Reo Māori ki ngā Rorohiko o te Kura

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An investigation into the use of software with a Māori language interface by Māori medium schooling of New Zealand

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Table of Contents

Introduction

Motivations

Language is a major part of culture and identity; its significance can be reflected in the extent of its use in everyday activities and settings. Information technology and computers are becoming a regular part of our daily lives, and so the electronic domain is another important area for language maintenance. Te reo Māori has been under threat since the settler government began imposing monocultural, monolingual and assimilationist policies that devalued its status and practice. There have been various efforts to revive and revitalise the Māori language including Māori medium education and Māori language software interfaces. These software interfaces translate computer operating systems and programmes, such as Microsoft Office, so that the display menus and functions are presented in te reo Māori. Part of revitalisation is normalising the language in domains where it previously has little or no presence, and this is an objective of the software interfaces. As computing is a regular component of schooling, this research aims to determine the level of awareness and interest that Māori medium schools have in these types of software interfaces. Telephone interviews and online surveys were conducted on these schools to ascertain the usage of Māori computing applications, as well factors that prevent it. This report is merely a sample of a larger project which intends to survey all Māori immersion schools in New Zealand; however, because of time constraints, this report only analyses and presents the findings for 24 schools. The ultimate goal of this research is to assist the promotion and propagation of te reo Māori.

Method

This report used a combination of quantitative and qualitative methods of analyses. The literature review used a quantitative analysis by examining the different elements of the project. It started with general definitions and functions of language and its importance to culture and society, and then looked specifically at the significance of te reo in terms of the Māori worldview and culture. The different types of language death were outlined and then analysed in the New Zealand context; it gives a brief history of te reo Māori from its position as the primary language used by the native inhabitants, to its swift decline that resulted from the arrival of the European settlers. It analysed the role played by colonisation, assimilation and urbanisation in the deterioration of te reo Māori, and then examined its treatment under the Treaty of Waitangi. The next section of the literature review concerns Māori medium education; an overview of Māori resistance is given, followed by some literature on language revitalisation, and then the development and objectives of kōhanga reo, kura kaupapa and whare kura is explored. The last part of the literature review looks at the increasing use and importance of information technology in today's world and its effect on language. It also gives an overview of the technologies that have been developed to support the continuation and enhancement of te reo Māori and describes the software interfaces

available. The materials used for the literature review were books, journal articles, theses and a range of websites.

The qualitative analysis involved surveying the staff and students of Māori medium education about their use of te reo Māori on computers. The aim of Dr. Keegan's larger project is to survey all 84 of the listed Māori immersion schools; however, due to time constraints this report only details the first handful of schools that were questioned. The larger data set will be collected in due course. Fifty schools were contacted: 24 were interviewed, 26 were emailed and the research team are awaiting replies, and one school did not answer after several attempts to phone them. Telephone and an online Facebook survey (Appendix VI) were the mediums used; only the telephone surveys will be discussed as the surveying is still in its initial stages and the response rate for the online surveys so far has been low. The details of this process are outlined in the results section of this report.

Literature Review

Language

General definitions
There is a great body of study dedicated to language called linguistics; however, this section is merely a brief overview of language and its importance to humans, and so it will only look at some of the main ideas and concepts. Humans are social creatures by nature (Turner, 1987) and language is part of the social behaviour that allows us to communicate with one another. While many animals and even plants can communicate with each other, humans are considered different and unique as our communication system is learned rather than biologically inherited (O'Neil, 2006). Language is usually acquired in early childhood through social interaction. The online Oxford Dictionary (2012) defines language as "the method of human communication, either spoken or written, consisting of the use of words in a structured and conventional way". This structured way refers to the grammatical rules that determine whether the symbolic combinations are meaningful or not (Dictionary of Philosophical Logic, 2009). A broader definition of language as a system of signs that encodes and decodes information encompasses those based on visual stimuli like sign languages, and artificially constructed systems such as computer programming languages (Answers.com, 2012).

Functions of language
The focus of this research is human language – both verbal and written. Another characteristic that makes it unique to other communication systems are the many functions it performs. A central role of language is to store, manipulate and communicate knowledge and ideas (Blackwell Dictionary of Sociology, 2000); however, this can be broken down into more specific purposes. Crystal (1987)

describes of number of them including the emotive or expressive function; language can be a way of getting rid of nervous energy such as cursing when we are angry, or verbally reacting with fear or affection. The social function of language maintains rapport, such as saying 'hello' or 'good morning'; it does not communicate ideas but signals friendship or lack of enmity (Crystal, 1987). Some of the other main functions include recording facts such as historical reports, business accounts and parliamentary acts, and using it as an instrument of thought such as when a person thinks aloud (Crystal, 1987). Another important function of language is its relationship with identity and culture. As this aspect is significant to this research, it will now be examined more closely.

Language and culture

Language has been called an expression of identity as it can be used to tell others facts such as our social background, age and occupation (Crystal, 1987). Kramsch (1998) explains how words can reflect a person's attitudes, beliefs, and point of view, but they can also transmit a group's cultural norms and values (Appel & Muysken, 1987). So language is not merely an instrument for communicating messages; it expresses cultural reality (Kramsch, 1998) and can distinguish community membership and how a person or group is different to others (Appel & Muysken, 1987). People are identified as part of a group or community by their accent, vocabulary and discourse patterns (Kramsch, 1998), and these speech communities also help define the boundaries of larger groups such as tribes, ethnic groups, regions and nations (Blackwell Dictionary of Sociology, 2000). Culture and identities contribute to group formations; language is entwined with these notions so people experience a "sense of social importance and historical continuity from using the same language as the group they belong to" (Kramsch, 1998, p. 66). Language is a vital part of any culture as it is the medium through which that culture is transmitted (Parliamentary Library, 2000). Language is one of the most noticeable manifestations of identity and it is susceptible to shift and decay (Appel & Muysken, 1987). Factors that influence language maintenance include economic status, demographic factors and institutional factors such as mass media, government services and education (Appel & Muysken, 1987). These issues will be discussed in the next section, but first the importance of te reo Māori and how it corresponds with the Māori worldview will be examined.

Te Reo Māori

As mentioned above, language expresses cultural reality and can reflect attitudes and beliefs. This can be said about te reo Māori as it expresses "the values, beliefs and ideology of people in a powerful way" (Pere, 1994, p. 18). Knowledge of te reo Māori has been identified as a significant characteristic of being Māori; however, fluency without knowledge of the culture deprives one from understanding what it means to belong and be part of a Māori tribal group (Pere, 1994). The stance of the claimants in the Te Reo Māori claim to the Waitangi Tribunal described the language as being at the heart of the Māori culture (Durie, 1996). As the two elements are so intertwined, it

is appropriate to first give a brief overview of the Māori worldview before examining the importance of the Māori language.

Te Ao Māori

Māori culture cannot be conveyed properly in mere words, and even less so in English, so the following is a basic interpretation of the Māori worldview. Te ao Māori takes a holistic approach; everything and everyone is part of an interconnected whole and so everything must be respected. The notions of complementarity and interdependency are embedded in the worldview (Diamond, 1999), and the principle of balance was critical for survival. The concept of balance is significant not only between the sexes, but also in terms of interaction with the environment. This respect for all things can be attributed to whakapapa; the creation story illustrates how people, as well as all life, are descended from the primordial parents, Ranginui the Sky Father and Papatūānuku the Earth Mother. Their children are the superior beings and controllers of all resources, and their offspring, which includes people, are the species and plants etc. that inhibit those areas (Ministry of Justice, 2001). It was said that the genesis of the Māori language began when Hineahuone – the first woman – sneezed 'tihei mauri ora!' the first cry as the mauri entered her (Coney, 1993). The harmony between the male and female element and the connection to all living things maintains this essential balance. These special connections and relationships are expressed and reflected in the Māori language. An example is the word whenua which means land and placenta. This word conveys the symbolic relationship of women and the earth; just as the land nourishes and gives life to the people, so too does the placenta nourish the foetus inside the woman (Mikaere, 1995).

Importance of te reo Māori

Barlow (1991) describes how te reo Māori is sacred because it was given by the gods so that the Māori people would be able to know the will and power of those higher beings. As with all other living things, language also has a mauri - a life force or living vitality; it has a spirit that gives it a unique structure and function (Barlow, 1991). However, to remain a living language it must be spoken regularly and taught with the appropriate understandings. The various mediums such as proverbs, stories, songs and other knowledge hold hidden meanings and symbolic references for those who understand the history (Pere, 1994). Pere (1994) explains how English translations lack the depth of the information and knowledge of the words or expressions, and may not transmit the several possible meanings that depend on context and even tone. The Māori language is important because it embodies the Māori culture and is part of their unique identity which makes them tangata whenua of this country. Like other aspects of Māori culture, the arrival of the European settlers brought many changes and put the language under threat. Before this history is explored, the literature on language shift and language death will be examined.

