha with little understanding of the dominant group.

Graham Smith (1990) delineated the identifiable principles operating in any Kaupapa Maori practice, and showed that critical analysis and consideration must be given to both cultural and structural implications when Kaupapa Maori is used as an intervention in educational crises. The principles include; Tino Rangatiratanga (the relative autonomy principle); Taonga Tuku Iho (the cultural aspirations principle); Ako Maori (Maori teaching and learning principle); Kia Pike Ake i Nga Raruraru O Te Kainga (mediation of socio-economic impediments principle); Whanau (extended family principle) and Kaupapa (principle of collective vision), (1990, pp. 27-28). Elements from these principles appear in my analyses with whanau taking on key significance. Smith concludes that 'Kaupapa Maori does critically engage and challenge the taken for granted; it also mediates the debilitating effects of power and economic elements on Maori students. It attempts to create more authentic spaces for Maori to "do their own thing" (ibid, p.9).

Canadian first nations academic Cora Weber- Pillwax proposed principles underlaying indigenous research that resonate with Kaupapa Maori research and philosophies. That all forms of living things are respected as related and interconnected; the research benefits and is grounded in the lived realities of indigenous communities; that it acknowledges the indigenous 'epistemology, ways of knowing and science of knowledge'; that transformation is an expected outcome; and that knowledge creation through research is 'an ongoing function for the thinkers and scholars of every indigenous group' and is not solely limited in the formal academy (Weber-Pillwax, 1999, pp 40-44). Strengthening direct links with other indigenous researchers and academics globally enhances Maori theorising and research practices and has great potentials for development through the use of Information Technologies.

Critics of Kaupapa Maori

To date there has been little critical response to the developments of Kaupapa Maori in education outside of the academics who contributed literature about its creation. Kaupapa Maori is referred to as 'the Auckland School of thought' because, as pointed out by educationist Penetito, many of the academics there from the inception were at the University of Auckland including; Jenkins, Johnston, Nepe, Pihama, T. Pohatu, Rata, Sharples, C. Smith, G. Smith, L. Smith and M. Walker, (Penetito, 2005, p. 7). In a natural progression other Maori academics have contributed thinking around Kaupapa Maori in education including Berryman, Bevan-Brown, Bishop, Clothier, Cooper, A. Durie, M Durie, Fuli, Irwin, Ka'ai, Kidman, McCarthy, A. McFarlane, E. McKinley, S. McKinley, Penetito, Pere, H. Phillips, Reid, Royal, Selby, Tomlins Jahnke and Waitere-Ang. These writers among others have contributed to the advance of Kaupapa Maori as a legitimate theoretical base and process developed in part to address the differences in educational achievement between Maori and non-Maori in Aotearoa/New Zealand.

Aotearoa/New Zealand educationist Elizabeth Rata involved in the development of Kohanga Reo later challenged the validity of Kaupapa Maori, calling it deeply flawed based on what she calls 'the neotraditionalist assumption' that Maori and Pakeha are ethnically distinct and have cultural

differences (Rata, 2004a, p. 3). That Kaupapa Maori offers 'a way of knowing' and knowledge creation based on whakapapa, (Boyd, 2009; Cooper, 1999; Marsden & Royal, 2003,; Royal, 2002; Shirres, 1997; Te Rito, 2007b) rather than 'genetic inheritance' is a detail overlooked by Rata. Her main concern is that Kaupapa Maori is traditional fundamentalism that is gaining strength and influence in Aotearoa/New Zealand education policies without any critical scrutiny. That it poses a danger to the 'conditions that underpin democratic institutions, policies and practices' is refuted by Penetito who says Rata 'ignores the fact that Maori have lived under the profound influence of western spiritual, economic and political ideologies and philosophies for almost 200 years, and yet they stubbornly remain 'intact' in their core identity as Maori, albeit radically transformed by the material conditions of their social, historical and geographical conditions' (Penetito, 2005, p. 6).

Aotearoa/New Zealand critical realists Marie and Haig, (2006), expressed their 'concerns about the uncritical acceptance of kaupapa Maori research (KMR) methodology in science policy ... research theory and practice.' Attributing the integration of KMR methodology in science policies, institutions and programmes to 'policy imperative rather than because it offers a satisfactory account of, or genuine alternative to, orthodox research methodology (2006, p. 17).' Rejecting outright that there is 'a Maori way of knowing' and concerns that 'establishing reliable knowledge has now become an interpretive affair, where interpretation is provided through a ... separate, yet equal worldview' (ibid, p. 18). Further charged with the rejection of 'orthodox research methodology, including standard criteria for evaluating knowledge claims', KMR adherents 'do not have suitable criteria for evaluating their research claims, and so their outputs do not constitute empirically validated knowledge' (ibid, p.18). They argue that there is an inherent bias that impacts on the usefulness and rigour of findings and conclusions of research. The same debate exists for qualitative researchers who refute positivistic critiques of their paradigm. Maori experience as subjects of empirical, positivistic and quantitative based research is that we are positioned subordinately and often negatively. Kaupapa Maori adherents vigorously challenge this positioning. This may be one reason that Maori are not rushing to adopt the 'pragmatic realism' methodology from Te Ao Pakeha advocated by Marie and Haig (ibid, p. 21).

Kaupapa Maori is a transformative praxis that addresses the questions and concerns of Maori from a Maori worldview, and aims for the improvement of outcomes for Maori that will positively impact on whanau, hapu and iwi and the development of the entire nation of Aotearoa/New Zealand.

Kaupapa Maori Research

My approach to the literature followed that proposed by Dr Cheryl Waerea-i-te-rangi Smith (Nga Wairiki, Ngai Tumapuhiarangi, Te Aitanga a Hauiti);

Maori knowledge in literature is everything that was ever written about Maori, so to narrow your search, ask what have Maori academics themselves written? The context is in the methodology, which literatures were privileged? Look to Maori writers as primary sources; we privilege our own people and tauwi later' (Personal Communication C. Smith, MAI ki Poneke Hui, July, 2003).

My literature review deliberately privileged Maori writers as sources with primacy, a viewpoint of 'indigeneity', from the perspectives of tangata whenua as indigenous people. The extent of knowledge contributed by Maori academics into both Te Ao Maori and Te Ao Pakeha is a topic requiring further research.

I read and used the work of non-Maori academics, theorists, researchers, and government publications about the tertiary sector performance and policies. The focus of my research is Maori so my reading and questions came from this perspective, for example looking specifically at Maori participation and completion of IT diplomas and degrees without much reference to other population groups in the ITPs.

Educationist and academic Jill Bevan-Brown presented the top ten components of Maori research based on a review of literature that identified many of the elements that are found in Kaupapa Maori research (Bevan-Brown, 1998, pp 231-245). One is the imperative for the research to result in some positive outcome for Maori. My research addresses the present dearth of literature about Maori experiences of learning in the ITPs and to inform the practices of those teaching Maori tertiary students. Kaupapa Maori requires that the research be of high quality and the methods, measures and procedures I used took cognisance of Maori culture and preferences. As a Maori researcher I hold myself accountable to the people

I researched, through return of their words for comment, careful processes of consent for use of their words and images, my PhD update panui distributed through e-mail, and 'knowledge exchange' to return the findings of the research to the people who gave freely of their own knowledge.

The positioning of those who undertake Kaupapa Maori research is discussed by Bishop (1994, 1996a) who sees that tikanga and kaupapa Maori provides the approaches and practices to be followed in the process which discursively 'operationalises self-determination for research participants' and 'the cultural aspirations, understandings, and practices of Maori people govern the way they organise the research process' (Bishop, 1996b, p. 114). While most of my research participants were not aware of Kaupapa Maori as research practice, most had strong knowledge of the tikanga that is expected in Te Ao Maori, and this basis gave us common ground.

Maori resistance to research

Feminist academic Kathie Irwin (Ngati Kahungunu, Ngati Porou) pointed out that 'as a direct result of the colonisation of this country, the research legitimated by the academic world has marginalised matauranga Maori (Maori culture)... As a result of this demeaning of matauranga Maori, researchers and academics generally have a poor reputation in the Maori community and are viewed with suspicion at best, contempt in the main' (1994, p. 38).

There are disadvantages of 'being a Maori researcher in a Maori research setting' because of Maori prior negative experiences with research that has been done on them or to them as subjects. As described by G. Smith, the outcome of this type of research has had little positive benefit to Maori. 'This reticence towards research and researchers is also fuelled by the fact that little has changed with regard to the marginal social, economic, political, educational or cultural positioning of Maori despite the promises of the implied benefits of research' (G. Smith, 1997, p 79).

Expanding on this concept, L. Smith (1999, p. 183) writes of how Maori researchers may have to convince Maori participants of the value of the research, to encourage Maori to undertake research, and to influence the wider research community in the way they undertake their research practice

with Maori. In my experience of this research project, I met with the full range of Maori initial responses from distrust of any research process, to a fulsome welcome and active support for the research. On meeting individuals *kanohi ki te kanohi* (face to face) I successfully engaged with every participant, and with the whanau of some of them. The ITPs were interested and supportive to have this research proceed as were the initial kaumatua representatives of the local tangata whenua at each site. I had little previous research literature relevant to my work with the ITPS to define the parameters of this project.

Kaupapa Maori Research in Tertiary Education.

There is very little research into the Maori experience of tertiary education from a Kaupapa Maori theoretical base. Clothier, 1993; Fuli, 1994; Hawke & Ah-Loo, 2002; Kidman, 1994; Phillips, 2003; Reid, 2006; Selby, 1996; and C. Smith, 2000 centred their research on Maori in tertiary education and used Kaupapa Maori to varying degrees coupled with other critical, transformative and sociological theories. Noeline Matthews (Atihauanui-a-Paparangi, Ngati Ruahinerangi, Ngati Apa) explored the policy and practice of Kaupapa Maori in six tertiary institutions in the Wellington region, including two polytechnics. Matthews' hypothesis was 'that low completion rates for Maori tertiary students may be affected by the way that Maori students are or are not supported at tertiary education institutions. The focus of Kaupapa Maori is used to highlight whether tertiary education institutions give support to their Maori students to live as Maori within the context of their study at tertiary education institutions' (Matthews, 2001 p. ii). Her findings show 'that Kaupapa Maori does exist in the institutions but its meaning is substantiated in different ways' (ibid p. ii). For one of her participants, 'Kaupapa Maori cannot be owned by non-Maori, they can participate and guide the involvement in it, but it does not belong to non-Maori' (Matthews, 2001, p. 35), and this is perhaps the reason behind non-Maori staff in the institutions avoiding engagement with Kaupapa Maori, as a process and philosophy they cannot own. Matthews decries the practice in institutions whereby 'the voices of Maori leaders and academics are only heard "on the day they voice the message" and then the message slides into history, or is ignored' (Matthews 2001, p. 2).

In pre-doctoral pilot research I undertook at the Wellington Institute of Technology (Wilkie, 2003), I used a Kaupapa Maori research approach to capture the experiences of some academically successful Maori students. The four students in the pilot had experienced both success and failure in their studies in the disciplines of Applied Arts, Business, Counselling and Information Technology. The support of whanau and helpful tutors and other staff were common factors in the stories of the students' success. From the student viewpoints, there was a relative ignorance about Kaupapa Maori including basic tikanga Maori on the part of staff; and the lack of understanding of how to proceed and succeed in their own polytechnic studies, on the part of the students.

Ethics

While there are parallels between the protocols of research ethics and the guiding philosophies behind Kaupapa Maori research practice, such as respect and caution covered in more detail below, the protocols of the academy to gain ethical approval for the research seemed strange from the basis of my own understanding of tikanga Maori. The primary difference was no face to face discussion with the Victoria University School of Education Studies Ethics Committee about my research process prior to consent being given. Consent was based on my written ethics submission to the committee that had no Maori members at the time. I used the Formal Proposal and Ethical Approval documents to inform key participants and to engage with three target ITPs. In spite of a copy of the VUW Ethical Approval preceding me, one ITP required me to complete an Ethical Approval Application to their Research and Ethics Committee. I asked to meet representatives of the Ethics Committee to answer further questions face to face. On meeting I agreed to keep the title of the ITP anonymous in my research. A year later I requested and received written permission to use the name Whitireia Community Polytechnic.

Kaupapa Maori has its own ethical considerations that extend beyond those required by the academy. The distinction between the two is explained by Professor Linda Smith in an interview filmed for rangahau.com, a website dedicated to Kaupapa Maori research;

Ethical issues are much broader than whether people give consent to answer a particular set of questions or give consent to have their

photographs taken. For example when you get formal ethics approval for your research it covers your questionnaire, or your interview questions. But if you are a Maori researcher, pretty much everything you do as a researcher from the time you enter ... not just the question part, everything from the time you enter 'til forever is an ethical site. You have to treat it with respect. ...formal ethical approval covers confidentiality but only of the questions....if you are a Maori researcher as a Maori you ought to know... that the consent that people give you encompasses much more than the formal questions that you are going to ask... In the end ethics are really about the nature of relationships and that is why it's quite easy to put a Kaupapa Maori approach to ethics. (L. Smith, 2006b)

My ethical responsibility towards my participants extends past the completion of this doctorate, and I value highly the ongoing relationships which began over the process of my research work with them.

Consent and Anonymity

Indigenous rights activist and academic Aroha Mead (Ngati Awa) speaks of the principles of 'free and prior informed consent' developed within the United Nations from rigorous consideration of research with indigenous peoples. This process of consent that works well for indigenous people and communities signifies the free opinion of participants who are asked to consent before the research happens, and are made 'fully aware of all the implications of the research both positive and negative.' However with indigenous research 'even with free prior informed consent it does not mean it is unconditional or permanent, it is always subject to ongoing negotiation between the researcher and indigenous communities' (A. Mead, 2006). I have written and verbal consent from my participants to use their images and recorded spoken words in subsequent outputs from the research, such as an interactive DVD.

Maintaining the research standards and ethical protocols required for doctoral research in the academy required use of a Consent Form developed for the research (attached as Appendix 3). The difference in ethical and tikanga protocols created challenges for me in the fieldwork with Maori participants. For example requiring a kaumatua to sign a consent form to make use of their words in my research is nonsensical from a Maori viewpoint where agreement to discuss or interview face to face with me is evidence of their permission and consent. 'I'm here talking to you now, if I

didn't agree to do this I wouldn't be here'. All participants consented orally and on principle I did not seek further written consent of the kaumatua advising me. I did promptly return notes or transcripts of their words with me and continued to communicate with them throughout the research process.

Every recorded interview was preceded by discussions about the research, considering the benefits that may accrue to Maori from the study and to gain acceptance for the written consent process that was on several occasions dismissed as unnecessary by the participants. I asked them to 'help me out with this paperwork' knowing the paper requirements of academic study that conflict with Maori ways i.e. *kanohi ki te kanohi* and orally.

On several occasions I was challenged about the option of anonymity offered by the consent forms as 'a typical Pakeha cop out' when Maori speak knowing we are accountable for our words, encompassing all of the ethical principles of the academy and more. Each contributor, and some very emphatically, chose to have their own names appear in my thesis and for their words and images to be used in dissemination of the research findings on the understanding that this may be of benefit to other Maori.

Accountability

Educationists and researchers, Bishop and Glynn are noted for publications about Kaupapa Maori research theory and practice in the field of education. In *Culture Counts: Changing Power Relations in Education* (1999), they concur with L. Smith (1999) that Maori reject researcher hegemony and control of research projects and process, arguing instead for Maori self-determination of the focus and benefits derived from research, as well as the legitimization of research process and findings, and the 'representation of voice and determination of accountability processes' (Bishop & Glynn, 1999, p.102).

As a kairangahau I consider myself accountable to all of the participants of my research. All interviews were based on a list of questions (See appendices 4 and 5) that were sent to the tauira Maori and staff a few weeks before we met. Although digital recording and playback has

superseded cassette tape technology, my assumption, proved correct, was that all participants would have access to tape players. The tapes and their contents belong to each participant and the originals returned to them at the end of the research process.

I undertook the transcription of the tapes myself because it guaranteed confidentiality and I have a strong preference for my own kinaesthetic learning style, words that literally pass through my hands for word-processing are more easily accessible from memory across five years of research work.

Participants received their interview transcripts by email and several took the opportunity to make and return deletions and corrections in the text. I maintain regular contact with the 58 participants, advisors and supporters of my doctoral research in the form of quarterly electronic panui (newsletters) that update my PhD progress. I have developed ongoing relationships in one to one email conversations, in occasional meetings with some of the participants, and continue meeting with my advisors and kaumatua.

Being Maori?

What importance should be attached to my identity as Maori impacting on this research? I think it is central to the whole process. Graham Smith (1990) summarised key elements of Kaupapa Maori research as 'related to being Maori; connected to Maori philosophy and principles; takes for granted the validity and legitimacy of Maori...' Being Maori was very much taken for granted by my participants and not by myself. My approach to the research is as what Chapple et al (1997, p. xi) coined a phrase for a 'working class Anglo-Maori' woman, who has succeeded in a non-Maori academy by moderating my behaviours there, to more closely align with the dominant Pakeha protocols, academic standards and in particular, mastering the English language. I have been dismissed as being 'not a real Maori' because I do not korero i te reo Maori and even more suspicious because I am doing a Pakeha degree; 'What's a PhD?' I know myself as Maori not solely from my whakapapa but my lived connection with Maori, my whanau and tauiwi Maori around me, in my research, and in my world view.

I was hopeful that the graduate students would have undertaken their own research in their degrees, and so have an informed understanding of what I wanted to do. I assumed, correctly, that Maori staff would be well aware of the importance of research within the tertiary environment and interested in a Kaupapa Maori approach. I believe that my overt use of Nga Pae Arahi to introduce me to my potential participants significantly reduced suspicion and scepticism.

I was aware of the extra expectations of tangata whenua that my research will be of some benefit to Maori. I share this expectation. All of the participants had read my Information Sheet (Appendix 1) and Profile (Appendix 2). The universal agreement to participate was motivated by their desire to help other Maori achieve academic success. All of the staff of the ITPs, Maori and Pakeha, shared the same motivation and interest to support the research.

A question I have been asked is whether non-Maori can do Kaupapa Maori research? I am open to anyone using a Kaupapa Maori approach, but mindful of the culturally defined subtleties of my own research experiences and unsure of how well non-Maori could do it. L. Smith (1999, pp, 187-194) argues that those who are not Maori are not precluded from participating in research that has a Kaupapa Maori orientation, and notes that this also does not 'preclude those who identify as Maori but cannot speak Maori language, those who are Maori but do not know their whakapapa, nor those who are Maori but have lived away from their iwi or whanau territories'. G. Smith (1992a) posited four models by which culturally appropriate research can be undertaken by non-indigenous researchers;

Tiaki or mentoring model, where authoritative Maori people guide and sponsor the research; whangai or adoption model, where researchers are incorporated into the daily life of Maori people, and sustain a life-long relationship extending far beyond the realms of research; power sharing model, where researchers 'seek the assistance of the community to meaningfully support the development of a research enterprise' and ; empowering outcomes model addressing the sorts of questions Maori want to know and which has beneficial outcomes. (Cited in L. Smith, 1999, p.177).

All these models imply a culturally sensitive, empathetic approach, but go beyond that approach to address the issues which are going to make a difference for Maori (ibid, p.177).

Other Maori academics have identified the tensions arising for Maori undertaking Kaupapa Maori research in the academy. Kathie Irwin saw that research for her PhD studies needed to 'mediate between and speak to two worlds, the Maori world and the academic world' (1994, p. 24). Irwin explains her approach to negotiating entry into fieldwork for her research;

From the start, the kaupapa of this research would be approached in a Maori way, invoking, as it would the traditions and customs of the Maori world. In this case there would be no question which world would lead: the world of research would follow. (Irwin 1994, p. 35)

I approached each ITP through their Maori Studies or Wananga Maori groups. At Northtec and EIT these are based in the same complex as the ITP marae. I spent time establishing relationships with Maori there and rapidly became comfortable because of their manaakitanga and positive support offered. There I am Maori just like them, albeit fairer skinned than some (McIntosh, 2006), from a different iwi and 'speaking a bit Pakehified'. I spoke of these groups as 'the friendlies' and joked about this with them. We all spoke of 'us here' in the Maori studies area, and 'over there' as the part of the ITP campus where the IT students are based. There appeared to be two separate and different worlds. From the IT staff and students, I learnt about 'us here' in the computing area, and 'over there' being the marae and Maori studies areas. For the most part, only the IT Maori students moved between both worlds.

Thinking Maori?

I am trained to think in the non-Maori academy and at the same time aware that my approach to this PhD is Maori. I am concerned by the same question asked by academic Hine Waitere-Ang (Ngati Tuwharetoa, Ngati Kahungunu) 'How much is cloaked and diffused when we, as Maori researchers, ignore our own level of institutionalisation particularly when we choose to write about ourselves?' (Waitere-Ang, 1998, p.224). My thinking like a Pakeha was for example early use of academic qualification as a measure of success, to find later that success is valued and regarded in different ways by my Maori participants.

I have over eleven years of experience with Kaupapa Maori as research practice starting in 1998 when I started work as a kairangahau with the New Zealand Council of Educational Research (NZCER). As a member of the

Maori minority on staff, I was immersed in a realm of Pakeha research practices and an uncertainty of how to proceed in the research projects with Maori I was engaged in (Wilkie 1998, 2001). I drew heavily on the advice of NZCER Pukenga Mr Dick Grace (Ngati Porou), and Board members Dr Graham Smith and Dr Kathie Irwin. It was here I first experienced what Bishop (1994, p, 175) described as 'Kaupapa Maori research (that) is located within an alternative conception of the world from which solutions and cultural aspirations can be generated.'

Research shows Maori in deficit positions on every indicator including educational achievement. This is not generally true of the participants of my research who had completed diplomas or degrees in IT, or were close to doing so at the time of this study. The main deficit for these students was the lack of other Maori learning and succeeding with them. My research seeks to understand their academic success in a 'deficit' environment, drawing on their perceptions of their experiences as Maori.

Kaupapa Maori is the source of the methodology posed by Dr Kuni Jenkins (Ngati Porou) that 'Aitanga as a framework gives rise to a particular kind of research paradigm which makes the information produced from it accessible to a Maori audience and those really interested in understanding Maori points of view' (Jenkins, 2000, p. 42). I found Jenkins' thesis inspiring, both to look at the worldview of the two partners, Maori and the Crown in turning towards each other for engagement in the domain of Maori education, and also to write in this direct to the reader voice using vocabulary accessible to Maori or non-Maori readers.

Key Terms from Kaupapa Maori

I use the term Kaupapa Maori (capitalised) to encompass the philosophies; the theories; the project planning; the processes; and the knowledge arising from my research. Throughout my study, participants and supporters were interested to hear more about Kaupapa Maori as both theory and as a research approach. Several first language speakers commented they had never come across this term used in this way before. Maori advisors to my research said the term more commonly used to describe both education and knowledge is Maturanga Maori and several noted that this term would be

more likely to be understood by Maori I worked with. In my research I use this term to refer to Maori education and knowledge generically.

Tikanga Maori is the term that describes the correct approaches for people's behaviour in any situation. Acknowledging and adhering to the appropriate kawa (protocols) on each of the marae and Maori studies areas of the ITPs, and at the same time informing correct approaches to the Maori governors, managers and staff of the ITPs. At Northtec I requested to go through a powhiri (formal welcome) as my entry to the ITP, as I had learnt from my prior online research that these were held weekly as part of training for staff and students. In the whaikorero the kaumatua Taipari Munro whom I had met with before, addressed and welcomed me, introducing me, my iwi links with tangata whenua, my proposed research work with the ITP, and acknowledged the importance of this formal and public introduction as part of kaupapa and tikanga Maori. Later Taipari pointed out to me that this is the correct process for an 'outsider' to be introduced to the local Maori people, and following this approach was a process to make contact that could be understood by the local tangata whenua.

Whakawhanaungatanga is establishing relationships amongst and between people. For many Maori this is a precursor to any further relationship or work together with ample examples from the literature on the stages and steps for this process. (Bishop & Glynn, 1992; Cram, 2001, 2006; Pihama, Cram & Walker, 2002; C.S. Smith, 2000; G. Smith, 1997; L. Smith, 1999, 2006). All of the participants to my research were sent my Profile (Appendix 1) and the Information Sheet (Appendix 2). I emailed and wrote to the Chief Executives of the three case study sites, requesting their support for my work. I emailed and spoke by phone with the Senior Maori staff in the ITPs, including the Kaiwhakahaere (Maori Liaison), Maori Advisors and Kaumatua attached to or working in the ITPs. I followed this with meetings face to face with key participants at each ITP and subsequent semi-structured recorded interviews. The questions asked of students, graduates and IT staff are attached as Appendices 4 & 5.

A process of establishing and sharing individual identity from whanau, hapu and iwi connections is called whakapapatanga that, in the context of my research, was an important part to establish and develop relationships with the ITP staff, the tangata whenua of those sites and the individual Maori

participants to my research. There is a wryly told anecdote that all Maori are actually related to each other, and eventually given time these real blood connections can be established. In my research, I was surprised to find that I am related through common Ngapuhi whakapapa with the first IT graduate I interviewed, Ang Cassidy. I am related to a kuia of the Eastern Institute of Technology (EIT) Pauline Tangiora, ironically through our common Scottish heredity. After meeting with me, one kaumatua phoned through a message to a staff member instructing 'we will work with her, she is one of ours', identifying me not simply as a Maori researcher, but also through my own affiliation with our iwi. While Pakeha qualitative research methodology makes a valid space for subjectivity, as does Foucault's genealogy, Kaupapa Maori research often involves more complex and connected relationships between the researcher and the researched.

Key Practices in Kaupapa Maori Research

Knowledge about the best approaches for research with Maori as individuals, groups and communities is growing. Some iwi authorities, such as the Ngati Kahungunu Iwi Incorporated Runanga have their own research plan (Ngati Kahungunu, 2006) that prioritises research for this iwi now. The runanga called on advisors who are Ngati Kahungunu academics and researchers (Cram, 2006), among others, for the development of their plan. Kidman (2007) investigated the best practices of research engaging with Maori Communities. Linda Smith (1999, 2006a) listed Kaupapa Maori practices that guide Maori researchers in the field and used by other researchers (Cram 2001, 2002; Pipi, Cram et al, 2004). I discuss my own fieldwork practice against these principles which are derived from Kaupapa Maori. I have made these practices **bold** in the text below.

Aroha ki te tangata, or a respect for people, could be argued as a practice that all researchers should follow. Prior to starting to make contact with any potential staff participants I researched to find out about their fields of interest and expertise. I briefly reviewed the histories of the local people, the tangata whenua of each site and learnt of any contemporary issues in the rohe (area), such as current claims before the Waitangi Tribunal. At best this information was surface level but it did help me make sense of casual comments about Wellington District Inquiry (WAI 145) and the

Northern South Island Inquiry (WAI 785) for Ngati Toa with their Treaty claims.

Kanohi kitea or the seen face is also kanohi ki te kanohi, face to face, the preferred mode of engagement for Maori. Researchers who seek to engage Maori through a paper only approach will find few replies to letters, emails, and faxes. I chose to make initial visits to the three selected sites, to introduce 'my face' and my research in person. Confirming that e-mail is taking an increasingly important role in communications, I negotiated appointments to meet with key participants through email. Speaking face to face I asked for agreement or support for engagement with my research at each site. I spoke with kaumatua of tangata whenua who worked with or advised the ITPs, the Deans of the Maori Studies schools at each ITP, and senior managers in the schools teaching the IT courses and degrees. The support and encouragement for my research was in part because the lower than average retention and completion or success rates of Maori is a shared problem amongst the ITPs and any advice or recommendations to improve this situation would be immediately useful to them. One respondent quipped "When you have finished are you going to sell this knowledge?"

Titiro, whakarongo ... korero meaning look, listen ... speak. A protocol that is appropriate in research and also common to the kawa or tikanga in formal hui and on marae. There are considerations of age, knowledge and experience in this practice, an example of children in particular attending hui with their elders, included in the events, expected to look and listen first, and at a much later stage to speak. Knowing my ignorance of the tangata whenua of the three sites, I looked first at websites and annual reports of the iwi runanga and sought the advice of the Maori advisors to my research. During the Ngapuhi powhiri at Northtec I witnessed for the first time men responding to the karanga, the call and response of welcome and entry to the marae. I was awed being acknowledged in the whaikorero (formal speech) from one of their kaumatua Taipari Munro. I did not speak during this process but later discussed with Taipari the appropriateness or correctness of my entry to Te Tai Tokerau.

Manaaki ki te tangata the process of sharing and hosting people and being generous is more commonly the mark of the hosts of a hui and a responsibility of tangata whenua hosting manuhiri (visitors). As manuhiri to

three sites the protocols of appropriate behaviour for me were equally predetermined by this tikanga. In discussion with various Maori advisers (supervisors, mentors, colleagues, kuia and kaumatua) I previously determined appropriate koha.

Koha is a gift and in the context of my research was returned to tangata whenua or my hosts. Presenting seminars to staff and students of the ITPs on Kaupapa Maori Research, sharing food with students prior to interviews, and gifting petrol vouchers at the end of the interviews, were all forms of koha considered appropriate for this research. At the end of the study a copy of my thesis will be gifted as koha to the libraries of the three ITPs.

Kia tupato be cautious or careful in the practice of research is a helpful guideline. Aware of my own ignorance in the knowledge and ways of the local people, the relative insignificance of the research in the fuller lives of my participants, and my understanding from past experiences of Kaupapa Maori research practice ensured I approached each site cautiously and with care.

Kaua e takahia te mana o te tangata means do not trample over the mana of the people. For myself, this is respect for others and their place in the world. Tuahine Northover advised that the mana of all my participants increased when they shared their knowledge with me, just as my mana will increase when I share my knowledge with others. I am mindful of the mana that has already been accrued by the kaumatua, kuia, advisors and supervisors, and their advice and guidance helped ensure I did not get into 'mana munching' or disrespect for others. The ethical conduct approved by the academy also requires this respect and regard for others in work with people.

In an interview for the rangahau.com website, esteemed educationist Professor Wally Penetito pointed out:

There's a mana which comes with the idea of being a researcher ... they think that they are doing something which is at a high level and beyond the normal person ...and they almost behave as though this is the case - 'I have come to research you, I am the one who knows everything.' What we need to stop and ask is 'well why are you coming to ask me then, you know everything?' It's that sort of attitude that is one of the hardest things to overcome... Maori in particular just have to learn that this is the case it is

important to so see yourself as not being any better off than others, that you actually need the people you are talking to... (Penetito, 2006)

Kaua e mahaki is do not flaunt your knowledge. I learnt in the process of this PhD that the more I learnt the very much less I had to say. On one level to be Maori and to be doing a highest level degree in a university is a distinction that separates and marks me as unusual amongst whanau and friends. In one way it caused alienation and suspicion, as one mother asked 'Are you the one from Wellington who's come here to ask our daughter all these questions?' I was able to connect with Maori students and graduates by being Maori and sharing the students' lived reality of a burgeoning Student Loan and uncertainty about future employment. At the same time I was able to engage with senior staff in ITPs who hold doctorates and discuss the research project at a different level.

Nga Pae Arahi - The Guides

In korero at Northtec with Taipari Munro (Ngapuhi, Te Waiariki), I learnt that my formal approaches to the ITP speaking with their kaumatua Rev. Winiata Morunga, and as manuhiri going through the formal powhiri of welcome to Northtec, signalled that I would follow the appropriate tikanga or protocols to engage with people in regions outside of where I live. Taipari pointed out parallels with traditional times, pre-colonisation in Aotearoa/New Zealand, when travelling outside your own tribal area could be hazardous. For an individual to travel freely within and through the lands of another tribe required the protection of a person appointed as a guide, te pae arahi, who would ensure (but not guarantee) your safety and also take on responsibility for the actions of the visitor. In my fieldwork I was aware that my conduct would reflect on Nga Pae Arahi who were in effect sponsoring me in their areas.

During my research I sought out the advice and guidance of kaumatua/kuia from tangata whenua in each tribal area, some connected with the ITPs and others who are people of high standing with their local iwi. For Ngapuhi and Northtec, both Rev Winiata Morunga (Northtec Kaumatua) and Taipari Munro (Northtec Maori Advisor to the CE) gave me advice and support for my work, and Taipari agreed to a recorded interview with me. Taipari also connected me with Maori staff on the Rawene outpost campus of Northtec.

My approach to Ngati Kahungunu and EIT was facilitated by my 'PhD study buddy' Te Taite Cooper, who introduced me *kanohi ki te kanohi* to Mr William (Bill) Prentiss, a senior kaumatua of Ngati Kahungunu. After a meeting to discuss my research in detail, Bill made a phone call to the EIT kaumatua Joseph Tuahine Northover MNZM (Ngati Porou, Ngati Hine, Ngati Kahungunu) to introduce my research and arrange my first meeting with Tuahine. I met Tuahine on several occasions to talk about my research, the concepts of poutama, and the title of my thesis. We met again at the opening of the new Pukemokimoki Marae in Maraeroa, Napier. In the process of dealing with EIT staff and students I made it clear that I was working with the support of their kaumatua.

To make a connection with the Ngati Kahungunu Runanga (NKII) I contacted Kym Hamilton (Ngati Kahungunu) who had supported my research into Special Education for Maori (Wilkie 2001, 2002). Kym was the NKII Education Officer who connected me to a recent IT degree graduate and representatives of three of the six Tai Whenua groups in the region. I interviewed Maia Kaukau (Ngati Kahungunu) for Te Tai Whenua o Orotu, one of the groups in the Napier area which represents six local marae.

The third site for my research is Whitireia Community Polytechnic in Porirua near Wellington. I first contacted a fellow member of the MAI ki Poneke Doctoral student support group, Mr Taku Parai (Ngati Toa Rangatira, Ngati Raukawa, Te Atiawa, Ngai Tahu), a kaumatua of Ngati Rangatira Toa, the tangata whenua of the area. Taku also holds the position of Purutanga Mauri, the liaison person between the ITP and tangata whenua. We met to discuss my research project and he agreed to inform Ngati Toa of my work and to support it in the ITP. Taku also connected me with Ms Willis Katene (Ngati Toa Rangatira, Nga Ruahinerangi, Ngati Tuwharetoa) the Director of Te Kupenga, the Maori studies area, who gave whole hearted support for my research, including the process to get my research through the Research and Ethics Committee, and provided the venue for the interviews with Maori IT graduates. Mr Hemi Potae (Ngati Porou) the Maori Academic Advisor for Whitireia Community Polytechnic gave me a background to the relationships that support Maori students in the ITP and connected me with key IT staff.

These people are the group I refer to as Nga Pae Arahi, my guides, and my research could be started and completed because of their early support.

Site Selection

I used quantitative empirical evidence based data and tertiary education policy to understand the contexts of the institutions and the participants. To establish the ITP sites from which to gather the voices of Maori who were succeeding, I reviewed publicly reported information about the sector particularly from the Ministry of Education, the Education Counts website and the Tertiary Education Commission. I analysed the ways the ITPs represent Maori on their websites, in annual reports and reporting participation and success outcomes. The synthesis of this information appears in the following chapter that gives the context of the ITP sector. From this analysis I learnt that one thread of programmes common to all of the ITPs in New Zealand was Information Technology (IT). My choice to focus on Maori graduates from the IT diplomas and degrees meant I could select from any of the then 22 ITPs as providers.

I identified potential target ITP sites from two main factors

- 1) The ITP offers degree level courses in IT, as my concern was the relatively low (10 percent in 2005) level of Maori enrolment in degrees in the ITPs. Having a degree study option available in the ITPs offers opportunities for graduates with Diplomas at levels 4 and 5 to advance their studies.
- 2) The ITP has, relative to the local population, a high rate of Maori enrolment. This was to increase the chances of Maori being enrolled in IT studies at the ITP and the number of potential participants for this research.

As each ITP is reflective of the region in which it operates, I considered at first that case study would be an appropriate vehicle to express the findings of my research. After completion and preliminary analysis of taped interview transcripts, I saw common themes arising from the participants of all three sites, and decided to present the findings thematically to keep the focus on the Maori students and graduates, not the institutions they had completed their studies with.

Student and Graduate selection

I was interested to interview Maori students and graduates of IT diplomas and degrees in the ITPs who were considered successful in their academic studies, and my method allowed me to follow what had led to their qualification. At each site, I met with senior staff of the schools offering the IT courses to outline my research and seeking referrals of successful students or recent graduates. I received eight direct referrals from these sources. The remainder were from word of mouth particularly from Maori staff in the ITPs, many of whom maintained contact with Maori graduates after their courses were completed. On reflection, it was the staff of the ITPs who determined who was a successful Maori student that I should interview, based on my definition of academic qualification signifying success. One criticism is that this process leaves out those students who did not complete the courses or qualifications, who may have told a different story about their experiences with the ITP. As shown by Phillips, 2006, Maori students who chose to leave their courses before qualification completions are making good choices informed by their own life situations. A further irony is shown in my analysis when the people I interviewed did not necessarily hold qualification completion as a success because they hold contrasting views of success as discussed in chapters 8 and 9.

In effect there was no random sampling of participants; I ended up interviewing both of the Northtec Maori IT students at level 7 and two recent degree graduates. I travelled to the Rawene Campus of Northtec and interviewed two students from the level 4 diploma courses there, and Charlotte Tane a Maori IT tutor. At the Eastern Institute of Technology (EIT), I met and interviewed Rebecca Clarke a recent graduate who held the position of Liaison for all Maori students in Business and Computing. I interviewed five IT degree graduates and Max who had moved away from the area. At Whitireia Community Polytechnic I interviewed four recent IT graduates and one who had to return to repeat two papers to complete her degree the following year.

Of the 17 Maori students and graduates that I interviewed, six had completed their degrees in 2006, representing 23 percent of all Maori graduates of the Bachelors degrees from the ITPs in that year. This

'representative sampling' is less a matter of research design, rather more strikingly, it highlights the fact of numerically few Maori students in the IT degrees in the ITPs.