Language Death

Te reo Māori is described as having a life force or living vitality; the literature also describes languages as entities capable of living or dying. Janson (2002) states that languages are not intrinsically stable; some emerge while others disappear. Nettle and Romaine (2000) expand on this by saying that languages aren't self-sustaining; for a language to exist there must be a community to speak and transmit it. There are a number of reasons that a language may 'shift' or 'die'. Language shift occurs when people change from speaking the language of their parents to another language, and so the old language is not transmitted to their children (Janson, 2002). Language death occurs when a language ceases to exist or be spoken at all. Social, cultural, economic and even military pressures affect languages (Nettle & Romaine, 2000), and nowadays there is more pressure from larger languages on smaller ones and as a result many of the smaller languages are vanishing in all parts of the world (Janson, 2002). Janson (2002) describes how people shift from one language with few speakers to ones that have more speakers and are usually in use over a larger area. The consequence of language shift is that it is not transmitted to the younger generations. The youngest generation is where the 'pulse' of a language lies; a language is at risk when it is not being transmitted naturally to those children (Nettle & Romaine, 2000). A breakdown in the intergenerational transmission is a major cause of a declining language (Ferguson, 2006). A language atrophies after a period of gradual decline. It begins to die when it is not used for all functions and purposes (Nettle & Romaine, 2000), and this is a regular occurrence for minority groups that integrate into mainstream society (Appel & Muysken, 1987).

Types of language death

Nettle and Romaine (2000) outline three categories of language death: population loss, forced shift and voluntary shift. Language death in the first category occurs when the people who speak the language cease to exist; this has been very common in the last few hundred years as native peoples have been wiped out by epidemic diseases (Nettle & Romaine, 2000). The second type of language death by forced shift can be undertaken in a number of forms; dominant groups have tried to make their own language compulsory for all, or they may enslave the minority group(s) by forcing them into a subordinate role, or they may take away the land and resources that the minority groups depend on (Nettle & Romaine, 2000). Forced shift can also take indirect forms such as using policies that target the economic roles of the minority groups rather than their language. By taking and controlling the key goods of the economic and social domains, the minority group has only a weak socioeconomic basis and therefore the language cannot thrive (Nettle & Romaine, 2000). Appel and Muysken (1987) follow a model that presents three main factors that influence language maintenance and shift: status, demographic factors and institutional support factors. Respectively, these factors entail economic changes such as modernisation and urbanisation, the number of speakers and geographical distribution, and elements such as mass media, government or administration services and education (Appel &

Muysken, 1987). The third type of language death proposed by Nettle and Romaine (2000) is voluntary shift; this happens when a group believe that they are better off speaking a language other than their own. This can be distinguished in two ways; 'top down death' occurs when the language retreats from the public domain and official institutions so that is it really only used in the home; what results is that younger speakers may not acquire full fluency as they do not have the opportunity to use it in all functions and domains (Nettle and Romaine, 2000). The second form, 'from the bottom up' occurs when the language withdraws from everyday use and instead is only used for ceremonial or formal occasions (Nettle and Romaine, 2000). The lines between these three types of language death are blurred and often language loss occurs as a result of a combination of all of them. The state of te reo Māori in Aotearoa/ New Zealand can be attributed to these types of factors, they will now be analysed in the next section.

Decline of te reo Māori

Language contact

When the Māori people migrated to Aotearoa, they became the dominant group and their language spread through-out the country, albeit with different dialects. The arrival of the European settlers brought a new language – English. The Treaty of Waitangi established the permanent residence of these new settlers, and so began the founding of a new state and the decline of the Māori language. Appel and Muysken's (1987) work states that language contact can lead to societal bilingualism which has three forms; in the first situation there are two languages spoken by two different groups and each is monolingual; in the second situation all people are bilingual; and in the third situation one group is monolingual and the other is bilingual, the second group will be a minority – a non-dominant or oppressed group. The last situation reflects a power differential between the speech communities and the disadvantaged group is left with the choice of assimilation or resistance (O'Laoire, 2008). As with many other colonised countries, New Zealand falls into the third category, with Māori being the minority. When the European settlers first arrived they recognised the need to learn the Māori language in order to trade and negotiate with the native people; furthermore, the missionaries learnt the language to transmit their values and sermons. The Māori people also saw the benefits of learning English and so a generation was born who were fluent in both languages (Winitana, 2011). This corresponds to the second situation of societal bilingualism described above, although it only applied to a proportion of the society. This did not last long; as the settler population increased and then surpassed the Māori population, the government began implementing policies that would not only affect control of natural and economic resources; it would break down Māori society and contribute to the decline of the Māori language. This state of affairs falls under the third category explained above – the European settlers, or Pākehā, were monolingual, while many Māori, who were now the minority, were bilingual. This language shift relates to the second and third types of language death described in the section above: forced and voluntary shift.

Forced language shift

The two types of forced shift occurred in New Zealand at various times. The processes of colonisation and policies of assimilation eroded the status of the Māori language; the key tool of language domination was the State education system (Ka'ai-Mahuta, 2011). The Education Ordinance 1847 stated that English was to be the medium used in schools (Ka'ai-Mahuta, 2011); although te reo Māori was not officially banned, there is much evidence showing that its use was discouraged (Winitana, 2011) and children were punished for using it, even if they did not know any English (Durie, 1996). This direct approach of forced shift not only prevented Māori children from speaking their language at school, it assisted in subordinating Māori culture and damaging the children's sense of identity and self-worth (Ka'ai-Mahuta, 2011). These assimilation policies were accompanied by the seizure of land through unjust confiscations and biased legislation which deprived Māori of their economic base, as well as their turangawaewae, and undermined tikanga and their sense of identity. The control of the economic and social domains lay with the Pākehā as Māori were effectively excluded from government and therefore had no say in how New Zealand was being managed. For many years, the Māori culture and worldview were not accommodated for, or barely acknowledged by the New Zealand system, and so the perception of the culture and language as an inferior and dying phenomenon continued.

Voluntary language shift

There were also occurrences of voluntary shift among Māori society; Māori parents pushed their children to learn English to improve their chances of success in the Pākehā mainstream (Parliamentary Library, 2000) and to avoid the disadvantages and punishment of speaking te reo Māori (Durie, 1996). Te reo Māori was seen as being a language of the home (Winitana, 2011). This corresponds to the top-down approach of voluntary shift as it withdrew from the public domain – English was used exclusively in official documents and the courts (Durie, 1998) – and Māori was only spoken behind closed doors. Eventually, the bottom-up approach transpired. Up until the Second World War, there were still high fluency levels in te reo Māori in rural, isolated communities (Parliamentary Library, 2000); however, urbanisation and policies of pepper-potting had dramatic effects. English was the language of urban New Zealand (New Zealand History online, 2011) as illustrated by the largely monolingual and monocultural media; the reduced social opportunities for speaking and hearing te reo Māori diminished not only its fluency and use, but also its standing in the eyes of Pākehā and Māori (Durie, 1998). These events highlight the three factors in Appel and Muysken's model: the economic status factor – urbanisation – influenced the language shift as people moved away from their traditional lands and into the cities. This contributed to the demographic factor of geographical distribution; once the people left their close-knit and isolated communities, they were pepper-potted among Pākehā families which reduced the opportunity for speaking their native

tongue. The institutional support factors: mass media, government services and education broadcasted the English language, and left little, if any room for te reo Māori which furthered its demise. Hence, the bottom-up approach of voluntary shift transpired as the Māori language withdrew from everyday use, really only being used on the marae and for other ceremonial purposes.

Te reo Māori and the Treaty of Waitangi

The despondent views of the Māori language were reflected in the 1960 Hunn Report; it stated that the survival of the Māori language and other relics of ancient life was entirely a matter of individual choice (Benton, 1987). It asserted the prevailing view of the time that nature would take its course and only the fittest elements would endure; this indicated the government's belief that they had no obligation to foster the maintenance, use and survival of te reo Māori (Benton, 1987). However, the Waitangi Tribunal's Te Reo Māori Report (Durie, 1996) stated that under the Treaty of Waitangi, the Crown promised to recognise and protect the Māori language, and that promise had not been fulfilled. Legislation such as the Māori Affairs Act 1953, the Broadcasting Act 1976, the Education Act 1964, the Health Act 1956 and the Hospitals Act 1957 were said to be inconsistent with the Treaty principles, prejudicing Māori so that they were not able to have their language spoken, heard, taught, learnt or broadcast etc. (Durie, 1998). The report identified that the guarantee under the Treaty requires affirmative action to protect and sustain the language, rather than a passive obligation to tolerate it, and certainly not to deny its use in any place (Durie, 1996). The Tribunal concluded that the Māori language had not been accorded the appropriate status as an indigenous language or as a taonga protected under Article 2 (Durie, 1998). Figures provided by Dr. Bruce Biggs showed that 90 percent of Māori schoolchildren could speak Māori in 1913; by 1953 the figure had dropped to 26 percent and then fell again to less than five percent by 1975 (Durie, 1996). The Tribunal's recommendations included making it an official language with the right to use it in the public domain (courts, government departments etc.), teaching te reo Māori from an early age, and appointing a Māori Language Commission (Durie, 1996). While this report initiated the government's acknowledgment of the declining state of te reo Māori and the need, as well as their obligation to protect and foster it, a revival and resurgence had already begun within Māori society. One of the key mechanisms in this effort was Māori medium education, this will now be examined.

Māori Medium Education

Māori resistance

The Māori have always been a strong and resilient people; although the processes of colonisation and assimilation are skilfully calculated, the Māori people have proved that they are not a 'dying race' as was once thought. Rather than backing down when the settler government imposed their laws and worldview on them, the Māori people fought for their rights to be recognised as tangata whenua and an equal Treaty partner.