Conclusion

Kaupapa Maori offers a contemporary theoretical base and research process to pose and answer questions of importance to Maori. With the advice of kaumatua/kuia and the generous contribution and support of the group I call collectively Nga Pae Arahi I was able to engage with tangata whenua and tauira Maori of the ITPs using protocols that they would recognise and feel comfortable with.

Combining Kaupapa Maori and qualitative methodologies I aimed to generate and present information in a new way, from a Maori view, that will be of use to understand the factors that contribute to Maori academic success in the IT field in the ITPs. The link between whakawhanaungatanga, the development of relationships, and academic achievement in the context of the ITPs is an element that receives a strong focus throughout my thesis. I show how Kaupapa Maori research involves complex and ongoing connections and relationships between the researcher and the researched.

I introduce my contemporary use of Nga Pae Arahi as a method derived from Kaupapa Maori that served to inform and guide my own practice and simultaneously to gain engagement from Maori both in the ITPs and the tauira Maori who had graduated. By going through powhiri I signalled my adherence to the correct tikanga for an 'outsider' to be introduced to tangata whenua.

On reflection I see the spiral nature of my own learning, and the relationships formed with participants and supporters during the research. I progressed stepwise through a poutama of learning beginning with Te Timata, my first steps outlined above. Confronting my own ignorance in a process of enlightenment – Te Maramatanga, I developed my understanding of the subject, and Kaupapa Maori theorising and research. Mastering the requirements and protocols of the academy, I gained confidence-Kua Kaha to pursue my studies. Halfway through my PhD studies I began to share the knowledge I had gained with others - Kua Mohio. Te Taumata, the pinnacle

of my own PhD will be one completion that leads to Te Timata -the first step returning the findings of my research to participants and supporters and later to others.

In the following chapter I move into Te Ao Pakeha to introduce in more detail the three ITP sites of my research in the contexts of the tertiary system and relevant policies.

Policies

New Zealand Tertiary Education System
Maori and Tertiary Education Strategy

New Zealand Qualifications Framework

Levels 1-10 of National Qualifications
Bachelors degrees span Levels 5-7

Chapter 5 Contexts from Te Ao Pakeha

Introduction

In my thesis, the factors that impact on the experiences of tauira Maori in Information Technology (IT) tertiary studies are heuristically divided into two worlds; Te Ao Maori alongside Te Ao Pakeha. The main purpose of this chapter is to focus on the Aotearoa/New Zealand tertiary education system, policies and institutions of Te Ao Pakeha, to give contexts for the stories of the experiences of my Maori participants. Within the system, Pakeha viewpoints, structures, processes and pedagogies are 'taken for granted' and Maori worldviews and practices, if represented at all, appear on the margins.

With reference to Poutama o Te Ao Hou that is the foldout at the back of this thesis, the header above shows two strands from Poutama o Te Ao Pakeha; the teal green steps represent 10 Levels of the National Qualifications Framework (NQF) and the grey steps the Aotearoa/New Zealand Tertiary Education System. These factors structured the tertiary learning environments and experiences of the tauira Maori.

The Aotearoa/New Zealand tertiary system has undergone major reform for over 25 years. It is not the purpose of this chapter to analyse the system or the reforms, for this refer to for example Abbott, 2006; Earle, 2006, 2007; G. Smith, 1992, 1997; Zepke at al, 2002, 2004, 2008. This chapter highlights elements of the system that impact on Maori in the tertiary institutions. Maori interests and aspirations are represented in the system by what I see as an elusive Maori Tertiary Education Strategy, developed in a process of a national 'consultation' and, following political trends and policy directives, is subject to change.

Statistically with a 'free choice' of tertiary education provider, Maori appear to prefer to undertake IT diploma and degree studies with Institutes of Technology and Polytechnics (ITPs). Looking deeper, 'failure' in secondary education precludes direct entry to the Universities, leaving the choice for tertiary education between the ITPs, the Wananga, and Private Training Establishments (PTE). The ITPs offered Bachelors degrees in Information Technologies (IT) that were not available at the time in the Wananga, nor in most of the PTE throughout the country. The effect of this limited choice resulted in more Maori studying IT from level 1 up to degree level 7 in the ITPs than with any other provider.

The New Zealand ITPs are a significant site of Maori tertiary education and have designated regional roles to play within the broader tertiary system. There is a dearth of information about the Maori experiences in the ITPs, and little research from a Maori perspective about the entire sub-sector. My research was conducted with three of the twenty ITPs offering degrees in IT, and each has a unique regional profile.

In a time of rapid technological change and a shortage of qualified technical professionals, Maori have double the national average rate of participation in learning in the field of IT. In 2007 almost 25 percent of all students in the ITPs studying IT were Maori (Ministry of Education 2007g, ENR.7). This effect can be explained in part by the uptake of free community computing courses offered by the ITPs throughout Aotearoa/New Zealand.

This chapter provides information from tertiary education policies and statistical reports that relate to Maori in the sector and in the IT field. It begins with a brief overview of the structure of the Tertiary Education System and outlines the strategic aims of the Tertiary Education Strategy (TES) that relate to Maori specifically. I argue that the treatment of Maori in the TES is subject to political shifts that for example resulted in removal of all reference to the Treaty of Waitangi from the strategy in 2007.

I introduce the National Qualifications Framework (NQF) that structures qualifications across 10 Levels, and is standardised throughout Aotearoa/New Zealand. This framework determined the tertiary learning pathways of my taurua Maori participants who share their journeys from

Level 1 through to their graduations with Level 7 bachelors degrees in IT. I go on to introduce the three ITP sites that engaged in my research in their regional contexts.

The Tertiary Education System of Aotearoa/New Zealand

Reforms to the tertiary education system of Aotearoa/New Zealand started over 25 years ago and led to restructuring that created the form of our present system. Represented here by the grey steps in Poutama o Te Ao Pakeha the tertiary education system consists of all providers of education and training including; Universities (that now incorporate Teachers' Colleges), Institutes of Technology and Polytechnics (ITPs), Wananga, Private Training Establishments (PTE), and Other Tertiary Providers. More recent arrivals into the system include Industry Training Organisations (ITO) and new government agencies such as the New Zealand Qualifications Authority (NZQA) and the Tertiary Education Commission (TEC). The system also contains the policies, regulations and funding processes, the students and other key stakeholders. Maori are recognised as key stakeholders and increasing numbers of us will enter tertiary education in the next ten years (McClelland, 2006; Ministry of Education, 2007f)). In 1990, the Education Amendment Act gave ITPs the right to confer degrees opening new locations for Maori and others to achieve IT qualifications.

Wananga

From a Maori viewpoint an even more significant reform instituted by the Act was the 'official' recognition and subsequent government funding of the Wananga. These tertiary education providers are defined as being 'characterised by teaching and research that maintains, advances, disseminates and assists the application of knowledge regarding ahua Maori according to tikanga Maori' (Education Amendment Act 1990, Section s162 (b) IV).

Although the Act recognises, regulates and funds only three Wananga; Te Wananga o Aotearoa, Te Whare Wananga o Awanuiarangi, and Te Wananga o Raukawa, many other small scale, local, hapu and iwi supported wananga flourish without government funding or regulation. Anecdotal evidence follows in the narratives of my taura Maori participants. Maori preference

for the learning available in the kaupapa based Wananga is largely responsible for the unprecedented surge in the number of Maori tertiary enrolments and our over representation as participant learners in the sector. This effect is yet to be researched from a Maori perspective. However, at the time of my research the Wananga did not offer qualifications in IT above Level 4 so Maori did not yet have the choice to complete IT degrees there. Many of the graduates had aspirations to teach IT in a kaupapa Maori environment such as the Wananga or the marae (see Chapter 9).

New Zealand Qualifications Authority

In 1989, a new government agency, the New Zealand Qualifications Authority (NZQA) was established under s 248 of the Education Act. NZQA was to ensure consistency nationwide in the recognition of qualifications in academic and vocational areas. Their role has now expanded into accreditation of providers to deliver and award qualifications, and to the registration of new qualifications developed in response to industry demand. One of the key tools in this process is the National Qualifications Framework (NQF), represented by the teal green steps in Poutama O Te Ao Maori, that orders all qualifications and learning across 10 levels. Levels 1, 2 3 and 4 are Certificates; Diplomas are offered at Levels 5, 6 and 7, and Bachelor degrees are on Level 7. Level 8 is for Honours degrees and post-graduate Certificates and Diplomas; Level 9 is for Masters Degrees, and Level 10 the Doctorates.

The national standardisation of qualifications resulted in the sale and purchase of entire programmes between our tertiary providers. The three ITPs in my research had purchased a complete package of an NZQA recognised Bachelor degree in IT from another ITP, the Bay of Plenty Polytechnic. The titles and the focus of the topics in the degrees were altered and each ITP was successful in gaining accreditation from NZQA to deliver the programme. The authority to approve courses up to and including bachelors degrees has been delegated by NZQA to ITP Quality, a standing committee of Institutes of Technology and Polytechnics New Zealand (ITPNZ) representing 19 ITPs around Aotearoa/New Zealand.

Tertiary Education Commission

The Ministry of Education evolved from the Department of Education and is the agency responsible for the development of education policy, practices and provision for early childhood, primary, secondary and, until recently, tertiary, education. In 2002 the Education (Tertiary Reform) Amendment Act established the Tertiary Education Commission (TEC) which was 'to foster the operation and development of post-secondary education and training facilities' (Maori Tertiary Education Framework, 2003, p. 41). TEC is responsible for the development and implementation of policy for the tertiary sector and uses a budget of over \$3 billion annually to contribute to 'national economic and social goals' (Tertiary Education Commission website 2008).

Tertiary education policy development is now the business of the TEC, along with the management and allocation of funding, and monitoring performance for all tertiary providers. One key policy document is the Tertiary Education Strategy, first published in 2002 with a recent version covering 2007–12 (Ministry of Education, 2007c).

The Tertiary Education Strategy

The first Tertiary Education Strategy (TES) clearly stated 'Partnership and autonomy expressed in the Treaty of Waitangi must be given effect through the Government, Maori and the tertiary education system working together to produce success in terms meaningful to Maori' (Ministry of Education, 2002). Strategy Two in the TES, 'Te Rautaki Matauranga Maori - Contribute to the Achievement of Maori Development' is strongly influenced by the work of a Maori Tertiary Reference Group, created to advise on Maori tertiary education issues and responsible for the development of the Maori Tertiary Education Framework (MTEF) (Ministry of Education, 2003b). The MTEF was based on analysis of consultation with Maori, the Hui Taumata Matauranga, and the work of leading Maori academics and representatives of Maori stakeholders in the tertiary sector. In the words of Dr Linda Tuhiwai Smith who chaired the Maori Tertiary Reference Group 'this Framework is an examination of how the tertiary system could work 'better' for Maori and what Maori think that means' (Ministry of Education 2003b, preface).

The MTEF includes three visions for Maori advancement summarised by Dr Mason Durie as a keynote address to the Hui Taumata Matauranga in 2001; to live as Maori; to enjoy good health and a high standard of living; and to actively participate as citizens of the world (Durie, 2002). The MTEF has seven priority areas, one of which 'Priority seven - Maori-centred Knowledge Creation' includes an overall goal for research and development in tertiary education that is of benefit to Maori, and this thesis fits that priority.

In June 2004, the TEC released the *Strategy for the Tertiary Education Commission: Working with Maori 2004-07* that positions the State and Maori in agreement that 'Education is at the heart of what Government wants to achieve for New Zealand's sustainable social and economic development. It is at the heart of what Iwi and Maori have said they want for themselves and their future generations' (Tertiary Education Commission, 2004, p.8).

Treaty of Waitangi

In Goal 2 of the Tertiary strategy, TEC aims to work in partnership with the tertiary education sector to enhance 'system and organizational capabilities that will contribute to Maori achieving their development aspirations.' This will be enacted by a combination of supporting the development of partnerships between the sector and Maori; resourcing the sector to 'help them develop effective Treaty of Waitangi relationships' and their ability to respond to Maori needs as identified by Maori (ibid, p. 13). However, when the latest version of the Tertiary Education Strategy was released in 2007, all reference to the Treaty of Waitangi and its principles had been removed from the policy document (Tertiary Education Commission, 2007). It appears the strategy anticipated the content of the 2007 'Principles of the Treaty of Waitangi Deletion Bill', that proposed 'to remove the words "the principles of the Treaty", "the principles of the Treaty of Waitangi", and the "Treaty of Waitangi and its principles" from all New Zealand statutes' (House of Representatives, 2007). The government's Justice and Electoral Committee examined the Bill and recommended that it not be passed, based on '171 submissions we received, 160 oppose the Principles of the Treaty of Waitangi Deletion Bill. We consider it clear that there is very little public support for the changes proposed in this bill.' The Bill was voted down at its second reading in parliament in October 2007.

In September 2006, I had attended a TEC 'consultation' with Maori where, within the space of three hours, we were given a copy of the published draft Tertiary Education Strategy, PowerPoint presentations about the contents of the draft, and asked for feedback. Countrywide, Maori will recognise what it is to be 'consulted' in this manner where practically complete policy documents are presented ostensibly for discussion and input with a very short period of time before submissions in writing close. At this 'consultation' hui a burning issue raised one question. Asked repeatedly in various forms of the education agencies officials; 'is the Treaty of Waitangi part of this strategy?' The question was not answered directly, and a reader will search in vain for direct reference to the Treaty in the final version of the Tertiary Education Strategy for 2007-12.

On paper at least, a Maori way is acknowledged; 'The Strategy recognises that a key aspiration of Maori is that Maori knowledge, Maori ways of doing and knowing things, in essence Maori ways of being, are validated across the tertiary education sector' (Tertiary Education Commission 2007, p. 4). Two of the rationales given for support of 'Maori living as Maori in both Te Ao Maori and in wider society' is contribution 'to Maori improving their own well being and making a strong contribution to the economic, cultural and social fabric of New Zealand'. Also, because 'an increasing proportion of tertiary students identifying as Maori means the quality of the tertiary education system will be increasingly measured by the outcomes of Maori students' (ibid. p.10). The TES specifically aims to increase 'the achievement at degree and postgraduate levels of under-represented groups, especially Maori ...through strengthening pathways from schools and other tertiary education organisations, and enhancing support structures within universities' (ibid, p. 14).

Maori Education Strategy

According to the TEC a separate Maori Education Strategy would be developed to articulate the aspirations of Maori in education for the education sector as a whole' (ibid 2007, p. 10). By 2008, the particular focus on Maori tertiary education is diluted throughout the Ministry of Education publication 'Ka Hikatia – Managing for Success. The Maori Education Strategy 2008-12'. It outlines the target outcomes for success of Maori in the education system from pre-school through tertiary and

continuing education. What is not made explicit is what success means to Maori in the system, and the default position is to the Pakeha system definitions such as rates of Maori enrolment, retention, and qualification completion compared against other ethnic groups in the system. As I show the reporting of these 'success outcomes' positions Maori in a deficit compared with almost all other learners in the tertiary system. Only our Pacific Island population lags behind Maori across all indicators and qualitative research specific to their experiences is sorely lacking.

Maori in Tertiary Contexts

In Aotearoa/New Zealand, the Ministry of Education (MoE) reports information from across the entire education system. It collects mandatory Single Data Returns from all publicly funded tertiary education providers three times a year and reports them through a dedicated website *Education Counts*. From these statistics the patterns of Maori participation and enrolment in the sector provide the broad contexts of the qualitative data relating to Maori IT students in the ITPs presented in following chapters. The data throughout this chapter is for 2007 unless stated otherwise.

Participation

Maori made up almost 15 percent of this country's population in the 2006 census (Statistics NZ, 2007). If Maori were 15 percent of those participating in tertiary education it would indicate equitable access and participation. In 2007, Maori were *over-represented* at just fewer than 19 percent of all domestic enrolments into tertiary studies (MoE, 2007 ENR 1). Participation rates of the population aged 15 years and older have 20 percent of the Maori population enrolled in tertiary study in 2007 compared with just over 13 percent of the total population. (MoE 2007 PPN.1). This effect is in part evidence of the impact of Wananga attracting new Maori enrolments into tertiary courses.

There is an over-representation of Maori at lower Levels 1-3 Certificates where, in 2007, 12 percent of Maori were enrolled versus 6 percent of the total population. One explanation for this is a 'catch-up' effect made by Maori who previously did not achieve qualifications in secondary education on Levels 1 and 2 of the NQF, and enter tertiary institutions to redress this

situation. In 2007, Maori were also overrepresented at levels 4 (4 percent compared against the 2 percent population total), and Level 5-7 Diplomas (3 percent against the 2 percent of the total population).

At Level 7 Bachelors degrees, Maori at 4 percent participated at a rate slightly higher than the majority European group rate of 3 percent in 2007. I have not seen this detail highlighted in any publication. The impact of international and domestic Asian learners on tertiary statistics can be seen here, for the Bachelors degrees, the Asian participation rate was 7 percent, significantly higher than all other population groups, and in effect moves the total population participation rate up by several points. The experience of Asian stakeholders in our tertiary education system, and their outcomes, is another area requiring research.

Enrolments

Maori are over-represented in enrolments to low level qualifications. In 2007 57 percent of Maori enrolled at Levels 1-3. In Fig. 5.1 below, the over-representation is obvious. However, in 2007, the rate of European tertiary enrolments in levels 1-3 was 39 percent (MoE, 2007 ENR.5). Like Maori, the largest group of European tertiary enrolments are in Level 1-3 courses. This point of similarity is not reported. A balanced report would show that like Europeans, the largest group of Maori learners enrolled into Levels 1-3 in 2007. The point of difference remains the greater proportion of Maori at Foundation levels 1-3.

Fig. 5.1 Maori and European enrolments by level of study in 2007

Source: Education Counts, Tertiary Enrolments 2007, Ministry of Education Provider Based Enrolments 2007, ENR.5

I started my own research with a focus on Maori who completed Bachelor's degrees in the period 2005 – 2006, later extended to include those who had finished in 2007. I learnt that many of these tauira Maori had enrolled in lower level Certificates and Diplomas and continued on to Bachelor degrees

as a result of achieving qualifications, or academic success, in their earlier studies.

In 2007, almost 29 percent of all tertiary enrolments were in Level 7 Bachelor degrees. This statistic includes enrolments in Levels 5 and 6 of the degrees. For Asians the enrolment rate in Bachelor's degrees was 40 percent, and for Europeans it was 30 percent. In the same year only 18 percent of Maori tertiary students were enrolled in Level 7 Bachelors (MoE 2007, ENR.5).

Degree Completions

In a study on 'how to increase the number of Maori attaining Bachelors degrees or higher' Ministry of Education analyst David Earle (2007) found that 'holding a degree benefits Maori economically, as well as having social and cultural benefits'. Earle goes on to report Maori that 'while the level of Maori degree attainment has increased, it still lags behind the rest of the New Zealand population and international standards. In 2001, 12 percent of the Pakeha (European only) population held a degree qualification, in the same year 5 percent of the Maori population did (Newell and Perry, 2006, p 41).

Earle (2007) confirms the applicability of international research findings (Prebble et al, 2005; Zepke et al, 2005) 'that first-year success is a critical factor for retention and completion of students in degrees. Passing 75 percent or more of first-year courses is an important determinant of remaining in study beyond the first year' (Ministry of Education, 2007a). Within the microcosm of the ITPs my IT staff contributors considered achievement in the first semester of studies towards a degree was the critical time frame determining eventual graduation. Strategies to retain ITP students in their first semester were developed by Wilson (2002) and the relationships and contacts between lecturers or tutors and students were critical. This is an area requiring more research; particularly that from a Maori perspective and for this reason is one strand of my thesis.

Maori Enrolment in the Tertiary Sub-Sectors

In both 2006 and 2007, the largest group (37%) of Maori tertiary enrolments were to the ITPs. This appears to reflect a trend of Maori preference for

learning there. A majority of the European group also prefer ITPs as their tertiary provider, with just over half (52%) in 2006, and just under half (48%) in 2007 of all European tertiary enrolments made in the ITPs. Part of the students' choice of ITPs as their education provider is proximity (Ussher, 2006) being located regionally throughout Aotearoa/New Zealand, students are able to live and study from home. Ussher also found that of all students Maori were more likely to travel further to get the campus of their choice that also offered the courses they were looking for. The lower entry requirements and the technical, practical and professional range of training and qualification from Levels 1-10 in the ITPs are further attractions.

Fig. 5.2 Maori tertiary enrolments by sub sectors in 2007

Data Source: Ministry of Education Provider Based Enrolments 2007 ENR.6

The next largest group of Maori (26%) enrolled with the Wananga in 2007, and a further 22 percent of Maori enrolments were with Private Training Establishments (PTE). The proportion of Maori enrolled in the Universities was 16 percent in 2007 with a marginal increase from 2006 linked to the previously separate Colleges of Education now integrated in the universities (Ministry of Education, 2007g, ENR.6, 2008, ENR.5).

In 2007 Maori were represented in all ITP enrolments at 15 percent, the same rate as our proportion of the Aotearoa/New Zealand population. This is an example of equity of access and participation for Maori, and of interest that the ITPs are the location of this effect.

Fig. 5.3 Proportions of Enrolments to ITPs by Ethnicity in 2007

Source Ministry of Education Provider Based Enrolments 2007 ENR.6

Information Technology

Described as the 20th century of steel giving way to the 21st century of technology, rapid changes are taking place in the Aotearoa/New Zealand workplace (McCallum, 2006). He remarks that employees increasingly require competence with new technologies and a new section of the workforce has developed with specialist skills in the installation, operation and maintenance of the technology. In spite of this trend there was a marked slow-down in the IT industry in 2000, and at the same time a drop in the number of people undertaking IT degrees. A global pattern saw a decrease in the number of people qualified with IT degrees and post-graduate diplomas available to the workforce. In Aotearoa/New Zealand a strong demand for skilled IT graduates continues (Department of Labour, 2005f and 2006c) and McCallum 'predicts this will result in serious ongoing shortages in New Zealand if not addressed quickly by providers and industry together' (cited in Earle 2008, p. 28).

As yet, there is no dedicated ITO in the IT field and each degree provider establishes their own links with the IT industry. Entry into the industry has prerequisite IT qualifications predominantly available from non-Maori tertiary institutions in Aotearoa/New Zealand, such as the ITPs. Increasingly IT qualifications in the Aotearoa/New Zealand workforce are imported with skilled immigrants (McClelland 2006; Newland & Perry, 2006).

In a series of reports looking 'Beyond Tertiary Study' aimed to inform the monitoring of the Tertiary Education Strategy, Earle (2008) reported IT as an area of study with a high unmet demand for advanced qualifications, at Bachelors degree level and above. The shortages are compounded by too few technology, science and mathematics teachers in secondary schools 'hampering the development of new students who could enter tertiary study in these areas' (Earle, 2008, p. 10). This issue was mentioned by several of the IT professionals I interviewed, and is discussed further in the following chapter.

In their submission on 'The Knowledge Economy' the Information Technology Advisory Group reported 'only 6 percent of people working in the IT field are Maori, only 1 per cent of Maori work in that field' (1999, p. 22). In 2002, the proportion of Maori in IT occupations had increased to 6.7 percent (Ministry Economic Development, 2003). A contemporary online publication www.tangatawhenua.com reported on a 29 January 2009 hui initiated by Maori Party Co-Leader and Crown Minister Dr Pita Sharples (Ngati Kahungunu) looking at 'the way forward for Maori', when our position relative to IT 'doesn't look too flash'.

IT generates over \$6.5 billion in Aotearoa annually and employs 36,500 workers. A further 45,000 IT jobs will be created (i.e. increasing use of cell phones, digital TV, online and wireless tools, gaming) but where will Maori be positioned in the IT industry, today and into the future? 'At the moment, it doesn't look too flash. (tangatawhenua.com, February 2009)

Here a Maori IT professional attributes low Maori uptake of IT to a lack of knowledge and the need for more IT education.

If more of our people knew exactly what IT was and what it entailed then maybe IT as a career choice would become more realistic. By educating our people in IT, then our people overcoming their whakama [shyness] in this regard would no doubt be increased, and you'd see a lot more of our people in the industry. (Simon, tangatawhenua.com, February 2009)

I suggest that people from all of our population groups may have little understanding of IT and its potential career paths, and there is value in addressing the issue.

Maori Enrolments in Tertiary Information Technology Studies

To understand the potential isolation for individual Maori in the context of IT studies it is useful to look at some quantitative data. A lesser known fact is that Maori participate in IT study at twice the rate of the general population of Aotearoa/New Zealand. In 2007 a total of 0.6 percent of the population aged 15 years or older participated in tertiary studies in IT. In the same year Maori had a 1.3 percent participation rate (Ministry of Education, 2007g, PPR5). Significantly Maori were 27 percent of all 2007 enrolments in IT at tertiary institutions.

Fig. 5.4 Enrolments into IT by Ethnicity in 2007

Source Ministry of Education Provider Based Enrolments 2007 ENR.7

In 2007 almost 33 percent of all Maori in tertiary level IT study were enrolled in the ITPs. There is a marked Maori preference (61 percent) for ITPs as providers of bachelor's degrees at level 7 in IT (Ministry of Education 2007g, ENR.16). During my analysis of the quantitative data I found that of the 41 Maori graduates of Bachelor's degrees in Information Technology in 2006, 26, or 63 percent were graduates of the NZITPs (ibid, 2007, COM. 14).

The New Zealand Institutes of Technology and Polytechnics

In 2007, the government funded 20 Institutes of Technology and Polytechnics delivering 'vocational and applied education and research'. Nineteen of the ITPs were members of a national association, Institutes of Technology and Polytechnics of New Zealand (ITPNZ). Member ITPs actively collaborate in forums on administrative and specialist subject matters; to date there is an e-learning forum but not an IT subject forum, or a Maori forum. ITPNZ commissioned research into; Maori uptake of IT (NZCER, 2004); Kaupapa Maori and Maori Education Pedagogy (Pihama, K. Smith, Taki, & Lee, 2004); Critical Success Factors and Effective Pedagogy for e-Learning in Tertiary Education (NZCER, 2004) and Foundation level (1-3) learning where Maori are over represented (Zepke, Leach & Isaacs, 2008).

All of the ITPs have a local regional focus, although many deliver programmes in other regions of Aotearoa/New Zealand. In his report *A changing population in the New Zealand tertiary education sector*, Research Analyst McClelland (2006) examined the impact of predicted demographic change on the student population and the 'network of provision' on the levels of New Zealand's human educational capital. He alerts us to the fact that some tertiary providers with a strong regional focus, such as the ITPs, operate in areas of declining population in the years 2006 - 2026. Included in this scenario with a nine percent projected drop in population aged 15 to 39 years are both the Eastern Institute of Technology and Northland Polytechnic. Whitireia Community Polytechnic faces a six percent drop in this group, although this is offset by their provision of courses in Auckland that has a predicted increase in population of 19 percent for the same age group. In 2006 all of the ITPs offered Level 7 Bachelors degrees in Information Technology. I chose to include three ITP sites my research that had higher than average Maori population regionally and higher than average rates of Maori enrolment.

Internal Affairs historian Ian Dougherty (1999) wrote *Bricklayers and Mortarboards* a seminal text on the history of all of the Aotearoa/New Zealand ITPs, and I draw from this to introduce the three sites of my research. Each of the ITPs has historical and contextual information on their websites for anyone wanting more. There is potential for a great deal more

research to be conducted about the ITPs which have influenced the development of our country for over a century.

NorthTec - Te Tai Tokerau Wananga

Northland Community College opened on 1 April 1978 as the first tertiary provider in the region. In 1987 the title was changed by the Council to Northland Polytechnic in line with a nationwide move to adopt Polytechnic as a standard term. In the same year a Maori translation of the title - Tai Tokerau Wananga - was added (Dougherty, 1999, p. 66). In June 2006 the ITP was renamed NorthTec and retained their Maori title. I use their name in 2007, NorthTec, throughout this thesis.

During the 1980s the ITP developed its Maori studies courses, and in 1991 opened the Marae complex with the wharehau named Te Puna O Te Matauranga. By 1995 the ITP offered degrees in Nursing followed by the Bachelor of Applied Information Systems, (BAppIS) (Dougherty, 1999 p 70). This is the degree completed by the NorthTec Maori graduates.

NorthTec is the region's largest provider of tertiary education, and the only one to offer programmes from foundation (Levels 1- 3) to degree Level 7. NorthTec has campuses in Whangarei city and Learning Centres in Kerikeri, Rawene, Dargaville, Kaikohe and Kaitia. Selected for my research as one of the ITPs with an over representation of Maori as students, in 2002 NorthTec had a student body profile of '42% Maori and 58% other ethnicities, [that] represents the future of New Zealand tertiary institutions' (NorthTec Charter, 2006).

Fig 5.5 Map of Te Tai Tokerau/Northland Region with NorthTec sites map Rawene Campus

Source: NorthTec website - Brief History of NorthTec and Campus Maps

Eastern Institute of Technology - Te Whare Takiura o Kahungunu

According to Dougherty (1999), the history of the Eastern Institute of Technology began with the opening of the Napier Technical School in 1899. The 1931 Hawke's Bay earthquake destroyed the school that continued operations from a range of regional locations. The first 20 hectares of the present day Otatara, Taradale site of EIT is midway between the two Bay cities, Napier and Hastings, and the Hawke's Bay Community College opened there with 'four relocatable classrooms, workshops and library' in February 1975. Later buildings would be named after John Harre, John Rose and Bruce Martin the first three principals and Chief Executives. In 1986 a gazetted name change to the 'Hawke's Bay Polytechnic' was followed on its 21st anniversary in 1996 when the ITP became the 'Eastern Institute of Technology'. For the purposes of this thesis I refer to it as EIT.

From a community college that delivered 'the usual technical institute classes for apprentices, technicians and professionals' (Dougherty, 1999, p. 130) along with evening and community classes, the ITP opened off-campus centres in Waipukurau and Hastings. Consulting the community to ask what education courses they wanted resulted in delivery on topics from te reo Maori to the preludes and fugues of Bach (ibid p. 132). In the late 1970s courses in Maori language and culture started in a local marae and by 1994 flourished in the purpose built whare wananga and marae complex (ibid, p. 133). At time of my research in 2006, a Wharekai (dining room) had been added to the marae complex. The Bachelor of Computing Systems (BCS) at EIT is offered in the Business and Computing Faculty, on the Taradale campus. From an outsider's Maori viewpoint I noticed the bi-lingual signage, the very low cost of parking provincially at 10 cents per hour or 80 cents for a day, and the artful façade of the Rose building completed in 2005.

Fig 5.6 Images of EIT

Bi-lingual signage at EIT. Provincial parking rates. Rose building.

Whitireia Community Polytechnic - Te Kura Matatini o Whitireia

A 1978 study of local community needs by Bob Dempsey established that the people of the City of Porirua sought a local alternative for tertiary education. At that time a range of courses were delivered in Porirua at outposts of the polytechnics in two neighbouring cities; Wellington and the Petone Technical Institute in Lower Hutt. On 10 February 1986 the Parumoana Community College opened its doors, changing its name to Parumoana Community Polytechnic in 1988. Stigma attached to the 'muddy waters' translation of Parumoana was lifted with the re-title to Whitireia (the source of radiant light) Community Polytechnic in 1989. On advice of staff, throughout this thesis I refer to it as Whitireia.

Aiming from the start to reflect the local multicultural Porirua Community, the ITP targeted the local Maori and Pacific Island populations. By 1997, 25 percent of their full-time students were Maori and 21 percent Pacific Island. Whitireia offered its first degree in Nursing in 1994, and in 1995 the first year of a Bachelor of Business Studies in conjunction with Massey University (Dougherty, 1999, pp. 157 - 162). Courses in basic Computing skills (Levels 1-2) were offered at Whitireia through government funded courses targeting unemployed and unqualified people such as ACCESS and the Training Opportunities Programme attracting Maori students.

The Bachelor of Information Technology degree was offered in 2006-07 by the Faculty of Business and Computing Studies. Because of the close proximity 'over the road' of Ngati Toa's Takapuwahia Marae, no marae has been built on the Whitireia site. A carved waharoa covers the entranceway to the Maori studies area, and carvings are located throughout the campus.

Fig 5.7 Images from Whitireia Community Polytechnic 2006

E Block site of Faculty of Business and Computing, Carving in foyer of E Block, Computer laboratory
(Source Images M. Wilkie 2006)

Conclusions

This chapter outlined information from Aotearoa/New Zealand tertiary education policies and statistically based reports that relate to Maori in the tertiary sector and in IT studies. It gave a brief overview of the structure of the Tertiary Education System and outlined the strategic aims of the Tertiary Education Strategy that relate to Maori specifically.

Representations of Maori in tertiary education are skewed towards an emphasis on disparities and lacks when compared against the dominant Pakeha population. This bias leaves matters of importance to Maori virtually unremarked such as; over-representation at 20 percent in the uptake of tertiary education nationally; proportionate representation at 15 percent of the ITP populations, and Maori as 25 percent of all ITP students enrolled into IT courses. These facts are not part of 'common knowledge' about Maori in tertiary education, and I argue that they should be. I see reason for hope by a different interpretation and presentation of data about Maori in IT studies, from a Maori viewpoint.

Potentials exist for a great deal more research to be conducted about the ITPs that have influenced the development of our country for over a century. Three of the 20 ITP sites in Aotearoa/New Zealand engaged in my research and are presented here briefly in their regional and historical contexts. Maori perspectives of these tertiary institutions are presented in the following chapters, from Maori staff and students, contextualised within the local landscapes of iwi who are tangata whenua of the land the ITPs are built on.

How to improve achievement outcomes for Maori across every level of education is a current issue receiving attention. The benefits to Maori from achieving a degree have effects economically socially and culturally (Earle, 2007) and as I will show these impact significantly on Maori whanau. An important factor for all students achieving bachelors degrees is progress made in the first semester and the first year of degree studies. My research explores how the relationships developed by Maori students were also an important element in their progress.

Our lack of information about Maori engagement with formal IT studies, particularly at degree levels 5-7 is problematic and my thesis explores how Maori have attained IT knowledge in the ITPs and after their successful completion of qualifications tracks their movement into work in the IT industry. I argue that a clearer picture of Maori uptake and successes in the IT field presented from a Maori perspective is a subject requiring more research. Increasing our understanding of the current status of Maori representation and qualification in IT fields and industries will inform policy to create more equitable participation for Maori.

Considering the ITPs and Te Ao Pakeha as contexts for Maori learners of IT has raised several issues that require further research, particularly from a Maori view. One area of interest is that the ITPs are sites of equitable participation in tertiary education for Maori, and in 2006 we were over represented amongst IT degree graduates. A 'common knowledge' is that Kaupapa and tikanga Maori and IT are in separate realms, but I argue the two realms are integrated in the lives of many Maori. More attention is needed on the potentials of systematic integration of dimensions and threads from Te Ao Maori with the expanding knowledge base of IT.

In the next chapter I introduce the iwi that are tangata whenua of the three ITP sites, and the 17 Maori IT students and graduates who contributed to my research. I look at the foundations of their Maori cultural capital, first contacts with computers and their prior educational experiences.

Te Timata - The First Step

Earlier learning experiences and 1st IT contact *Kowhai/yellow*

Whanau - Family

Fundamental group in Te Ao Maori.
Koiwi/ bone of humans

Tangata - People

Foundational cornerstone of worldviews.
Whero/ red of blood with mauri (life force)

Whenua - Land

A foundation of Maori identity and belonging.
Parauri / Brown of soil and living roots

Papatuanuku - Earth Mother

Archetypal female progenitor of all things.
Waiporoporo/ Purple Wairuatanga Spirituality

Chapter 6 | Te Timatanga - The Beginnings

Whakatauki

E kore au e ngaro, he kakano i ruia mai i Rangiatea
I will never be lost; the seed was sown even in Rangiatea'

I am strong and will strive to adapt no matter what trials I may face. Why?
Because I am a seed of my ancestors that first dwelled in Rangiatea, I will
never relent.

'Rangiatea formerly known as Hawaiki- homeland or origin of the Maori'
(From Taku Parai for Ngati Toa.)

Introduction

In a spiritual Maori worldview te whenua, the land, is personified as Papatuanuku the Earth Mother often presented with her complementary partner Ranginui the Sky Father. Within these parameters (Cooper, 1999), Maori live in the modern world and continue traditional connections or whakapapa to the lands of our people. The negatively spiralling effects of land alienation on Maori people has featured in claims before the Waitangi Tribunal and the basis of academic arguments such as Bishop & Glynn, 1999; Cram, 2001; A. Durie, 1997; M. Durie, 1994, 1998; Johnston, 1999; Marsden, 1984, 2003; L. Mead, 1996; McIntosh, 2006; Penetito, 2005; Pere, 1982; C. Smith, 2000; G. Smith, 1997; Te Rito, 2007b; R. Walker, 1989, 2001. The purpose of this chapter is to image the start of positively spiralling effects when connection with the land and identity as Maori is

maintained. I am convinced that one positive effect is success with academic qualifications in non-Maori environments, in this case for Maori qualified in IT by the ITPs.

My research question asked how and why in the face of deficits Maori succeed academically in their IT degree qualifications. Analysis provides a rich description of what these people attribute their successes to. Arguably strong identity as Maori and connection through home marae with the land is a factor, and there is no question that whanau featured most emphatically in the narratives that follow. Whanau is a major key to understanding Maori worldviews; it is one context for our entry into the world, the construction of identity as Maori and part of our identities as learners.

The image at the head of this chapter shows five strands from Poutama O Te Ao Maori. In turn these strands represent in waiporoporo (deep purple) a spiritual basis of Papatuanuku; in Parauri (brown) Te Whenua, the land, the physical landscape that surrounds the ITPs and literally sets the scenes for the Maori learning Information Technology there. However, the land is also the Mother of Maori people, and connection with particular land provides iwi identities and boundaries.

Represented in whero (red) are te tangata, the people, the indigenous Maori peoples who traditionally and still inhabit the takiwa. Importantly, this strand represents the tauira Maori participants to my research who are introduced in this chapter. Koiwi (bone of humans) represents here whanau, or family, a fundamental basis of Maori social structures and values. These first four strands represent the 'cultural capital' tauira Maori take with them into the ITPs, where little attention is given to it. The fifth strand, kowhai (yellow) represents Te Timata, the first step of the learning poutama. In this chapter it represents the early learning experiences and learning identities of my contributors. First steps were taken in their contacts with computers and studies before their entry into formal IT studies.

This chapter addresses the lack of information about Maori in the ITP context and, in this case, in the field of IT studies. The first section, Nga Papa, introduces the tribal lands of three iwi; Ngapuhi, Ngati Kahungunu, and Ngati Toa who are the tangata whenua of the three ITP sites of my research. With their consent, I show images of Nga Pae Arahi, my guides

who are members of tangata whenua or who worked in the ITPs. I go on to introduce 17 Maori contributors to my research who were students or graduates of IT Degrees, Diplomas and Certificates. While all but one identified themselves as Maori, there was a range in their identities and connections as tangata whenua, with their hapu and iwi, and their own whanau.

Te Timata presents foundational experiences and their education before entry into the ITPs, across a range from the early school leavers to those with a prior Bachelor degree. Members of both groups, Maori who achieved secondary school qualifications, and Maori who did not, went on to complete IT degrees. I describe their introductions to computers and their first steps into work before formal IT studies. The pathways they took into IT studies at tertiary level are as diverse as the 17 tauira Maori are unique individually.

Nga Papa - Foundations

Te Whenua - The Land

Connection with the land is a common thread for indigenous people of the world. Maori express this through iwi or tribal identity, and close association as the land itself.

During the process of my doctoral research I learnt a great deal more about the part of my whakapapa relating to my earlier line of descent from Ngapuhi iwi.

Ko Puhanga-tohora te maunga
Ko Taheke te awa
Ko Ngati Pakau te hapu
Ko Ngapuhi te iwi

Puhanga-tohora is the mountain
Taheke is the river
Ngati Pakau is the hapu
Ngapuhi is the iwi

With this pepeha, I belong to Ngapuhi in Te Tai Tokerau, the Northland region of Aotearoa/New Zealand. Puhanga-tohora (whale spume) is the maunga or mountain of my Ngapuhi hapu, or sub-tribe, Ngati Pakau. Taipari Munro (Ngapuhi, Te Waiariki) was one of nga pae arahi for my research work in Tai Tokerau. Knowledgeable in the complex whakapapa of the peoples of the Whangarei region, and an eloquent orator himself, Taipari explained the links between landscape and identity.

I use a traditional tauparapara, an opening to a speech delivered by the orators of my tribe's people on the tribal courtyards, the marae. In these

opening words I pay homage to the sacred mountains of the Ngapuhi tribes, standing with awe and laden with stories upon the Northland Tai Tokerau landscape. Doing this I place myself, a tangata whenua of Te Tai Tokerau and indigenous person of Aotearoa, into that very landscape, becoming one with it and making it an integral part of my own identity. (Taipari Munro, 2004)

At a fundamental level of our cultural capital, Maori take a sense of identity from our landscapes and the people who share descent from these same lands.

Te Tangata - The People

For the first time, the Aotearoa/New Zealand 2006 Population Census used two categories for Maori; Maori by ethnicity and Maori by descent. 'Maori descent refers to those people who are of Maori ancestry. The Maori descent count forms the basis of producing iwi statistics' (Statistics NZ, 2007, p. 2). Maori by ethnicity made up 15 percent (or one in seven) of the NZ resident population in 2006. This statistic is most often used in the official government discourses about the Maori population. Just over half (53%) of these identified Maori as their only ethnicity. However, 18 percent of the population identified themselves as Maori by descent, almost one in five of the total population.

Maori as an increasing proportion of the population require a more balanced representation within the discourses. For example of the 18 percent of the population who are Maori by descent, Statistics NZ (2007) reports that almost 16 percent did not know their iwi. To reframe this into the accurate and positive image, a significant majority (84%) of those who identified themselves as Maori by descent did know their iwi.

Of the 16 Aotearoa/New Zealand taurira Maori all but one had declared Maori ethnicity on enrolment to their ITP. Cheryl, the exception, claimed Maori descent and did not know her iwi. From the consent forms completed before the interviews started, the list of iwi affiliations showed representation from seven of the ten largest iwi of Aotearoa/New Zealand. The other graduate respondent, Maryanne, is Cook Island Maori.

Tangata Whenua - People of the Land

Generically, Maori are tangata whenua, people of the land, of Aotearoa/New Zealand. As tangata whenua, 16 tauira Maori strongly identified as Maori. Maryanne, actively involved with the Cook Island culture and community in Napier, had a strong identity, as Cook Island Maori.

Of importance to Maori is to know 'who' (Marsden & Royal, 2003) the contributors to my research were. I present them as part of Iwi with most claiming multiple memberships. Six named Ngapuhi and another two Ngati Hine. Six named Ngati Kahungunu, four named Ngati Toa, and three Ngati Porou. Two each came from Tuhoe and Ngati Tuwharetoa and one each from Te Arawa and Maniapoto. Other iwi affiliations were with Ngati Whatua, Te Aupouri, Ngati Raukawa, Te Atiawa, Ngati Whakaue and Ngati Mutunga. Three participants also specifically mentioned their descent from a Pakeha parent. All of the graduates mentioned at some stage of their interview that they were proud of their identity as Maori.

As expected the locations of the three ITPs influenced the proportion of Maori graduates who came from the tangata whenua of the local areas, with Ngapuhi strongly represented in the NorthTec group (5 of 6) and Ngati Kahungunu the largest group from EIT (4 of 6). Whitireia in the Wellington region is based within the takiwa of Ngati Toa and two of the five graduate students were tangata whenua, three were of other iwi as shown below.

Ko Ngapuhi Te Iwi

Referred to as 'the Far North' of the North Island of Aotearoa/New Zealand, Tai Tokerau was the site of the earliest multiple people settlements in Aotearoa/New Zealand for Maori, and later Pakeha. Ngapuhi as a collective tribal group has 122,214 members nationwide and is the largest iwi in Aotearoa/New Zealand (Statistics NZ, 2007). They are tangata whenua for Te Tai Tokerau and all but one of the locations of the NorthTec campuses and learning centres, the exception being Kaitaia.

The house of Ngapuhi stretches from Tamaki Makaurau in the south to Cape Reinga in the north, Its walls are the sub-tribes: Ngati Whatua in the south, Te Rarawa in the west, Te Aupouri in the north and Ngati Kahu in the east, Ngapuhi holds the centre of the House, and the mountains of significance within Ngapuhi are the pillars or poupu, which hold the ridgepole aloft. (Ngapuhi Website, 2008).

Takiwā

1. Te Takiwā o Ngāpuhi ki Whangarei
2. Te Roopu Takiwā o Mangakāhia
3. Ngāpuhi ki te Hau-ā-uru
4. Ngāpuhi Hokianga ki te Raki
5. Ngā Ngaru o Hokianga
6. Taiāmai ki te Marangai
7. Te Rūnanga o Taumārere ki Rākaumangamanga
8. Te Rūnanga o Ngāti Hine

Figure 6.1. Ngāpuhi Takiwā

Source: Ngāpuhi website

Ngāpuhi and NorthTec

At the main NorthTec Campus in Whangarei I met separately with Terry Barnett (Chief Executive), Winiata Morunga (Kaumatua), Taipari Munro (Maori Adviser to Chief Executive), and Janelle Beazley (Kaitakawaenga Maori) and later travelled to Rawene to interview Charlotte Tane (Tutor Computing and Business Administration).

Fig 6.2 Nga Pae Arahi from NorthTec 2006 - 2007

1. Rev. Winiata Morunga (Ngāpuhi), 2. Taipari Munro (Ngāpuhi, Te Waiariki)

Sources: 1. M. Wilkie Image, 2. NorthTec Website banner.

In an interview with Taipari Munro, I heard of the staff training at NorthTec emphasising the landscape of tangata whenua who made up 40 percent of their student population.

I think that it is important to know the layout of the land, hence the reason why we do the whakawhanaungatanga thing in our huihui. Whether that's 'my mountain is, my ocean is' or somebody delivering whakapapa, it's tangata whenua. When they do that, they are sharing the layout of the land, so it is important to know that. In some of the Maori cultural workshops that we have been holding here is trying to point out to the staff, you need to know the layout of the land if you are going to know how to work with the people who are living on it. (Taipari Munro, NorthTec)

Fig 6.3 Images from NorthTec 2006 and 2007

Front of Northland Polytechnic Raumanga Campus, Whangarei; Stone Carving.; Te Puna O Te Matauranga, (Source M. Wilkie Images 2006)

A link of identity as Maori through iwi affiliations and as tangata whenua of the land is part of the stories of all but one tauira Maori in my research. As a foundational value from a Maori worldview, it appears significantly as a consistent element in these stories of academic successes.

Five of the NorthTec participants were tangata whenua as Ngapuhi including two from Ngati Hine, and each affiliated with a different hapu. The first of all the tauira Maori I interviewed was 29 year old graduate of the NorthTec Bachelor of Applied Information Systems (BAppIS) Angela (Ang) Cassidy (Te Aupouri, Ngapuhi, Pakeha). Ang was one of the three graduates who mentioned descent from a Pakeha parent, in her case her father. 'Mum's mother is from Te Aupouri, Maungomoko way up in Kaitaia and her father is from Taiwhiu that's Ngapuhi. Dad is Pakeha from Maramarua (south of Auckland)'. Ang was born in Auckland, and moved with her family to Kaitaia, later to live in Whangarei, where she was at the time her IT studies started.

Fellow 2005 BAppIS graduate, Ria Kaire (Ngapuhi, Pakeha) linked through her father to the Ngapuhi Ngarangatonua marae was also 29 years old at the time she finished her studies. 'Dad wanted to come back to his home place; he wanted to come back to his roots. My mum is Ngati Pakeha; her family is from South Island, Nelson'. Ria was born in Gisborne and grew up

in Ruatoria, the heartland of Ngati Porou iwi, where her father was a teacher. Returning to Te Tai Tokerau as an adult Ria commented on the tribal variations in tikanga and kawa (protocols).

My heart is always in the coast because that's where I was brought up. I learnt a lot of Kaupapa Maori down there and the ways of Ngati Porou, which are quite different from the ways of Ngapuhi. It's quite strange coming up here as an adult to see how they do things up here... like they will never have seen a woman speak on a marae. (Ria, 29)

At NorthTec studying her final year of the BAppIS at Level 7 in 2007 was Colleen Hart (Ngapuhi, Ngati Hine, Ngati Whatua). Colleen was born in Whangarei and has whakapapa to 'Waikaritau marae in Pourau, two hours from Whangarei and an hour out of Dargaville'. In one of several examples of families relocating for better educational options, Colleen had moved her family from Kaitaia to Whangarei to do the BAppIS at NorthTec.

In his second year at Level 6 in 2007 was 26 year old Harmen George (Ngapuhi) from Onerahi in Whangarei, a member of Te Parawhau hapu. '[I'm] living in Toi Toi Road in Otaiko, staying on the marae called Te Pa Aroha Toi Toi. It's my nanas marae and she's caretaker, she recently had a heart attack so I'm just there for support'.

I interviewed two students at the NorthTec Learning Centre in Rawene (setting sun) located two hours drive northwest of Whangarei, on the Hokianga Harbour. The first student I met was Linda Taumaunu (Ngapuhi) who was born in Auckland; 'My father is from here, just down the road. From being brought up here, my family is in Omanaia'. Sharing the same classrooms was Cheryl Rudolph, the only respondent unable to name her iwi of descent, but married into the Ngati Poto hapu of Ngapuhi, with children who are members of tangata whenua.

I have no information about my whanau iwi. My mum's great grandfather came over in the 1800s a whaler on some ship. He got involved with the local Maori down Gisborne way... I think the family started marrying into Pakeha after that. A lot of the Maori was getting bred back out again and being Pakeha they weren't really interested in who they were; because they perceived themselves more as Pakeha than they did Maori. It was never discussed who we were, who we came from ... so we can't really backtrack. (Cheryl, 41)

As Ngapuhi is our largest iwi, I expected to find them at any of the ITP sites of Aotearoa/New Zealand and in particular at NorthTec within the tribal

territories. In fact seven (41%) of the 17 participants were from Ngapuhi and five of them had enrolled with NorthTec.

Ko Ngati Kahungunu Te Iwi

*Ko Wairoa-hōpūpū-hōnengenene-mātangirau te awa; ko Whakapunake te maunga;
ko Ngāti Kahungunu-ki-Te Wairoa te iwi! Ko Ngaruroro-mokotūararo te awa;
ko Kahurānaki te maunga; ko Ngāti Kahungunu-ki-Heretaunga te iwi! Ko
Ruamahanga te awa; ko Rangitūmau te maunga; ko Ngāti Kahungunu-ki-Te
Wairarapa te iwi!*
(Ngati Kahungunu whakapapa provided by Dr Joseph Te Rito, Ngati Kahungunu)

Ngati Kahungunu is the third largest iwi in Aotearoa/New Zealand, with 59,226 people (Statistics NZ, 2007). Their tribal lands, on the East Coast of the North Island, cover from Wairoa down to Cape Palliser, the southern most point of the Island. Because of this large spread of the iwi territories, the peoples are aligned into six distinct Taiwhenua, consisted of groupings of hapu and marae, throughout the region.

Fig 6.4 Ngati Kahungunu Takiwa

Source: Ngati Kahungunu Website

Ngati Kahungunu and EIT

I was influenced to have EIT as one of my research sites by my guide, past Head of Maori Studies at EIT Dr Joseph Te Rito, and introduced formally to Ngati Kahungunu kaumatua by my PhD 'study buddy' Te Taite Cooper. At EIT I met with Tuahine (Joe) Northover (Kaumatua), John Harmen (Acting Head of Maori Studies), Anne Hiha (tutor and on EIT Council), and Waipa Te Rito (Pouwhirinaki Maori) who's brief was both support and liaison work.

Fig 6.5 Nga Pae Arahi from EIT

Joseph Tuahine Northover MNZM (Ngati Porou, Ngati Hine, Ngati Kahungunu), Dr Joseph Te Rito (Ngati Kahungunu), Council Member Anne Hiha (Ngati Kahungunu, Ngai Tahu, Ngati Mamoe, Ngati Rangitahi, Ngati Whakaue, Ngati Pikiao).

The Eastern Institute of Technology (EIT) is located in Taradale on the edge of Napier City, in the Whanganui A Orutu district, and Ngati Kahungunu are the tangata whenua of that land.

Fig 6.6 Images from EIT

View of Wharenuui from EIT Front office, Te Tuatahi, Waharoa (gateway), Te Ara o Tawhaki, Wharenuui. (Source M. Wilkie Images 2006)

The first Maori graduate I met at EIT was Rebecca Clarke (Tuhoe, Ngati Kahungunu ki Wairoa, Pakeha) who was working at that time in the role of Maori Pacifica Student Mentor in the Faculty of Business and Computing. 'I am from Wairoa. My Dad who was born in Ruakituri up the back of Wairoa is very much a homeboy part of Wairoa. My mother is Pakeha, also born and bred and raised in Wairoa'.

The next EIT graduate I met was Sonya Pene (Ngati Kahungunu, Tuwharetoa, Tuhoe, Ngati Porou) who had returned to the workforce with her 2005 Bachelor of Computer Systems (BCS) degree. Sonya belongs to Ngati Parau hapu of Ngati Kahungunu; her home marae is Waiohiki near Taradale. She was born in Wanganui; 'Dad was in the Army based in

Wanganui, but he was always from Napier. He moved back here, that's why I'm here'.

Born in Hastings 'on the day the American president John F Kennedy was shot', my next contributor was Tania Kupa (Ngati Kahungunu, Te Arawa) who had studied the BCS at EIT from 2004-2006.' I am Kahungunu; my marae is Omahu, down Taihape Road in Fernhill. My hapu is Hinemanu on my father's side. From my mother I am Te Arawa, our marae is Taheke on Lake Rotoiti'.

BCS graduate Mei-Ana Ave (Ngati Kahungunu, Tuhoe) belongs to Kohupatiki Marae in Clive, Napier.

Ave is my married name, my husband is a Cook islander. Robin was my Maori name from dad's side. The Robins live around the marae and down one road are all brothers Robins. My sister and uncles live there, so when I'm just going "home" I go to the marae. (Mei-Ana, 34)

Interviewed in Whangarei, Maxine (Max) Cooper (Ngati Hine, Ngati Porou) was in her final year of the BCS at EIT in 2006 when her studies were interrupted by family illness and she had returned home for that reason. 'My bones are from Matawaia South East of Kaikohe. I was born in Kaikohe'.

Maryanne Marsters (Cook Islands) had graduated with the BCS in 2005, and worked in the EIT library. As a Cook Island Maori her story gives insight into the path taken by a Pacific Islander of a group even more under-represented in the IT field than Maori and in degree level studies throughout Aotearoa/New Zealand. 'I am from the Cook Islands. My family is from Palmerston Island, my mother was born there. My father was born on Suwarrow. I was about 5 years old when we arrived here'.

Ngati Kahungunu is represented in my research by the stories of six IT graduates ranging in age from 22 - 42 years. Five studied their Degrees at EIT and one at Whitireia.

Ko Ngati Toa Te Iwi

Mai Rangataua, ki Waitapu, mai Miria te Kakara, Ki Whitireia, whakawhiti te moana o Raukawa, ki Whakatu, ki Wairau, tai atu ki Kaikoura, Huri ake ki te Arahura, te rohe o Ngati Toa. (Taku Parai, for Ngati Toa.)

The change to count Maori by descent contributed to Ngati Toa iwi growth from just over one thousand (1,098) in 1996, to almost three and half thousand (3,462) at the 2006 census (Statistics NZ 2007). The rohe of Ngati Toa Rangatira is based in the south western region of the North Island and the top of the South Island (Te Tau Ihu). The traditional rohe is described as being from Whangaehu in the North Island, the Tararua Ranges to the east, south by Turakirae Heads (Southern tip of North Island) to Kaikoura and west to Arahura on the south-western coast of the South Island. Its obvious landmarks include the Porirua and Wellington Harbours, Kapiti and Mana Island and the Marlborough Sounds.

Fig 6.7 Ngati Toa Takiwa

Source (Ngati Toa website)

Ngati Toa and Whitireia

My connection to Ngati Toa was through Taku Parai a fellow member of MAI ki Poneke, the Maori and Indigenous post-graduate support network in Wellington. At Whitireia I met with Taku in his role as Purutanga Mauri/ Kaumatua, and he undertook to discuss my research with Ngati Toa. He spoke about me with Willis Katene, the Director of Te Kupenga who I met and subsequently interviewed. On a later visit I met and interviewed Hemi Potae, Whitireia's Maori Academic Support Coordinator.

Fig 6.8. Nga Pae Arahi from Whitireia.

Taku Parai (Ngati Toa Rangatira), Willis Katene (Ngati Toa Rangatira, Ngaruahinerangi, Ngati Tuwharetoa), Hemi Potae (Ngati Porou).

The main campus of Whitireia Community Polytechnic is in Porirua City where Ngati Toa is tangata whenua.

Fig 6.9 Images from Whitireia 2006 and 2007

Maori may view the 'taken for granted' landscapes of the ITP as 'alien'. Iti Rearea the 'Maori friendly' entrance to Te Wahanga Maori at Whitireia. (Images M. Wilkie)

At Whitireia I interviewed Jo-Anne Grace (Ngati Rangatira Toa, Te Atiawa, Ngati Raukawa, Ngati Porou), who had been born in Te Kuiti and returned to Porirua with her whanau by the time she was at secondary school. 'Mum's side here is Ngati Toa Rangatira, Te Ati Awa, and Ngati Raukawa. Our marae is at Hongoeka. Dad is Ngati Porou from Te Whanau o Ruataupare'.

Another graduate of the Bachelor of Information Technology (BIT) at Whitireia, Wiremu Wineera (Ngati Toa, Ngapuhi), was one of only two male students I interviewed.

Ngati Toa is the iwi but I'm not sure of the hapu. My mother is from Ngapuhi, I've never been there, we just stayed down here. I'm from Porirua. I was born and raised in Wellington, we moved to Paekakariki when I was 13 and settled in Porirua since. (Wiremu, 25)

Not surprisingly with an urban city based ITP, the remaining three Whitireia graduates were not members of tangata whenua (Ngati Toa), but two had

been born in Wellington. The first of these, Juliana Bennett (Ngati Whakaue, Ngati Kahungunu, Ngati Mutunga ki Wharekauri) grew up in Johnsonville and maintains close links with her Ngati Kahungunu iwi connections.

I was brought up in Wellington; Johnsonville [my] home marae is Kohupatiki in Hastings. Dad lives there so I am there all the time, about once a fortnight ... our family lives in all the houses around there. Its location is by Clive, across the river from the Clive township. (Juliana, 29)

Another of the 'class of 2006' BIT graduates from Whitireia was Sharon Mohi (Ngati Kahungunu, Ngati Maniopoto), who was born in Wellington and grew up with her adoptive family in Tawa. 'It's a little tricky because I'm adopted; I usually go by Ngati Kahungunu which is my father's side. On my blood side it's Ngati Maniopoto'.

The last of the Whitireia BIT graduates completed final papers for her degree in 2007. Maxine Clarke (Tuwharetoa, Ngati Porou) was born in Auckland and grew up in Wellington. 'My tribe far up north is Ngati Tuwharetoa. Our home marae is at Waihi Village between Tokaanu and Taumaranui.'

Hapu - Sub-Tribes

At a broader level Maori whanau are linked into sub-tribal groupings of hapu. All (11) of the NorthTec and EIT tauira Maori named their hapu with half (6) naming hapu links from both their mother and father. Three more named hapu links from their grandparents. At Whitireia, two of the graduates named their hapu, and two others did not. The complexity of identity with hapu and iwi for urban Maori living outside of our tribal regions, or those who have been 'whangaid' or adopted into other families is demonstrated by Sharon's response.

I don't know much of my bloodlines. I grew up with my mum who is Pakeha and so I didn't have too much to do with the Maori side of things except when I went to stay with my old man (father)... I didn't really have too much to do with that side of things. (Sharon, 29)

The Marae as Home

I asked all of the graduates 'do you have contact with your home marae?' The importance of home marae to a strong identity as Maori (Reedy, 1989) was reflected by all but one of these tauira Maori who spoke of enduring

relationships and contacts with their home marae. In my secondary research question, I was interested in contact with marae as a possible element of significance in the stories of Maori who had achieved success with IT qualifications. Analysis shows it is important. Fifteen of the 17 participants named their home marae, three named two marae as home. One who couldn't recall the name of the marae mentioned the location and village, and the other exception was Maryanne whose contact with the Cook Islands was minimal. 'Only with a brother who lives there, he stayed on Rarotonga'.

There are several levels of relationships with marae; some Maori retain symbolic links to their marae while in the group I interviewed most had a close and enduring relationship. The frequency of students' involvement with their home marae covered a spectrum from Harmen who lived on his as an able bodied support to his grandmother, to those living away from their home during study, returning only when necessary. Rebecca's reply was a typical answer; 'Very little contact unless there is a need. When I am there I am there at 150% or not at all. It is Pakowai marae in Frasertown, my dad, my family, his brothers and grandfather are all from there'.

Colleen had relocated to Whangarei to do the BAppIS but returned home for hui about their lands; 'Papakainga meetings, we have them there, about every three months'. Mei-Ana from EIT and Juliana from Whitireia belong to the same whanau who live in housing surrounding the Kohupatiki marae. Juliana travelled over four hours each way from Wellington to the Hawkes' Bay to maintain regular contact with her marae. Part of this was to attend wananga to learn the waiata or songs of her people.

Kohupatiki in Hastings. Dad lives there, so we are there all the time, once a fortnight. Our family lives in all the houses around there. Birthdays, weddings, tangi we are all there. Church is there every fortnight. Waiata wananga have been running for the past two years and we are involved with that. (Juliana, 29)

Just under half (7) of my participants were living near enough to a home marae to be actively involved on a regular basis. Several spoke of how their identity and positions in the kitchens 'out the back' at the marae remained the same regardless of academic qualifications. Cheryl gave a typical example; 'Yes I'm connected with Ngati Putungarai; that is over Rotokaka ...

A lot of the tangi anything that's happening down locally we go to. We are in the kitchen, hanging over that sink'.

Both Linda and Ria from NorthTec mentioned their previous work on their local marae committees and along with three other graduates spoke of a decrease in their involvement with their home marae during their study and because of current work commitments. This effect is one requiring closer scrutiny as one of the hidden 'costs' of tertiary studies for Maori.

Lots of contact but as soon as I started doing my degree it impacted on how much time I spent on my marae, that's mums marae Hongoeka in Plimmerton, not so much dad's, Ruataupare at Tuparoa. My kids were small so I was home with them, a lot of involvement with hapu affairs and always at the marae, we built our whare we were fundraising and cooking and lots of that. Then I went and did my degree ... so that's less time. Not as much since fulltime working and studying I used to see (parents) a lot more when I was home with my kids. (Jo, 47)

The potentials for 'virtual marae' are increasing with both iwi and marae websites posting whakapapa information and electronic panui for members to keep informed with activities and hui. For example the Ngapuhi panui called '@e marika!' published by Te Runanga a Iwi O Ngapuhi. There are issues about developing the skills within iwi, hapu and marae to maintain and update their websites on a regular basis as mentioned by several of my participants including Tania from EIT;

I'm there all the time for tangis, birthdays but slack about marae meetings and elections of marae trustees; I am just busy at the moment. I try to keep in touch with someone on the marae trust so I can keep an eye on what's happening. They put out notices and Omahu has a website unfortunately it's not kept up to date. (Tania, 42)

Almost all of my participants linked with a home marae as a hub and potential point of contact with extended Maori whanau. It is clear from my research that marae are overlooked as places that information, such as details of tertiary or IT courses available locally could be disseminated. The potentials to link more Maori into IT studies by approaches at marae level require further active research.

The Centrality of Whanau

The centrality of whanau to a sense of identity is a core of Maori worldviews;

Maori is whanau orientated, it doesn't matter what he does, where he is, he is always talking about the family; it's the whanau. This whanau thing is part of Maori way of life. (Tuahine Northover, 2008)

Whanau is positioned as a primary social unit of Maori society (Ngata, 1940) consisting both immediate family, such as the nuclear family unit of parents and children, and the extended family that covers many generations (Biggs, 1960; Buck, 1958; Mead, 2003; Metge, 1964, 1995; Pere, 1982; Walker, 1990). Both M. Durie (1994) in his Whare Tapa Wha (Four Sided House) model and Pere (1991) in her Te Wheke (Octopus) model, position whanau as critical to well-being of an individual and all Maori. Edwards, McCreanor and Moeweka-Barnes (2007, p 3) emphasise the importance of an understanding of what whanau is in relation to the well-being of young Maori people and cite the briefing to the Families Commission that describes a broader concept of whanau.

Whanau is a much wider concept than the traditional "family". It approximates what non-Maori would generally understand to be an extended family. Although there are many Maori one-parent households, Maori are also more likely to live in multi-generational households. For Maori, whanau provides care and nurturing as well as identity and a sense of belonging and purpose. (Ministry of Social Development 2004, p 105)

Analysis of all participants' stories showed a majority 12 (70%) were living in a form of nuclear family, meaning parents with their children only. This echoes findings of recent research where 'established social orders have been displaced in favour of familial structures that are more like nuclear families' (Edwards, McCreanor and Moeke-Barnes, 2007; McIntosh, 2005; Ministry of Social Development, 2004). The dynamics within the Maori forms of nuclear families are more complex, for example one graduate Ang lived in an extended nuclear family.

Two years ago mum and dad moved down from Kaitia, and I was already living here with my Tane (man or partner). Mum and Dad purposely found a house with somewhere we could be as well, so they found a house with a self-contained flat downstairs.... (where) it's me and my Tane. Upstairs it's my mum, my dad, my sister who will be twelve this year, my brother who works in town. Then my sister and her husband want to come down (here) ... we are trying to find somewhere, our own bit of paradise in Whangarei where we can all live on the same little plot and we are not so far away from one another. That's just more about all of us being able to support one another. (Ang 28)

The remaining 5 tauira Maori lived with extended whanau groups, most of these were three generations including two graduates, Tania and Juliana who were raising a child and lived with their own mothers. The importance

of whanau to the educational successes of my participants is a thread running through all of my findings in the following chapters.

Nga Timata - First Steps

These tauira Maori developed 'learning identities', their perceptions of themselves based in part on their prior educational experiences. Thunborg and Edström (2008, p.7) defined a learning identity as 'how actors experience themselves as learners in different life spheres'. I portray the different elements with the poutama to show how for Maori all spheres of their lives are part of their identities as learners. Thunborg and Edström were also concerned about the distinction attributed to Bruner (1990) that separates 'learning about' knowledge or subjects and 'learning to be' or become someone in a specific situation or context. I explore this further in following chapters.

Stables (2003) was interested in how learning experiences in classrooms impacted on the personal and social identities of learners, and argued for research focused on how different learners respond to learning in terms of their developing identities, complementing life history-based approaches to understanding educational and career trajectories. My research offers narratives of this group of Maori learners and as established above the strength of their identity as Maori is common to all of them. What can be seen below is that my participants had a wide range of prior educational experiences that impacted on their levels of confidence in their ability to learn and eventually led to their enrolment and successes in IT studies.

Represented by the kowhai strand of the Poutama o Te Ao Maori, participants took many first steps in their experiences of secondary and tertiary learning prior to entering the ITPs for IT studies. Outcomes range from five participants who left school with no qualifications, to the two graduates with prior bachelor's degrees in other disciplines, and five with prior Diplomas, only one of which was in IT. From an official viewpoint in Te Ao Pakeha, completing secondary school is regarded as success, particularly for those with qualifications. Literature links success at secondary level with success in tertiary studies (Chapple, Jeffries & Walker, 1997; Earl, 2008; Scott, 2004, 2005; Scott & Smart, 2005) but as I will show, people without

secondary qualifications also go on to achieve tertiary qualifications so other factors must be at play.

Some Secondary School Experiences and Entry to Work

Young mother of two Rebecca rocked her 10 day old baby in his pram as she sat one of her School Certificate exams.

The 5th form was the year that I became pregnant with Zion, so my learning curve escalated and turned into a staircase as opposed to a curve but things changed. ... I remember sitting the SC exam and Zion was 10 days old and I had him in the pram on one side and my leg going while I was sitting there typing - rocking him with my foot as I was typing for the SC typing exams. That was November. I finished school with the exams and had 6 weeks holiday at home with him and arrived back January 27th with the rest of the 6th form to start school. (Rebecca, 29)

Rebecca went on to achieve two Diplomas in Business and Accounting and taught Economics in local secondary schools. As a relief teacher she felt the need for more learning that led onto her degree studies with EIT.

I did relieving for three or four years. After that the sponge inside my head got a little bit empty, wrung it all out. It was time to go back now and soak up some more knowledge, that's the only way I can describe it. It had been a long time since I was learning and that wasn't good I need to go back now. (Rebecca, 29)

Five of the tauira Maori did not complete any qualifications while at secondary school. Colleen was typical of the group having left school as soon as it was legal, aged 15 years.

(I got) nothing at high school, I left before school C. I left at 15. I left school to go and do a sewing course, for 6 months or something. Then I worked for another 6 months, then I got pregnant and had my first one. (Later) I did a computer generated imaging course in Kaikohe in 2002 at the Institute of Animation and Technology. That was just Level 4. (Colleen, 34)

Several spoke of difficulties while learning at secondary school, particularly with examinations and formal assessments.

I did really well at secondary school except when it came to things like School Certificate. I think at the time we were the first ones where they brought in this assessment. At that time there was a stage in my life as a teenager when I wasn't going to school, so I didn't pass. I came back for about another 6 months then left. (Maryanne, 43)

Maxine was one respondent who was asked to leave her secondary schools without any chance at gaining qualifications.

I left school when I was 14. Actually I was booted out of two colleges because I was a bit unstable and with family being unsettled at the time I didn't attend school. I did correspondence from home but I didn't learn very

much. My education was pretty shocking; my spelling, English, communication skills were shocking. ... I did do a TOPs course, because I was put into that situation where naughty children got into a programme – I was just 15 – to study Office Skills. It wasn't something I wanted to do it was just something I put myself into that position through my own actions. I still wasn't very good with written language or study. (Maxine, 27)

Ria, who completed a Bachelor of Communication Studies (BCS) at age 20, took her new skills into publishing work. Her career path changed drastically in Auckland and when she relocated to Whangarei she went into manual retail work.

After I'd worked for two years I decided I didn't really like the business world, it wasn't really for me... I thought I want an easy life, a job with no stress, go there, do your hours and come home, which was not like the job I was doing, we were all over the countryside, you had to do work at home, it was all hours ... then I moved up here (Whangarei), we built our house I got a job at the "Veggie Twins" which is like a fruit and veggie shop. Started off with cashier and moved on to trimming, working with a knife. (Ria, 29)

Wiremu had achieved Higher School Certificate, tried six months of a Health Studies degree at University and gained an IT qualification as a CISCO Certified Network Engineer on a Ngati Toa marae based course. He went into maintenance work, painting and in a petrol station before he returned for higher level learning in IT

After leaving school with five S.C subject passes, Mei-Ana relocated to Australia where she did 'odd jobs here and there, not going anywhere really.' Returning to Aotearoa/New Zealand she married and had three children as she gained other work in retail and later packing carrots.

What actually got me to go and study was when I was a carrot packer, that's when I found out I was pregnant with my daughter, I already had two sons at that time. I was working here and there and I ended up in the pack house for carrots, pregnant and I was thinking "hell no I don't want this for my kids" and that's when I started to snap into reality. (Mei-Ana, 32)

This 'snap into reality' is discussed by Thunborg and Edstrom (2008, p.7) who wrote of crises experienced by learners that leads them to move from one learning identity, e.g. 'the learning failure' to become 'instrumental learners' and 'the good learner'. They suggest that a life crisis or change in circumstances can serve to prompt individuals back into learning. This was the case with several of my contributors; however, I frame the experiences as a form of enlightenment in the next chapter.

Another two went through TOP courses that led onto work for Max a cadetship with Social Welfare, and Sharon who went on to be a mother.

I left half way through 6th form and went to do a word processing course at Whitireia. That went really well – a Certificate in word processing skills. The tutor wanted me to go on and do the course similar to the one I just completed, but no, I didn't want to. I went on to have my son in 1995. I did the children thing. (Sharon, 29)

There is potential for research that focuses on the long- term outcomes for people who have completed TOP and other 'catch up' courses and subsequently continue into higher levels of tertiary learning.

First Contacts with Computers

The pathways individuals took that led them into IT studies were as unique as each person. From early experiences some were initially scared of the technology, some indifferent to it, and others were fascinated with it. One common thread to their stories shows how Maori, in the absence of formal training, 'have a tutu' or tried out the new technologies, in this case computers. Tutu at another level relates to what is tangible, and many of the tauira used the term to describe how they tried things out in a hands on approach with the computer, and discovered from there how to make it work for them.

I asked each of the tauira Maori to recall their first experiences with IT for example the first time they put their hands on a computer. The purpose of this question was to discern any pattern that linked earliest contacts with the technology and their decisions to pursue tertiary level IT studies that led them to achieve Degrees. Over a third spoke of their earliest contact with computers in their homes. For the other tauira Maori pattern emerges for age groups. The increasing numbers of computers into Aotearoa/New Zealand schools over the past 10-15 years is reflected in the stories of six aged in their twenties. Interestingly, most of these were not particularly taken with the idea of computers or IT from their early experiences, perhaps a form of 'familiarity leads to contempt'. Others were introduced to computers through tertiary level training in ITPs and TOP courses and two had their first contacts with computers at work, both in Australia.

Digital Natives

The six people who spoke of their first contacts with computers in their whanau home could be seen as 'digital natives' meaning they have grown up with the technology. The youngest, Sonya, spoke of their home computer and her ambivalence about Computing at secondary school.

I was young, about five, my dad had a computer, I played games. We had computing at secondary school, I didn't really like it. I knew how to do it. I didn't sit in front of a computer and do a lot of work, it was just there. I would go in and type up my assignments and that was it. They had classes in Computing, I didn't do them, I was better at Maths and Science. (Sonya, 22)

EIT degree graduate Mei-ana was dismissive of her early experiences with their home computer and this may have compensated for no access to computers in her secondary school.

We weren't allowed to use computers at the Steiner school, everything was hand written so computers weren't introduced to us. It was more like my mum and dad bought the first computer... they were like black screens with green text. You had those big fat floppy things. Even then it didn't interest me. They couldn't do much except type letters. (Mei-Ana 32)

As a young girl, Ria was introduced to computers by her father a secondary Maths teacher who was 'into Maths and Computing and all that'. While her brother and father 'had a tutu', Ria was unimpressed.

My dad had a programme that showed a map of the stars and you had to put in numerous floppy discs to get it to work. All you could see on the screen was what you could get if you walked outside and looked at the sky at night, so it was nothing impressive to me computing. I didn't see it had any potential for me. (Ria, 29)

Rebecca 'played around' with a computer from her cousin; it was a big thing to have one in their home.

She had used it at Med. School and I don't even think I could get it to work properly... I remember ogling over this contraption, I had no idea how it worked but it was buttons and that was my fetish. So I just played around ... I remember the buzz of 'we've got one of these things in our home now', a big thing. (Rebecca, 29)

Primary and Secondary School

NorthTec graduate Ang had made active use of computers in her Primary school learning, revealing its use for punishment and reward in the classroom.

I was about 10 ish ... it was at Primary School. We had Maths games and one called "Where in the World is Carmen San Diego?" they used that for

Geography, that's when I first started using one. They used it as a treat thing, so if you were good you got about half an hour to an hour a week. If you happened to be the haututu that week you got nothing. (Ang, 29)

Prior to her entry at Level 3 to IT studies with NorthTec, Ang started the National Certificate in Computing (NCC), and made use of computers in everyday life.