Actions such as establishing the Kīngitanga and the Māori Parliament Kotahitanga in the 19th century exemplified their ability to adapt to new methods and practices. The various protests and movements from the 1970s onwards exhibited their renewed strength to recover what was so wrongly taken from them. Part of those goals included the retrieval of their ancestral lands and waterways, their culture, and more specifically their language. With this in mind, they began developing their own language revitalisation strategies.

Language revitalisation

O'Laoire (2008) explains language revitalisation as involving a reversal of language shift; where a language has been threatened by extinction, people start using it to gradually restore its vitality. Its defining characteristics are that it adds new speakers by involving the home domain and intergenerational transmission, it adds new functions by introducing it into new domains, the speakers revalorise the language, and there is the awareness that positive attitudes, commitment, strong acts of will and sacrifice may be needed to save and revitalise it (O'Laoire, 2008). Attitudes are a huge factor – not only those of the speech community, but those held by society as a whole are crucial as to whether the efforts will succeed (Te Puni Kōkiri, 2007). It must be remembered that revitalisation policies and efforts are not formed in isolation, and it has become commonplace to refer to an ecological model of language planning that engages with other important social forces (O'Laoire, 2008). Nettle and Romaine (2000) state that political, geographical and economic factors support the maintenance of linguistic and cultural diversity, and that a holistic approach is needed which sees language as being part of the larger natural environment. There are different types of approaches to revitalisation; where languages are substantially endangered, actions may include recording excerpts from living speakers so that teaching materials and dictionaries may be produced, while other efforts may focus on normalising the language by reintroducing it into public domains such as the media, administration and education (Ferguson, 2006). Ferguson (2006) also notes that schools are one of the main agencies of socialisation, and that education has been identified as a key instrument for language revitalisation. However, as stated above, teaching alone is ineffective unless other important factors are engaged with. This was the case in Ireland; while teaching the minority language in schools was helpful, it was insufficient because there were no actions in other domains to reinforce the teaching (Ferguson, 2006). A language must be used in everyday life to survive, not just in schools and ceremonial occasions (Parliamentary Library, 2000). Nettle and Romaine (2000) assert that official support is no guarantee of vitality; merely conferring status on a language doesn't necessarily ensure its reproduction, a more successful approach is to confer power on the people themselves. Durie (1998) explains that while the State has a role to play in language development, the initiative must come from the people. This is what the Māori people have done. "The fight to retain, revitalise, and extend Māori language typifies Māori determination to assert a positive cultural identity in a contemporary world" (Durie, 1998, p. 59). It was after years of cultural subordination

and language dominance that the Māori people took matters into their own hands (Ka'ai-Mahuta, 2011). The health concerns about the language prompted a range of initiatives (Statistics New Zealand, 2002), and te reo Māori education was identified as a significant driver in the revitalisation effort (O'Regan, 2006).

Types of Māori education

There were many initiatives to revitalise the Māori language; the first macro-iwi movement was Whakatipuranga Rua Mano made by Ngāti Raukawa, Ngāti Toa and Te Āti Awa in 1975 (O'Regan, 2006). The strategy was to reverse the language decline and develop new generations of speakers; within six years the first Māori University, Te Wānanga o Raukawa was established in 1981 (O'Regan, 2006). Its purpose was to advance, disseminate and support knowledge initiatives through teaching and research (Winitana, 2011). As the Crown would not support this initiative, the system was funded by Māori themselves (Winitana, 2011). The first bilingual school was established in Rūātoki in 1977 and eight more were officially approved in the following decade (Benton, 1987). Some saw it merely as a token reaction and a closer inspection found that the entire Pākehā teaching regime prevailed (Winitana, 2011). In contrast, the kōhanga reo (language nests) movement, which gathered momentum in the early 1980s, was driven from the inside, by Māori, and allows them to control their destinies in a hands-on way (Winitana, 2011). Winitana (2011) describes the Wānanga o Raukawa initiative and the kōhanga reo movement as "seeds of determination" (p. 103); one is sown at the preschool level and the other is at the tertiary end, and together they stake in the ground a defined pathway for Māori language immersion education. Kaupapa Māori schooling is a form of resistance and has been significant in breaking the dominant cycle of social and cultural reproduction of Pākehā culture (Ka'ai-Mahuta, 2011). The aim of kōhanga reo was a pre-school conducted entirely in the Māori language, with the hope of making every child bilingual by the age of five (Walker, 2004). The movement has been very successful; by the end of 1985 the number of schools was almost 400 (Benton, 1987), and then around 800 by 1993 (Winitana, 2011). Although the numbers have declined over the years – there were approximately 450 language nests in 2008 (Winitana, 2011) – their existence is a critique on the conventional State system, and their rapid growth illustrates that they fulfil a need for Māori and provide tools of transformation, liberation and emancipation (Ka'ai-Mahuta, 2011). An issue identified by mothers was that they had nowhere to send their children after preschool; parents claimed that within three weeks of their children attending a mainstream primary school, their children displayed negative attitudes toward their language by suppressing it or losing it completely (Walker, 2004). Consequently, kura kaupapa (primary level schooling) and whare kura (high school) were set up. They were established because it was realised that mainstream schools functioned to reproduce Pākehā culture at the expense of Māori culture, and the threat of Māori language death was the rationale for replacing bilingualism with total immersion (Walker, 2004). These Māori medium schools have evolved from the principles of the kōhanga reo movement to provide excellence in

Māori language, knowledge and cultural frameworks (Ka'ai-Mahuta, 2011). In 2010 there were 463 recorded kōhanga reo with 9,370 enrolments (Education Counts, 2011a), and 72 kura kaupapa with 6,007 enrolments (Education Counts, 2011b). Much has been achieved in terms of revitalising the Māori language; however, there is much more work to be done and more domains to re-colonise (O'Regan, 2006). One of those domains is computer technology and this will be explored in the next section.

Information Technology

Information technology has become an important part of communications, trade and learning in New Zealand and around the world (Roa, 2006). Information is increasingly being provided electronically (Keegan, 2007), and the assortment of media technologies allow mass and long-distance communication (O'Laoire, 2008). "Information technology has important roles to play in supporting minority and endangered languages" (Austin & Sallabank, 2011, p. 1), and if languages can be used in these electronic environments they are likely to survive and prosper (Keegan, 2007).

How information technology can assist languages

O'Laoire (2008) asserts that minority language communities must embrace media and information technologies as a way of dialoguing with the world and themselves. Since information technology has become central to the lives of the younger generations and those in professional and educational contexts, it's reasonable that it should play a part in the revival and maintenance of minority languages such as te reo Māori (Roa, 2006). As stated by Mark Rees in a news article, "[t]echnology plays a huge role in the dissemination of culture – it has a significant impact on education and the way we use language" ("Microsoft New Zealand", 2011). The importance of education in language revitalisation has already been commented on above; O'Laoire (2006) continues by saying that while it is a critical domain, it must be linked to and networked with technological advancements since schools operate in global as well as national and local contexts. Information technology can be used to assist minority and endangered languages by documenting and archiving language information, creating multi-media resources for language learning and preservation, and it has the power to create virtual language communities, connecting speakers and learners and creating a new environment for the language to be used (Keegan, 2007). It may also aid minority languages in gaining access to socio-economic domains (O'Laoire, 2008), and since it has a strong presence in Māori homes and communities, it's highly influential in the area of intergenerational transmission (Roa, 2006). Computers and technology have become part of our normal everyday activities, and a real living language needs to be incorporated into those arenas so that it can be seen, heard and utilised everywhere (Keegan, 2007). This has been achieved through the mode of television; an objective of Māori Television was to normalise the use of te reo Māori by producing it through this medium and by showing it in relevant everyday settings (O'Laoire, 2006). The

focus of this research is the use of Māori language interfaces, and these will be discussed next.

Programmes and initiatives assisting te reo Māori

Keegan (2007) outlines a history of information technology assisting the support and maintenance of te reo Māori: In 1986 the Kōhanga Reo movement created a bilingual computer system to support Māori education; in 1990 the New Zealand Council for Educational Research set up a computer bulletin board in te reo Māori – Te Wahapū – to facilitate discussion and provide access to a database of new technical terms in Māori; in 1992 the University of Waikato designed a word processor called Tā Kupu to teach written Māori skills to children; and in 1993 the University of Otago staff began integrating Māori language course material into a computerised laboratory to assist Māori students with their learning of te reo Māori. Since then, there have been a number of new initiatives and programmes designed to support the Māori language. There are a number of websites that are provided in both English and Māori; a study found that in 1998 there were 16 websites and 206 webpages completely in te reo Māori, and this increased to 24 websites and 25,232 webpages by 2002 (Keegan, Cunningham & Benton, 2004). There are also a range of translation and pronunciation tools including the Google Translator Toolkit and the Māori Macron Restoration Service. Programmes such as the Google search engine, Moodle (Roa, 2006) and the Niupepa digital library (Keegan, 2007) can also be displayed in the Māori language. This technique is a Māori language interface, otherwise known as software localization. Austin and Sallabank (2011) describe software localization as "the process of translating menu items, buttons, dialog boxes, and even help files into a particular language" (p. 394). It supports languages by encouraging use in the electronic domain and could possibly be applied to other devices such as mobile phones (Austin & Sallabank, 2011). This has been achieved with Microsoft Office 2003, 2007 and 2010, as well as the operating systems Windows XP, Vista and 7 ("Microsoft New Zealand", 2011; Roa, 2006). The language packs translate "commonly-used features within specific Microsoft products using a 'skin' on top of the existing frameworks, giving the user the ability to use the technology in a language that is familiar and honours linguistic and cultural differences" ("Microsoft New Zealand", 2011). The latest versions offer greater accuracy and a wider vocabulary and each edition can be downloaded free from the Microsoft website. The language interface packs for Microsoft Office and the Windows operating systems are part of the focus of this research; the aim of the surveys was to determine the level of awareness of these programmes and this will be discussed next.