I was playing games; I was chatting to my friends in the chat rooms. I actually wanted to do my CV, and I was just starting on that and I was struggling with bits and pieces in the National Certificate course. I was having a tutu, but I wasn't really using it for its full potential. (Ang, 29)

Introduced to computers at secondary school, Wiremu preferred outdoor activities.

I remember that at school I didn't like them. At Scots [College]...they started to bring them in just as I was leaving at the end. I just preferred playing sports and being outside and doing all that sort of thing. So I didn't really get into it. (Wiremu, 26)

It was at secondary school that Jo found pamphlets that led her into computing at an ITP.

I was at Tawa College and had no idea in the 7th form. There were two pamphlets in the library, one said go to Wellington Poly and do accounting the other said go and do Computer Programming which I'd never heard of. I just chose, because I didn't want to do Accounting even though I liked it, I chose the Computer Programming. My mother thought it was strange. (Jo, 46)

This example of a serendipitous or haphazard access to information about IT is echoed in the stories of other tauira Maori implicating the poorly developed pathways of entry into IT studies as discussed in the following chapter.

TOP and Tertiary Courses

Sharon was introduced to computers in a LINK course at Tawa College, where secondary students learn in the ITP environment. This led her to a Training Opportunities Programme (TOP) course.

It would have been at school at Tawa College, but back then we didn't really do that much. It must have been the first time I think because we never had one at home. We had LINK courses at College and I think that's why I wanted to get into the Word Processing course that I did at Whitireia, that's a TOPs course, using computers. (Sharon, 29)

Maxine also had her first 'hands on' experience with computers on a TOP course.

Back in 1995 when the first operating system of Windows came out, but it wasn't hands on hands on, it was viewing the graphics that were on it. This was at my TOPs course I did. We hadn't interacted with it properly. But then I wanted to do other things, I wasn't certain. (Maxine, 27)

Having already purchased a home computer that was left in its box, Linda entered the National Certificate in Computing with NorthTec, which supplied a free computer for learner's use.

The one that I got here, that was the first time. The other one hadn't even come out of the box until I came here. I just wasn't sure. I thought if I touched it I'd break it so I had to go and find out how to use it. ... I thought it was a big step for me to even think about it. (Linda, 48)

Maxine was another graduate who had purchased a computer ahead of her entry into formal IT studies.

About 6 years ago that's when I purchased my first computer, a Compaq Presario Model NE Windows 2000. That's when I started to read, read, read, and only through reading I realised 'oh there's more to things'. (Maxine 27)

Only Ria spoke of using computers in her first degree in Media Communication Skills, remarking on the foresight of the people who had designed the course.

The first time I really had to use a computer was in my first degree, which I started in '91. Because our tutors had the foresight to know that Information Technology was going to be a big thing in the future in Media organisations. They required all of our assignments to be word-processed. (Ria, 29)

Both EIT graduates, Tania and Maryanne, had used computers in their work in Australia.

I used to do a bit of data entry, over in Aussie, they wanted data entry operators. I was working as a temp for an agency going place to place. It wasn't really a computer, you were just entering data, not like with Microsoft Office where you are putting in and getting back, this was just putting in. (Tania, 40)

First step contacts with computers covered a range from in their whanau homes, in their schools, in TOP and ITP courses, and in the Australian workplace. As a graduate of Wellington Polytechnic, Jo was the only respondent who had previously taken her first qualification in Computer Programming to enter work in the IT industry. How my participants went on to use their IT qualifications from the ITPs is shown in the Post-Script.

Conclusions

Te whenua me te tangata, the land and the people, are foundational to Maori worldviews and are not well understood in the ITP contexts. I deliberately introduced the lands, the tangata whenua and the guides in the ITPs who also understand Te Ao Maori. That almost all of the tauira Maori held symbolic and enduring connections with whanau, iwi and marae supports more than a finding of coincidence. I learnt these foundational elements were part of all but one of the stories; Maryanne the exception was away from her own people and land in Rarotonga.

Te Timata, the first step of the leaning poutama captures the range of learning identities beginning with the outcomes of secondary schooling. While completion of 6th and 7th form qualifications may help explain the continuation into tertiary education for some, it does not explain the three who had left school without any qualifications and went on to become IT Bachelor degree graduates as shown in chapter 9. Exactly how and why they did so is the focus of my research question.

The purpose of this chapter has been to introduce the individual tauira Maori in the context of some core concepts of a Maori worldview. I did that with whanau and iwi first, followed by hapu and home marae. All of these contexts along with the land are foundational for Maori and taken for granted in Te Ao Maori. They are a critical part of the cultural and learning capital that Maori take into the ITPs and as I argue, important elements in the positive academic outcomes that follow. I outlined some of the learning experiences that are part of the learning identities of these tauira Maori. I took the negative discourse that would argue the 'failures' have a fractured learning identity and therefore have a liability before they start tertiary studies. I then reverse the discourse to show that all of the tauira Maori go on to complete tertiary IT qualifications.

These learners came into the ITPs with particular cultural capital that I interpret as their strong identification and lived connections in Te Ao Maori, and with learning capital from their prior experiences in the mainstream education system. These tauira Maori ventured out into tertiary education through a myriad of pathways. No two stories from my participants about

their entry into IT studies are the same, although, there are some experiences mentioned by them all, as presented in the following chapter.

Te Maramatanga - Enlightenment

Personal realisation leads to understanding.

Pounamu/greenstone

Chapter 7 Te Maramatanga - Enlightenment

He Whakatauki

I te kore, ki te po, ki te ao Marama
From the nothingness, to the night, to the full daylight
(Pa Michael Shirres, 1997)

Introduction

Creation is an eternal spiral movement from a state of nothingness and unlimited potential, into experiences of potential, through to states of enlightenment and realisation for infinite potentialities (Cooper, 1999). Poutama and the spirals it implies represent this process. As Royal discovered, genealogies or whakapapa of creation are not just historical explanations they are 'complex image statements about reality as we presently experience it' (2002, p. 21). I use the poutama to explain the realities of progression in steps taken by these tauira Maori. In the previous chapter, I described the foundations of spirituality, land, people and whanau that are central to Maori worldviews. Considering their first steps in prior education and computing, metaphorically their experiences formed their identities as learners in te po. In this chapter, I explore their movement into a state described by Tuahine Northover as kua marama, enlightened, and the potentials it created for them.

Representing enlightenment in many forms the strand from Poutama o Te Ao Maori above is Pounamu (greenstone). At a broader level, education is linked with the potentials for enlightenment and Maori aspirations voiced here by Taipari Munro.

As Maori, in terms of being able to look at education and what education can do for us, without a doubt it brings enlightenment and it brings understanding. I want our people to be there, and to be that. (Taipari Munro, NorthTec)

Each tauira Maori recounted an 'a ha' moment of intra-personal realisation about the stage of their life when they understood themselves to have the

potential to undertake tertiary education. Most experienced a moment of no return with the increasing understanding of how much knowledge there is, a sense of what they did not know, and that they had to do something about that. A realisation about the potentials that IT studies would have for them and their whanau changed the way they subsequently acted. I term all of these experiences as enlightenment.

This chapter presents insights into the motivations for these Maori to enter IT studies where they were in a marked minority, and the small steps taken in their approaches to IT qualifications. Accessing support within the ITP demonstrates their application of knowledge about how to achieve in that learning environment. Critical to the academic success of most is help from peers, mentors, IT staff and Maori staff in the ITPs who feature in stories alongside the central significance of whanau.

Decisions to Enter IT Studies

Increasing understanding and enlightenment created multiple reasons behind the decisions for these tauira Maori to enter IT studies in ITPs. Themes from their responses are separated below into their motivations to start on the IT learning pathways. All of the tauira Maori I interviewed had studied with the ITP located closest to where they had lived, so proximity (Ussher, 2006) and the availability of the IT studies options with the ITPs are part of decisions to study there. These decisions impact on whanau and in three cases included relocation of the whanau to live nearer to the ITP.

Whanau

Significantly whanau responsibilities were given as a reason, a motivation and a critically important factor in the decisions to enter IT studies. For example Ria began a second degree motivated by her responsibilities as godmother to the child of a friend who had died tragically young. Ria spoke of employment in IT as a way to earn good money in work with regular hours.

People in computing earn lots of money. I need lots of money to look after my goddaughter. It seemed relatively easy hours, not like nursing shift work. That's the way of the future, it's going to get more and more and either you live with IT or you fall behind. So that [goddaughter] was my

main reason and for future employment prospects I thought it would be good ... it's a good skill to have. (Ria, 29)

Rebecca the young mother from Wairoa spoke of how she decided to enrol at EIT after seeing the childcare facilities during a secondary school trip.

I went on a Year 13 trip in the 7th form to all the universities and we pulled into EIT here, and if you ask me I could have gone home after that. We just got in the gate, looked at this campus and the facilities for Zion [childcare] that was a big part, I couldn't come here unless they catered for my whole family. I pretty much didn't need to go on the rest of the trip because I left the EIT and knew this would be where I would go... More so thinking about a career because I had a child there was no room to muck around, I couldn't afford to. (Rebecca, 29)

Considering whanau first, gaining knowledge and a career to support their children was a typical motivation for all of the tauira Maori with children.

Others spoke of how their decision to enter IT studies had been influenced by events within their whanau. For Ang her brother and partner completed studies that introduced her to the idea and encouraged her to enrol for a Level 3 Certificate in Computing.

My brother started off doing a Certificate in Information Systems...He was my little introduction to the tutors and the papers and things like that... My Tane [partner] said look I've just done this course. I think it would be really cool for you to do it. So I went and did it, and it was... exciting, I was learning new stuff all the time. The things that I was learning I could use. So, ICT kind of found me, I didn't find it. (Ang 28)

Wiremu was one of the three tauira Maori who had whanau members working in the IT industry, and he was influenced by their successes.

I had family involved in IT and they all seemed to be pretty successful. My older brother seems to be really quite independent ...He's a programmer working for EDS... enjoying his work, getting on with it and doing well. Another sister, that I did the CISCO course with, she's over in Australia... Her husband is involved in IT as well and they seem to be travelling the world getting work. (Wiremu, 26)

Below I further explore whanau use of IT and discuss the potentials for whanau and iwi to have members who are confident users of the technologies.

Knowledge and Skills

Reflecting a pattern found in research literature on student retention and completion of tertiary qualifications (Ministry of Education 2007e; Prebble, Hargraves, Leach, Naidoo, Suddaby, and Zepke 2005; Scott 2004, 2005; Scott & Smart 2005; Wilson 2002; Zepke et al ,2005) several contributors spoke of wanting more IT knowledge and skills as opposed to aiming for qualifications. Linda was interested in applications of IT to business and accounting for her whanau business.

Well we had our own family business too, computing was another thing that was going to help if I knew what I was doing and do all our own books. Instead of writing in the books there's a new thing that's come out now [MYOB] and you can just jump on and da de da de da. (Linda 48)

About 20 percent of the papers for Rebecca's Business Diplomas and Degree were in IT, which she saw as important for her future 'in the world'.

I wanted the knowledge of software packages like MYOB and other payroll packages, also the management of accounting systems through whatever software the company is using. I don't think you can apply the theory and the concepts out to the big world unless you've got the Technology component to go with it. (Rebecca, 29)

Jo, had an earlier IT qualification, the New Zealand Certificate in Data Processing and a degree in Maturanga Maori, she had worked as a Programmer, and enrolled at Whitireia to gain specific information to update her knowledge.

I came because I just loved Programming and I wanted to avail myself of the technologies that are available now. I went to England and contracted doing Programming but its different now. So I came to learn that and said I just wanted to learn the languages, not a degree. (Jo, 46)

At the time of my research, it was not possible to study for papers of a qualification to pick up knowledge of a single IT subject. The tauira Maori were required to enrol in full programmes of study. Seeking particular knowledge with no interest in qualifications explains why many people do not complete degrees and a pattern in our tertiary system that needs closer scrutiny.

Further Education

Realising the importance of improving educational levels was particularly important for those with no school qualifications, for example, Maxine who had left school aged 14.

I just wanted to get some type of education. I wasn't too certain on the actual title. 'Information' was getting information that I really needed, to get myself a job, get some money going on, get off the benefit, and it was an education. (Maxine, 27)

Many contributors took a pathway through learning in the IT field, which began with Certificates at the lowest levels and for most led eventually to graduation with a degree. BIT graduate Juliana had started with a Training Opportunities Programme (TOP) Certificate in IT and was excited by the new technologies.

I'm not sure what it was about IT but I've always wanted to get into Computing. I was never interested in all those Sci-Fi things when I was a kid, but it just seemed to appeal to me, what you could do on a computer, not having to write things out all of the time. Just as I got more involved in the industry [I got] really excited by all the gadgets and things that are coming out. (Juliana, 29)

About to enter her first job after completing her IT degree, Ang with a prior Teaching Diploma explained her decision each year to continue her IT studies at NorthTec in steps with built in 'escape hatches' that began with a Level 3 Certificate.

I couldn't find my little place on the planet, my Tane suggested to me go to do the National Certificate Level 3 in Computing. I did that here at the Northland polytech. Then because I enjoyed it...I was learning all the time, it was different and dynamic; it was like 'OK I'm going to do the Level 4'. So I did the Level 4 and 'OK this is cool, there are some extra things, while I'm not going to go into the degree, because that's a bit scary, I'll do the Level 5 Diploma first'. It was my own little way of setting up escape hatches. If I didn't like computing at least I came out with the Diploma when I finished the first year. But after the first year I was still as passionate as I was doing the Level 3. So I went into my second year [Level 6] and stayed at it. Then come the end of the 3rd year [Level 7] it felt like things went just so quick, it was amazing...I loved doing the degree, it was awesome. (Ang, 28)

Ang's approach step by step was typical of the many contributors who spoke about entry at lower level IT qualifications (Levels 2- 4) and then continued on to the IT degree (Levels 5-7) as a result of their earlier completions. This was the pathway followed by Maori at the three ITPs in my research.

Employment and Money

Increasing understanding about the link between IT qualifications and the opportunity to improve employment and whanau living circumstances was mentioned as a motivation by practically all my contributors. Whanau are inextricably part of the decisions and motivations to take this pathway, for example Whitireia graduate Sharon who spoke of thinking about work when her youngest child was due to enter school when she recognised the need to 'get educated'.

I was thinking 'I've got to do something with myself', my daughter was nearly at school 'should I just go out, look for a job, keep my fingers crossed?' I thought 'nah I've got to get educated.' (Sharon, 29)

Committed to the support of her two daughters, Colleen spoke of liking computers and scanning for work before she had completed her degree at NorthTec with her understanding of how hard it is to enter the IT industry.

I had come from low paying jobs like horticulture and stuff like that, and I just want a job that pays better money, and I like computers....There's not enough jobs around in Whangarei, I looked in Auckland, nothing; it's really hard to break into jobs like that. (Colleen, 34)

Mei-Ana's understanding of the importance of technology in the workplace explains her decision to undertake IT studies that resulted in her degree.

I wasn't really going to go directly to computers. I was looking for something good to get a decent job. I found myself interested in IT and I realised computers is the way to go because that's our new technology of today. (Mei-Ana, 32)

While already employed, Max had spent extra time at work to learn more about using computers, and saw the potential that IT had to enable her to return home in the future to an isolated area of Tai Tokerau and to earn a living from there.

When I was working years ago at the Social Welfare, I used to stay back until 9 or 10 at night. They used to think I was just dedicated to my job, but I had stopped my job at 5pm and I was trying to teach myself how to use this computer. I decided to do something about it then. When I came home back up to Northland, I wanted to go bush, live in there but still be in touch with the world, and still be able to have some sort of living from home but be in the bush and do it. I felt that with IT that was possible. (Max, 32)

Maryanne who was unqualified at school and had worked in low level office work had an eye on her future prospects.

Because that's what I saw was happening in society, computers and technology is in every workplace. One of the things I was looking at, for the

future I didn't want to be doing physical work , so I can just sit on my bum, for that you need computers. So that was the first push towards doing the Certificate. (Maryanne, 43)

None of the tauira Maori spoke of receiving any guidance or advice while at secondary school, about the potentials from study in IT, working with computers, or the steps they could take into the industry with qualifications. The government funded Career Service has online information about IT qualifications nationwide, and potential IT employment pathways. Ironically the people who want this information may not have IT skills or knowledge to use a computer to access the advice.

Whanau and IT

Positioned in the discourse on 'the wrong side of the digital divide' (Ministry of Economic Development, 2000, 2007), Maori are represented as lagging behind the population in uptake of Information Technologies. This generalisation for the whole Maori population did not hold true in the stories of my contributors with whanau members using computers for games, to whole whanau actively using the technologies every day at home and work, and for regular contact through emails and internet based phone calls. Juliana's response was typical of those who noticed a difference in use of computers based on ages.

Yes my mother and father, we keep in email contact. Not my grandparents, but the majority of cousins etc are. There are still a few that won't go near them, some older aunties and uncles and some cousins who wouldn't have a clue what to do; they don't even know how to turn them on. (Juliana, 29)

Asked to describe the computers they had at home, all had at least one PC (Personal Computer), and many reported multiple computers. Three had received a PC for free as part of their enrolment to ITP based Community Computing courses and completion of the National Certificate in Computing at Level 2. 11 of the 13 IT graduates had built their own or modified PCs for use by the whole family. Mei-Ana's response also points to the whanau reliance on members who have gained IT knowledge and skills.

Yes I bought this PC while at school, off 'Trade Me', it cost \$100. I've revamped it so it's got high specs, you can game on it. I basically built it up myself; it's got 80 gigs, the latest processor, everything for my kids and husband to play on it and for me to do my work. My husband uses it at home for gaming; it's all basic to them. They use the web but they are always asking me 'How do you do this? Where do you find this?' Actually the whole lot of them are. I think it's the fact that people seem to think they need computers in their homes. I'm not joking you, it's the easiest way I can communicate with my sister...it's easier to email, its even better than

texting...Anything else like if they had to type up letters that side of it they don't use it, they tend to use the net a lot but if it's type up a CV or do a budget it's like 'Mei-Ana can you do it for me?' (Mei-Ana, 32)

Half of the tauira Maori owned a laptop as well as a PC. Many spoke of passing on their earlier computers, or setting up computers for use by their whanau. Others spoke of hardware and software repairs for the extended whanau. Max's answer gave a typical example of all of this, although she was the only one who mentioned a name for her laptop.

I've got two in the hall from people that got told I knew a little bit about computers, they are waiting to be fixed. I've got one in my son's room ...I set it up so that it was his TV, his stereo, his radio, his homework, his Internet, all of those things in one so I didn't have to go spending buying a stereo and a DVD etc. I've got my, I call it my husband, my Tane, because it's the only thing I'll stay up until 4 o'clock in the morning and still be happy with. He sings to me and I can switch him off when I've had enough... I got him when I was second year in my studies. The first year I left it alone because of the price of laptops back then. He is a COMPAQ P3, its 20 gigs got a 1.2 MH processing chip. For it's time it was top of the range, DVD, CD writer, what's standard now but not back then six years ago. I had to wait a whole year to make sure it was what I needed, not what I wanted. (Max, 32)

I asked all of the tauira Maori if any one else in their whanau, or among their friends, had formally studied in the IT field. Eleven said 'no' with comments such as 'I'm it so far', 'no, it's a lonely world' or 'no, I really wish they would'. Some shared the position of Maxine who said 'I'm the only one in my family that's got an education at this moment'. Jo who had worked in IT mentioned the changing attitudes towards IT over time and the normalisation of home computers and computing in schools.

In my whanau? No. Close friends? No. I'm the geek. I used to never want to say what I did... I don't mind so much now because everyone's a geek, it's the norm now, so everyone, not quite everyone, but they all get computers in schools and at home. (Jo, 43)

About half spoke of whanau members studying IT, Wiremu and Tania had been preceded into study by older brothers. Others had been the first in their whanau to enter formal IT studies, subsequently younger siblings had entered IT degree courses, and whanau had started free Community Computing courses with the ITPs. There was some evidence of informal learning within whanau, and almost every contributor reported being called on if there was a specific computer based task or crisis. The pattern of introducing or encouraging whanau with the new IT technologies shows how it increasingly becomes familiarised in homes a usual part of everyday Maori life.

Whanau Support

In my analysis of all of the interviews and discussions I had with tauira Maori and advisors, whanau, in its many forms, was discussed as not only the basis of individual identity through whakapapa, but significantly as a critical consideration for these Maori undertaking academic studies in the ITPs. Aiming to identify what type of support was a factor in their completions of courses and qualifications, I asked an open ended question, if 'anyone supported you in your studies?' Almost all mentioned their whanau directly. The reply from Mei-Ana gives a typical example of the practical support offered by whanau when children are part of the family make-up.

Basically when I had assignments due I'd stay up all night studying my husband did the kids. He cooked, cleaned everything, I think if I didn't have his support in that I would have been pretty much stuffed. My family was there. I really got into them. If I couldn't pick up the kids, they were there, a phone call away so I got a lot of support from them. (Mei-Ana 32)

For the single parents, the extended whanau were crucial in their support of everyday tasks of raising a child, combined with degree studies.

I suppose my mother would be the biggest one, she was my live in baby-sitter. 'Mum I've got to go would you drop this kid off or pick her up?' And she did no questions asked. I just kind of took it for granted; I knew she would do anything for me or her moko. (Juliana 29)

The children of Maori students were also mentioned as an important support in the process of learning, in the way that they understood the competing demands on the students' time. Parents spoke of negotiating changes within their whanau that supported their IT studies.

My kids left me alone when I needed to do my reading and stuff. When I was doing it at home they knew that my time was down in the room, and that's when they stayed right away because they knew I would go right off track. There's so much reading, a lot of reading. ...So it was just leave me alone, I'm going to my room if you really need me, if you really don't, don't bother. And they were really good about it because it was mum going out and doing her learning and doing all these things. (Cheryl, 41)

Only a few graduates had the help of whanau in the 'mechanics' of their learning meaning the academic skills required for degree level IT studies. As an example to have proof reading of assignments by others is commonly encouraged by tertiary institutions. Wiremu was fortunate that both his mother and his wife were able to support him in this way.

I got help from my whanau, proofreading a lot of my stuff. That helped heaps. I was quite happy in the last six months my mother, who started

proofreading from day one, commented how much it had improved. You don't even know it until you get that sort of comment. It's that sort of help has been quite good. ... My wife just giving me time, being patient when I had to stay up all night and do things, and she would proof read a lot.
(Wiremu 26)

The majority of my contributors were studying IT well above the knowledge and skill levels of the rest of their whanau who were unable to help with the content of that learning. A more practical support and encouragement was mentioned by many.

*I had my awesome family, and my awesome partner, who were there when "I just hate this paper, I don't want to programme any more."
"It's all right, go back to the computer; we'll get you a cup of tea. You'll be fine."
But they helped me heaps. (Ang 29)*

A few had other whanau members who had studied IT, and had to some extent encouraged and supported my contributors.

*(My) cousin Lisa is another Maori graduate, her maiden name was Kupa. She ... graduated the year before me, I followed in her footsteps. Funny thing is we had a couple of classes together. She was 3rd and I was 2nd year, she goes;
"Hey cuz you are good at programming can you help me?"
I said "come on get your head around it!!"
I used to ask what is this paper like? She'd give me advice on some of the papers which was good. Some I took on some I didn't. (Tania, 41)*

Only Maryanne spoke of resistance within her whanau to her IT degree studies.

The wider family reaction was negative, like 'why are you studying, shouldn't you be working making money?' It was that money thing. A sister of mine with her Diploma in Early Childcare, I think because she's done study and can see what happens down the track, she was supportive. But those who hadn't done studying it was just really negative, it was tough. You just had to push it aside. Was I supported at home? No, even now I get upset.
(Maryanne 43)

Several IT lecturers had mentioned the experiences of past individual female students working to gain qualifications to improve their longer term employment options, who met resistance from within their whanau who had no prior experience of tertiary level learning. Those women dropped out in the final few months of their IT degree studies. This effect requires more research if it is indeed a factor making the learning experience more challenging and onerous for the individuals concerned.

Whanau of Interest

One strategy to overcome a lack of support or knowledge is the creation of a 'whanau of interest' (Bishop, 1996b; Metge, 1995) or peer support groups (Prebble et al 2005; Zepke & Leach, 2005). These tauira Maori formed groups with other students, Maori and non-Maori, enrolled in the same courses, to assist each other in their learning. This strategy was mentioned by some of the EIT contributors, and two were part of the same group that set high standards and were motivated to pass courses.

My main support was my study group we'd been right through from day one. I don't know how it is that we cottoned on to each other. We met up and all have high standards and wanted to pass. We graduated in the end. (Tania, 41)

The support of extended whanau, for example in caring for children of the students during their study sessions together, and the parents of the students providing late night sustenance for late night and all night study groups was mentioned by several.

It was more a study group, we tended to gravitate towards each other anyway, because we had similar problems in learning, plus we naturally pick up those that help you out, and that you are willing to help. ..We were all learning ourselves, what we did tend to do was if there were somebody who understood it more we would ask them to explain it, and it was just one big discussion and very humorous too, with music, 3 o'clock in the morning, with mothers with their pancakes coming out. (Max, 38)

Another EIT graduate, Mei-Ana formed a study group with like minded fellow students who were not Maori, but were all determined to achieve their goals.

My friends that I associated with, who were also on the degree [supported me]. I found myself attaching myself to people that wanted to pass. One of them was really young but a straight A student, only 19 when I first met her, she was Indian. Then also another person who must be like 33 at that time, we hung onto each other, never let each other go and we got through. They weren't Maori either. (Mei-Ana, 34)

The two Maori graduates from NorthTec in 2006, Ang and Ria, were the only Maori in their year, and two of the three females in their class. Their 'whanau of interest' or support group had a gender basis.

I found that because our numbers were so few, the girls in the class, we were our own little team. You know if there were notes missing we could go to one another, if we missed class we could go to one another. Or, something that we didn't quite understand, that they might of. It was an awesome little team of three that we had. (Ang, 29)

Information System academics Crump, Logan and McIlroy (2008) showed that females are a less than a third of the workers in the IT industry in Aotearoa/New Zealand, and that mentoring is significantly beneficial for the advancement of women in IT careers.

In their synthesis of research into the impact of student support services on student outcomes in undergraduate tertiary study, Prebble et al found 'strong evidence that peer mentoring and tutoring improves student outcomes in terms of retention, completion and academic performance' (2005, p. 12). Almost half of my contributors spoke of mentoring and support from peers, as 'study buddies', and in study groups using tuakana-teina relationships, taking turns sharing their subject expertise with others. While Prebble et al (2005, p. 7) found no evidence for the idea that institutions 'based on a shared ethnic, gender or religious ethos, would have a beneficial effect on student outcomes' the stories of some of these taura Maori show the reverse also to be true, as demonstrated below.

Tuakana-Teina, Support of Peers

I found that all of the taura Maori realised they needed help at times, and gained knowledge of how and where to access help, and to be confident enough to ask for it. My youngest contributor Sonya pointed out that she felt dumb at times, that could be understood to mean feeling ignorant and whakama (shy), and/or unable to speak. Sonya 'never asked' for help at EIT, instead she found peer support from an older student she called her 'study buddy'.

Help was just the teachers, but not really. They were pretty good if you needed help, if you had queries just ask them. Sometimes you feel like you are dumb. Most of them help though. I never asked. I used to have a study buddy and we used to go to each other. It just worked out that way, it was another mate, we could just ring each other up if we were stuck. (Sonya, 22)

At the time of our interview, BCS graduate Tania was teaching National Certificates in Computing at the Flaxmere campus of EIT.

My fellow peers inspired me; we had our own mentor group with each other, that's how it worked... We had our specialised things, you are good you do that, especially working in a group ...We were a hard working group, hard yakka but we had high standards and we were all good at our own things. (Tania, 40)

Cheryl at Rawene spoke of support from her tutor and fellow students, following the tikanga of tuakana-teina relationships where the role of the tuakana is a mentor and that individuals could take either or both roles in those relationships.

Charlotte [tutor] was like that, she would push you if she knew you were getting behind or you were worried that you weren't going to get things done on time. She would have a talk to us, see what our problem was and see if she could help. Our other students were helpful, if you had a problem and they knew how to help you, they were there. So you had mentors all around you not just your tutor. (Cheryl, 40)

In my research, accessing support from peers and tuakana-teina relationships, featured in the stories of almost all the degree graduates and those learning for certificates and diplomas.

Help from Staff and Mentors

A majority of my contributors spoke of contact with and support from Maori staff who held liaison, advisory or support roles in the ITPs. At each site one Maori staff member had responsibilities for potentially all of the Maori students, across all fields of study in the ITP. Their tautoko features positively in the learning journeys of my contributors but was of limited help in the IT courses themselves.

Reflecting the national pattern of few Maori teaching IT in the tertiary sector, there were no Maori staff on the IT degrees at the three ITPs during 2005-2007, although graduates spoke highly of two Maori IT lecturers who had taught at Whitireia and left due to 're-structuring' in 2004. Without Maori lecturers or tutors the protocols and assessments within the classrooms are virtually completely Pakeha that impacts on student outcomes (Myers, Rees, Fletcher, Johnston and Anderson, 2009) or potentials for Maori academic success.

The tauira Maori appreciated their relationships with the few Maori IT teachers, and found them easy to approach and supportive. At Whitireia, Wiremu had two Maori lecturers and valued the local knowledge, understanding and appropriate teaching style of one of them.

In the first two years...George Tongariro was ...the Programme Manager. He was really good, really supportive. His teaching style was really on the

button for that level. He had an open door and you could go and talk to him at any time. I think that helped, he was a lot more approachable and considerate and he could understand a lot more situations, things outside of the polytech. He's from Porirua and knows a lot more about the people. I think he's quite good, I was really happy with everything he did. He was quite realistic with his approach. (Wiremu, 26)

Maori tutors can be found for those learning IT at lower levels including six of these tauira Maori employed by their ITP at some stage to tutor Community Computing and National Certificate courses. Their experiences are covered in some detail in the following chapter.

IT Staff

Non-Maori staff reported as helpful by these tauira Maori, were predominantly IT tutors, with Programme Coordinators/Managers or Student Support staff. Almost all of the tauira Maori spoke of the support of the ITP staff lecturing, tutoring and managing the IT courses. The student appreciation of their IT teachers is peppered through the quotes used above. Several also spoke of the teaching styles of their tutors and lecturers, for example Tania was one of several who spoke highly of all their tutors at EIT, and was inspired learning with one lecturer in particular.

All the tutors are good and Steve Corich Head of the BCS is a very inspirational person, I like him...He puts things into pictures, he doesn't just talk from a PowerPoint, he puts it into diagrams, he's a very diagram person, in simple terms, not all technical and not all PowerPoint, you'd get bored with that. His innovative style of teaching I like. When someone is talking too technical he would put things into simpler terms. You could go up and approach him after class. (Tania, 40)

Almost all of the students spoke of their tutors and lecturers as an important part of their eventual achievement of IT qualifications. Several graduates spoke of developing relationships with their Programme Coordinator or Managers.

Yes the Programme Coordinator, I don't know if she outright claimed an open door policy, but it was always open. She became my port of call, my rock, for anything. I was a young 18 year old girl from Wairoa, I needed to ask questions and I didn't know where to go. She was the Programme Coordinator, we hit it off immediately and she was just who I chose to go back to all of the time. (Rebecca, 29)

Juliana spoke of support as manaaki [taking care of] and the difference she noticed in two of Whitireia's campuses when she travelled from Otaki to take Level 7 classes 'here' in Porirua.

I suppose the first two years up at Kapiti they were really good. The Programme Manager was just always helping us to get through, pushing us if we slacked off. We didn't have to, or weren't thrown in the deep end and left to drown, they were there to help us through. But unfortunately here we didn't have the same manaaki that we had there. I suppose also it's not as hard as I thought it was [to ask for help]. (Juliana, 29)

I position Juliana's realisation of asking for help as an enlightenment for the tauira Maori, and it is clear that some found it difficult to do, as discussed in further detail below. From an ITP or Pakeha perspective it may be 'taken for granted' that asking for help is the correct protocol. I suggest that some Maori may be unaware of or unsure about that, impacting on their chances to complete qualifications.

Mentors

With a formal ITP Mentoring system in place none of the NorthTec IT degree graduates had used it, and only one graduate had used the formal system at EIT. I use the 'M' here to denote the institutions' formal practice of Mentoring, and 'm' for the informal support practices described by the tauira Maori. NorthTec offered a student Mentoring programme, and each area of study had its own Mentors, explained by Ang as a form of tuakana-teina relationship for help with the 'first little steps' of learning at the ITP.

What that Mentor system is, they get students who are second or third year, to act in a Mentoring role for people who come in at first year. Knowing that this place is scary enough... coming into this situation which is so different from High School. They realised there is a need to help support these people through those first little steps...In Maori we call it tuakana-teina that concept, that's how the Mentoring programme works. (Ang, 29)

While none of the NorthTec IT degree graduates had used the formal Mentoring system, Ria was herself a Mentor.

They did have a Mentor system here, and I was a Mentor, but that wasn't really for study, that was more for helping new students, where's the toilet, where's the café, where's the classes, how do you log onto the computer? (Ria, 29)

Maryanne, considered both sides of the question about support at EIT.

Yes and no, there's support here, there's Maori and Pacific but that's not the same. It is better than it was. When I did the Diploma in Performing Arts I was handed a note with a phone number to ring a Pacific person, I didn't. But coming to the degree, Waipa Te Rito has been really, really helpful. She got me onto Mentors. (Maryanne, 43)

Maryanne was the only tauira Maori who had used a formal Mentoring scheme while studying for her IT degree. She found it difficult to learn with

a Pakeha Mentor, and appreciated her Mentors who were Maori including one who was a friend.

My Mentors were Maori, there were two and I swear they got me through. They were students one and a half years ahead of me. I knew I could go to them and they'd explain things and help me to understand. Well there was the first person who was Pakeha and I didn't feel comfortable, I'd ask questions but I didn't feel that I was getting anywhere. The next person I got was a Maori guy Rollie and he was brilliant, he should be a teacher... Later on I got myself another Mentor, she was good with programming. We were friends anyway so if I needed to understand anything in a certain area, it felt right, I felt comfortable with her. (Maryanne, 43)

At the time of our interview, as a graduate of the BCS, Maryanne was working full time in the EIT library, and was unofficially mentoring Pacific students.

Not officially. I'm not sure how many PIs are in this (BCS) programme, I see now quite a few. So whenever I see them in the library, and if they look Island, I'll say to them 'look if you need help' and point them to where they need to go. (Maryanne, 43)

Asking for Help

About a third of my contributors, all from the younger end of the age range, reported minimal or no contact with Maori support staff in the ITPs and no form of mentor for their IT studies. Four contributors were learning in an ITP for the first time and spoke of feeling alienated within the environment and uncertain about asking for help. Like most others this group reported support and help available from their tutors, including two with tautoko from Maori IT degree lecturers.

NorthTec BAppIS student Harmen had previously left two degree courses unfinished and said for his IT degree he had not asked for support from Maori on staff, although he knew several of them and was aware of whom to see if he needed help. Initially maintaining that no-one was helping him in his IT studies, Harmen went on to mention help from one of his course tutors in particular.

Yeah I've got a Programming tutor that used to help me a lot. Because I was struggling with some concepts of Programming and he would stay with me, and answer some questions, but apart from that no one. (Harmen, 26)

Whitireia graduate Sharon had no mentor for her studies but spoke of support from Maori staff, her ability to ask tutors for help based on her

relationships with them, and reflected on her inability to ask for help from her peers.

I felt that whenever I needed help I would always be knocking on the tutors' door and I feel like they gave me all the help that they could. Because I got on with them not just as a student, I talked with them about other things as well. I thought that was cool as well, getting to know them on a different level, not just student and tutor... I had no qualms about asking the tutors. It was just the guys in my project group...then I felt like I was drowning quite a bit of the time. One told me that he did sense that and why didn't I say anything to him, but I just found it really hard asking for help. I don't know what it was; maybe I should have put more time in it. (Sharon, 29)

Colleen said she had no-one to mentor her with IT studies at NorthTec. Her consideration of others was her reason for not using the formal Mentoring system, although she used the Student Learning Centre. I asked what she would do if she got stuck.

I grow another grey hair. No I go to the Internet and look and try and sort it out myself. For the first year I must admit I did come in for that student help because of the Algebra and Maths and I was freaking out. ...I never really used the IT Mentors because they were busy doing their own study too. (Colleen, 34)

A few of the tauira Maori who completed their IT degrees had not accessed any form of support from ITP services or staff outside of their IT tutors.

Several were confident from previously completed tertiary studies, and taught Community Computing courses at the ITPs. They reported no support from other staff outside the help of their tutors. Tania was one of the EIT contributors who mentioned the tautoko of the Pouwhirinaki in a role that was potentially in support of all Maori, particularly pastoral care such as accessing scholarships.

Waipa Te Rito was very good, I know her too from Omahu [marae]. To tell you the truth she didn't help me study wise but she helped me in the pastoral side of things like Maori scholarships. She would say you should apply for this whereas I may not have looked at it. She pointed me in the right direction for financial help and did sign a couple of my things for me, being a kaumatua. (Tania, 40)

In this casual way, the process of whanaungatanga in action in the ITPs is mentioned. Both Waipa and Tania whakapapa to the Omahu Marae and Waipa is acknowledged here as a kaumatua of tangata whenua with, in this instance, the authority needed to endorse scholarship applications.

Knowing Where to Get Help

The more mature contributors readily accessed help including Maori support staff, other staff particularly IT tutors, and mentors for their studies. All had contact with Maori support and advisory staff in their ITP and most spoke positively about the support they received from IT staff. My eldest contributor was Linda (48) at NorthTec's Rawene Learning Centre, who started her IT studies with Certificates in Computing, taught and supported by one Maori tutor, Charlotte Tane. 'I was her student right back to absolute beginners and she just helped me all the way through this'. Linda's main mentor in IT was her husband who learnt about computing informally alongside her, and 'helped her out' in a way that supported her learning.