Findings & Conclusions

Survey Process

The report will now review the process and results of the surveys. The qualitative analysis involved creating a short questionnaire consisting of questions about whether the participants write in te reo Māori on computers, which (if any) applications they use in te reo Māori, whether Māori medium schools should use these software interfaces and what factors prevent people from using them (see Appendix V). The questionnaire was utilised in two forms – by way of a telephone survey, and an online survey hosted by the Facebook website (see Appendix VI). The online survey was presented in both English and Māori. Permission to undertake this research project was first sought from the Ministry of Education (see Appendix III), and then they provided our team with information and contact details for all the Māori medium schools in New Zealand. Before contacting the schools, approval was requested from the Faculty of Computing and Mathematical Sciences Ethics Committee to ensure that all participants would be made aware of the relevant information, and that measures would be taken to protect their privacy (see Appendix II).

The schools were contacted by telephone and the principal was invited to undertake the two minute survey at that point in time, or at another time convenient to them. If the principal was not immediately available, they were sent an email outlining the request to survey their school, and the participant information sheet (see Appendix IV) and questionnaire were attached. Twenty-four responses were recorded; four were full primary schools, 19 were composite schools (Year 1 – 15) and one was a secondary school (Year 9 – 15). Permission was sought from the principal for other staff members and students to undertake the online version of the survey – the results of which are not included in this summary. The schools were also offered information sheets about typing macrons on MAC and PC computers, downloading and installing software with Māori language interfaces, and using other applications with Māori interfaces (See Appendix 1). These sheets were offered to the schools regardless of whether they undertook the survey.

Results

There were 25 responses recorded from the 24 schools interviewed – two interviews (with the principal and a teacher) were conducted on one school.

Question 1: Are you a student, teacher, or other (please specify)?
Twenty-two of the participants were Principals, one was a Deputy Principal, and two were teachers.

Question 2: Do you write in te reo Māori on your computer?

All 25 of the participants stated that they do write in te reo Māori on their computers.

Question 3: Do you use software with a te reo Māori interface?

Twelve participants said that they do not use software with a te reo Māori interface ("Māori software"), and 13 answered that they do.

Question 3a: Why don't you use it?

There were a few reasons why respondents stated that they do not use Māori software. The main reason was that people were not aware or did not have access to it – nine of the 12 participants answered this way and one used the Language Manager for typing macrons as that was the only tool they knew about. The other participant (of these 13) was not confident about his IT skills and thus his ability to use this type of software.

Question 3b: Which programmes do you use?

Of the 13 participants that said they do use Māori software, eight use Microsoft Office, seven use Microsoft Windows, all of them have used Google, and two have used Moodle in Māori. It should be noted that two of the 24 schools use Apple computers; the software for Microsoft Office and Windows is only for PC computers which may explain why one of the participants said that they do not use Māori software, and why the other has only used Google in Māori.

Question 4: Do you think children and staff of Māori medium education should use software with a te reo Māori interface?

All of the participants believed that children and staff of Māori medium education should use Māori software. One of the main explanations for this affirmative answer was because it reinforces te reo Māori; it promotes the language and its proficiency within the school environment and aligns with the kaupapa of the schools. Māori software is a good teaching tool, and as a few of the participants noted, all resources used in kaupapa Māori schools should be in the Māori medium. Other participants commented that these resources should be used to keep the language alive; this was noted in the literature review – using language in domains where they are not usually found normalises it which supports its revival and maintenance. Another common theme that arose in response to this question was that Māori software is a necessity and would greatly benefit the students. It is conventional in kaupapa Māori schools to not integrate the English language into teaching until the high schools years; it therefore makes sense to have computer programmes in Māori for younger students who use computers. Some of the participants described how it would be easier for younger students to navigate, read and understand Māori software as the students are more familiar with te reo Māori. This would also be more conducive for teachers as they would not have to use English just for computer work, or as one school currently does – speak the instructions in Māori, and then point to the English word on the screen. This would maintain and better support the language and it would take less time. Some

of the participants also complained of the time taken to manually insert macrons using the *Insert/Symbol* function.

Question 5: What do you think prevents users who are fluent in te reo Māori from using software in te reo Māori?

There were a range of reasons given in response to the fifth question; as already highlighted by Question 3a, awareness of the software was a major barrier, and the cost of acquisition was also identified. Some of the participants described how a person's fluency and literacy may prevent them from using Māori software, and IT confidence, skill and support were also named factors. In terms of the actual language, regional differences arose as a possible factor; there are various dialects of te reo Māori and this may hinder usage if people cannot understand it all. This is related to another factor mentioned – new words. The rapid rate of new technology and devices has resulted in a surge of new Māori words; some people may not know these new words which may impede the way they use the software. Another comment was that the system and devices – such as the keyboard – are not designed for te reo Māori. A few of the participants suggested that people may be more familiar with the English versions of software, and one noted that they were much faster in performing tasks with the English versions and so it was not necessary to use the Māori versions.

Question 6: Do you have any further comments about software with a Māori language interface?

Most participants did not have any further comments, but those that did mentioned the need for more resources of this type – this is to move into the 21st century and keep the students up-to-date with technology. Others commented on the need to encourage the use of Māori software, and also for more IT support; some schools had Māori software set up on their computers but staff members or even students changed the settings back to English.

Conclusions

The aim of this research was to determine the level of awareness and willingness to use software with a te reo Māori interface by the Māori medium education sector. The literature describes the importance and function of language in culture, society and as a part of identity; te reo Māori is an important part of Māori culture and reflects the values and principles of the Māori worldview. There is much written about the decline of te reo Māori due to factors such as colonisation, assimilation and urbanisation; however, there has been much effort in reviving and maintaining te reo Māori. Māori medium education is one such effort, and with the increasing use and importance of information technology, the development of software with te reo Māori interfaces has also been a beneficial advancement. Dr. Keegan's larger project aims to survey all 84 of the listed Māori immersion schools; however, this report only conveys results for 24 schools and so only provisional conclusions can be drawn.

So far, most of the surveys have been conducted on principals, and 100% of the participants confirmed that they write in te reo Māori on their computers. Forty-eight percent of the participants do not use software with a te reo Māori interface – the main reason being that they either did not know about the resources or didn't have access to them. All of the participants believed that Māori medium schools should use this type of software; it would reinforce, support and promote the use and proficiency of te reo Māori, and it would benefit those younger students who are not as familiar with English. Factors identified as barriers that may prevent people from using these resources include knowledge and awareness of the software, costs of acquisition, IT skill level and support, regional or dialect differences, and simply being more familiar with the English versions of the software. Although these results are still premature, they appear to be indicating that the level of awareness of 'Māori software' could be improved, and that schools are eager to acquire and utilise these resources. More promotion and support for these resources is needed so that kaupapa Māori schools can incorporate them into their teaching regimes; this will allow students to stay up-to-date with technology, normalise the language in computing environments, and reinforce the overall maintenance and use of te reo Māori.

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Appendices

Appendix I – Māori Software Instruction Sheets

**Macronized Vowels on a Mac (OS X 10.1 & 10.2)**

In order to type macrons using an Apple Macintosh you must make some changes in the System Preferences which allow you to change the keyboard layout.
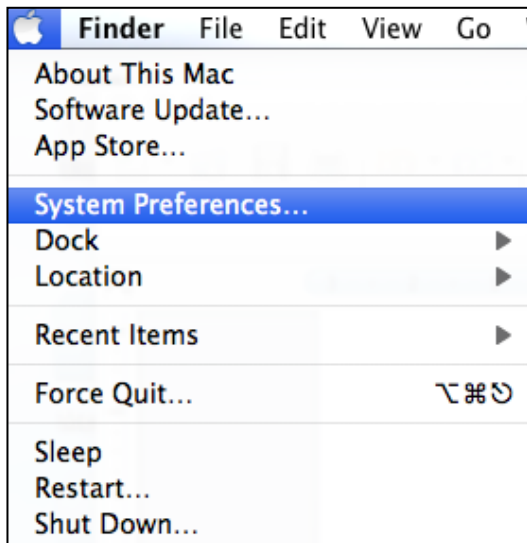
1. Choose **System Preferences** from the **Apple Menu.**
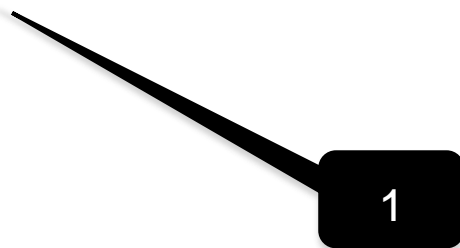
**2.** From the System Preferences Window click on **International.**