My husband helped me out, he would just read and help me out 'look you do it like this'. I'd say 'I don't think so'. He did know how only from reading it and examples! You know I could read and then I could just sit and there were a lot of questions that I didn't understand. But I would say 'What does this mean?' and he would be able to explain it to me and then I knew where I was. He didn't use computers he just did it from reading; he's one of those people and he's a Ngati Porou. (Linda, 48)

A typical example of proactively seeking support from IT staff asking questions or seeking advice when they needed it is from Jo at Whitireia.

My tutors were really supportive. I like those tutors in the IT... If I ever had problems with what I was supposed to be handing in, how to interpret what they want, I would always ask them and they'd always respond. They were just really supportive in class. I liked them. They were all different but they really generally want you to do good and pass, they'd help if you asked them questions. (Jo, 46)

The IT graduates from all of the ITPs had completed a practical project in their final year. Jo spoke of the support with a person who mentored her project work by email and online chat.

When we did the project we had to have somebody from work to support it. Greg was my supervisor, he was the Wananga side of the project and he really, really mentored me. He's a really good Programmer. He lives in Mahia so we did it by chat or email, hardly any phone calls 'cos chat's good enough. He was a really good mentor. (Jo, 46)

Unlike the two other ITPs in my research, Whitireia did not employ a Maori Liaison person, that role was undertaken by all of the Maori staff in Te Kupenga. A comparative role was the Maori Academic Support Coordinator. All but one of the Whitireia student and graduate contributors mentioned his tautoko. Juliana, who had previously worked at Whitireia, had strong relationships with the Maori on staff there.

I used to work here at Whitireia in the Maori Department so I knew quite a few of the staff. Hemi Potae was the Maori support person I had quite a bit of contact with him. I used to work with him and had a mates' relationship with him. Willis, I know her and her family in Otaki, she hasn't been here that long. Other than that, no-one else. (Juliana, 29)

Like the Maori support staff in the other two ITPs, Hemi sent regular emails to all of the Maori students at Whitireia, and arranged regular hui for them. Contributors also spoke of texts from Hemi, one example of technology used in support of Maori. Pressures of time, family commitments and assignment deadlines precluded some taking an active part, but all mentioned they appreciated the information and advice.

Hemi was good, I hardly ever saw him but he came to my presentation. He texts Maori students. I didn't even reply or come to half the things, but I just found that supportive. I never felt like I needed to go. He'd text you 'do you need help with your assignments?', or 'sausage sizzle in the courtyard', or 'come in for karakia to start the year', I found that really supportive. He sent out emails on grants, I never used that stuff but I just always knew it was there. When I did my presentation he and Willis came. (Jo, 46)

Wiremu who did attend some of the weekly hui arranged by Hemi also spoke of the support he had to get extra help with his Programming courses. Of interest here is the process of asking a support staff member to approach the IT tutors on his behalf, to arrange for extra expert tuition, and the development of a peer tutoring scheme for Maori.

A couple of times me and a friend went to him when we were struggling with our Programming courses and he approached the tutors and said these guys are struggling can we get some extra support? So he actively pursued it and followed it up. We got extra classes and the peer tutoring scheme going, he runs that. And then as it went on I met with them once every 6 months to say hello and how things are going. (Wiremu, 26)

One of the few graduates with other members of their whanau with ICT expertise, Wiremu had support from his brother on technical questions or content of his IT degree courses.

Any time I've got questions of a technical nature I can ask my brother which I did do quite a bit on the project side of things. He wouldn't pat me on the back and say do this or do that, if I asked him he would tell me straight up and give me direction in terms of the market, but never it was never forced or active mentoring. He was definitely helpful. (Wiremu, 26)

I argue that an important part of the learning journey towards academic achievement for these tauira Maori was to realise their need for help at times, to know how and where to access it, and to be confident enough to ask for it. Almost all of these tauira Maori were proactive asking questions or seeking advice when they needed it, and taking part in peer support

groups of varying kinds. All but two of my contributors had successfully completed their IT qualifications with the ITPs at the time of my research.

Conclusions

This chapter has shown that whanau featured in the motivations for these Maori to enter IT studies. It also shows how whanau supported these learners outside of the ITPs. In return, the drive to achieve good employment that paid well in the IT industry was universally attributed to have the purpose of securing the comfort and well being of their whanau. Major obstacles arise when whanau are not supportive of the learners, and this effect requires further scrutiny. At a risk of repetition, whanau is an element in Maori decisions and support for higher level studies that requires attention, from the ITPs and other tertiary providers, and as a subject of further research.

None of these tauira Maori reported any guidance or advice while at secondary school, about the potentials from study in IT, working with computers, or the steps they could take into the industry with qualifications. Research is needed into how Maori take the pathways into IT that begins at the interface between the ITPs and Secondary schools, such as the LINK and STAR initiatives, and also the pathways between the tertiary providers such as the Wananga and the PTEs that offer Levels 1-4 courses in computing and IT, with the ITPs and the universities offering IT degrees. An outline, potentially in the form of a poutama, of all the possible pathways that Maori, and others, could take into IT would be a valuable resource.

Each of the tauira Maori described an intra-personal realisation at one step of their lives when they understood their own potential to undertake further IT studies. I term this 'a ha' moment as an enlightenment for each individual, and highlight that this has a positive influence on the knowledge base and well being for the wider whanau and Maori collectively. For some the pursuit of knowledge and skills was more important than an end goal of qualifications. The extent that this Maori worldview influences Maori patterns of uptake and non-completion or completion of tertiary studies can only be surmised. However, in a process of 'small steps' taken in their IT studies, most of these Tauira Maori achieved qualifications at increasing Levels up to the degrees. With this came increasing IT skills and knowledge

that literally came into the whanau with the learners. In this way understanding about the potentials of IT and tertiary qualifications comes into the wider whanau. However for the many whanau who do not have members qualified in IT, ironically the information about how to get onto the IT learning pathway is online, and may not be accessible for those without IT skills or knowledge to use a computer to access the advice. I propose consideration of marae as a source of information on IT pathways and options for Maori whanau. The way to get the information to Maori who are not linked with marae is another issue.

Whanau feature throughout this chapter as central to the experiences, motivations to enter IT studies and the goad for determination to complete qualifications to achieve employment. Only three of the tauira Maori reported siblings ahead of them on the IT pathway while all others were the initiators of whanau experiences with IT qualifications. Most did not have prior shared knowledge of IT within their whanau, and a few implied a sense of marginalisation and isolation both at home because of their choice of studies, and as Maori in the IT courses.

Expertise and greater knowledge potentially separates graduates as 'geeks', however everyday use of IT by whanau was evident in all but one of the stories. This challenges a misconception of all Maori as a group on the wrong side of the 'digital divide'. For these tauira Maori IT was part of everyday Maori whanau lives. I respectfully positioned these tauira Maori as pou, standing in their own whanau as the member who has knowledge about IT. They mark the start and the achievable completion of a learning pathway for other whanau to follow.

Critical to the academic success of most is accessing help from peers, mentors, IT staff and Maori staff in the ITPs who feature in stories alongside the support of whanau. For some asking for help was either seen as not needed, or too difficult to do. How Maori throughout Aotearoa/New Zealand access help in the ITPs is largely unknown. Asking tutors for help is the correct and appropriate protocol inside the ITPs, but not all of my contributors were comfortable to do that. For the most part, these tauira Maori created their own study support in groups as tuakana-teina, where most felt comfortable asking help of their peers.

The central question behind this thesis is to discover how some Maori achieved completion of IT degrees in the ITPs. This chapter strengthens my argument that whanau in the broadest sense to include the whanau of interest is a major part of motivations, perseverance and the academic success of tauira Maori.

In the next chapter, I show the difficulties and challenges of IT studies for the tauira Maori, and what they enjoyed the most about it. Stories of the sacrifices made by whanau in support of the learners, and the financial challenges that were overcome are shared by most of them. The tauira Maori are confident in their skills with IT and their academic skills that result in the qualifications that mark them as a 'success' within the ITP and the Aotearoa/New Zealand tertiary education system.

Kua Kaha, Kua Pakari, Kua Tino Matau

Strong, Capable and Confident
Mawhero/White - Red

Constraints

Financial
Time

Practices

Information Technology
teaching and learning

Chapter 8 Kua Kaha, Kua Pakari, Kua Tino Matau Strong, Capable and Confident.

He Whakatauki

*E kore au e ngaro, he kakano i ruia mai i Rangiatea
I will never be lost; the seed was sown even in Rangiatea"*

I am strong and will strive to adapt no matter what trials I may face. Why?
Because I am a seed of my ancestors that first dwelled in Rangiatea, I will
never relent.

'Rangiatea formerly known as Hawaiki- homeland or origin of the Maori'
(From Taku Parai, for Ngati Toa.)

Introduction

Ngati Kahungunu wisdom tells of Tane the knowledge seeker, who had to fight 24 battles for the right to even begin his ascent to the uppermost heavens. The poutama can represent the steps he took on this ascent. I expanded this metaphor to the challenges some of the tauira Maori faced before they began their IT degree learning journeys for example those with no secondary school qualifications or little prior knowledge of IT in their whanau. In the ITPs they overcame the constraints of realities of their lives, considering finance, supporting themselves and their whanau while studying, and mastering the IT knowledge.

The purpose of this chapter is to focus on the tauira Maori as they engaged with IT learning and teaching in the ITPs. It achieves this by reporting the perceptions of this group about their experiences as both students and for some as teachers of IT. As discussed in chapter 6, people are important to

Maori learners, and the whanau that supported them is also the source of dilemmas over conflicting priorities with their use of time. I have structured the data with strands from both worlds of the poutama, to positively image the tauira Maori as confident learners in the IT courses and to highlight the challenges they overcame to achieve their goals.

The step of Poutama o te Ao Maori coloured mawhero (white-red) represents a stage when they had confidence engaging with IT. Applied from the 5 steps of the learning poutama 'Kua Kaha, Kua Pakari, Kua Tino Matau' strong, capable and confident was explained by Pae Arahi Tuahine Northover as a stage demonstrated in video recorded assessments of his own students of advanced te reo Maori at EIT. He remarked on the change in demeanour as students became self confident and his role to encourage students further.

As you go up that poutama, you will hear the level has gone up. Right from the start you hear it yes. Because you hear it, see it, the confidence that they have, the way they stand, the way they deliver it. So this is why I use that method, because it builds self-confidence, not only the knowledge that they gain from it, their confidence in themselves, it changes their whole demeanour... you don't bully them into it, you don't push them, you only take them so far kia kaha ki a koe, encourage them a bit more. (Personal Communication Tuahine Northover 12 July 2008)

Throughout my research, encouraging other learners, their peers or students at lower levels of IT, was common. This has elements of Maori values placed on kotahitanga, manaakitanga, and responsibilities of tuakana-teina relationships.

From Poutama o Te Ao Pakeha the brown steps represent practices of Information Technology teaching and learning. In this chapter, I share some reflections from the tauira Maori about their learning experiences in IT courses, what they enjoyed and were most confident with, and the difficulties of their IT studies. Applying this to their own practices some subsequently encouraged others while tutoring IT Certificate courses. The red steps in Te Ao Pakeha represent the constraints of their own learning journeys, the challenges of limited finances and time, and their prior responsibilities to their whanau.

The tauira Maori are confident in their skills with IT and knowledge that result in the qualifications marking them as a 'success' in the ITP and the

Aotearoa/New Zealand tertiary education system. When asked why they were successful with their studies, combinations of factors were commonly remarked.

Confidence with IT Studies

In each interview I asked directly 'what did you enjoy most about your IT studies in the ITP?' My assumption was that their answers would show the things they were most confidently engaged with. There were multiple answers to this question with some who spoke of their favourite topics and others of their experiences of learning.

People

Many spoke of 'good people', both fellow students and staff, as the most enjoyable part of their IT studies, and most important in their progress with their IT qualifications. I explain this as the critical role that whakawhanaungatanga, developing relationships with others, plays in academic completions. Speaking of her IT courses at NorthTec's Rawene Learning Centre Cheryl considered that without good people 'it's not worth it'.

The course itself, the people were the one's that made it, the other students, but the tutor as well. Without the tutor and without the good people around you, and that's the other students, it's not worth being here. (Cheryl, 40)

In a slightly different take on people interaction, while at Northtec, Ria particularly enjoyed competing with the 'boys' in her class and comparing marks with her peers.

The part I enjoyed the most would have been beating all the boys in just about everything. That was quite enjoyable, especially after they open the door. Boys are quite competitive, after you get your assignments everyone was asking 'what did you get?' The tutors are saying 'it's supposed to be confidential' but we all told each other our marks; that was quite good. (Ria, 29)

Wiremu spoke of enjoying his learning at Whitireia when his relationships with others were more familiar, and he grew in confidence and comfort.

I tended to enjoy it more so towards the end when the groups became more familiar and the people you interacted with, the tutors you got on quite well then you started to really grow and get better at it. As I got more confident and comfortable with what I was doing then the marks all improved and my learning improved. I really enjoyed that side of it. (Wiremu, 26)

The importance of relationships, whakawhanaungatanga, to these taurira Maori is critical to their perseverance with IT studies.

Programming

One third of my contributors named the logic based Computer Programming courses as what they had enjoyed most about their IT studies, and that included the creative potential of Programming. Juliana's response was typical of most;

Programming, I think it was the logical thing about it. It seemed to make sense to me. Just being able to create things, just that buzz when you finally get them to go and it all works. (Juliana, 29)

Tania spoke of enjoying the challenge of Programming and she rose to the challenge with the support of her tuakana-teina group of fellow learners mentioned in the last chapter. She observed a large drop out of students failing the Programming papers.

Would you believe it Programming, it was hard and complicated... I got into a study group with other good students who liked Programming and went right through the Programming stream using Delphi 5, then Object Oriented Programming (OOP)... It was just solving a problem, building things. .. I must admit when I did OOP there was hardly anyone left, they had all been whittled out ...they failed or found it too hard. Quite sad the final Programming paper and there's only eight of us left. Really sad, but it's true it's what happens. (Tania, 40)

My thesis does not pursue the stories of the Maori ITP students who did not persevere with their IT degree courses, although the diminishing number of students in higher level courses was of concern to several of the taurira Maori.

Jo at Whitireia 'liked all the IT stuff' and while she 'loved the Programming' extended her skills 'a bit outside the square' to write software that would create patterns for weaving tukutuku panels.

The biggest challenge was the project ... we used C++ language that was hard. I think that was the biggest Programming challenge. We did a prototype of a software application...you know tukutuku panels, draw the pattern on the graph paper and then weave it and how it changes? We wrote software that would draw the pattern for you so you didn't have to re-graph it every time to change the colour or change the size of a triangle. Drawing on graph paper, it's boring, so we did a prototype to prove the concept that you can type in I want so many rows and columns, put in the size of panel and I want this pattern, and it will generate the thing, you can print it off and weave from it. We put 3 patterns in; we were really constrained by the time and the resources we could use. We didn't use any of the polytech

technologies which are Microsoft; we went for C++ open source stuff. I think it was a really good decision but I don't know if the tutors liked that too much, it was a bit outside the square, the whole project was, it was tough. (Jo, 46)

Jo is one example of the tauira Maori fulfilling aspirations, in this case using IT knowledge to create new software that will save many hours work for tukutuku weavers of the future, and enhancing Te Ao Maori as a result.

Practical vs. Written

Over half of the tauira Maori mentioned the practical, hands-on process of learning IT as one of the things they enjoyed the most. For example Colleen who said 'The practical for example hands on in front of the computer instead of writing, writing, writing, work I don't like'. For Rebecca it was the practical learning and also the application of the skills as she developed them.

Practical learning...the theory was sometimes a little bit of an information overload but to be able to apply the skills in the lab in the next session was brilliant. It really reinforced the learning, and I also had a sense of being able to cope in the big wide world if I learnt this... I found that really rewarding being the practical components of doing it. (Rebecca, 29)

Ang spoke of enjoying the 'hands on stuff' particularly networking and hardware and interaction with other people.

I enjoyed all of the course but I loved being able to get in there and pull plugs out and put things in and develop my own network and things like that. I hated Programming, I'm not a Programmer but I did enough to pass. I've decided no I can't sit there and look at a screen and think and type and think and type, I need to talk to people, I need to play. (Ang, 28)

While she joked about playing, the deep learning and thinking that Ang engaged in resulted in 'enough to pass' marks. How these were valued at NorthTec is revealed in the post script to the next chapter.

Multi-Media

Several tauira Maori spoke of Multi-Media, a highly commercial and popularised part of IT studies, as the thing they enjoyed learning the most. Importantly, two used their new skills to develop resources of use for Kohanga Reo, the Maori Language Nests for Early Childhood Education.

It's actually Multi-Media I really enjoyed that. What I did for my sister, for my project I created her a Kohanga Reo CD specifically designed for her children. She gave me all the activities that she wanted and I actually

designed the CD ROM for her and for Kohanga Reo, they find it hard to get hold of the technology for the children... I came up with the pictures and things, I formed her activities she wanted to do, and the kids use it all the time. It's in Te Reo which is really good because they are able to understand it. (Mei-Ana, 29)

Another student who created a Multi-Media resource for Kohanga Reo was Tania who had followed her son for a day with a video camera, and she too shared the resource with her whanau members.

I also felt I had to do some Multi-Media the video and graphics. I'm not a very artistic person but mum was really impressed with the little bird I drew. She is more artistic than me but I got the bird flying across the screen. It had a little sound, it was animation and I did enjoy editing video. I went to my son's Kohanga and videoed them. I got them to do the haka and perform their items. I followed them one day on their campus. My final multi-media CD was 'Liam's Day at Kohanga'. I put it on a CD and gave one to my father and some to his uncles. (Tania, 40)

Like Jo, Mei-Ana and Tania contributed IT resources of particular value in Te Ao Maori, and created legacies for whanau and other people of the future.

Maori tutoring IT

In a spiral of events, several of the tauira Maori became tutors of IT in National Certificates at Levels 1, 2 and 3, at NorthTec and EIT. They spoke of their experiences from both viewpoints, as Maori tutors, mentors or tuakana for others, and as teina, as learners, themselves.

Both Ang and Ria had tutored part-time on the NorthTec Community Computing courses to support themselves during their IT studies.

It was Community Computing, that's a fees free course that helps people who come into the room and go "I don't know how to turn on a computer, I don't know how you are going to teach me" and they are the best people to teach, so that's what I did. (Ang, 29)

Discussing the students who were learners in these courses, Ang pointed out the whanau first commitments of her Maori students, determined the times they would participate in the classes.

It depended on the day of the week really. For Ria who did Saturday mornings, she had a couple of Maori ladies, but a great deal of them were older Pakeha people. In the afternoon, I had younger Pakeha people, but on Fridays I had quite a few Maori in that class. They had kids to look after in the weekends and the course that I taught on Fridays went from one 'til five. So from one to three I had these people here, three o'clock they'd leave to go and pick up their kids, and then they'd be back in. (Ang, 29)

Programme flexibility enabling students to meet their whanau responsibilities, and fit in to IT studies at their own pace is attractive to many Maori learners, evidenced by the rate of Maori enrolment into Level 2 IT Certificates nationally.

At EIT, BCS graduates Tania and Mei-Ana tutored National Certificates in Computing at Levels 2 and 3 and coordinated the Flaxmere campus. Tania spoke of herself as a student revealing a learning identity constructed as a 'stupid' learner. From this experience she encouraged her own students to ask questions.

I used to sit in the front of the class, I always sat at the front and my hand would go up all of the time. ... OK I asked a lot of questions because I really wanted to get it in my mind and make sure it was right. I was like 'this is probably going to be stupid but...' He (tutor) probably thought I was a pain in the butt but that's how I was. I tell any student who is going to do anything ensure you ask a question. (Tania, 40)

At the time of our interview, graduate Rebecca was on staff at EIT Coordinating Maori and Pacific students for the Business and Computing School. She was about to embark on work as an online tutor.

I've been offered a part-time opportunity to teach people in the community who are team leaders or are involved with running a group of people to become supervisors. That course is run online so I've been chosen to tutor and oversee and facilitate these students through a Certificate in First Line Management, a National Certificate awarded by EIT. Also next year I teach an 'Accounting for non-Accountants' class which is definitely me helping people with this knowledge. (Rebecca, 29)

All of these tauira Maori were confident, both with the knowledge of their IT subjects, and their abilities to teach others, within the predominantly non-Maori environments and protocols of the ITPs.

Constraints

Assuming that the parts of their learning experiences that the tauira Maori enjoyed least would also be the things they were least confident with, I asked what they had enjoyed least or found most difficult about their IT studies. Most gave multiple answers. Just over half mentioned particular IT subjects including Mathematics, Spreadsheets, Networking, Theory papers, and Programming. A few spoke of clashes or dislike of the teaching styles of individual tutors that made study onerous. The quote below is the only one

in this thesis that is anonymous as the staff member mentioned could be easily identified and continues with the ITP.

The (named) course was quite hard, but I'd put that down to the tutor who was such a bore. We had two class time slots together so it was just a really long afternoon. Our tutor would go on about stuff that was so irrelevant, I found that one not hard just boring (Anonymous).

For mature learner Maryanne the 'information overload' from all of her papers was most challenging.

Information overload was a big thing for me, I guess the amount of the whole thing was too much to absorb. So what I didn't like about it there was all this information that you had to cram in, but how much of it did you retain? That's what I didn't like. (Maryanne, 43)

The small number of Pacific Island IT learners found Maryanne easier to approach than their tutors, a particular difficulty for her.

It was pretty good, but I felt there wasn't quite enough support for Pacific Islands. What I found was some of my time was spent helping other Pacific Islanders, where they wouldn't go to the tutor they would come to me. It's the language thing for some of them, or not comprehending what [was wanted], to clarify things. In the end I just had to say 'no, I've got to do this otherwise...' unfortunately. (Maryanne, 43)

Impacts on whanau were considered the most difficult thing for contributors with children, for example BCS graduate, and mother of three Mei-Ana found 'the whole thing' difficult, and she spoke of other Maori having difficulty asking questions or for help.

The whole thing was difficult. I had to put myself in a routine and it was basically studying - do your work - study - do your work - I couldn't really break out of it. I tried to not get to that stage of things being difficult, if I did have problems I did make a point of going to see the tutors. I wasn't that shy to see them. I was the only one who couldn't understand it, that was me!! I wasn't going to sit there and leave the classroom not knowing. I noticed for a lot of Maori people they would get intimidated and really shy and I wasn't going to let myself fall in that trap I couldn't. The whole process of going through it, it's hard, so hard, but if you just keep going, keep going you will get through. (Mei-Ana, 32)

This quote from Mei-Ana reveals a reflective learner, where her work was as much about learning how to master the IT knowledge as it was about 'learning to be' an IT student (Thunberg & Edstrom, 2008)

Maxine did not enjoy her IT degree studies while she was doing them because of the struggle required prioritising her personal education over her family.

At the time I didn't enjoy it, at the time it was 'I gotta get this done'...Trying to get organisation I guess, like having your most important and then your important things. Family is quite important to me, but so was my study, so I had to pick which one was quite important, and they very much both were. I'd have to tell my son that if I don't do this, then we are going to stay here in this little box forever, so it was basically choosing from the two most important things in my life and that was my family and my education. That was the hardest. (Maxine, 27)

While enjoying Communications and Design papers, mother of three Sharon was stressed, juggling family and study commitments.

Stuff was going on in my home life, I couldn't just come home and go on the computer and study, I had to come home and family first, get all that done, I wouldn't be able to do things until my children were in bed. Stuff was going on with me and my partner, that didn't help, it was really stressful. (Sharon, 29)

Time management was one of the greatest challenges of degree level studies for many of the tauira Maori. Several spoke of spending all night to finish an assignment for an 8 am deadline, and discussing their work with peers. Ria developed her skills during her IT degree at NorthTec.

I'd have to say time management because that is one skill I had not learnt... [I] crammed it all in at the last minute. But at the last minute when you are talking to everyone else about what they're doing, you sort of get ideas from there, and we all put ideas out to each other. (Ria, 29)

Sonya spoke of 'missing a social life just studying'.

Keeping up with my assignments and studies, because I was flatting I would like to go out and have a good time, so it was like make sure I met all the due dates and stuff. I was always on time, there might have been a couple of assignments I was a day late. (Sonya, 22)

For Colleen the hardest part of her IT degree was that she was the only Maori on her courses with no one to help support her in a Maori way.

I'm the only one doing my course, and it's horrible, and I wish there was more. Because I feel like a fish out of water type of thing, I'm not prejudiced or anything, it's just a different atmosphere. But you know Maori support each other in different ways, the way they teach us you've just got to be on to it, there are no second chances. (Colleen, 34)

As shown in chapter 5 the low numbers of Maori studying IT at degree levels results in the isolation of individual Maori in some IT classrooms where they default to the dominant protocols and regulations to complete courses.

Finance

In Poutama o Te Ao Pakeha, I position finance as one of the constraints or challenges faced by the tauira Maori as they studied in the ITPs. I show here it is also important in Te Ao Maori. Tuahine Northover pointed out to me that from his position as a member of the Waitangi Tribunal he had observed a lack in the skills set that Maori use to live and progress in Aotearoa/New Zealand; the knowledge and expertise of high finance and long term implications of money management. It is likely that few Maori are knowledgeable and work in professions in the Finance sector, similar to the pattern of few Maori in IT. For Harmen both the financial pressures and a sense of isolation as one of the few Maori in his IT degree courses were difficult.

The student life sucks, the lack of money sucks, not being able to buy things when you need them, it gets you down after a while if you haven't got the things you need... Sometimes you feel like it's not worth it, or you look around and you don't see people like you that are there studying. I mean Maoris, there's hardly any, there's nobody on the course I'm doing, it gets hard. (Harmen, 26)

I asked all of the tauira Maori how they had supported themselves and their whanau while they were studying. Some had used the government funded Student Allowance during study, and as shown above, Harmen struggled with his student budget. He was aiming to get part-time work tutoring IT Certificate courses in the same way that Ang and Ria who had tutored part-time while studying to boost their income. Ang was a typical example, working from 'between 6 and 15, more likely 9 hours a week...I got a Student Allowance and worked part-time. I was teaching; I used my Teaching Diploma'.

As I show in the following chapter, government investment in women who were supported by the Domestic Purposes Benefit (DPB), for sole parents and their children, paid off. This group used the Training Incentive Allowance (TIA) linked with DPB to subsidise their costs of study such as travel to the ITP or childcare. Mother of three Sharon's response was typical. '[I was] on the DPB the whole time... I had to have a Student Loan of all my fees because I had the TIA for childcare and books and travel.'

Others had husbands on the Invalid's Benefit and government Superannuation. Several spoke of the financial support of their working

partners. Jo had made use of her previous savings from work as a Programmer and part-time work during her IT studies.

My partner was really good at supporting us and I had part-time work. I never got a Student Loan, my part time work paid for that, we just had our family income. The other thing was I had all this money from when I was contract Programming because it was such good pay, in lots of ways that supported me because we had assets from it. It's quite tough, it still is. I think I just made it, just scraped in paying all the fees. I actually didn't pay them very well, I paid them off. You are supposed to pay within two weeks of enrolment... (Whitireia) never said anything, sometimes they would look at you a bit funny. I think that by the time they get to debt collect I'd already paid by about halfway through the course, but sometimes I couldn't pay the whole lot at once. (Jo, 46)

Speaking of scholarships for their studies, both Wiremu and Tania had received support from their respective Iwi, and Wiremu, with the help of the Maori Academic Advisor at Whitireia accessed the now defunct Manaaki Tauria Fees Subsidy.

Student Loans and Debts

Depending on individual circumstances, tertiary students are eligible to apply for Student Loans that cover the cost of course fees and Course Related Costs of up to one thousand dollars each year. In this group, debt from Student Loans ranged from zero up to an estimated \$50,000. The median Loan debt was \$15,000 and the average debt slightly higher at \$15,800. The cost of the IT degree fees was around \$4,000 for each of the three full time years at the ITPs.

Three of the contributors had no debt from their IT studies, one was ineligible for loans, one chose to pay for fees and costs from their family income, and one had paid off the loan for fees within 18 months of graduating. Four of the graduates had accrued debt from earlier courses of study with implications that changing career paths is expensive and leads to greater debt. Of these the most indebted was Ang ineligible for Student Allowance, who had used the Student Loan to support herself in training to be a teacher. 'I think it was 28 thousand dollars'. For her subsequent IT degree at Northtec, Ang 'took out a loan for the fees only. Between 10 and 15, and it wasn't any more than 15 thousand.' She also used the Course Related Costs (CRC) loan; 'only in my first year, and that was to replace a computer that had died.' At her best estimate the total of her student debt

was 'enough to get a mortgage on a house, I don't know it must be between 40 and 50, it must be'.

EIT graduate Maryanne estimated her debt, from her prior Diploma in Performing Arts, and the BIT at 'About 30 thousand... all inclusive. Thank goodness the interest has stopped and the CRC, I did that pretty much for my second and third years'.

For Juliana, the only contributor who had studied IT with a Private Training Provider, her debt was 'very scary, about 12 thousand dollars. The majority of that from Spherion, their [course] was very expensive. It was a Student Loan not the Allowance with CRC.' Ria had paid off the Student Loan debt for her previous degree with Auckland Technical Institute, and estimated her debt for the Northtec degree, for the Fees loan and one year of CRC at about \$15,000.

Another student ineligible for the Student Allowance, because she was under 25 years of age, was EIT graduate, Sonya who spoke about the impact of interest charged on her debt and the relief when the Labour government suspended interest on loans for people who meet set criteria.

I was on a Student Loan, I wasn't entitled to the Allowance, I went flatting. It's a hefty 30 grand [debt]. Interest bumped it up, but they've wiped [interest] now, stopped charging it. I pay it back through me working. I don't pay lump sums onto it. I don't even think about it I just keep going. I think it gets wiped off when you pass away. (Sonya, 22)

As mentioned above, the students who were sole parents supported by the DPB were eligible to apply for the Student loan and CRC. Max's response was typical.

I did for the excess [costs], there was always the TIA but it was only aid for about two thirds of it, so I still had to take on a Student Loan, plus extra childcare costs depending on your class times, and even so you had to do group studies, and if you really wanted to apply yourself you had to be a part of that synergy of learning. (Max, 32)

Employed at the time of our interview, EIT graduate Mei-Ana was another who spoke of her student debt as 'scary', taken on with the support of her husband, and part of the drive for her to complete her qualifications.

It was my husband; it was totally all on him. I was so lucky especially with that Working for Families. It's more beneficial now to study than when I did, we basically lived on one wage and just enough not to qualify for WINZ. [income support]. I needed to take a Student Loan for the whole shebang. It's very scary. I'm looking at \$18,000 to pay back. I started off very good, I

paid for my Certificate and part of my Diploma but I couldn't pay for the rest. Plus another factor of why I had to finish off the degree was the money. More for my kids' sake. (Mei-Ana, 32)

Financial stresses and struggles as students were part of the narratives of most of these tauira Maori, and significantly they mastered financial skills to enable their commitment to complete their studies.

Maori Cultural Content or Assessment

In chapter 5, I raised the issue of a lack of Maori dimensions in the content of the IT degree curricula, and its delivery within these ITP. Commonly kaupapa and tikanga Maori were seen as belonging to a separate realm. From the stories of these tauira Maori there was minimal opportunity for Maori collective preferences in the assessment methods used. The exceptions were final year projects that involved kotahitanga or team work and joint assessment for the results of those collaborations. An Ako Aotearoa Symposium considering tertiary assessment and higher education outcomes found that 'most standardised measures reflect Western/Anglo/Euro epistemologies that may be invalid for students of non-dominant cultures' and that the 'insistence on assessment of individual work... marginalises collectivist cultures...despite the fact that in various professions the criterion for mastery involves working well in groups, not by oneself' (Myers, Rees, Fletcher, Johnston, & Anderson, 2009, P. 6). This is a constraint for tauira Maori who carrying their own cultural capital (identity, worldviews, values and relationships) have few options to express them in the ITP learning environment.

What contributed to Academic Success?

In chapter 2 I presented the traditional understanding that there is no concept of either success or failure in Te Ao Maori. Those who 'never aim to be successful also never fail; they just don't reach the taumata, they don't fail' (Tuahine Northover, personal communication 16 January 2007). I learnt that my emphasis on qualification completion as a form of success was from a Pakeha worldview that was not part of the thinking for most of the tauira Maori. I spoke with graduates half had been identified as successful by their teachers and half identified by other Maori, and asked them what had contributed to their successes. As discussed more fully in the next chapter, many demurred from that label as successful but most conceded that in Te

Ao Pakeha, completion of degrees and diplomas is regarded as a form of success. Once again whanau or family featured as a major contributing factor of the completion of the qualifications for over half of the contributors and not repeated in detail here. Support from others, their own hard work, time management and commitment to studies were typical points along with a work ethic to achieve goals and determination to finish what they had started.

Tania's response was typical presenting a combination of factors.

I'm not the brightest... I think its just hard work and you have to want to succeed. I was doing it for me number one; number two my son, I want my son when he gets older to see 'Mum can do it, I can do it' [and]; number three my mum... to make her proud and to get a pat on the back. It just takes hard work, late nights and motivation too. If you are not motivated to do it you are not going to do it. ... To pass it's a combination of everything, good peer students, good whanau a family that backs you up, you are motivated enough, you are interested, you have good tutors, which does help, all that combination will make it. (Tania, 40)

Ang spoke of the 'awesome people behind me. Having people who could accept that I gotta do this before I can come and talk to you to share your day, I have to do this. So people who accepted me and just my own hard work (laughs).'

A value on finishing something that had been started was mentioned by almost half of my contributors. As expressed by Linda 'I wasn't starting something and not getting to where you want to go you know'. Sonya who was emphatic she was not successful because she was not working in the IT industry, was another who wanted to 'finish it off.'

I'm not working in an IT company; my job isn't based around IT, I am in admin. That's why I say I'm not successful... I didn't care about anyone else I was doing it for myself I don't know why. I got that far and I wanted to finish it, it's a waste of time getting to a certain point then thinking 'oh nah I don't want to do it any more', I might as well just finish it off. (Sonya, 22)

Wanting to accomplish completing something to show whanau and friends contributed to Sharon's success.

I suppose mainly myself just wanting to make something of myself, being able to show my whanau and friends that I can accomplish something, because I haven't always had the name to finish things that I started. Plus the tutors were good, they'd pee me off sometimes, like they wouldn't give us our marks back in good time. All the friends that I made, that was helpful. (Sharon, 29)

Mei-Ana attributed her success to 'hard work, support from my family and more hard work.' In fact her story that had started with enlightenment in a carrot packing factory tells of a remarkable commitment to the completion of her IT exams at EIT.

I got married while studying; I was carrying my daughter while studying. I sat my exam, my contractions came on, so I rang my husband, met him at the hospital, I had her then the next day finished my exams. It came to the point, a lot of people said I should have taken a break. I knew I was pregnant and wanted to get it out of the way. I didn't want to muck around, for me especially as I studied I didn't want any special privileges because OK I was pregnant. I wanted to be treated like everyone else, but I felt sorry for the person who was running that course because I was 'crazy'; but committed. (Mei-Ana, 32)

Both Wiremu and Jo who had studied at Whitireia spoke of support from their employers and expert IT advice from colleagues contributing to their degree completions.

Family support, wanting to do it, and I think having a job here [Te Puni Kokiri] definitely helped, seeing what you are learning in practice. It was almost like doing an apprenticeship when you are actually on the job, and it definitely helped in my grades... it helped heaps especially in the 3rd year because if there were problems or issues I could come back and ask people here. I did get a bit of help from people here. We have got a couple of Programmers here, I was stuck with a couple of problems on my project and run it by them and they would say 'try this try that' it ended up they were right, it saved heaps of time. (Wiremu, 26)

Jo was interested in IT and motivated by the support of her employers.

I was interested in it, I liked the studies. ...My success I don't know I think it was myself, I think if I paid \$600 a paper I better pass it and do a good job of it. I wanted good marks because my work was letting me have the time and they were refunding my fees afterwards, you can't just fail or not do good. I'm surprised at my marks, I didn't think they were that great but they always came out good when I did the work. (Jo, 46)

Just prior to our interview together, Jo had uplifted her Academic Record and was frankly surprised by her grades. How Whitireia viewed her work is revealed in the Postscript.

Both Juliana and Maxine from Whitireia spoke of their focus on a goal of completion.

My goal right from the start was to complete it. I just stayed focused on it the whole way through, being a kind of minority in the class as well I just wanted to get out there and do it. Maori and female. I think there were seven Maori of about 30 in total ... Only one didn't get through. (Juliana, 29)

Maxine was the one who did not get through by the end of 2006, but returned in 2007 to re-sit two papers.

I think because I'd had my time of wasting money, I'd had my time of falling out of things and I didn't want to do that again. I think the older you get the little bit more understanding. I'm pissed off that I hadn't done it before; I just didn't want to, there were too many other exciting things out there to do than sit in a classroom and listen to tutors. I didn't want to do what I had done; I had failed in the past and I don't want to fail. You can fail in life but you have got to keep going at it until it's completely finished or until you are satisfied. I might not be satisfied I might want to keep studying, I don't know. I didn't want to fail like I had in the past; I wanted to stick at what I was going for. (Maxine, 27)

Combinations of factors were given by these tauira Maori to explain their academic success in IT studies. Few reflected it must have been their own hard work and all demonstrated commitment to their studies. They revealed a disciplined work ethic and a determination to finish what they started. Some were proving a point to themselves, that they could do it, and others wanted to make their whanau proud. For many, failure was simply not an option.

Almost all were primarily motivated by their commitments to whanau, especially their children and parents. Whanau responsibilities were both constraining and highly valued by all of my contributors. Reciprocally whanau contributing time and practical support, for example childcare and enabling time for study were commonly mentioned. Relationships with 'good people' who were peers in the computer laboratories and classrooms and Maori support staff were mentioned in the last chapter as appreciated by almost all of the tauira Maori. Good IT teachers in the ITPs were important for the eventual academic success for many.

Employers who paid fees or allowed and paid time off for IT studies were special contributors to the success of three of these graduates. This practice could be highlighted or promoted as highly beneficial for all concerned and may form a stronger pathway between the workplace and keeping IT knowledge up to date by ongoing studies with the ITPs, or any tertiary provider. Conversely the opportunity to apply skills at work, using the curriculum based knowledge that had a high practical component in their courses was also highly valued.

I developed great respect for the tenacity and perseverance of all of these tauira Maori, confirming the appropriateness of my use of the poutama metaphor with Tane's own tenacious pursuit of knowledge.

Conclusions

This chapter gives voice to the tauira Maori to speak of the difficulties and challenges of IT studies, and what they enjoyed most about it. While half of the tauira Maori enjoyed practical hands on aspects of their studies, they were also confident using all of the modes of learning required for Degrees. That they are academically capable as well as practically talented, using skills of listening and speaking also valued in Te Ao Maori, is evidenced by their graduations.

Contributors explain their perseverance through the challenges and difficulties of their studies in the ITPs. Conflicting priorities between their responsibilities to whanau, especially children, and their studies caused stress and anguish for some who are parents. Maxine's comment captured that dilemma 'Family is quite important to me, but so was my study, so I had to pick which one was quite important, and they very much both were'.

The central question behind this thesis is to discover how and why some Maori achieved completion of IT degrees and qualifications in the ITPs. The tauira Maori spoke of a combination of factors contributing to their academic success including; their own hard work; whanau inspiration and support with their own position as role models; their motivations and determination to finish what they had started; a level of self satisfaction and proving a point to others; and achieving their own goals. These perspectives show also that whanau is a major part of motivations, perseverance and the academic success of Maori contributors. I show these tauira Maori as confident in their knowledge of both IT and academic study skills, and their work returning knowledge to others.

The extent to which the academic success of Maori learners is positively or otherwise affected by having Maori as tutors or lecturers in IT courses is yet to be known. At present the low number of Maori in the IT field does not allow a balanced picture of what longer term benefits could arise from a

greater number of Maori in the industry, and teaching in the ITPs. This subject requires more research.

Finance offers obstacles for almost all tertiary learners, but for Maori the decision to curtail family income for the period of study, and shoulder the burden of Student Loan debt was for most a collective decision. To date I have seen little information that explains the financial implications of tertiary study for Maori whanau in particular. Most official documents are couched in terms of the individual students, their eligibilities, entitlements and lawful responsibilities. Whanau are not legally responsible in Te Ao Pakeha for the debt of one individual member, however as my contributors showed whanau are impacted collectively by their decisions to enter IT degree studies and many whanau viewed the individual debt as their collective responsibility, exacerbated for some by previous tertiary debts. In 2006 the Labour government alleviated the burden of interest on Student Loans for those eligible that brought anticipated and immediate relief to the contributors with above average student debt. Conversely, the age limited access to Student Allowance and the low rate caused distressing debt for those who took on maximum Loans. Maori viewpoints about the 'costs', not solely financial, and the benefits of degree studies is a topic requiring more research.

The impact of social policies on the lives of my contributors and their whanau is evident in their stories. For example six of the women were recipients of the DPB as sole parents, and used the TIA to partially fund their studies. All took out the Student Loan to supplement the shortfall of costs of study. That this policy to return beneficiaries to work is effective is shown by the five graduates who had completed their degrees and were moving on into full time employment. Research to follow the longer term outcomes of Maori who have been supported by government benefits then moved on to contribute back into the workforce has yet to be undertaken. It could be valuable to present positive stories of transitions from government Benefits to the benefits of higher learning and employment.

Matauranga Maori where knowledge is shared with others is clearly in progress in the stories of my contributors who exemplify IT expertise entering Maori whanau, hapu, and iwi. It also shows the incorporation of IT into spaces that did not previously include it, and reconciling the knowledge

they are gaining with their cultural knowledge and practices. Jo was part of a group that created a programme to simplify tukutuku design for panels of any size, saving thousands of hours work for weavers of the future. Tania's whanau has a multi-media record of Liam's Day at Kohanga and Mei-Ana created a Kohanga Reo CD full of activities, images, sound and i te reo Maori. All of this work can be used now, be developed further, and endure to become taonga of the future.

For the tauira Maori who enjoyed Programming although it was a hard and complicated subject the importance of good relationships with the tutors and lecturers was critical. Anecdotally others who struggled with Programming dropped out of the degree courses. Consideration could be given to development of IT degrees that do not rely so heavily on all students completing Programming papers, or alternatively the development of Maori conceptualisations of the topic that enable a more culturally relevant approach to the knowledge. I argue also for active exploration of the potentials for systematic integration of dimensions and elements from Te Ao Maori into the expanding knowledge base of IT and into the assessment practices for these professional qualifications.

In the next chapter, I move on to the aspirations and dreams of these tauira Maori including their plans for further studies. They share their own understandings of success that are much broader than completing IT studies and what gaining the qualification meant to them. Many offered their advice, especially for other Maori thinking about IT, and for ITPs who have Maori learning there. Chapter 9 shows Te Taumata, or pinnacle of completion of IT degrees and qualifications, followed by Te Timata, the first step into work and post-graduate studies.

Te Taumata - The Pinnacle

Completion of stages of learning
Tuauri/ Indigo with Matariki/ Pleiades

Kua Mohio - Knowledgeable

About Information Technology
Kikorangi/ Blue.

Chapter 9 Mohiotanga me Te Taumatatanga - Knowledgeable and The Pinnacle

When you reach te taumata; you have gone past me...When you reach te taumata, you leave me behind... When you have reached te taumata, take me with you. (Tuahine Northover, 2007)

Introduction

The process of growing knowledge is implicit in the stories of Tane's ascent to the highest heavens, and his return to share knowledge with humans. Knowledge is accumulated by each of us in the experiences of our learning journeys. This chapter is concerned with the knowledges gained by these tauira Maori in their pursuit of IT qualifications. English poet Alfred Lord Tennyson said 'Knowledge comes, but wisdom lingers.' For Maori nga taonga tuku iho, the treasures of our ancestors, is ancient wisdom. From this core Maori values and worldviews arise and are clearly evident in the narratives of these tauira Maori. Wisdom that lingers is relevant in contemporary Maori lives.

I maintain that some Maori do aspire to be 'citizens of the world' (Durie, 2001) and to achieve that may require mastery of Information Technologies. My thesis positions Maori as knowledgeable in 'IT ways' with the potential to expand our own access to, and participation in, the 21st Century global world. I exemplify this by my deliberate 'positive imaging' of tauira Maori who achieved IT degrees and qualifications. Having negotiated their way through IT studies in the ITPs, gathering knowledge and expertise in both tertiary study skills and Information Technology of Te Ao Pakeha, they simultaneously demonstrated the values and tikanga of Te Ao Maori.

Above two strands from Poutama o Te Ao Maori offer frames for Maori viewpoints of their IT learning experiences in the ITP environments.

Kikorangi, the blue strand represents the fourth step of the learning poutama, Kua Mohio where Maori are knowledgeable in their field of IT studies and the skills of tertiary study. All of the tauira Maori are knowledgeable in IT and most were unwilling to position themselves as such. Tuauri the indigo strand represents a fifth learning step, Te Taumata, The Pinnacle, representing here their achievement of Bachelors' degrees in Information Technology and the Certificates and Diplomas that lead onto the degrees. The metaphor of the learning poutama shows that implicit in reaching a pinnacle of Te Taumata is the next first step Te Timata, here the beginning of their learning journey using their IT skills and knowledge in the workplace, and their aspirations for the future.

Success is a dynamic construct that alters with time, context and perception. What success means is contestable. This chapter shows Maori viewpoints of success strongly related to values from Te Ao Maori such as whanau and whanaungatanga, the development of relationships. Attaining knowledge in 'varying degrees of life' and particular job related knowledge is valued here. These tauira Maori demonstrated personal motivations such as 'proving a point' and qualities such as resilience or 'stickability' that were significant to their own successes. A work life balance is a measure of success as is a good job. Importantly, for these Tauira Maori success is relational with whanau, with hapu, with peers, with tutors and with the ITPs.

I artificially limited the concept of success to that Pakeha value placed on achievement of IT degrees. This success is represented by a tohu, a certificate or other symbol of achievement, or to mark an important event. In the lives of these tauira Maori, the tohu of IT qualifications was one of many 'little successes'. Having 'that little bit of paper' the qualification, enabled new potentials after graduation. The tauira Maori spoke of applying their IT knowledge to get a job or develop careers in the industry. Others sought more IT experience, professional development and training in IT.

Their future goals and aspirations centred on the well being of their whanau with some seeing themselves as teaching IT and as role models for other Maori. The commitment to learning as a lifelong process as represented by the poutama is exemplified with plans for advanced level studies, not all of these in the IT field. The chapter concludes with the thoughts of the tauira Maori and their advice for; whanau; potential students of IT; how to get to

the end of a degree; advice for the tutors and a plea for 'Maori ways' to be combined with 'IT ways'.

Knowing What Success Means

My thesis explores how and why Maori achieve IT degrees that is considered a success in the ITPs. As argued in Chapter 2, success is a contestable term interpreted in many ways by different people. As discussed in the last chapter I had learnt that traditionally Maori held no concept of success as it is understood in Te Ao Pakeha today, where, as my thesis shows, the dominant discourse positions Maori in the deficit side of the success failure dichotomy.

Aspiring to 'live as Maori' (Durie, 2001) when individuals reach a level of knowledge for example of Kaupapa Maori, and exemplify the virtues and values upheld within this philosophy, their mana increases (Marsden & Royal, 2003; Mead, 2003; Metge, 1985; R. Walker 2001). Virtues such as humility and eloquence and values such as tautoko and whanaungatanga are building blocks of mana in Te Ao Maori, and potentially could further influence the Aotearoa/New Zealand tertiary education system. In my analysis, all of the tauira Maori demonstrated these virtues and values among many others.

From the realms of Te Ao Pakeha the tauira Maori now have technical IT skills and knowledge far in advance of my own, of others in their whanau, their iwi elders, and the general population of Aotearoa/New Zealand. None saw themselves this way in my interviews with them as discussed further below. How Maori collectively locate ourselves in relation to Information Technologies is an unknown, and what knowledge is available, positions us in deficit for economic and educational reasons (Ministry of Economic Development, 2007). Research is needed to redress the imbalanced representation with more informed 'evidence' of how Maori have adopted and make use of the new technologies.

'Take Me With You'

When you reach te taumata; you leave me behind... When you reach te taumata; you have gone past me...When you have reached te taumata, take

me with you. (Personal communication Tuahine Northover, 12 July 2007 abridged)

There are many possible interpretations of these words taken from my handwritten notes of a spiralling conversation with pae arahi Tuahine Northover here edited to fit a linear argument. One of the challenges for some Maori pursuing academic qualification is the resulting disordering of a natural arrangement where our elders are wiser and more knowledgeable than ourselves. The more highly qualified we become, the further behind our unqualified elders and whanau appear to fall. In our academic studies our knowledge in a discipline takes us past the levels of others around us. Interpreting Tuahine's words he could be asking knowledgeable Maori to help him to increase his skills and understanding of the new technologies. Rather than be left behind we can take our elders and whanau with us. Tuahine recounted whanau guiding him through communication, presentation and information technologies leaving a handwritten manual that he referred to almost daily. This process of sharing IT knowledge happens every day in Maori whanau throughout Aotearoa/New Zealand and as argued in chapter 7 an area of interest requiring more research. Tuahine spoke of the process of 'sharing your knowledge with your neighbour' as the fastest way to learn. Later he spoke of the mana that is given to those you share your knowledge with, in the process enhancing your own.

In early 2007, I was fortunate to spend several hours at the home of another pae arahi, Kerehi Waiariki (Dick) Grace (Ngati Porou). Our relationship began in 1998 with Dick's role as Pukenga (Advisor) to the New Zealand Council of Educational Research advising me on my research looking at 'Matauranga Motuhake' Special Education for Maori (Wilkie 2001) and the Evaluation of Ngati Porou/East Coast Strengthening Schools Initiative, called at that time 'Whaia te iti Kahurangi' (Wylie and Wilkie 2002). In discussion about the poutama, Dick explained that whatever level or step of a learning poutama we are on, our mana is equal to others on the steps below and the steps above.

[In] tikanga Maori every individual is unique and they have their own time in which to know. ... A Maori perspective on this difference is the equality of mana, that applies to poutama,; if a person is on Level 1 of knowing in a certain area and another is on Level 6 that person on level 6 has no greater mana than the one on Level 1, that mana is equal, they both have that special power which is the same. (Personal Communication Dick Grace, February 2007)

Dick spoke of his own lack of knowledge with computers. He described how his grandson (moko) was able to act as the older knowledgeable tuakana in the IT field.

Poutama is about where a person is in terms of their own growth. I am especially (aware) when it comes to things like computer skills, I know where I'm at and I know I've got a helluva long way to catch up with my moko, I know that. Also in that is the tuakana-teina, in terms of who has the knowledge or who hasn't. I will give you a good example of about five or six years ago one of our moko who was at college 'whaikairo - show me'. I said 'kei te tuakana - you are the elder', he looked at me and his face beamed 'oh yeah koro' he understood straight away exactly what I meant and that's tuakana - teina. I had no idea of computers. (Personal Communication Dick Grace)

Throughout this thesis are stories of Maori sharing their knowledge, skills and expertise in IT, this is a fundamental kaupapa of ako Maori, matauranga Maori, tikanga Maori and Te Ao Maori. I interpret achievement in these uniquely Maori realms as one important measure of success for Maori exemplified in the stories of these tauira Maori.

Success Is Dynamic

Changing throughout life a Maori concept of success is dynamic and understood in relation to each context of place and time. That the context influences understanding was explained to me by Max Cooper (Ngapuhi) when we discussed the difference between Maori and Pakeha when a question is asked from a Pakeha viewpoint and the correct answer is 'taken for granted'.

When you ask a person what colour the sky is, naturally they say blue. When you ask a Maori what colour the sky is they would need to know is it at night? During the day? Is it cloudy? Is it raining? Are the stars out, or can you not see them? Is it a full moon? What season is it? It's not about being particular, but you've got to take the holistic thing into consideration, and a lot of the questions asked in the academic world don't, they aren't specific enough. And that's where I think Maori think they are dumb when they are learning because they think 'Oh my god I don't know what they are talking about'. When they answer and are given the time to be told why they didn't get it right, they turn around and say 'well I knew that but that's not what the question asked'. For whatever reasons in the academic world we ask around the question, we don't ask the question, so that's where we struggle as Maori, defining the real question. (Max, 32)

I confronted the fact of my own 'thinking like a Pakeha' when I had asked all of the tauira Maori directly what they thought success is. Several thought the question was too difficult to answer, 'That's a toughie. I have no idea; I don't know how to answer that'. I came to understand I had provided no

context for the question. I realised the Pakeha measure of 'success as qualification completion' was not foremost in their minds. When I pointed out that others had identified them as successful in completion of their IT degrees and courses, most demonstrated humility unwilling to position themselves as successful or be whakahihi, boastful of their own achievements. To overcome their understandable hesitation I went on to ask what success means generally or what in their experience other successful people are like?

The way that they do their job, the way that they explain things to you, the way that they are completing the job and that person is satisfied for what that persons' done. That person is good at talking, that person has a way about themselves where they express themselves well. (Maxine, 27)

Able to speak about a third person many highlighted qualities they saw other successful people have. To point out that these same qualities can be attributed to these tauira Maori is evident in their words and actions reported in this thesis, but not necessarily the way they would represent themselves.

I found that a Maori view of success is holistic, with multiple elements to be considered at the same time, as represented with the poutama. For Harmen success came in 'varying degrees of life' meaning perhaps that the emphasis of what success is changes over time and with contexts. However like all of these tauira Maori, whanau is a foremost consideration.

I see success as varying degrees of life, which is success within families, success within your workplace. You could say money's one of them, but that's not high on my list. Family is probably one of the highest, and study would probably be second on my list, then after that work satisfaction. (Harmen, 26)

Harmen' words can also be interpreted as that people can be on many levels in the different aspects of their life simultaneously. Achievement in one discipline or area does not equate to success in all of them. As I show in the final chapter, Poutama o Te Ao Hou can represent this multi-levelled reality with ease.

Completing What You Start

As evidenced by the many different viewpoints here, Cheryl pointed out that people have different perceptions of success. The completion of her

courses signified success to her, not as a qualification but as proof that she could complete something.

For all of us we have our different perceptions of success but for me to accomplish this course is my success...for me to complete anything is a success. I'm one of those procrastinators that don't normally complete things. (Cheryl, 40)

The imposed Pakeha construct that completing an IT qualification is a form of success came from the way I had framed my questions. Some of the graduates conceded that completing their own degree could be seen as successful, others doubted it. Generally other signifiers of success were more important and valued by all the tauira Maori.

'Being Everything That You Can Be'

NorthTec graduate Ria saw success as subjective and essentially it was to reach her full potential to be everything that she can be. This echoes a Maori viewpoint that each individual will express their uniqueness in the values they hold and the way they live their lives (Boyd, 2009 in press; Marsden and Royal, 2003; H. Mead, 2003; Shirres, 1997). Others did not see Ria as a success when she had chosen to go into manual work in spite of a prior degree.

Success is quite a subjective thing. Like I know after I finished my first degree, and I finished my first job and went into manual work, a lot of people thought that I wasted my life and wasted my opportunities... My idea of success is really reaching my full potential and being as much as I can be... some people the best they can be is be a ditch digger, and that's their lot in life, and they are happy with it. And if you are happy with it, you know that's really the main thing...Whereas other people work all their life and get money, money, money and it's never enough because success isn't money. It's... just really being everything that you can be. (Ria, 29)

Humility -'I am but I'm not'

Sonya was one graduate who expressed that while holding a degree makes her successful she demonstrated humility and spoke of her goal as a career that used her IT skills and so she was not successful.

Success I don't know. For me its being comfortable, for them like to have a good job to support their families is what success means to me. I'm not successful, I am but I'm not. I'm not successful. Probably because I've got a degree that's why I'm successful, but career wise not really. I don't have a lot of experience so I'm not successful. But the part of me that's successful is because I've achieved something, I've got kids. That's a hard question. (Sonya, 22)

On reflection, and due to give birth to her second child within days of our interview, Sonya saw that having children was her achievement, a value strongly upheld in Te Ao Maori and evidenced in the stories of some shared here.

Added IT Knowledge

My thesis positions the tauira Maori with knowledge that is part of their cultural capital before they enter their IT studies. For Maryanne success was to complete her degree and come out with added knowledge. However like some of her fellow graduates she felt she was not a success because she did not know enough.

For me success is when I studied for the degree it's to get to the end to complete your studies and come out of it with added knowledge ... I noticed that with my degree I didn't feel like I'd retained as much as I should have. You didn't feel as though you knew as much as you should, in some ways although I accomplished it in some ways it wasn't a success because I don't feel that I came out knowing enough. It's a common thing, like 70-80% of students who graduated with me say the same thing, and yet when I talk to them, they know a lot. (Maryanne, 43)

Maryanne was not the only respondent who could see that their peers were more knowledgeable than themselves. Most demonstrated the hunger to know more that leads Maori on to further advanced level learning and studies as discussed below.

'That Little Bit Of Paper'

I represented the IT qualifications as a 'tohu' to the tauira Maori and asked what it meant to them to have achieved it. Several spoke of their qualification as a 'bit of paper' and for the recent graduates this was a signpost of their success with their studies.

That I got to the end of the tunnel. I see the light and I'm still walking...and you have that little bit of paper and that's all you need for success right now. (Ang, 29)

My interpretation of what the qualifications signify for all of the graduates is their mastery of IT skills and knowledge at degree level, recognised both nationally and internationally. Of equal significance is evidence of their ability to study in a tertiary environment. What the graduates eventually did with their 'little bit of paper' is shown in the Postscript that follows.

‘Work Life Balance’

One challenge for Maori studying for IT qualifications is the cost in both money and time lost to their whanau as discussed in my previous chapter. A strong thread arising from analysis of all of the stories is the drive to balance the priorities of home life and work. Several had already achieved this and considered it a major signifier of success. Already in employment as a Coordinator and Tutor of Community Computing courses, EIT graduate Tania saw that although her work was not highly paid she was delighted in the life balance she had achieved with enough time to ‘give back’ to her son.

I tell you what I don't get paid high money here, so moneys got nothing to do with what I mean... but this job I'm doing now gives me a life balance. I feel that I've taken enough from my son, I've done my study, now I'm giving back to him because there were times that I needed to spend time with him and I didn't through study but I have a life balance here now. (Tania, 40)

For Mei-Ana, qualified and working alongside Tania, her future plans for work hinged on her availability for her children.

Where Tania and I are at in our jobs we flit between management and tutoring. With EIT you can't do both, they have Academic Staff or Allied as Management. I've come to the decision I want to go to Management. I have the EIT Certificate in Adult Education and at the same time I can flit in between. I'm heading more to management and it's because of the flexibility of it for my children. I can structure the classes and they have to fit in with me. Everything I'm trying to do at this stage is for my children. (Mei-Ana, 32)

Although a work-life balance is also valued in Te Ao Pakeha, I argue that the top priority of whanau above all else in Te Ao Maori is central to understanding Maori views of success.

Achieving Personal Goals

Success was seen as achieving their own personal goals by all of these tauira Maori.

I think success is making yourself goals and then accomplishing them, definitely. Everyone has got to have goals, something to stride (sic) to get. (Sharon, 29)

Maxine was philosophical about the pattern of failures of her past that changed with her perseverance or stickability to complete her IT degree.

I think because I'd had my time of wasting money, I'd had my time of falling out of things and I didn't want to do that again... I didn't want to do what I had done, I had failed in the past and I don't want to fail. You can fail in life but you have got to keep going at it until it's completely finished or until you are satisfied. I might not be satisfied I might want to keep studying. (Maxine, 27)

Juliana was looking forward to full time employment that would take her off income support from the government and give her new freedom and control in her life

In terms of study I suppose realising my goal of my degree was my success. On top of that was doing it well and getting good marks. In life I suppose there is that financial side of it, not having that burden. I suppose just having the options to do what you want, how you want to do it instead of being dictated by some outside like an agency. Be free to do what you want and how you want to do it. (Juliana, 29)

In this sense, IT qualifications and greater employability contributes to new freedom for these Maori graduates.

Future Goals and Aspirations

Seeking indications of their longer term future plans I had asked 'What are your goals, plans, dreams or aspirations for the future?' Ang having secured an IT job was dreaming of becoming a fully qualified technician

The only real dreams that I have is to get all the qualifications that I need to have say after my name Angela Joy Cassidy Ellis, Technician. (Ang, 29)

At the time of our interview Ang had (BAppIS) after her name and intended to continue learning and gaining technical IT qualifications.

Knowledge acquired by these taurira Maori in their IT degrees and courses was valued in particular for the skills and expertise of use in their future work and careers. For Wiremu graduating and achieving 'straight A's and Merit passes' in his third year signalled success. Achieving a good job that used his IT qualifications made him 'quite successful'.

I wanted to graduate, that's one measure of success, to get through. Then I set myself that I wanted to get straight A's for the third year, which I achieved, and Merit passes... Then really to get a job and get paid reasonably well, I achieved that with Te Puni Kokiri. I think I've been quite successful in what I've wanted to achieve to date, getting through the tertiary and getting a job that uses the qualification. (Wiremu, 26)

Job Search

All of the tauira Maori had plans to get or keep a job, ideally using their IT knowledge and qualifications and this would be one form of success to them. Their employment market is global, for example as far as London in Maxine's plan.

I'm going to London at the end of this year with a friend for about six weeks and in that period of time I'll be looking for a job. If I don't find the job in that 6 weeks I'll come back to NZ. If I do I'm looking at the work permits to work in London for two years then come back to NZ and work here and hopefully retire, and more education. (Maxine, 27)

Other tauira Maori used the internet to search for jobs throughout Aotearoa/New Zealand, and they spoke of this as a taken for granted tool and process to use. For Colleen, prospects in her home town of Kaikohe were for manual, seasonal work, so she relocated her whanau into Whangarei to study for the IT degree and was prepared to relocate again for work in the industry found through the internet. Her hope was to return home to work eventually.

The next step after my degree is get a good job then I'll be happier. Or even start my own business, hopefully one day work from home, go home and work. What I do is just search on the Internet like Seek IT, they have jobs there and I keep track of that... I don't mind moving out of Whangarei to do whatever. (Colleen, 34)

With virtually Aotearoa/New Zealand wide broadband internet services promised by current government policies, the home and the workplace can be the same site, particularly for IT entrepreneurs and experts. For Maori who have more time in the heart of their whanau, the rewards are obvious. The potentials this offers for Maori requires more research.

'Get a Bit of Experience'

All of the graduates were aware of the need to gain industry experience, and faced the challenge to get a job using their knowledge and skills so they could develop that experience. At the time of our interview, EIT graduate Sonya worked as an Administrator/Personal Assistant in the Maori Women's Welfare League in Napier and spoke of the challenge to get experience in the IT workplace.

I'm looking for experience, it's quite difficult to go out and get one from a newspaper you send in your CV and they say sorry you haven't got enough experience. How are you supposed to get the experience if they won't let you do it with them? So it's hard. There are no IT jobs around here that I've seen; I've been to www.seek.co.nz all the jobs are in Auckland Wellington and Christchurch. I don't really want to move, I'm quite happy where I am. (Sonya, 22)

Max thought successful people in the IT industry had both practical abilities and experience and qualifications were a bonus.

So success is about having the practical ability and experience; and that the qualification the bit of paper is actually the cherry on top. I suppose industries are recognising that, because it's people with experience and not necessarily quals, however you can't beat having them both, if you have got them both you are home and hosed. (Max, 32)

I argued in chapter 5 that links between graduates and their potential employers are tenuous, evidenced by the stories of the tauira Maori almost all of whom secured work from their own initiatives. Developing confidence to do this in the Pakeha world of work was one of the skills applied from their confidence enhanced during their IT studies in the ITPs.

'The Different Languages'

For Maxine aiming for a job as a programmer in web applications using her knowledge of five 'IT languages', she wryly noted that she was yet to master te reo, our Maori language, and included it in her future learning plans.

As my profession what I wanted to do since I started was to be a Programmer, to learn more about the different languages in IT, so far there's four and going onto five. But then again I haven't even learnt my own lingo, my own te reo so probably that's one of the things I would like to do as well. Also to be a Programmer: Web Application Development. (Maxine, 27)

Staff at the three ITPs spoke of noticing a pattern of Maori graduates 'coming back', picking up te reo and tikanga Maori courses and 'going on to learn more about themselves'. It could be argued that learning te reo Maori and speaking it is one measure of success, particularly in Te Ao Maori.

Completing an early prototype for computer generated tukutuku patterns during her Bachelor degree studies Jo was determined to write a full application.

The project I did draws tukutuku patterns with a computer, that's been my thing for years I just never had the time to do it. So we did that prototype and I'm determined to write an application, a full one, that does it properly.

I get a bit scared that I'll never do it but I was scared before that I'd never start it, at least I've started it now. (Jo, 46)

'You Just Keep on Learning and Learning'

In my discussion about the poutama with Dick Grace, who is Jo's father, I learnt more of the poutama from the booklet, about Te Heke Mai Raro, the wharenui at Hongoeka Bay; 'the steps of the design indicate acquisition of knowledge at different levels throughout life and also represents the many levels of knowledge that exist.

Yes and it doesn't end, you might be successful at one level but there is another level above that and above that. I've heard people say that when you reach old age you have reached the taumata, but then you go into the spiritual world and again you go through the same process. A wairua, spiritual, for me that's what poutama is about. (Dick Grace. Personal communication 2007)

The traditional value of ongoing learning, encapsulated in the learning poutama was expressed by many of the tauira Maori. Mei-Ana who wanted to succeed further envisioned her goals for learning that would take her beyond a PhD and will be perpetual in her life.

I've got goals in my life and I don't think I've succeeded to the stage I want to go. I still want to reach your level [PhD] even then I don't think I'll be stopping there, you can't just stop learning, you just keep on learning and learning. (Mei-Ana, 32)

Both Dick and Mei-Ana give a very clear articulation of what the poutama is in contemporary times. There is room for research that goes deeper and higher into knowledge about the poutama, and their thoughts give a glimpse of the potentials this may hold.

Further Aspirations

Max had returned to the far North and had a goal based on her own observations as a Community Computing Tutor for NorthTec to create an IT learning centre based on a holistic whanau approach.

I would like to provide initially a holiday programme here in the North where I have families come in over one week in the holidays, where I am working with the parents, those interested in up skilling in the computing industry, while we run the holiday programmes for the kids. But I'd like to see it merged with tikanga as well, because when they first walk into the classroom, the first thing they will do is not sit down at a computer. They need to do the "cuppa tea" thing... saying lets get to know what stumped your learning growth from the last time you were here, how to overcome it, and the fact you might have just had a run in with your partner and you've still got that on you, and lets get that out and clear it so we can open out for enjoyment of the learning. (Max, 32)

Rebecca had aspirations to 'enlighten people' especially Maori 'to the world of learning'.

What I want to do now is either use the skills and knowledge that I have got in ICT or the Commerce sector, and to teach that knowledge to others or just to enlighten people to the world of learning. That's probably my biggest thing, especially Maori communities that it is OK. I just wanna create the desire to learn that's all. I want to show people that it's OK and it's cool to learn. (Rebecca, 29)

She raised two important points, that the IT industry is volatile and changes rapidly, and that her core values, from Te Ao Maori manaakitanga and tautoko, here helping and supporting others, do not change.

Helping people... is part of my morals and my values... that always tell me to help others...I do think in 10 years time my industry may have changed, my environment may have changed, but I do definitely see myself still helping others...If I saw a 16 year old that I knew needed a hand and I knew there was somewhere to help them solve their problem I could not walk away until I had done that. (Rebecca, 29)

Maryanne had a dream to complete a PhD and to act as a role model, encouraging younger people to keep on with their learning into higher levels of study.

In my mind I'm thinking of PhD, but I think like you were saying about role models there needs to be more of us, and if I can encourage those coming after me to not just stop there. (Maryanne, 43)

I position all of the tauira Maori who are IT graduates as poutama, inspirational role models in their own right for their whanau, hapu, iwi and our nation.

Success is Relational

In chapter 3, I highlighted poutama as a metaphor for success that is meaningful in both Te Ao Maori and Te Ao Pakeha. On another level poutama represents whakapapa, the conceptualisation of how individuals and groups are related to each other. For these tauira Maori their own success with qualifications was understood as a shared achievement, in relation to their whanau, hapu and iwi, and their relationships with peers, the ITPs and IT staff.

The excellent relationships Maori IT students had in the support of whanau is from their view a key factor in their success as discussed throughout my

thesis. Beyond studies Jo saw human relations as the thing that made people successful. Jo worked hard to complete her IT degree and was enjoying the balance in her life for which close family and friends were key.

I reckon human relations make people successful, and balance in life. If you are happy and you are comfortable and your family are close and you have good relationships with other people not just your family, you've got friends, I reckon that's success. (Jo, 46)

Many, like Colleen wanted to create a living that was comfortable for themselves and their families.

Success is just happiness really, living comfortably. Money does cause arguments, but just enough money to live comfortably will be good... giving what you can to your kids, who pretty much missed out most of their lives. (Colleen, 34)

As discussed in Chapter 8 many of the tauira Maori spoke of the support of their relationships with peers as critical to their own achievements in IT studies.

Having the support goes a long way, if you haven't got the support in class and out of class you are never going to make it. You have got to have really good support...Having those people around you really pushes you to keep going. That's just putting your head down, put your head down in the book and your butt up and go, just do it. (Cheryl, 40)

After graduation Rebecca had secured contract work with EIT and saw this as a huge achievement for herself, but she doubted the ITP would understand the impact this had on her whole family.

One of the big pinnacles for me with the financial stability to be offered a contract and a salaried position here at EIT opened up so many doors personally and as far as work goes my career opened many doors, but what it cemented for us as a family I don't think EIT will understand it's just they are too big to understand what they have done for little old mere me offering a contract, it's just huge, definitely a big achievement. (Rebecca, 29)

The question of the impacts on whanau when individual Maori achieve success, graduating and moving into IT related employment is an area of interest for more research.

Reciprocity

Another strong thread of the notion of relational success from tikanga Maori is utu or reciprocity, a form of giving back that is highly valued (G. Smith, 1992; H. Mead, 2005). Many of these tauira Maori had aspirations to return benefits of their own IT learning to enhance the lives of whanau, iwi and the nation. Contributing new knowledge and tools to the kete of knowledge is of benefit to the whole of Te Ao Maori, now and into the future.

For EIT graduate and Computer tutor Tania, her ongoing learning was professional development required of teachers in the ITPs that enabled her to improve her teaching IT to others.

I have to finish Diploma Adult Education for my professional development with EIT I just finished a paper, teaching young adults and I'm starting to get young adults here. I can think now I know how that theory goes in practical, it is helping my own teaching at Flaxmere. (Tania, 40)

Juliana had goals to keep learning in IT, to get a job to suit her and somehow get involved with teaching Maori about IT.

Get a job, pay the Student Loan off. I would just like to keep learning things in the industry. ... I'd like to also get involved with teaching Maori about IT, that's one thing I've always had in the back of my mind, once I've got where I want to I want to put it back into the Maori communities specifically...I hope it would be Te Wananga o Raukawa that would be [teaching in Otaki]. (Juliana, 29)

Continuing with her development of the tukutuku patterns prototype is a priority for Jo who described its potential for use as a way to teach Maths although how to fund that work was not yet clear to her.

Well for my whole future, the application stuff, write the application and it does tukutuku patterns and stuff, cut and paste and make your own patterns. Think about using that to create ones that do taaniko patterns, then think if you can write software that will let you decorate the inside of a house, have a panel here and a carving there. Then think about how you can use this to teach Maths to kids, because tukutuku is all Maths, and building a house is all Maths learning tools. That is the big dream because to do that you need to not have a job. You really need an income. (Jo, 46)

Advice for Potential IT Students

I asked each of the tauira Maori for their advice to Maori who are potential students of IT up to the degree. Most recommended that Maori recognise the value of having IT knowledge and skills. Several spoke of beginning with 'baby steps' in the level 1-3 courses; while being realistic and at the same

time 'giving it a go.' Juliana wanted to encourage all Maori to gain IT skills that are needed for any kind of work, and pointed out that to gain IT skills was not a waste of time.

I think IT is a necessary skill for any job really, even as a starting point. That may not be where they end up but it will certainly get you hungry for more. It's a necessary tool, you are not wasting your time, it's a good place to start I think. (Juliana, 29)

Sharon urged Maori to 'do it' and for those without experience to start with the lower level IT courses.

Do it, I'd definitely say do it. For school leavers maybe not go into 6th form, go and study for 3 years...The first year we thought it was hard, it was not easy. If you didn't pass the first time there is a re-sit it wasn't that stressful, it was basic stuff. For someone who hasn't had experience in that they should start lower. There's heaps [of courses] out there. (Sharon, 29)

Maryanne had similar advice for any young Pacific person wondering about computing and pointed to Foundation Level 1 and 2 courses as a way to get skills needed to complete a course.

Go for it!! But as well as that, you need to be realistic. Do they have the skills to go in there and cope with it? And if they don't you need to point them somewhere first to get the skills to be able to go in there and have a chance at completing it. They do have Foundation Courses, that's the important one. Once they have that...it was enough to get me through the first year [of the degree]. (Maryanne, 43)

Wiremu wanted everyone to give higher education a go and for those who are not sure whether IT is right for them, try an introductory level course first. He is advocating the step like approach to learning of the poutama.

I wouldn't have thought that I would come out [with an IT degree] then I see people that I haven't seen since I left school and I tell them what I'm doing and they are a little bit shocked. Everyone should give higher education a go ...It's not that difficult, you've just got to get in and give it a go, it's a big learning process but life is about learning and you've just got to take it a step at a time. Basically give it a go; it may not be for everybody. I reckon if you are struggling for direction or you are not sure if it is for you there are free courses that are run and they do give an introduction to see what will be covered. Definitely give them a go and by the end of it you'll probably have a good idea whether it's of interest or not. (Wiremu, 26)

How Maori can get to the end of a Degree

Maxine also wanted Maori interested in IT to 'give it a go' and gave her advice on how to keep on going with the help of others.

If they are definitely interested in IT give it a go. If you get through the first year and are proud of yourself, then keep going at it, don't turn back. It doesn't matter how hard it gets throughout those years; if family is putting you down or friends are in your face, shit happens to everybody, dramas

happen, but pretty much just keep going. If you like IT carry it on, get as much information as you can from anybody in the IT industry because you are going to need it. Stick with people who are very up there with the IT industry because that also helps you get through.

Ask as many question as you can, read as much as you can, fill that brain up as much as you can. If you don't understand it don't read it, get someone else to explain it to you, there's no point trying to read what you don't understand. ...Get as much support and as much information as you can from each other and to learn from each other because that's very important too. (Maxine, 27)

An important point is the relational process that leads to success, like Sharon, Tania and Sonya both advised the way to get to the end of their studies was through the support of study buddies, or a study group, and to do the work.

The trick is to get good friends in a study group around you. Surround you with people who are going to succeed, who are going to pass, who are hard working. To me I had a good group. Being older, a mature student was a bit different too. It's the young ones, influenced by their peer groups, it's just getting the right peer group that helps, it's just doing the work to tell the truth... You can't do it on your own, you've got to do it with someone else, buddy up with someone. (Tania, 40)

Just stick at it, go hard. I suppose its diligence, you've just got to keep at it and work hard. Partner up with someone, a study buddy. (Sonya, 22)

Mei-Ana challenged the stereotype of dumb Maori convinced that we can do it, and that we have tutors there to help.