3. Then click on the tab for **Input Menu.**

4. Tick **U.S. Extended [4a]** and tick the check box for **Show input menu in menu bar [4b].**

5. Close the International Window.
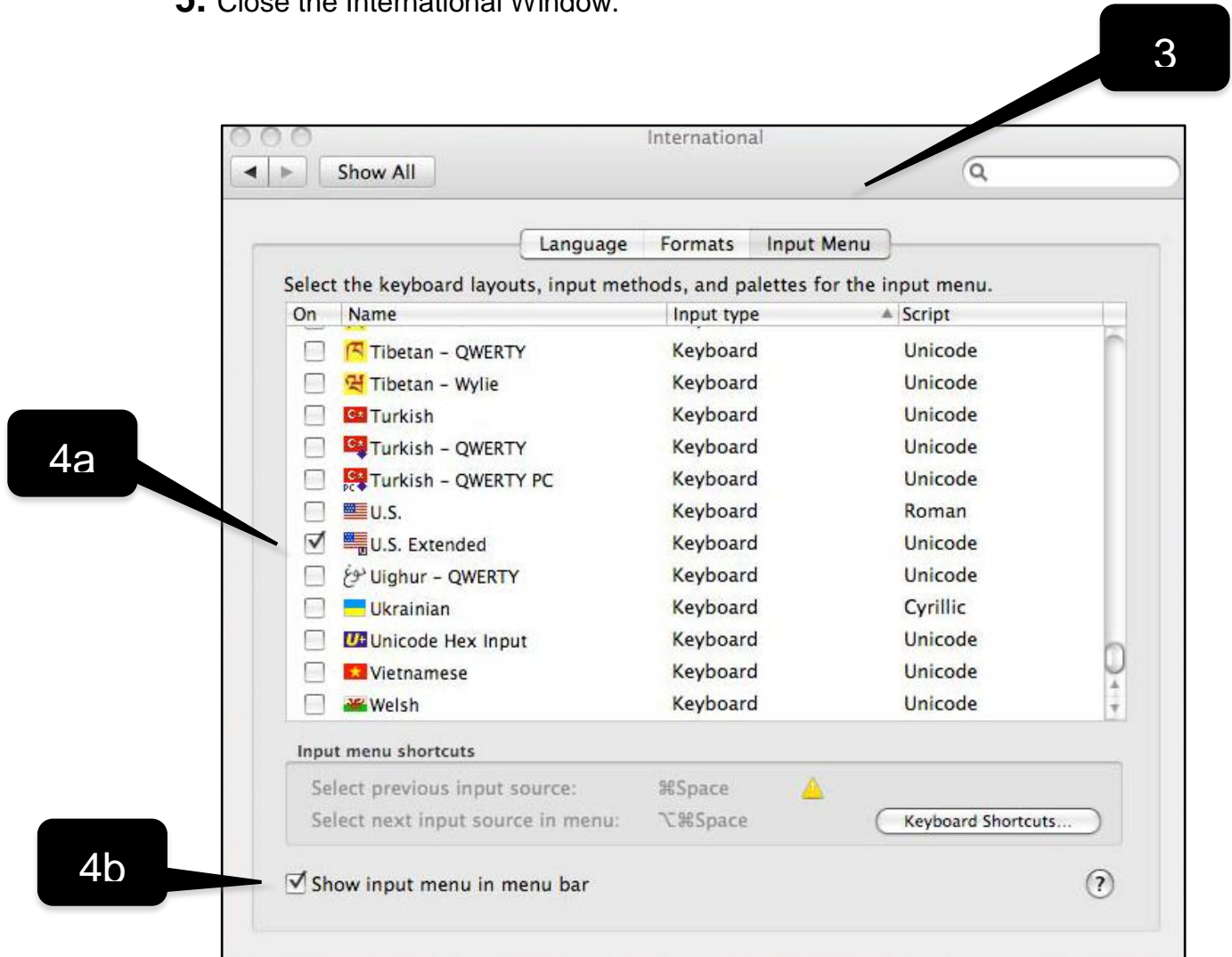
**6.** At the top right of the screen there should be a little **Australian flag.**

7. Click on the flag and there should be a drop down menu listing other input methods, select **U.S. Extended.**
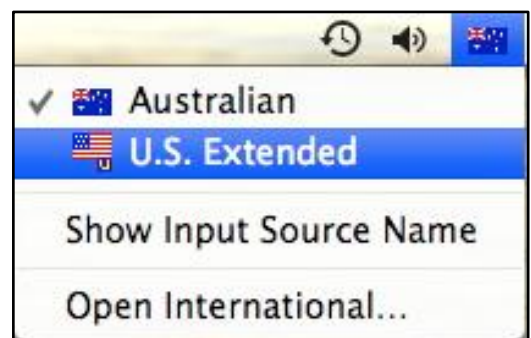
8. To create the macron hold down the Option key and a vowel to type the character that you wish the macron to be over.

For example, **Option + a** types **ā.**
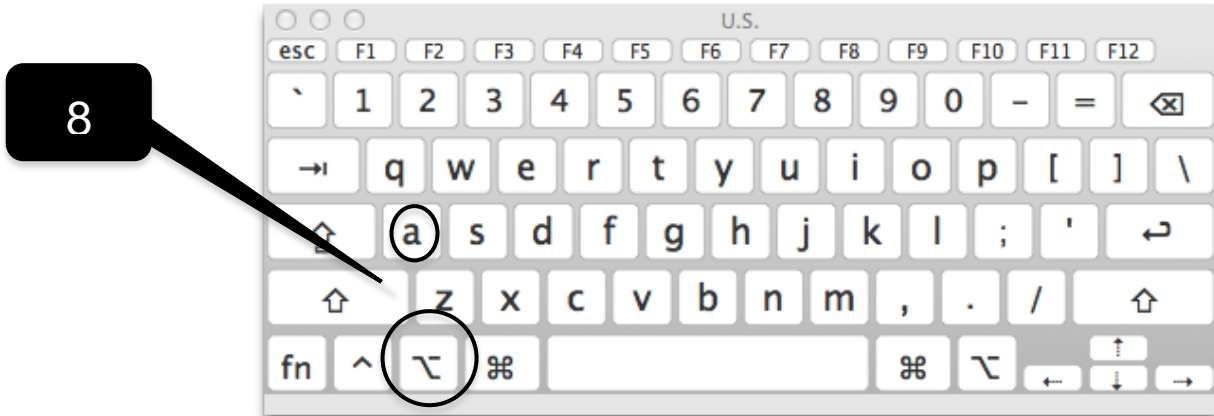
NOTE:
The typing of macrons works in applications that support a Unicode format, e.g. Word, Excel, Powerpoint, and only with Unicode compliant fonts, e.g. Times New Roman, Arial, Cambria etc.

Macronized Vowels on a Mac (OS X 10.3, 4 & 5)

In order to type macrons using an Apple Macintosh you must make some changes in the System Preferences which allow you to change the keyboard layout.
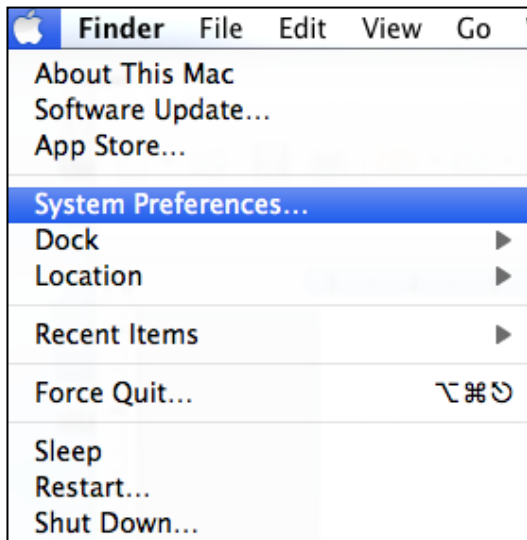
1. Choose **System Preferences** from the **Apple Menu.**

2. From the System Preferences Window click on **International.**
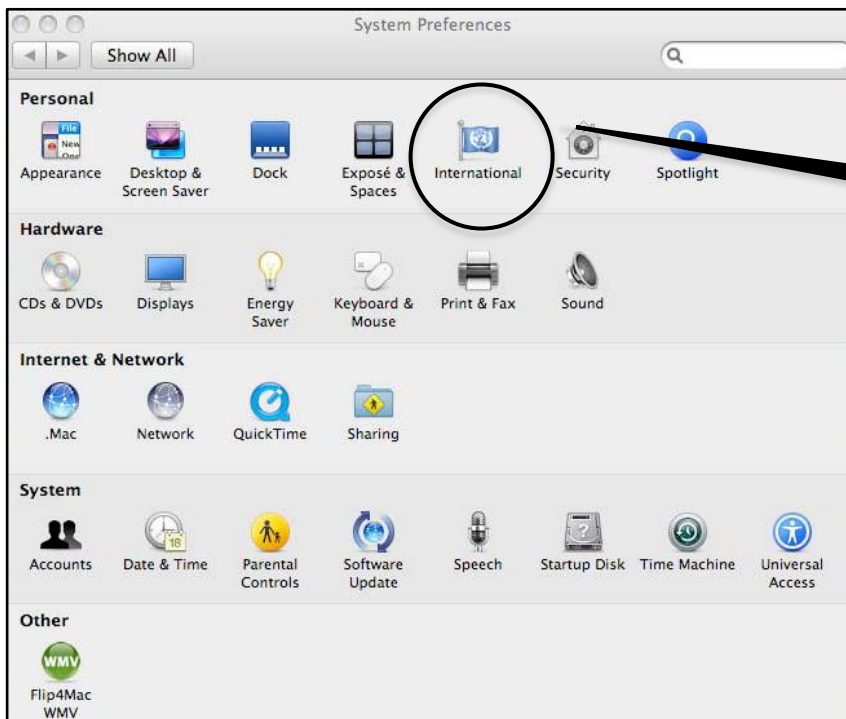
3. Then click on the tab for **Input Menu.**