They are not [dumb] honestly. It's more convincing that they can do it. They say 'oh no you need brains', but it's not brains, you just have to do the work. If you can read and write you will be fine. Have more understanding of what is actually given to you, and that's where you've got your tutors to help you. (Mei-Ana, 32)

Sharon was certain that Maori students can have faith that they can better themselves and accomplish their degree.

Really, having faith that they can better themselves and knowing that one day they are going to look back and see that they have accomplished something really great and it is a really awesome feeling. (Sharon, 29)

Advice for IT Teachers

I proposed to the tauira Maori a scenario of 'this un-faced unnamed tutor who is in front of a degree level course and they've got a class with Maori students in it. Do you have any tips for them, how to go about supporting

their students to achieve?’ Mei-Ana, tutoring IT herself advised IT degree tutors to speak simply and in laymen’s terms and for students to work and ask questions.

I found in general with those tutors they need to speak in laymen’s terms, they tend to speak off in their technical world and it doesn’t have to be that technical... It goes back to the learners. When you are doing a degree you have to do your own research as well, its work, they’ve gotta do the work too, specially at that level. I remember the questions I asked in class they were always simple; I thought I was the only one in the lecture theatre who didn’t know. In fact no one else knew as well, but no-one would say anything. I’m one of the ones on the ‘tutor list’ she’s gonna ask questions. I want them to break out of being quiet and ask questions. (Mei-Ana, 32)

Sharon urged the IT staff to help Maori students in the class by informing them of the support available to them, and urge staff to ‘learn up on all that’ to understand their Maori students.

Let them know what kind of support is out there for them, I don’t think that ours really told us that much. At the beginning and at orientation, the Maori staff would come in and explain stuff. But let them know what support is out there for them. When they are not Maori they don’t really seem to understand. Maybe they should learn up on all that. (Sharon, 29)

In another example wanting non-Maori staff to understand one of the most important relationships for Maori, Ang wanted all IT staff to know that each of the Maori students in front of them has a whanau behind them.

The one thing that I would say is to realise that you’re not teaching just that person. Somebody ages ago told me ...to always remember you walk in a triangle, I was like ‘what does that mean?’ There’s you at the front, your parents are behind you, behind them are your siblings, behind them are your aunties and uncles, your cousins your nieces, your nephews, your hapu. Always remember you walk within a triangle. OK so the person in front of the class always needs to bear in mind that student in front of them has whanau behind them. (Ang, 29)

That whanau are central to taurira Maori realities and successes is essentially the most important knowledge to have been highlighted in my research.

Advice for Whanau

Wiremu had some ideas of what whanau can do to support their members to get into higher study by exploring options, being positive and being there to help the student if needed.

You can be pro-active and find out what other courses and other avenues are available. Just be positive really if they are talking about doing some study, just support them – just let them know people are there to help if they need it. (Wiremu, 26)

Understandably, whanau without IT knowledge and expertise cannot help students with technical aspects of degree studies, but they can support the learner with encouragement, as described by Colleen.

I'll be the only one in my family to get a degree if I pass it...It would have been good to have whanau to support you in what you are trying to learn, but because they don't know themselves aye although Mum's there and she wants to support me but she don't know how when it comes to all the technical stuff. But she's there going, 'yeah yeah, keep going, good on you'. (Colleen, 34)

Rebecca hoped by sharing her story with others they could be inspired to move from disadvantaged positions to where they would want to be. She was hugely appreciative of the work she had with EIT that enabled her to take to and collect her children from school each day.

I have lots of thoughts. I would just hope that my own experiences I can turn around and put that into a format that someone else can use as an aspiration. If I could do that for one person I'll be happy. I like to share my successes, which I haven't always done. I've never been in a position in my life to share successes because of the way we started out I always felt I was climbing the ladder from the bottom rung all the time and I thought for many years that I was disadvantaged... It's only in the last couple of years that I've thought no no I'm advantaged now, I'm 28, I have a Degree and 2 Diplomas, two children and a partner of 13 years and a salaried position. All of that come together very fast and I look and think I've done some good things. (Rebecca, 28)

Whakaaro, Thoughts

Towards the end of our interviews, I asked all of the tauira Maori for any last thoughts they had. They shared their advice about IT studies in the ITPs, how to get through degrees, advice for IT staff and for whanau.

'A Statistic of Good Things'

Rebecca described herself as a statistic because she 'was a teenage pregnancy'. Having graduated, she is 'a statistic of good things' and hoped others would understand that anybody can get qualified whatever their position in life.

I was a statistic that was doomed...I was a teenage pregnancy, we were teenage parents, statistically we were from a low socioeconomic area of the country with really high unemployment and not a lot of industry opportunities. I was very doomed. When I realised that, that was the day I got up out of bed thinking 'oh no I won't be' I maybe for now but I will be a statistic of good things.' (Rebecca, 29)

I would argue that all of the tauira Maori are part of the statistics of good things.

Colleen at NorthTec 'wished there was more Maori' in IT studies and understood that, without access to the technology, why many Maori were not there. The computer won in a cheese competition was the chance that led her into IT.

I suppose you've got to love computers to succeed in this degree, I suppose it's not for everyone, but I don't know, I wish there was more Maoris. I don't know why they don't know. I know people who don't have computers, they don't have enough for telephone bills to get the Internet and that's half the reason why they are not. It's only by chance that we won a computer that got me started, or else I would probably not be here today. (Colleen, 34)

Understanding ways to get more Maori aware of and involved in IT learning is one aim of my research, discussed more fully in the conclusion chapter.

'Maori Ways with IT Ways'

Ria spoke eloquently about the change needed to reconcile what she called 'Maori ways with IT ways'.

I think it will be an interesting study Maori in IT because it's definitely the way of the future. There may be some difficulties though reconciling the Maori ways with IT ways, and how you can use IT in a Maori way, ... in my opinion there is going to need to be some kind of change, probably on the Maori part to make a sort of a new way rather than stick to the old ways, which are good, but try and somehow bring the old way into the new way. That's a problem that no-one's got an answer for it... It's all new stuff so we are stuck between leaving the old people behind now and having a new way... (Ria, 29)

I show in my thesis that some Maori are able to bridge the two different ways, where 'Maori ways' such as tuakana-teina relationships, are being used to gain mastery in the 'IT ways'. At the core of this are the potentials of relationships between the many elements of the two worlds that I explore in the final chapter.

Conclusions

In the conceptual frame of the learning poutama, at one stage of our learning journey we become knowledgeable in the field of our pursuit. I position the 13 tauira Maori IT graduates as more knowledgeable in the field of IT beyond the level of most of the population of Aotearoa/New Zealand.

The graduates demonstrated that they have also mastered the skills and processes of tertiary studies and the disciplines required to complete a Level 7 degree. I used Te Taumata to represent achieving qualifications as a pinnacle that ironically is not necessarily regarded as such by these Maori or in Te Ao Maori. On reflection presenting Te Taumata as the pinnacle of the learning poutama, evidenced by graduation with a degree in IT is to limit the concept with a Pakeha interpretation.

A tension exists between two understandings of success in two heuristically separated worlds. Academic qualification does not equate to success or an increase in mana for Maori, whereas in Te Ao Pakeha, it is a direct signifier of success. For IT teachers, the ITPs, and throughout the tertiary system, completion of qualifications is success. The tauira Maori saw success subjectively based on their own values shared in common in Te Ao Maori, and most did not necessarily see themselves as successful because they had completed a degree. To position the tauira Maori as both knowledgeable and having achieved Te Taumata is imposed on them by this thesis.

Traditional wisdom held no concept of success that equates to our present day Pakeha dichotomy where Maori are too frequently showcased as failures. Traditional values from Te Ao Maori position whanau before all else and whanaungatanga, the establishment and nurturance of relationships between people for mutual benefit, underlies the stories from all of the tauira Maori. The significance of whanau in the successful completion of qualifications by Maori needs to be understood by all teaching professionals and institutions.

Success is dynamic, changing with contexts and over time and life stages, and understood in various ways by different people. What the tauira Maori considered to be success included achieving knowledge and skills related to jobs and they demonstrated their success with their abilities to undertake and complete tertiary studies. Achieving personal goals was universally regarded as success particularly as this enabled future goals and aspirations for their whole whanau. Upholding values from Te Ao Maori such as whanaungatanga, utu, tautoko and kotahitanga was regarded as success as was achieving a work-life balance.

Significantly these findings show that for some Maori success is relative and depends on how well they do in their relationships with whanau and friends, peers and employers, IT tutors and the ITP institutions. From a Maori viewpoint, built into these relationships is a measure of utu or reciprocity, the expectation and intention of giving back. About half of the taurira Maori were teaching or intending to teach IT to others, particularly other Maori. Throughout the stories is the tension for Maori between the individual learner, and the relational learner, and this difference requires further research.

The sharing of knowledge with others is fundamental to kaupapa Maori and taken for granted in Maturanga Maori, Ako Maori and tikanga Maori. In the context of Information Technologies I argue that these values and practices are the hope for Maori futures where knowledgeable IT graduates can lead our elders and whanau into confident use of the technologies and connection with the global world. The normalisation of remote connections to the workplace and to the world opens potentials for Maori and all other IT savvy New Zealanders. How Maori are placed to take advantage of these global realities through IT is a poorly researched area of interest.

Rather than a scenario for Maori digital futures that is 'not too flash' I positively image the existing potentials to increase Maori mastery and use of IT. As quipped by one of the guides of my doctoral studies, Te Taite Cooper 'it is time to take the Po out of Maori Potential' when Te Po is darkness or 'a state of confusion' (Cooper, 1999) and 'Maori Potential' is a current buzzword in education and Maori development policy. Increasingly technology is normalised in Maori whanau contexts, and will increase in use as an everyday tool. The potentials from the application of IT knowledge for Maori cultural purposes, such as Jo's tukutuku pattern programme, will be of immense significance in the continuation of our Maori cultural heritage. However there are benefits for a nationwide influence such as when Jo spoke of the potential of using her application to 'teach Maths to kids, because tukutuku is all Maths, and building a house is all Maths learning tools.' A resource for teaching Maths would also potentially have use for Maori knowledge integrated into Architectural, Design and Construction industries. Jo is creating an artefact that will mark a point in time when Maori are using technology to enhance and preserve our own cultural knowledge and capital. This requires greater research attention and

consideration of implications of e.g. global Intellectual Property and copyrights.

In the final chapter I present the conclusions of this research project and show how the tauira Maori as poutama in their own right have managed to succeed in their IT studies and simultaneously to uphold the values of Te Ao Maori. I show my own holistic interpretation of the poutama, its application for Maori learning in the ITPs and tertiary system and potentials for application in other fields, and recommend areas for further research. My thesis concludes with an update from all of the Maori IT students, graduates and tutors, in the Postscript.

Chapter 10 Te Ao Hou - The New World

Te Timata

My thesis interprets poutama as a metaphor for traditional Maori notions of success in a contemporary context. The 'pou' of poutama can represent an upright or upstanding pole, concept or person, and the process whereby knowledge or learning is fixed into mind. The 'tama' of poutama can represent a person with the responsibility to acquire and transmit knowledge into whanau, hapu and iwi Maori. In this way poutama is a person who stands as a role model or mentor and an inspiration to others. I maintain that each of the Maori who contributed to my research is a poutama in their own right.

While the tauira Maori at the heart of the narratives have been exceedingly successful in their chosen field of IT study, we do have to keep it real. Other students were not successful, but that is not the point. My research deliberately reverses the dominant discourse on educational failure to positively image Maori (Cooper, 1999; Foucault, 1984; Ransom, 1997). This change is needed to maximise the number of Maori achieving IT qualifications, entering the IT professions and to confidently lead more of us through the increasingly taken for granted IT knowledges in this 21st century digital world (Ministry of Economic Development, 2007).

I use a Kaupapa Maori methodology and report the overall thesis in terms of the poutama. Understanding that this is not the conventional way to conclude a thesis, I continue on to reflect on the research questions and my findings, and implications for application of the poutama beyond this research. I used two poutama images to portray two heuristically divided worlds of Te Ao Maori alongside Te Ao Pakeha. My research leads to the conclusion that Maori experience both worlds simultaneously and that complex combinations of elements contributed to their successes on many levels. My contention is that non-Maori have few ways to understand that reality, in part due to the lack of literature or information in the public domain on this issue. The poutama as a heuristic metaphor creates a new way for shared understandings. A Maori worldview can be understood as essentially holistic, multi-levelled and collective. Computer Graphic technology from Te Ao Pakeha enables these concepts to be portrayed visually as a poutama of the new world.

Fig. 10.1 Poutama o Te Ao Hou
Artist Brian Samuels

Throughout my thesis, I have used strands from the poutama of both worlds to illustrate my points. Poutama o Te Ao Hou shows the synthesis of these many elements as an integrated whole. It demonstrates a holistic Maori worldview that I use as a context for my research. I include a foldout of Te Ao Hou at the end of my thesis so it can be used as a guide by readers.

Conceptually, I integrated the two heuristically separated worlds by moving and reflecting elements from Poutama o Te Ao Pakeha into the realms of Te Ao Maori. This is the standpoint of my thesis; a Maori perspective using 'insurrected knowledge' of the poutama to illustrate my viewpoint (Foucault 1978, 1984). As an art work, the concepts, colours and strands of the poutama are open to interpretation by a viewer. In my written argument I attribute specific meanings to each strand to represent factors that I found important in the stories of the academic successes of these tauira Maori. Reality is complex with multiple views in both worlds and this is one interpretation.

Strands from Te Ao Maori

Papatuanuku - Earth Mother

*Waiporoporo/ Purple Wairuatanga Spirituality
Wairuatanga*

Ranginui - Sky Father

Hihi Katikati/Ultra- Violet

Papatuanuku the Earth Mother and Ranginui the Sky Father are the predetermined limits within which we can reliably speak of whakapapa (Cooper, 1999). Representing Wairuatanga, the spiritual realities of a Maori worldview, these elements are two cornerstones of my thesis. The light from these strands illuminates all other elements of the poutama. However, my purpose is not to explore these dimensions here, simply to emphasise their significance for many Maori, and alert others to this detail (Shirres, 1997; Marsden, 1992; Marsden & Royal, 2002).

Whenua - Land

Parauri / Brown of soil and living roots

The beginning of most whakapapa, and an anchor of Maori identity, parauri, represents te whenua, the land that is foundational to a Maori worldview. Drawn to represent the living nature of the land, whenua shows roots that are the foundations supporting other strands. I maintain that regardless of location in the world, Maori carry a fundamental connection with the whenua that is the basis of all other relationships that follow. (Clothier, 1993; A. Durie, 1997; Ka'ai, 2004; Karetu, 1979; Marsden & Henare 1992; H. Mead, 2003; Munro, 2004; Pere, 1991; Royal, 2003; G. Smith, 1997; Te Rito, 2007a; Walker 1989)

The three ITPs, firmly located within Te Ao Pakeha, have beneath them literally the whenua of tangata whenua, the local iwi. The legal title of ownership of the lands the ITPs are built on is predominantly in the hands of the Crown or Pakeha, but that does not alter the connection the people of the local iwi have with that whenua. It is the first of many layers of our identity as Maori and is an element overlooked by people with limited knowledge of Kaupapa Maori and a Maori worldview.

Identity as Maori begins with whakapapa to the land. I argue that maintenance of that link is one factor in the eventual academic successes of some Maori, as was the case in my research. I introduced three ITPs from their unique regional locations and later in the landscapes of the iwi who are tangata whenua of these areas. More work is needed before people, including staff of the ITPs and other tertiary institutions have understanding of this fundamental connection. My thesis alerts us to this detail.

Tangata - People

Whero/ red of blood with mauri (life force)

Of primary importance in a metaphor based on whakapapa is tangata. Where the red strand represents Maori people, imbued with the flash of mauri, the life force, shared by all living things. This strand identifies a cultural location of the learners, another strong element of Maori cultural capital. I looked for the relationships the tauira Maori had with their iwi and found that all had strong symbolic and, for many, lived and enduring connections. I learnt that cultural capital such as connection with iwi and strength of identity as Maori impacts positively on academic achievement in the non-Maori environments of the ITPs. I learnt of both symbolic and ongoing active connections with home marae and concluded that these hapu based locations could be used for promoting, if not delivering, learning and knowledge of Information Technologies.

Whanau - Family

Koiwi/ Bone of Humans

The image above shows clearly the folded harakeke that is the basis of all the strands in Poutama o Te Ao Maori. Koiwi is the bone of humans, inspired by Max who answered the question, 'where are you from?' with 'my bones are from Matawaia, South East of Kaikohe'. I used this strand to represent whanau, the family that is the fundamental group of Te Ao Maori (Makereti, 1938; Durie, 1998; Mead, 2003; Pere, 2001). The anchor of belonging to a Maori cultural location is transferred across generations through the whanau. Whanau are considered key to 'intergenerational transfer of knowledge, wealth and power' (Edwards, McCreanor, Moeweka-Barnes, 2007, p 13) and have a critical role to play in Maori development, education and well-being (Durie, 2004,2006), Positioned on foundations of wairuatanga, whenua and tangata, whanau is a core element in all of the stories of success from these tauira Maori. It is critically important to

understand the central contribution that whanau make to Maori students' eventual graduation.

Whanau are the bones of every story in my narrative, students are motivated to begin studies by whanau, and regardless of little knowledge of IT collectively, active practical support from whanau is attributed by almost all to have helped them gain tertiary IT qualifications. The probable benefits for whanau were a motivation for these tauira Maori to persevere with their studies and their future aspirations rest on the well-being and advancement of their whanau.

Ang wanted all IT staff to know that 'you're not teaching just that person.' because each of the Maori students 'walk in a triangle' with themselves at the front of the collective and extended whanau behind them. That whanau are central to tauira Maori realities and successes is essentially the most important knowledge to have been highlighted in my research.

Consideration is needed by tertiary institutions to their own relationships with Maori whanau, as both a concept and as the actual reality in the lives of many of their Maori students and staff. A collective publication of what institutions are already doing with whanau could generate a valuable benchmark and a resource for others to use. This could also lead to ways for more whanau to relate to the institutions as the hosts of their tamariki and mokopuna.

Te Timata - The First Step
Kowhai/Yellow

The native Kowhai tree blossoms in Spring in Aotearoa/New Zealand, and I used the yellow of kowhai to represent Te Timata, the first step of a learning poutama. I asked the tauira Maori about their earlier learning experiences that shaped their own view of themselves as learners, as they entered the ITPs. At this first step of their IT learning journeys, they are open to new learning and knowledge. For some taking small steps, beginning with lower level IT Certificates to develop as learners, and 'having a tutu', playing with

and exploring the technologies were important starts to their journeys towards IT degrees. Research points to success with secondary qualifications as a precursor to successful outcomes in tertiary education, however it cannot explain the three early school leavers who went on to graduate with IT degrees. I argue that it is a combination of foundational elements from Te Ao Maori that are the factors that matter for Maori learners.

A clear generational difference became apparent in the range of first contacts with computers; the younger people had experiences of computers at schools and in their homes, the start of the digital native generation of contemporary times, where information technologies are a common part of every day life. More mature people, now termed digital migrants in the vernacular, came to information technologies in tertiary studies, including IT or computing courses run by the ITPs, or in their workplaces. Exactly how the Maori population at large engage with and make use of IT in contemporary times is largely unknown, and a subject for future research attention.

Te Maramatanga - Enlightenment
Pounamu/Greenstone

Traditional Maori creation stories speak of a whakapapa that begins 'I te kore, ki te po, ki te ao marama' from the darkness to the night culminating in the world of light or enlightenment (Shirres, 1997; Royal, 1998). The stories of Tane-nui-a Rangi speak of how he ascended beyond this world to retrieve and return knowledge of use to the people, a beginning of enlightenment. Perhaps controversially, knowledge of a learning poutama places enlightenment as the second step of five and I represented it here as pounamu, the highly valued greenstone. Intrapersonal enlightenment for many of these tauira Maori began with a realisation about themselves and their desire to improve the future for their own whanau. This prompted the start of their IT studies and led on to decisions that changed their lives. Increasingly, their awareness of how little they knew as students was based on their growing understanding of how very much there is to know in the IT

field. These 'a ha' moments (Thunborg & Edstrom, 2008) fuelled the desire for many to complete their courses and to do this they first mastered the processes of learning and knowledge acquisition in their IT studies. I term the realisations and openness to new understandings as an example of enlightenment.

Kua Kaha, Kua Pakari, Kua Tino Matau - Strong, Capable and Confident
Mawhero/White – Red

Positively imaging tauira Maori as strong, capable, and confident is not wishful thinking. Kua Kaha, Kua Pakari, Kua Tino Matau is a representation of the tauira Maori based on the evidence of their stories. I coloured the third step of the learning poutama mawhero; that is a blend of white and red. I signal that Maori as tangata whenua, in red, are achieving in the Pakeha environment of the tertiary institutions, in white, and through the process grow in confidence and capabilities with IT.

Confidence increased when the tauira Maori overcame the difficulties and challenges of IT studies and 13 of this group of 17 hold IT degrees, proving they were confident enough to use all of the modes and skills of degree level learning. That they are academically capable as well as practically talented in the IT field, using skills of listening and speaking also valued in Te Ao Maori, is evidenced by their graduations.

When asked why they were successful with their IT qualifications all but one of the tauira Maori spoke of the support of their whanau. It is clear that the individual students were able to meet the prior commitments e.g. to their children, with the support of their whanau, and this contributed to their levels of confidence as they pursued their IT studies.

Kua Mohio - Knowledgeable
About Information Technology
Kikorangi / Blue.

Throughout this thesis are stories of Maori sharing their knowledge, skills and expertise in IT. The sharing is a fundamental kaupapa of ako Maori, matauranga Maori, tikanga Maori and Te Ao Maori. Pae arahi Tuahine Northover explained that in the sharing of knowledge the mana of both the person receiving the information, and the person delivering it is increased. I interpret sharing IT knowledge in Maori ways as one important measure of success for Maori exemplified in the stories of these tauira Maori. Importantly the aggregated increase in knowledge also enhances the mana of Maori collectively, although this factor requires a higher profile in the educational discourses.

In the conceptual frame of the learning poutama, at this stage of their learning journeys the tauira Maori become knowledgeable in the IT field. Represented with kikorangi, a blue strand, I position the graduates with levels of IT knowledge far beyond most of the population of Aotearoa/New Zealand (Ministry of Education, 2008). They have also mastered the skills and processes of tertiary studies and the disciplines required to complete a Level 7 degree.

The IT knowledge entering into whanau and Te Ao Maori offers potentials to expand on existing Maori connections. Examples of marae and iwi based websites enable remote connection through 'virtual iwi' and a way for more Maori to stay informed about issues affecting their own people. Communication technologies such as mobile phones and email were commonly mentioned in use by all but one of the whanau. Internet based phone calls connected whanau members from all over the world to their Aotearoa/New Zealand homes. The entry of IT knowledge into whanau through the tauira Maori takes it beyond the skills of simply fixing or upgrading hardware and software for other whanau members, it points a way for other whanau members to follow.

Some of the narratives tell of IT knowledges used to generate resources that are particularly valued in Te Ao Maori, such as Jo's computer programme to generate patterns for tukutuku panels, and Mei-Anna and Tania's DVDs that are resources about and for Kohanga Reo. With more knowledgeable individual Maori making use of IT skills and tools, potentials expand for development in the collective knowledge base of Te Ao Maori. For example the digital capture and archiving of contemporary knowledge that benefits the collectivities of whanau, hapu and iwi and creates legacies for future generations

The computer graphic images used to illustrate the theorising and contentions of my thesis were created in collaboration with artist Brian Samuels. With over 30 years of experience with Information Technologies his advanced knowledge and skill was applied to visualise the poutama. Open Source Software including GIMP and Blender, available free online, was used to generate CG images that will eventually be made available for download from the web. The images demonstrate one example of 'Maori Ways', being a worldview, 'with IT Ways', or advanced CG knowledge, as an actuality. The images show the dense, multi-levelled, multi-perspectives offered by the poutama metaphor. Under magnification it is possible to perceive the colour weave at the basis of each picture, a unifying element that is not visible unless pointed out. In an analogy of my doctoral work, what is required is a change in perspective to see what is already there.

Te Taumata - The Pinnacle
Completion of stages of learning
Tuauri/ Indigo with Matariki/ Pleiades

I used Te Taumata, an indigo strand, to represent achieving qualifications as a pinnacle that ironically was not necessarily regarded as such by these tauira Maori or in Te Ao Maori. I had limited Te Taumata as the pinnacle of the learning poutama with a Pakeha interpretation. For IT teachers, the ITPs, and throughout the tertiary system, completion of qualifications was regarded as success. While some Maori may agree that degree completion

is a success, the way to achieve that pinnacle is different in the worldviews of Te Ao Maori and Te Ao Pakeha.

Harmen spoke of people being on varying levels of success in the different arenas of life, and that achieving in one discipline or area does not equate to success in all of them. Many others pointed to success as subjective, based on individual perspectives, changing with contexts and over time and life stages. What these tauira Maori considered to be success was achievement of IT knowledge and skills related to jobs, achieving a work-life balance and achieving personal goals that enabled future goals and aspirations for their whole whanau. Upholding values from Te Ao Maori such as whanaungatanga, utu, tautoko and kotahitanga was regarded as success. The poutama metaphor can portray this multi-levelled, multi-arena reality with ease.

My research emphasises that for some Maori success is relative and depends on how well they do in their relationships others including whanau and friends, peers and employers, IT tutors and the ITPs or other educational institutions. From a Maori viewpoint, built into these relationships is a measure of reciprocity, the expectation and intention of giving back (Pullen, 2003). About half of my respondents were teaching or intending to teach IT to others, particularly other Maori. Throughout the stories is the tension for Maori between the individual learner, and the relational learner, and this difference requires further research.

Strands from Te Ao Pakeha

Implying an industrialised rigidity with textured coating of colours, the steps of Poutama o Te Ao Pakeha were designed to fit behind and complement the hues of the steps of Poutama o Te Ao Maori.

Relationships - The NZITPs and Tangata Whenua

Progressing from the bottom left of Poutama o Te Ao Hou the lowest blue strand represents the relationships between Maori and the ITPs. My

research begins to address the limited literature pool available on this subject. It is however an element requiring more research. From my perspective the fundamental relationship is between existing Maori staff, students and governors, and the rest of the institution. I showed that there is a marked separation of 'us here and them over there', a divide between Maori and non-Maori, and between perceptions about IT and Maori. I argue that a change is needed in the perceptions on both sides of the divides to enable ongoing success for Maori in IT studies.

Relationships between students

I explored further the learning relationships that are critical to Maori academic success, those developed between students in the ITPs, represented by the purple strand of Poutama o Te Ao Pakeha. My research found that all but one of the graduates had become part of informal study groups, forming tuakana-teina relationships with their peers (Pere, 1994). Contrary to other research findings (Hawke & Ah-Loo, 2002, Gavala & Flett, 2005), few had used the formal mentoring or support systems instituted by the ITPs. This suggests that more work is needed to understand how Maori create their own support in study, and to explore how this mediates the experiences for Maori learners in the ITPs.

Relationships between Students and Staff

Signalling the cultural locations of the institutions, a cerise strand represents relationships the tauira Maori had with staff in the ITPs. Given the default to non-Maori protocols, some of the tauira Maori spoke of difficulties asking direct questions of IT teachers while others had created relationships with IT staff and were prepared to ask questions to maximise their learning. From speaking with IT staff, I learnt that only the Maori teaching IT had deep understanding of Te Ao Maori. Ideally this can be changed, and my thesis offers one way to start to look at this element.

Almost all of the graduates had regular contact with Maori staff in the ITPs and spoke of the tautoko from these relationships. The role played by Maori staff in the ITPs and other tertiary institutions in the academic success of Maori is an element about which little is known. My research shows that this relationship is part of the learning journey that led to graduation for these tauira Maori. As such it is an important topic for further research.

Practices - IT Teaching and Learning

The brown step represents the practices of IT teaching and learning in the ITPs. I learnt that IT staff are the face of the greater tertiary system and the field of Information Technology to students. Most were not Maori, with little knowledge of Te Ao Maori and considered that IT knowledge was in a totally separate domain to Maori knowledge. My thesis argues differently. The tauira Maori accommodated the practically mono-cultural individual based worldview of their IT teachers, the IT domain and the ITP. They demonstrated mastery of IT content knowledge and almost half became IT tutors. Several of the tauira Maori were working, teaching IT courses at the time of our interviews but I had interviewed them as graduates to learn how they had completed their IT degrees.

Research with Maori teaching IT in Aotearoa/New Zealand at tertiary level will generate an exceedingly small sample, but I suggest there would be value in knowing how some Maori do get to these positions, to make a way for more to go the same way. The question of what difference it makes for Maori students to have a Maori teacher for IT studies has yet to be answered. I suggest it may be an important element for research aiming to make spaces for more Maori to pursue IT as a career.

New Zealand Qualifications Framework

The national framework of qualifications (NQF) in Aotearoa/New Zealand begins from Level 1 with Certificates and is structured in steps up to Level 10 Doctorates. The focus of my research was the IT Degree qualifications at Levels 5 to 7 where disproportionately few Maori are studying. There is scant literature from a Maori perspective about Maori in any field of degree studies in any of the tertiary institutions, and up to the end of 2007 nothing about Maori in IT in the ITPs. The stories of these tauira Maori show they started at the lower levels of IT studies and progressed in small steps to achieve their degrees. In fact most did not initially have achieving a degree as their goal; their studies were for other purposes. Selling IT packaged as degrees is unlikely to attract Maori or any people who are uncertain of their ability to learn and have little familiarity with IT. Promoting a stepped progression of learning recognised by qualifications at each level is a poutama model that is feasible in the existing structure of the NQF with examples from the graduates of these three ITPs.

The national standardisation of qualifications through the NQF enabled the sale and purchase of entire IT programmes between tertiary providers and these IT graduates studying at three separate ITPs completed almost the same programme. Variations were the emphasis placed on topics, such as programming or networking. With this high level of content similarity, it is possible for programmes countrywide to be more meaningfully linked.

Articulations of stepwise learning, based on qualifications nationally, rather than the individual ITP, could impact positively on learning outcomes nationwide. NZITP representing all but one of the ITPs in Aotearoa/New Zealand had yet to form an IT forum that could be a vehicle for this level of collaboration that in the end could benefit the students, the ITP and the nation. Equally an online Maori forum has could actively link the relatively few Maori working in the ITPs.

Policies - Tertiary Education System Structure and Strategies

A constant issue for Maori, as long as there has been a tertiary system in Aotearoa/New Zealand, is the marginalisation of Maori (Clothier, 1993; Corscadden, 2003; Matthews, 2001; McIntosh, 2006; L. Mead, 1996; Pihama, Smith, Taki & Lee, 2004; Selby, 1996; G. Smith, 1992, 1997). I represent this with a grey step. The structures that embody the strategies for the system are predominantly mono-cultural, this includes the ITPs. My example of removal of all reference to the Treaty of Waitangi in the 2007-2012 Education Strategy against the specific advice of Maori in a national consultation process is a prime example of this.

Maori are subject to a tertiary education discourse that emphasises disparities between Maori and other groups of the population (Chapple, Jeffries & Walker, 1997; Ministry of Education, 2007a; Scott & Smart, 2005). Statistics show that more Maori succeed by achieving tertiary qualifications than those who do not (Ministry of Education, 2008). My thesis reverses the negative discourse (Cooper, 1999; Foucault 1984, Ransom, 1997) to focus on examples of positive stories of Maori who have achieved academic qualifications in the IT field where numerically very few Maori venture. Maori are not yet represented proportionately in degree level studies and the impact is felt by individual Maori who are 'the only one' in the IT degree classrooms. I maintain that a different perspective, a Maori perspective, could alter that.

Education policy states that success for Maori in tertiary education is a success for the whole country. With the increasing proportion of tertiary students who are Maori caused by population aging over the coming decades, Maori success rates will impact more strongly on the national success rates. Statements of Maori tertiary education success have been diluted by inclusion in *Ka Hikitia, Managing for Success*, the strategy for Maori across all levels of education from pre-school to post-graduate (Ministry of Education, 2007f). My thesis shows a different approach to the question of success for Maori in tertiary studies. In part to acknowledge the different approaches Maori use for engagement with the tertiary institutions

(Phillips, 2003), and the methods they followed to achieve academic qualifications. The poutama yields a new way to think about this question, suggesting many elements that are important from a Maori worldview that need to be taken in to account.

Constraints
Financial, Time

My thesis is not a fairy tale with pretty pictures. It contains a narrative from the life stories of real people who faced the real challenges of undertaking tertiary level IT studies and the constraints of life as a student. A russet red strand represents the realities of major restraints that are experienced by most tertiary students, such as issues around finance. However for taura Maori there are other responsibilities, not necessarily well understood in Te Ao Pakeha.

Implications of financial support, such as the Student Allowance and Student Loans are couched in terms that relate to an individual learner. For Maori based in a collective such as whanau, the financial responsibilities impact on the family first. Only one taura spoke of resistance to her taking on studies when she could have better contributed to her family by going out to work. A resource that points out both the longer term responsibilities and the benefits of tertiary qualification for Maori whanau, hapu and iwi, could help inform more people about financial opportunities and obligations framed in a way that is directly applicable in their own lives.

With the scarcity of Maori content in the IT curriculum coupled with a 'common knowledge' that the two realms of Te Ao Maori and IT are separate, the challenge for many Maori is to adapt to the virtually mono-cultural ITP environment and assessment processes, to achieve IT qualifications. I have suggested a collation with informed consent, of Maori specific resources generated in IT projects and assignments in the ITPs and potentially the Universities and Wananga nationwide could very rapidly build a resource of interest and use in future developments of the curriculum and delivery of the degrees.

Commitments to whanau are prioritised ahead of all others for many Maori. IT staff spoke of this as an issue that interfered with Maori student attendance in class, the tauira Maori spoke of the stress caused by the competing demands on their time for whanau and their time for study. On reflection I question the need for pressure cooker situations that resulted in almost all of the tauira Maori reporting 'all-nighter' sessions ahead of assignment deadlines. It may be of value to consider delivery of courses on a schedule that is a better fit with the demands of whanau. Maori approaching Community Computing courses at times that fitted around their children, leaving class to collect children from school and returning to the computing course, was described by Ang at NorthTec. This kind of flexibility is an enabler of more Maori engaging in IT studies.

Beyond finance another question of 'costs' of tertiary studies relates to the time lost when Maori are no longer available to support whanau and hapu or marae based activities due to commitments to tertiary studies. This dimension is yet to be explored further.

Pathways

Global Knowledge Economy IT Employment Pathways

Increasingly, our awareness of the world is becoming a global one. Indisputably, Information Technologies offer the means to connect people planet wide, and creates opportunities for knowledge from Te Ao Maori to be shared more broadly. This strand represents pathways that are coloured with a muted yet hopeful yellow. Anomalies exist between the western style academy awarding qualifications deserved by individual endeavour and the potentials of a Maori and global collective approach to achieving goals. To assume that all Maori are interested to connect with others internationally is incorrect, although increasingly research and academic texts available online and a proliferation of Maori websites, offer possibilities to expand the opportunities for people worldwide to connect with our worldview, and our knowledge bases. I maintain that the skill set developed by Maori in a communal and holistic approach to life positively positions us

for global connection, and that mastery with Information Technologies is one way to facilitate that.

I found that the IT learning pathways taken by these tauira were not well lit, meaning that prior to engaging with their studies with the ITPs they had little information about IT as a subject, as a field of knowledge, or as a prospective employment option. It is highly probable that with more information about these pathways, more Maori would engage with IT studies. My thesis points to these poutama, the graduates who are role models in whanau for success with qualification completions and show the start of the path of learning for others. Obviously this effect need not be limited to the field of IT; it is equally applicable to the pursuit of all fields of knowledge.

Problematically, too few Maori are involved in the advisory panels that link IT programmes in the tertiary institutions with the industry. In fact, none of the three ITPs in my study had Maori representation on their advisory groups, and there was little likelihood of that changing in the near future. This limits the possibilities for Maori ways to be considered in the development of courses, and in the transition through to employment after graduation. It is an issue that deserves greater research attention. Ironically technology itself offers one way to introduce Maori concepts and representation into the IT arenas, as mentioned above a nationwide forum through NZITP could, with consent, share examples of work that had a Maori basis, to add Maori content to the IT curriculum.

Research

The final green strand of Poutama O Te Ao Hou represents my research, located as an element furthest removed from the realities of my research participants lives. By including the research strand inside the poutama I signal my subjectivity as a Kaupapa Maori researcher. My own research is subject to the requirements of the academy and the elements represented in Te Ao Pakeha. Equally my primary identification as Maori, as a member

of my own whanau, and as a kairangahau or Maori researcher means the elements depicted in Te Ao Maori are also significant in my own life and learning journey.

My research addresses issues that impact Maori. My approach is centred by Kaupapa Maori and my intention is that my work is of benefit for Maori. That these matters may be of little significance for non-Maori is not a major concern as that is simply a reversion to the status quo. However the purpose of my work is to argue for change, by adopting a new perspective of Te Ao Hou – The New World that is a Kaupapa Maori and poutama based positively imaged representation of contemporary times.

Throughout my thesis, I have indicated issues that are of concern to Maori that require further research, with potentials to generate resources that could assist more Maori to achieve IT qualifications. In chapter 1, I questioned how well a Maori worldview and cultural values are understood or accommodated in tertiary education. It appears from my research that outside of the Maori staff in these ITPs there was little understanding, and within the IT qualifications there is a dearth of Maori content.

Stretching over a hundred years, the archives are relatively silent when it comes to literature and research about the Maori experiences of the ITPs. In chapter 4, I stated my research aimed to address this present dearth of information. Also, there is to date only a small amount of research based literature relevant to Kaupapa Maori methodology or Maori in the broader tertiary education system. Research that specifically collated and reviewed the research and literature about Maori in the broader tertiary system could generate a benchmark resource that would also identify specific knowledge gaps and identify issues for further research. As a Kaupapa Maori researcher I am interested to see a re-think on how values and practices from Kaupapa Maori and Te Ao Maori could be implemented in tertiary institutions, in part through conscientisation prompted by Maori voices from those contexts.