4. Tick the **Māori** flag **[4a]** and tick the check box for **Show input menu in menu bar [4b].**

5. Close the International Window.
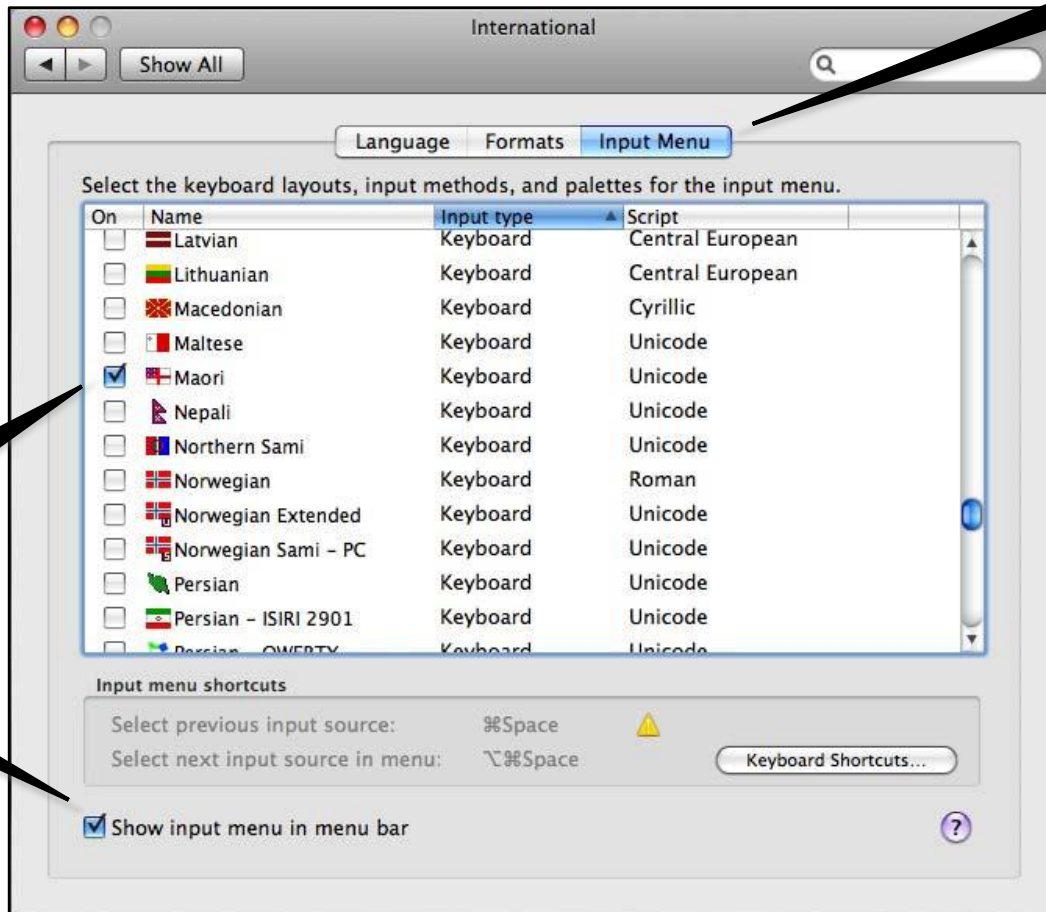
6. At the top right of the screen there should be a little **Australian** (or other) **flag.**

7. Click on the flag and there should be a drop down menu listing other input methods, select the **Māori** flag**.**

8. To create the macron hold down the Option key and a vowel to type the character that you wish the macron to be over.

For example, **Option + a** types **ā.**
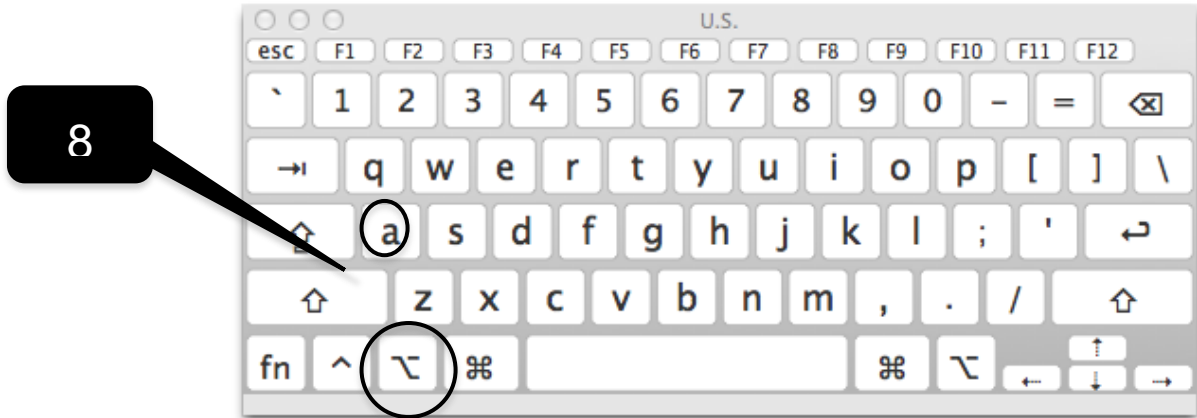
NOTE: The typing of macrons works in applications that support a Unicode format, e.g. Word, Excel, Powerpoint, and only with Unicode compliant fonts, e.g. Times New Roman, Arial, Cambria etc.

Macronized Vowels on a Mac (OS X 10.6 & 10.7)

In order to type macrons using an Apple Macintosh you must make some changes in the System Preferences which allow you to change the keyboard layout.
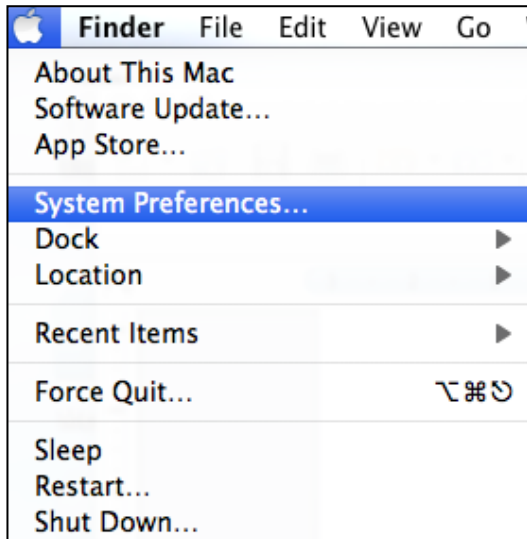
1. Choose **System Preferences** from the **Apple Menu.**

2. From the System Preferences Window click on **Language and Text.**
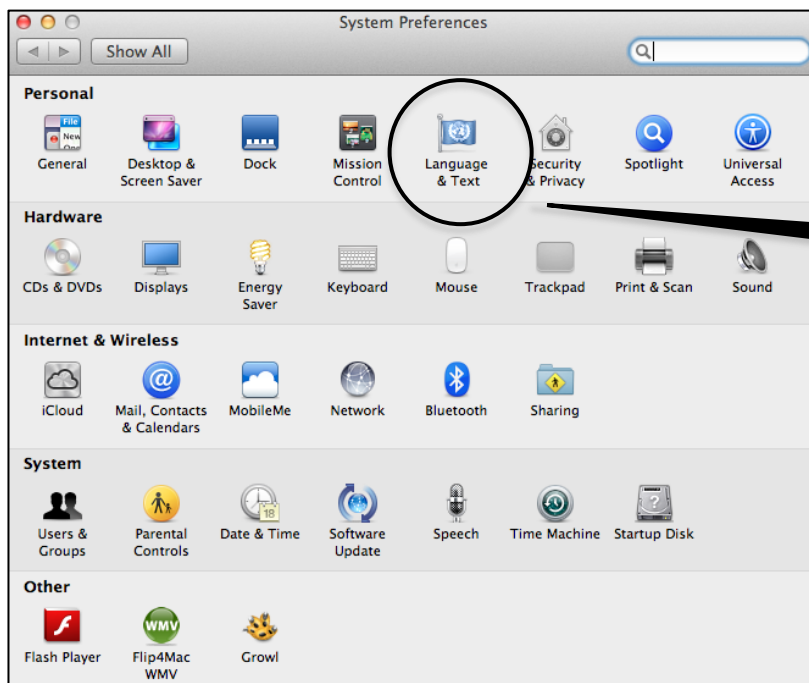
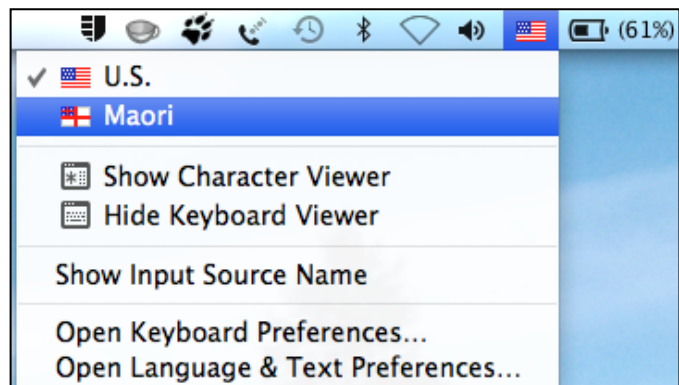**3.** Then click on the tab for **Input Sources.**
4. Tick the **Māori** flag **(4a)** and tick the check box for **Show input menu in menu bar.**

5. Close the Language & Text Window.
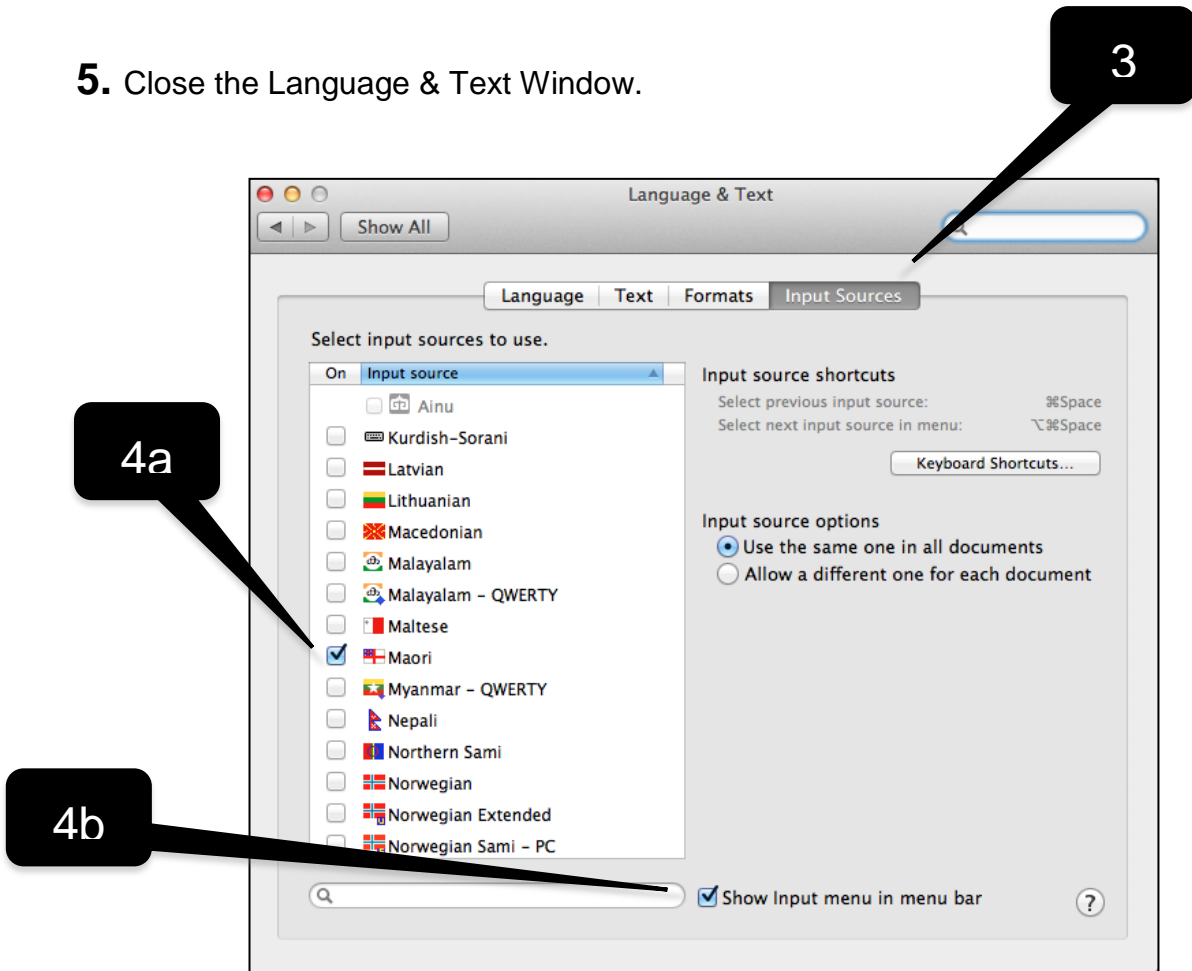
6. At the top right of the screen there should be a little **flag.**

7. Click on the flag and there should be a drop down menu listing other input methods, select the **Māori** flag.

8. To create the macron hold down the Option key and a vowel to type the character that you wish the macron to be over.

For example **Option + a** types **ā.**

8

NOTE: The typing of macrons works in applications that support a Unicode format, e.g. Word, Excel, Powerpoint, and only with Unicode compliant fonts, e.g. Times New Roman, Arial, Cambria etc.
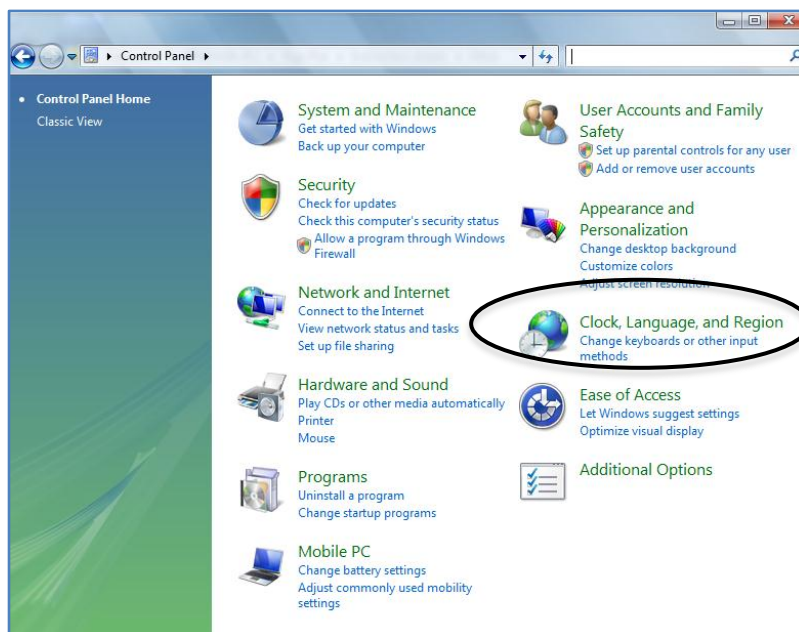
Macronized Vowels on a PC (Windows Vista)