The cycle of IT studies uptake was at its lowest ebb at the start of my field research in 2006 when Aotearoa/New Zealand enjoyed one of the lowest unemployment rates in a decade. However by 2009, with unemployment rates sky rocketing, an exponential increase in technologies and an ongoing

urgent global shortage of IT expertise, the cycle has begun to climb and enrolments increase. I argued in chapter 5 that new pathways for Maori to engage in IT studies could be discovered by research into our present uptake of IT nationally and the pathways taken by those who have succeeded in IT studies.

More research is needed into how Maori take the pathways into IT that for many begins at the interface between the ITPs and Secondary schools, and also the pathways between the tertiary providers that offer Levels 1-4 courses in computing and IT, with the ITPs, Wananga and the universities offering IT degrees. While acknowledging that some ITPs articulate the IT learning pathways within their own institution, an outline, perhaps in the form of a poutama, of all the possible pathways that Maori, and others, throughout the country could take into IT would be a valuable resource.

My research demonstrates the issue of disproportionately few Maori teaching IT in Aotearoa/New Zealand at tertiary level. I suggested research into how some Maori do get to these positions, to identify a way for more to go the same way. On another level, the question of what difference it makes for Maori students to have a Maori teacher for IT, or any field of tertiary studies also requires research. On a broader level a further question about how the Maori population nationally engage with and make use of IT is largely unknown beyond measures of Internet connections and qualification completions.

Of equal concern is the level to which Maori are represented on IT programme advisory groups, and the implications of the lack of Maori input to upgrade and development of IT courses, and in the pathways that cover transition to employment in the industry. As signalled above, this is an issue that requires attention.

In chapter 6, I used four strands from Poutama o Te Ao Maori; spirituality, land, people and whanau, to represent some of the 'cultural capital' tauira Maori take with them into the ITPs. In my research I found that outside of Maori staff and the tauira Maori themselves, little attention is given to it. I suggest that strong cultural capital is a significant factor in the eventual academic qualification of these learners and as such requires research.

Te whenua, the land, and te tangata, the people, are at the foundations of Maori worldviews and important contexts to understand the experiences of those who are Maori. Our connections with hapu or sub-tribes come from both specific lines of descent and the group of whanau who centre on local lands and marae as the hub. Connections with hapu and iwi revealed that all of these tauira Maori held a strong sense of belonging and identity as Maori. The land, the tribe, the hapu, the marae and the whanau are essential elements of Maori identity and our cultural capital. With almost all the tauira Maori linked with a home marae, they seem the ideal places for the promotion of tertiary education or IT studies.

Through the worldwide web the 'virtual iwi' or 'virtual marae' can reconnect Maori with their iwi and hapu identities and with whanau. While most of these tauira Maori lived in nuclear families, almost all were linked with their broader whanau and hapu. The importance of whanau to academic success for Maori is one thread of interest. Whanau is a concept that pervades all of Te Ao Maori, and is experienced in a myriad of forms. (Makereti 1938; Metge, 1995, Ministry of Social Development, 2006) Whanau featured significantly in the anecdotes of motivations to enter IT studies, in the supports that helped them get through, and also in further aspirations.

Contributions

Adding Maori voices to the 'silences of the archives' (Gandhi, 1998) my research aimed to understand why and how it is that some Maori in the Aotearoa/New Zealand ITPs were successful in IT degree studies against a standard story of educational disparities. I was looking for the important elements that are key to Maori succeeding in IT Degrees. I argue that it is the combination of foundational elements from Te Ao Maori of identity and belonging, whanau and Maori ways of learning are the factors that matter for Maori and that sets them apart from all other learners.

Building upon these foundations, relationships with others, and support from peers, tuakana and teina, IT tutors and Maori staff of the ITPs were important. Individually their own hard work, time management skills and commitment to studies, along with a work ethic to achieve goals and a determination to finish what they had started were commonly mentioned.

Practically all of the Maori researchers mentioned in the body of this thesis argued for a Maori viewpoint about our experiences in all domains such as legislation and policies, health and education. My research revealed that Maori have understandings of success based on a collective and holistic viewpoint that differs from Western knowledge based on individuals. These tauira Maori are living in two worlds and mentioned values from both. For them, success was seen as dynamic, changing with contexts and over time and life stages. What they considered to be success included achieving knowledge and skills related or leading to employment as was achieving a work-life balance. Achieving personal goals was universally regarded as success as this enabled future goals and aspirations for their whole whanau. Upholding values from Te Ao Maori such as whanaungatanga, utu, tautoko and kotahitanga was universally regarded as success

Adding to the small pool of literature about Maori in Aotearoa/New Zealand tertiary institutions, my thesis also develops Kaupapa Maori research praxis to include nga pae arahi, the guides, who were my early links that enabled engagement with tangata whenua. Demonstrating the central importance of relationships in Te Ao Maori I nurtured these across five years from first meetings face to face and periodic updates through e-panui or newsletters to all of the contributors and supporters of my research. Information Technologies offer new potentials for research praxis to include participants at all stages of the process and CG images demonstrate IT use to holistically portray complex, multi-dimensioned information directly.

Applications of Poutama o Te Ao Hou

I use the poutama heuristically to first separate and scrutinise, the two worlds of Te Ao Maori and Te Ao Pakeha, then re-integrate them into Poutama o Te Ao Hou. In my thesis I used it to structure the research and analyse the narratives of 17 Maori who studied IT in the ITPs with a focus on why 13 of them had graduated with IT degrees. However, the metaphor holds potential for broader applications.

Considering poutama as whakapapa, it is a framework that can be applied in different contexts and in different areas. While created to reflect the foundational realities of a Maori worldview, the elements can also be applied as a critical framework for the concerns of other indigenous people or

interest groups. In this example, the first four foundational steps from Te Ao Maori reflect the spiritual realities, the importance of belonging and shared values placed on the land the people and the whanau. These steps also represent the origins and identity of the people concerned. Using a broader genealogy after Foucault, these elements could be altered to represent other foundational or historical factors that apply in a given situation.

From Te Ao Pakeha, the first three strands have a focus on relationships, in application this could be between key areas, groups or issues. I used the next three strands to represent teaching practices, the National Qualifications Framework and Educational policies. These could equally apply to considerations of practices, structures, legislation and policies in other fields. While I chose to positively image the tauira Maori in my research, the next two strands in Te Ao Pakeha the realities of challenges and constraints and existing systems and pathways are also important factors in this analysis. By application any factors of a given field could be attributed to these strands.

In the preface to my thesis, Tuahine Northover points out that the five steps of the learning poutama can be applied in many fields. First in summary of my use of these steps that are embedded in Poutama o Te Ao Maori, I show multiple factors are impacting on the learners. In the first step the tauira Maori were at a point in their learning journeys, where they are open to new learning. At a second step of enlightenment they have reached new understandings and realisations and openness to new understandings. With strong support from whanau the tauira Maori were confident in their learning to be students, and learning in the IT field. Over time they become knowledgeable about IT and all of them shared their IT knowledge with others. Te Taumata is the pinnacle, and for this thesis it is achievement of IT qualifications.

By application, the first step of my doctoral studies began with an expectation I would learn a great deal. I became enlightened by knowledge shared freely by others and I learnt that Maori view success differently to Pakeha. With support of my supervisors and guides I grew confident in my own abilities to conduct Kaupapa Maori research engaging with Te Ao Maori and Te Ao Pakeha. On a fourth step, I have learnt a great deal to become knowledgeable about some aspects of Kaupapa Maori research, Maori

perspectives of success, and how some Maori engaged with and completed IT degrees. The pinnacle for this learning journey is completion of the doctoral degree.

Te Taumata, Te Timata

The title of my thesis points to the pinnacle of every learning journey followed by the start or first step of the next one. Poutama as a metaphor illustrates this philosophy and at the same time encompasses the more accurate conception of learning as a complex multi-dimensioned spiral process.

In the beginning I contended that little was known about Maori who were students in the ITPs. There was limited understanding about how Maori accessed IT knowledge and skills generally, and more pointedly how they began and proceeded on their IT learning pathways. We needed to understand more about what contributes to tauira Maori success in degree level studies in IT, and every other field, and importantly how Maori view success itself. This thesis begins to address the silence of the archives with regard to Maori narratives of higher education. At the end of my thesis I can see it serves as a pou of sorts, to stand as a first step to consider these issues and the beginning of a new learning journey.

The title of this chapter, Te Ao Hou, The New World, refers to a time when Maori knowledge and Pakeha knowledge together creates new understandings and a new way to understand Maori success that is positively imaged. This is one primary intention of my thesis. I argue that the two worlds are part of one world, and the integrated Poutama o Te Ao Hou images that.

Kaupapa Maori theorising and research practice enables use of culturally relevant tools, such as the poutama, to identify and resolve issues that are problematic for Maori in particular. The whole nation of Aotearoa/New Zealand can benefit when traditional knowledge underpins approaches to resolve issues that impact Maori, and will also have application for others. As a heuristic, the poutama offers a way to begin with the core values and foundations of a Maori worldview shown in Poutama O Te Ao Maori. It is possible to overlay it with elements from Te Ao Pakeha and consider the combined whakapapa or genealogies of problems or issues.

The five steps of the learning poutama can be applied to most domains of knowledge, or whatever the kaupapa as Tuahine Northover points out in the preface. Pursuing mohiotanga, knowledge; whakaputa whakaaro, communication; rangahau, research; te hanganga, nāna ake, creativity; or Whakahaere, management, all learners go through steps and stages of learning.

Traditionally, poutama teaches us that learning begins before birth, continues through life, and after death. Poutama teaches us that the mana of a learner is equal to all others, ahead of them and behind them, on the learning pathway. Poutama teaches us that knowledge is gained in steps, and implies the perseverance needed to progress upwards. Poutama reminds us that knowledge is built layer upon layer, and for Maori the foundations of this knowledge begin with our tipuna and before them eternally, with Papatuanuku, the land.

My own PhD journey has spiralled from Te Timata my first step, with the help of many others, to reach for Te Taumata, the pinnacle of qualification completion. My next step returns me to Te Timata, when I can begin to generate resources to showcase and share with others the knowledge, images, and voices of some remarkable tauira Maori. That one learning journey, such as pursuit of a Bachelors degree in IT or a PhD in Maori Education is completed is not a success, as we understand learning continues on to a higher level, eternally. Perhaps Te Taumata can never be reached, but we know where to start, with Te Timata.

Post Script

What happens when tauira Maori have reached 'Te Taumata' of academic qualifications and carry on with their lives? In early 2008 I asked each of them in an e-mail to update their stories to the end of 2007. I collated their highest academic qualifications, with their own reports of ongoing learning and employment, and include some final comments and their farewells.

Ang Cassidy (Te Aupouri, Ngapuhi, Pakeha)

Ang graduated from NorthTec with the Bachelor of Applied Information Systems (BAppIS) and took the top Academic Prize of her 2006 class for her consistently high results across the entire degree. Ang had achieved her 'dream job' as a Field Service Engineer with DTSL (Desktop Technology Service LTD) in Whangarei. Her work involved 'all sorts from computer repairs to eftpos installs to ATM repairs and a little network work.' Ang continued her learning with NorthTec and in-house training with her company; 'I have done a lot of job specific training, so EST-A training as I do a lot of electrical work in some form. Dell Certification, Syncro training for eftpos installs etc.' Ang and her whanau had achieved their goal of buying a house together. 'Cheers Ang'.

Cheryl Rudolph (Unknown, Ngati Pakeha)

Cheryl had graduated Year 2 Te Ara Reo O Te Wananga O Aotearoa and completed Level 3 Computing and Business Administration, with NorthTec. She was 'nominated and elected on to the Kohukohu School Board of Trustees' and achieved her goal to 'get a job' as a part time Community Computing Coach for NorthTec.

This course is run in our local Kohukohu Primary School and provides for our adults who can not get to Rawene the local campus. This scheme is run at the school but NorthTec provides most resources e.g. books and our local school benefits financially by the polytec hiring the Computer suite. It is a win-win situation for us all. Our locals benefit by not having to travel out of the area to learn the Basics of Computer Learning. We have been running this course since October last year and we have a lot of interest and support for this programme from the locals. I enjoy the job I am doing and have some very keen students who make your job fun and fulfilling. It also gives me some independence and now I am in the workforce for the first time in many years...So for me it has been a great ending. Thank you, Cheryl Rudolph.

Colleen Hart (Ngapuhi)

Colleen graduated with NorthTec's Bachelor of Applied Information Systems (BAppIS) in 2007. 'I also got the NZ Computer Society Excellence Award.' Her first job was 'for Regent Training Centre Whangarei, as their Online Learning Research and Development Manager. My job is to set up and teach classes online for students who live in rural mid north area's so they can now study from home via the Internet.' She moved from Whangarei via Taumaranui to Wellington to take up her next job 'with Te Puni Kokiri Head Office as their Business Analyst in their IT Support Services.' Colleen's eldest daughter had 'completed and graduated her NorthTec Performing Arts Diploma. She is moving down with me next week to try and find suitable work...Regards Colleen.'

Harmen George (Ngapuhi)

Harmen had experienced a few challenges and struggled with some of his papers in the second year of NorthTec's Bachelor of Applied Information Systems (BAppIS). His lecturer reported that he had returned in 2007 to re-sit papers and to advance on to year three, Level 7 of the degree. 'Cheers, Harmen'

Jo-Anne Grace (Ngati Toa, Te Atiawa, Ngati Raukawa, Ngati Porou)

Jo graduated with the Whitireia Bachelor of Information Technology, 2006 and took the top Academic Award for her three year degree. She had started a job in Wellington with the Ministry of Health as a Senior Business Analyst. Jo was working to achieve her goal of building a new home for her whanau on her land near Porirua. 'Arohanui, Jo Grace.'

Juliana Bennett (Ngati Whakaue, Ngati Kahungunu, Ngati Mutunga)

Juliana graduated with the Whitireia Bachelor of Information Technology in 2006 and had started work as a Business Analyst with 'Te Puni Kokiri - Ministry of Maori Development' in Wellington. Her work at the end of 2007 was to 'develop a web based application using ColdFusion and Javascript, with a SQL database'.

I'm still trying to come to grips with the commuting from Otaki and organising my whanau so I can commute, so I haven't got any plans for further study yet, although I intend to do a few short courses on Business Systems Analysis and SQL. But I do intend to continue my studies at some point in the near future. nā Juliana

Linda Taumaunu (Ngapuhi)

Linda had completed the Level 4 Certificate in Computing and Business Administration and continued her work as a 'Community computer coach – reliever level 3 computer business admin.' at NorthTec's Rawene Learning Centre. Linda had started advanced studies on the 'National Certificate in Adult Education and Training (Level 5) through Up Skill Te Wananga O Aotearoa-fees free course. Thanks, Linda.'

Maryanne Marsters (Rarotonga)

Maryanne had graduated in 2004 with the EIT Bachelor Computing Systems, and continued on to complete a Masters in Library Information with Victoria University of Wellington. She continued her work as a Librarian for EIT, and her work in support of the Cook Island community in Napier. Maryanne

Maxine Clark (Ngati Tuwharetoa, Ngati Porou)

Maxine emailed to say 'My final exam as an IT student was on 27th June and I started my job on the 28th of June 2007. One month on I successfully got my results and got my Degree.' She is a Whitireia 2007 graduate with the Bachelor of Information Technology and continues to support her son Felix. 'Regards, Maxine'

Maxine (Max) Cooper (Ngati Hine, Ngati Porou)

Max's studies for the BCS with EIT had been interrupted by the terminal illness of her father. She relocated 'home' to Whangarei to be with him and her mother. A paper shy of the degree Max moved further north and at the end of 2007 was in a series of hui with her local community to establish their ideas and support for her whanau and IT learning centre, called 'Mo Tatau Cyber Whare. 'Keep in Touch, Max'

Mei-Ana Ave (Ngati Kahungunu, Tuhoe)

Mei-Ana completed the EIT Bachelor of Computing Systems in 2005. With EIT she completed the Certificate in Adult Education in 2007 and the Online Certificate in First Line Management. She enrolled 'with Massey University to do the Postgraduate Diploma in Education (Distance and Online education - extramurally).' Mei-Ana continued her work with EIT 'job sharing the position with Tania Kupa as the Coordinator of the Flaxmere Learning Centre...to ensure the centre is operating effectively and accordingly'. Her teaching work was to 'tutorial assist students that are enrolled in the flexible National Cert in Computing Levels 2 & 3 and also students enrolled in community computing.' Mei-Ana relocated to live in Hastings with '3 children, husband, dog (Te Reo) and cat (Ngeru)' to support her chronically ill 'father in-law who requires constant care' Joining them in their new home was 'my brother in-law (Jason) and his son (Jordan). So our house is very busy'. Mei-Ana was delighted to report that 'In 2007, 2 of my younger sisters gave birth to 2 beautiful boys so I am an aunty. Mauri Ora Na Mei-Ana Ave (BCS, Dip ICT)'.

Rebecca Clarke (Tuhoe, Ngati Kahungunu)

Rebecca graduated with the EIT Bachelor of Business Studies (BBS) in 2006. She continued with 'EIT Hawkes Bay ... after a few humps and bumps and changes in staff' as a Lecturer/Maori & Pasifika Student Mentor for the Faculty of Business and Computing. Her work was to 'lecture foundation accounting and business courses', and to 'mentor Maori students of the faculty to achieve their goals'. Rebecca continued advanced studies with plans to complete the 'Diploma in Adult Ed.' with EIT in 2008. Sharing the goal of raising good young adults with her partner Rebecca pointed out;

My own achievements are now in the form of my children. My son is representing teams for both school and Hawkes Bay in cricket and rugby and after 2 weeks at high school has received commendation from the headmaster personally... This for me is achievement as it reinforces to me that we are doing great things and the results are great children!!! Regards, Rebecca.

Ria Kaire (Nga Puhi, Pakeha)

Ria graduated with NorthTec's Bachelor of Applied Information Systems (BAppIS) in 2006 with grades infinitesimally lower than Ang Cassidy to add to her earlier Bachelor of Communication Studies. She continued her general learning in 'a programme called "LifeWorks" that's run through

Open Polytech, and I was told by my coach, you have to do these three work life challenges and after you do all of those work life challenges you get a National Certificate in Employment Skills, which is level 1, NZQA'. Her future studies goal was to complete 'the Microsoft Certified Solutions Developer (MCSD), which is like an international qualification. Basically you can programme anything in Microsoft. But it's like anything in IT you've got to keep up to date with it'. Employed on contract with 'NorthTec, Te Taitokerau Wananga', Ria had spent 'a year on their IT services helpdesk' and had moved on to a job as an Analyst / Developer that involved 'a lot of systems analysis and project management. Kind regards, Ria Kaire.'

Sharon Mohi (Maniapoto, Ngati Kahungunu)

Whitireia graduate Sharon gained her Bachelor of Information Technology in 2006. Achieving her personal goals she moved with her three children into a house near her mother and secured interesting work using her IT knowledge with the recommendation of her degree Programme Manager.

I am now a full time employee for the Crown Law Office on The Terrace in Wgtn and am working in the IT department as a Desktop Support Analyst. It is a small team of 5 and we cater to all the techy etc probs for just under 200 peeps. I went through quite a few different recruitment agencies but ended up hearing about this position through our programme manager at Whitireia. Crown Law had contacted Julie for any prospective employees. Crown Law is pretty much made up of many counsel (lawyers) and of course the Solicitor General, so we get some pretty interesting stuff floating around here. The team that I work in are absolutely awesome, I love working with these guys, it is sort of like a wee family. My boss is a really nice guy; he really cares and looks after his IT team. They are all so knowledgeable so I try to be like a 'sponge' and soak it all up. I feel truly blessed that I was able to land myself in this job. I really enjoy working and have made some really good friends here. I started out on a 6 month contract, which they turned into full time. YAH!!!! have nearly been here a year and gee it has just flashed by. This has been such an enormous self confidence booster. Who would have thought 5 years ago that this is where I would be :) Sometimes I need to step back and take a look at everything that I am thankful for.... there is heaps....An educated, strong and independent Maori woman is definitely something great to aspire to be!!! -this is what I often remind myself :). Take care, Sharon'.

Sonya Pene (Ngati Kahungunu, Tuwharetoa, Tuhoe, Ngati Porou)

Sonya graduated with the EIT Bachelor of Computing Systems in 2004. She was working full time 'as the administrator' for the Maori Women's Welfare League in Napier. With her partner and two children in mind Sonya was open to new work opportunities that would use her IT knowledge and skills. 'Cheers, Sonya'

Tania Kupa (Ngati Kahungunu, Te Arawa)

Tania holds two bachelors degrees in Business Studies and Computing Systems from EIT. She worked as the 'Flaxmere EIT Co-coordinator' for 'Eastern Institute of Technology (EIT)' after 'going thru contractual negotiations and her 'role at Flaxmere EIT has been split into two roles (Coordinator/Learning Assistant).' Her work involved 'Marketing, Administration, tutorial assistant for flexible computing courses, customer service'. Tania had enrolled in a 'Postgraduate Diploma in Business and Administration (major in Management) at Massey' University and in July 2007 'Got a pass for my first postgrad paper Corporate Governance.' I met Tania again as part of the Ngati Kahungunu Digital Futures Think Tank hui during 2008. 'Ka kite, Tania Kupa (BBS/BCS)'.

Wiremu Wineera (Ngati Toa, Ngapuhi)

Wiremu graduated with the Whitireia Bachelor of Information Technology in 2006. He continued his work as a Business Analyst with Te Puni Kokiri. His work involved 'Systems and Database Administration, Training and Support work'. Although he had not enrolled for any advanced studies he was about to start 'a Te Reo class through work and looking forward to that'. Life outside of work was busy he had bought his first house and 'things are going well for me and my family we are expecting another baby boy in May so planning and looking forward to that. We have also been busy doing Kapahaka and assisting in the Hui Aranga celebrations in Wellington this coming Easter www.huiaranga.co.nz ... [I] have been doing websites for friends and organisations like the Hui Aranga. The dream is still alive and one I will pursue it at some point in my career. Thanks Wiremu'.

Charlotte Tane (Ngapuhi)

Interviewed as a Maori IT tutor working in an ITP at the time of my research, Charlotte continued in her role with NorthTec as a 'Tutor Computing & Business Administration' at the Rawene Learning Centre where she had 'also been given the added responsibility of being the campus technician'. She taught 'Accounting, Law, Business Administration & Computing' and continued in online studies for the Level 5 Diploma in Information Systems with the Open Polytechnic of New Zealand. 'Regards Charlotte Tane, Tutor'

(Dr) **Margaret Wilkie (Ngati Porou, Ngapuhi)**

In 2010 I realised two things. To have qualifications in front of my name, frees up space for my iwi affiliations in every sense of those words; and that I had altered the order of the '5 steps of the learning poutama' share by Tuahine Northover. I found the graduates I interviewed gained confidence (kua kaha, kua pakari, kua tino matau) in the Pakeha learning environment before they were able to grow their knowledge (mohio) of IT. Tuahine Northover's students of advanced level te reo Maori grew their knowledge of te reo me nga tikanga Maori and from this became confident, evidenced by their stance, their voices and the content of their use of te reo Maori. The examiners reports are attached to the electronic version of my thesis.

Appendix 1 Profile

I pike ake a Tane-nui-a-rangi i te aratitia ki te toi o nga rangi. Nana i tiki i nga kete o te matauranga me nga whatukura kohatu o te kaupapa ako.
Tane-nui-a-rangi ascended to the highest heavens. He gathered the baskets of knowledge and the sacred stones of learning.

He Whakapapa

Ko Hikurangi te maunga	Ko Puhanga Tahora te maunga
Ko Waiapu te awa	Ko Hokianga te moana
Ko Te Whanau O Ruataupare te hapu	Ko Ngati Pakau te hapu
Ko Te Ariuru te marae	Ko Tahekeroa te marae
Ko Ngati Porou te Iwi	Ko Ngapuhi te Iwi
Ko Margaret Wilkie taku ingoa

Nga mihi nui ki a koutou. Ko Margaret Wilkie (B.A. M.A., Dip.Tchg.) ahau. I am in the third year of full-time study for my PhD in Maori Education. I am based within He Parekerekere: Institute for Research and Development in Māori and Pacific Education, in the Faculty of Education at Victoria University of Wellington.

My doctoral thesis is a Kaupapa Maori research project seeking to find the voices of successful taura Maori in New Zealand Polytechnics and Institutes of Technology (NZITPs) in the field of Information Communication Technology. An aim of the research is to contribute to the future success of Maori in both of these arenas. The words and thoughts of tangata whenua of the case study sites are coming from Maori who are kaumatua, kuia, managers, governors, staff, students, and whanau members.

My current PhD focus is fieldwork with three ITPs. I am assisted in the cost of this work with support from the 2006 Philippa and Morvyn Williams Scholarship www.vuw.ac.nz/scholarships.

I am deeply grateful to have been awarded the 2007 Ngā Pae o te Māramatanga Doctoral Scholarship that supports my commitment to full-time study. For more information www.maramatanga.ac.nz

Since 2003 I have worked part-time as the Administrative Coordinator for MAI ki Poneke www.vuw.ac.nz/mai, the Wellington ropu for the national Maori and Indigenous Post Graduate Student support programme www.mai.ac.nz.

I am happy to be contacted by email margaret.wilkie@vuw.ac.nz.

Appendix 2 Information Sheet

He Whakatauki

E tipu e rea mo nga ra o to ao.
Ko to ringaringa ki nga rakau a te Pakeha hei oranga mo to tinana
Ko to ngakau ki nga taonga o o tipuna hei tikitiki mo to mahunga.
Ko to wairua ki te Atua nana nga mea katoa.
Grow tender shoot for the days of your world
Turn your hand to the tools of the Pakeha for the wellbeing of your body
Turn your heart to the treasures of your ancestors as a crown for your
head
Give your soul unto God the author of all things

Ta Apirana Ngata

This information sheet is about Nau Mai ki te Angitu** a Kaupapa Maori research project looking for the reasons that Maori succeed in Information Communication Technology (ICT) studies at diploma and degree levels in New Zealand Polytechnics and Institutes of Technology (ITPs)

With lower enrolments into degree courses and above and lower than average academic success rates for Maori in the whole tertiary sector the research aims to find a way forward contributing to the success of Maori as nearly 40% of us choose ITPs for our tertiary education in 2004 dropping to 35% in 2005. Less than 8% of us choose ICT studies at the time that this knowledge is seen as critical for Maori development and success in the global and local economies. The research will discover the things that help Maori succeed in ICT and advocate for changes where needed to encourage greater success for Maori in the ITPs.

The sole researcher for the project is Margaret Wilkie, (M.A., B.A., Dip.Tchg.) After working for more than 12 years in the polytechnic sector, and six years involved in Kaupapa Maori research in education with the New Zealand Council for Educational Research - including 2 years looking at Maori in Special Education and a further 2 years working on the evaluation of Whaia Te Iti Kahurangi for Ngati Porou/East Coast, the time has come to look at what is happening for Maori in NZITPs.

Following principles from Kaupapa Maori research, contact will be made through whakawhanaungatanga (establishing relationships), and lead on to interviews kanohi ki te kanohi (face to face). Each participant will be asked to choose to either use a pseudonym or their own names and this will be stated on a consent form. Where requested all identifying details will remain confidential to the project and records kept in a locked filing cabinet, then subject to individual consent be returned or destroyed within two years of the project completion. Academic Supervisors and Maori pukenga (advisors) may also view the raw material created for this research project.

The views, thoughts and experiences based on interviews will be collected on tape – and/or on video - with the consent of participants, and a copy of this along with any digital images returned to the person featured. With

* Draft Title for research project and PhD Thesis

agreement copies of video recorded and tape recorded interviews and digital images will be used in publications and presentations.

A full or partial transcript of interviews will be returned to the participants for their feedback and clarification. When analysis of all interviews and case studies are completed a copy of a draft will be sent on to participants who wish to continue as part of the research process, and for contribution towards an audit of the research itself from a Kaupapa Maori perspective. Interviews will take on average one hour (or longer with agreement), and time spent reading and giving feedback on the transcripts and drafts will depend on the level of involvement chosen by each participant.

This project is the basis of a thesis for a PhD in Maori education from Victoria University of Wellington and will contribute to the field of Kaupapa Maori research in tertiary education and optimistically to improvement in Maori uptake of ICT and achievement of success in this chosen field. The thesis may be adapted for publication as journal articles and as a basis for presentations and papers to conferences.

The research has been given ethical approval by the Victoria University of Wellington Human Ethics Committee to be undertaken from October 2005 – December 2007.

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Appendix 3 Consent Form

Nau Mai Ki Te Angitu*
Welcome to the Success

I _____
(Full name)

Of _____

(Contact Postal address)

Consent to be part of Nau Mai Ki te Angitu*, the Kaupapa Maori research project looking at Maori success in the field of Information Communication Technology in New Zealand polytechnics.

I have been given information about this research project, and have had the chance to ask any questions about it. I understand what is required from me.

I understand that I can withdraw from this study at any time before the final analysis of information is completed, without any reason or explanation.

I understand that if I withdraw, all recordings and transcripts will be returned to me and will not be used in any way for the research project.

Contact email address: _____

Contact Phone: _____

Confidentiality

I consent to: Yes No

The use of my given names

The use of my iwi names (below)

My names and iwi
kept completely confidential

* * Draft Title for research project and PhD Thesis

The use of a pseudonym below

(Pseudonym/ name chosen for use in any publication or presentation)

I understand that this research will lead to publication as a thesis for doctoral study at Victoria University of Wellington, presentations and papers for conferences, journal articles and other potential publications. I give consent for use of my information for these purposes subject to the confidentiality statement above.

I understand that I will be sent a copy of any recording, transcripts and images of me and understand that my consent will be asked before use of these in publications and other presentations.

I understand that I will have an opportunity to read and correct or edit any written transcripts relating to me and a draft of any case study relating to me, before the end of the research project.

I understand that I will have an opportunity to be part of an evaluation audit of the research project.

I understand that after completion of the project Nau Mai Ki Te Angitu the original recordings made on tape, video, digital images and transcripts relating to me will be returned to me.

Notes of any other agreement made in discussion:

Signed: _____
(Signature)

Dated: _____

Signed: _____ Dated: _____
(Researcher Margaret Wilkie: Signature)

Appendix 4 Questions for IT Students

Whanau/Hapu/Iwi

Where are you from?

Do you have any contact with your home marae?

Are you involved locally with any Maori groups, organisations or activities, if yes please describe

Tell me about your family

Age/marital status during study

Tell me about your academic study that brings you to today

What qualifications did you complete at secondary school?

Other learning and qualifications?

How did you support yourself/family while you were studying?

Do you have a student loan/debt?

What courses /qualifications are you enrolled in?

Did you enrol as Maori when you started your course?

Full time or part time study?

When will you finish the qualification?

Why did you choose IT as your field of study?

When and how did you first get into IT/computers?

Has anyone else in your whanau or friends got into IT study?

Have you got a computer you can use at home? Describe

What access do you have to IT for use?

Do other whanau members use computers?

What part of IT study do you enjoy the most?

What is the most difficult thing for you about IT study?

Do you have contact or support from any Maori on staff here?

Are any of your tutors Maori?

Do you have support from other staff here?

Does anyone mentor you in your IT study?

Tell me about anyone who helps or supports you in your studies.

Do you know of other Maori students in your courses who did not complete?

You were named as a Maori student who was successful in your IT studies, what contributed to your success?

What do you think success means for yourself or for other Maori students in IT?

What do you want to do when you have completed this tohu/qualification?

What are your goals /plans/ dreams / aspirations for the future?

Do you have any plans/dreams for advanced studies?

Do you know who is tangata whenua for this place?

Does this polytechnic have relationships with them?

Do they have a website? Have you visited it?

Any other questions, ideas, thoughts, things you want to say?

Appendix 5 Questions for IT Staff

Where do you come from?
How long have you worked here?
What is your present role in the polytechnic?
How long have you had this role?
What other role/s have you had in this polytechnic?

What qualifications do you have?
Are you currently undertaking further study? If yes details
If no do you have plans to in the future?
Are you currently undertaking any research? If yes details
If no do you have plans to in the future?

What courses are you currently teaching?
How are your courses promoted or advertised?
Are students interviewed for a place on your courses?
How many places are available on each course?

Is there an EFTs target for your courses?
If yes how well did you do to meet that target in 2004 and 2005?

It appears that ICT courses go through a cycle of high popularity followed by a lower level of interest and uptake. Is this true in your opinion? If so do you have ideas about why this happens?

Do you have access to information and advice about things Maori? If yes please describe.
Are there any aspects of your courses that explore Maori dimensions in the learning?
Do you have any contact with Maori families or organisations? Examples
Who is tangata whenua in this local area?
Do you have contact with them directly?
Are Maori involved in the development or advisory processes of your courses?

Do you have Maori students in your courses?
Do you have a view on how Maori students are different to other students on your courses? Examples?
In what way are Maori students the same as other students?
Do you have strategies to support or help Maori students in particular? If yes please give an example.

In many NZ polytechnics, Maori students have a lower retention rate (stay on to the end of the course) than other students, is that the case in your courses?
If so do you have any information about why this happens?
In many NZ polytechnics Maori students have a lower qualification completion rate than other students, is that the case in your courses?
If so do you have any information about why this happens?

Can you give any examples/anecdotes about Maori students who have succeeded well in your courses in the past few years?
Can you identify any particular reasons for their success?
Is there anything further you would like to say?

Kupu Maori - Maori Words

Ako Maori - learning and teaching

Aniwaniwa - rainbow

Aronui - basket of knowledge

Ao - world

Ao Maori - Maori world).

Ao Pakeha - Pakeha world

Aotearoa - New Zealand

Awa - river

Hapu - sub-tribe

Hanganga, nana ake - creativity

Haututu - tear away or poorly behaved

Harakeke - flax

Hononga - connection

Hui - gathering or meeting

Io - the creator

Iwi - tribe

Kaha - strong, able, capable, courageous, intense, energetic

Ngati **Kahungunu** - Hawkes' Bay Wairarapa iwi

Kaiako -teacher

Kairangahau - researcher

Kanohi ki te kanohi - face to face

Karakia - prayer

Karanga - call and response of welcome and entry to marae

Kaumatua - male elder

Kaupapa Maori - philosophy

Kawa - protocols

Kete - baskets

Kohanga Reo - pre-school language nest

Koiwi - bone of humans

Te **Kore** - the void

Korowai - cloak

Kotahitanga - the energy of people working together

Kowhai - yellow

Kua (particle) has, had, have, will have

Kuia - female elder

Kupu - word

Mahi - work

Mahara - mind

Manaaki - taking care of

Manaakitanga - hospitality

Manuhiri - visitors

Marae - ancestral meeting ground

Maramatanga - enlightenment/insight

Mata pono - principles

Matariki - Pleiades

Matua - to know, understand.

Matauranga Maori - knowledge and education

Maunga - mountain

Mauri - life force

Mawhero - white red
Mohiotanga - knowledge
Mokopuna - grandchildren

Nga - plural form of the
Ngakau - heart
Ngapuhi - Northland Iwi

O - Of
Oriori - chanted narratives or lullabies

Pae Arahi - guide
Pakari - mature
Pakeha - European
Pakeke - advisor
Panonitanga - transformation
Papatuanuku - Earth Mother
Parauri - brown
Pepeha - saying
Te **Po** - darkness
Pounamu - greenstone/jade
Poutama - stepped design
Powhiri - formal welcome
Pukenga - advisors
Putieketanga - positioning

Rangahau - research
Ngati **Rangatira Toa** - Wellington and Marlborough Iwi
Ranginui - the Sky Father
Rawene - setting sun
Reo Maori - Maori language
Ringawera - hot hands
Rohe - area

Tauira Maori - graduates and students
Tai Tokerau -tail of the fish/ Northland
Takiwa - tribal area
Tamariki - children
Tane - spiritual entity of the forest
Taneutuutanga - reciprocity
Tangata whenua - people of the land
Taumata - the seat of authority / pinnacle
Tautoko -support
Tawhirimatea - God of the Winds
Teina - younger sibling or descent line
Tikanga - correct practices/reason
Timata - first step
Tipuna/Tupuna - ancestor
Titaratanga - structuring
Tohunga - priest/expert
Torino - spiral
Tua-atea - basket of light
Tuakana - elder sibling or descent line
Tuauri - basket of darkness / indigo
Tukutuku - woven latticed panels
Turangawaewae - place to stand

Tutu - experiment with

Waiata - songs

Waiporoporo - purple

Wairuatanga - spirituality

Wananga - learning events

Whaikorero - formal speeches

Whakahaere - management

Whakairo - carving

Whakapapa - genealogies

Whakapapatanga - process of sharing identity from whanau, hapu and iwi connections

Whakaputa whakaaro - communication

Whakatauki - proverb or saying

Whakawhanaungatanga - establishing relationships amongst and between people

Whanau - extended family

Wharenuī - traditional meeting house

Whare Wananga - house of learning or wisdom

Wharekura - name of the Whare Wananga built by Tane's brothers

Whenua - land

Whero - red

Abbreviations

BAppIS Bachelor of Applied Information Systems

BCS Bachelor of Computing Systems

BIT Bachelor of Information Technology

EIT Eastern Institute of Technology

IT Information Technologies

ITO Industry Training Organisation

ITP Institutes of Technology and Polytechnics

ITPNZ Institutes of Technology and Polytechnics New Zealand

MTEF Maori Tertiary Education Framework

MoE Ministry of Education

NQF National Qualifications Framework

NZQA New Zealand Qualifications Authority

PTE Private Training Establishment

TEC Tertiary Education Commission

TES Tertiary Education Strategy

TOP Training Opportunities Programme

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