In order to type macrons using a PC, the easiest and most thorough method is to change the keyboard driver that is used by the operating system, as follows:
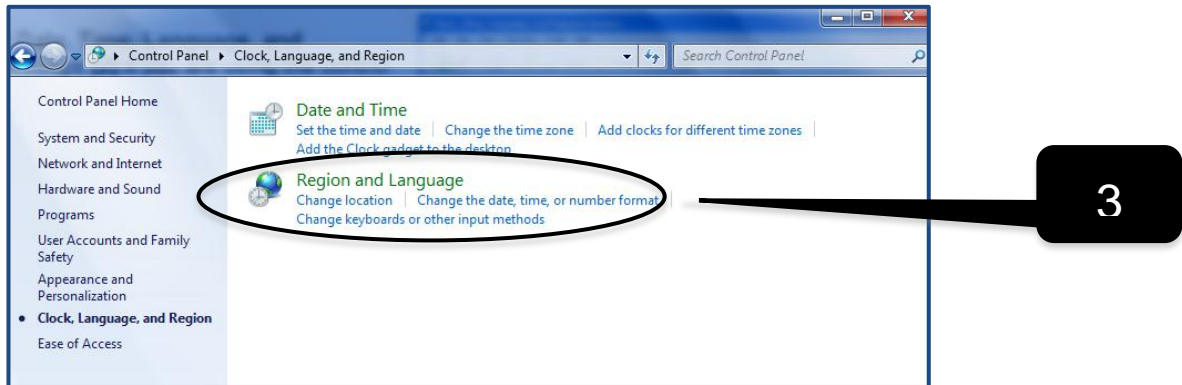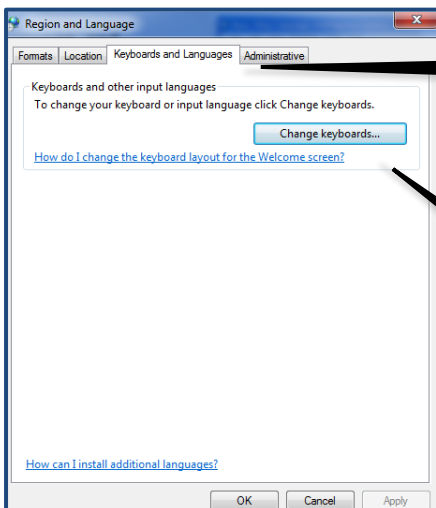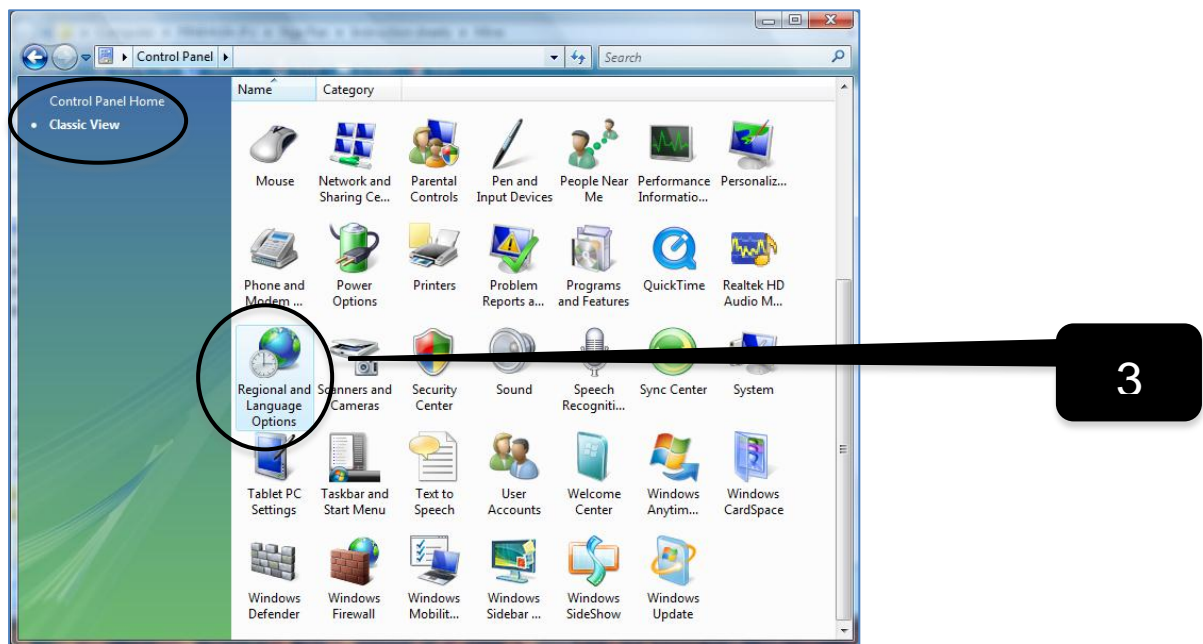
1. Open the **Control Panel** from the **Start Menu.**
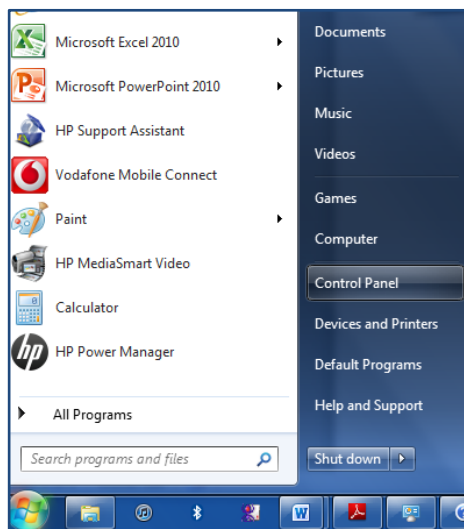
2. From the Control Panel Home Window click on **Clock, Language and Region.**

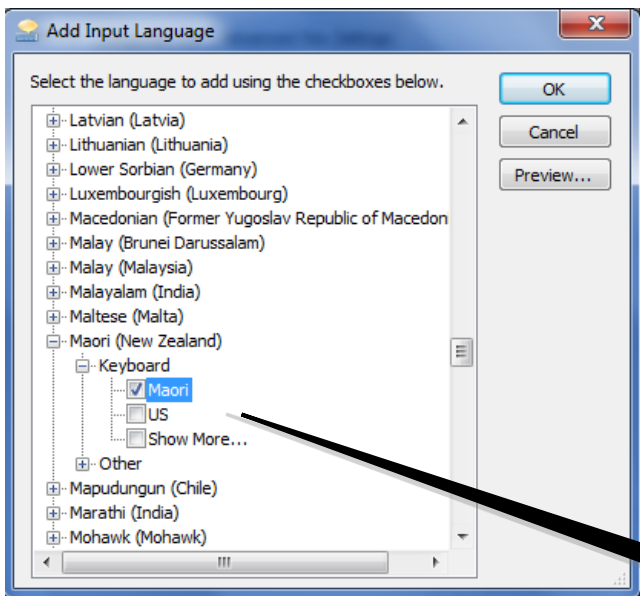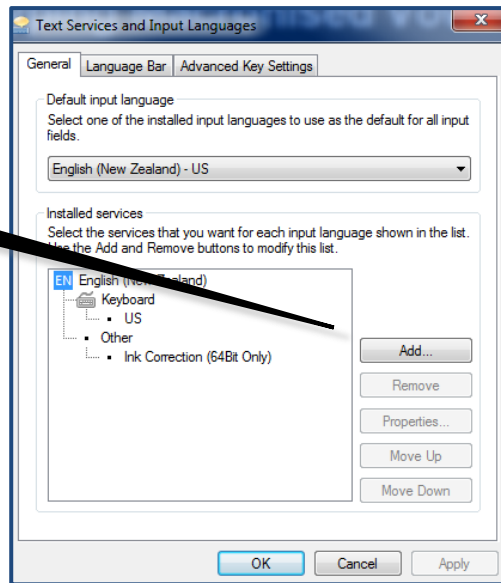**3.** Then click on **Region and Language.**

OR If you are in the Control Panel **Classic View**, click the **Regional and Language Option** icon.

4. Click on the **Keyboards and Languages** tab **[4a]**, and then click the **Change keyboards…** button **[4b]**.

5. In the **Text Services and Input Languages** Window click the **Add**… button.

6. Click on the addition sign next to **Māori (New Zealand)** in the list. Then do the same for the **Keyboard** tab and select **Maori**.

This will change the keyboard settings to the Māori keyboard which the University of Waikato was instrumental in adding to the Microsoft settings options.
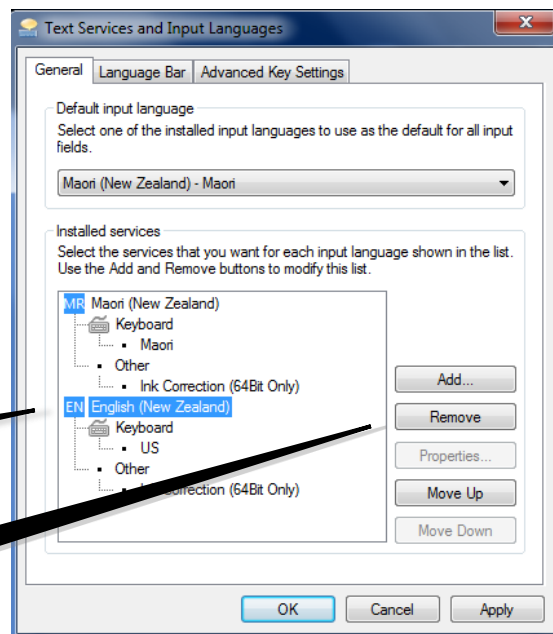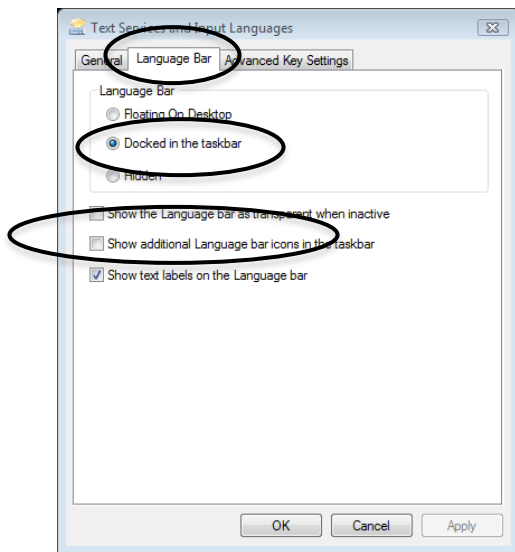
Then click **OK.**

7. In the Text Services and Input Languages Window, select **English (New Zealand)** or whatever contains the **Keyboard US** service **[7a]**, and click **Remove [7b]**. Māori will become the default input language if there are no other installed services. Then click **Apply** and **OK,** and exit out of any other open windows.
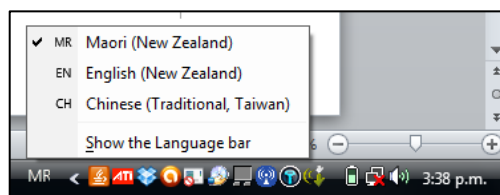
Note: You can keep multiple languages installed on your computer. Instead of removing the other services, go to the **Language Bar** tab and select **Docked in the taskbar** and **Show text labels on the Language Bar.** Then click **OK.**

The Language Bar will now appear on the Task Bar. You can alternate between languages at any time.

8. In most cases you can immediately use the Māori keyboard to type macronised vowels. You do this by typing the acute/tilde key followed by the macronised vowel you want to add.

For example, + = **ā**

To get the acute sign (`), push the button twice.

Please note that on some computers, you may have to hold down the acute button and the vowel at the same time.

NOTE: The typing of macrons works in applications that support a Unicode format, e.g. Word, Excel, Powerpoint, and only with Unicode compliant fonts, e.g. Times New Roman, Arial, Cambria etc.

Macronized Vowels on a PC (Windows XP)

In order to type macrons using a PC, the easiest and most thorough method is to change the keyboard driver that is used by the operating system, as follows:

1. Open the **Control Panel** from the **Start Menu.**
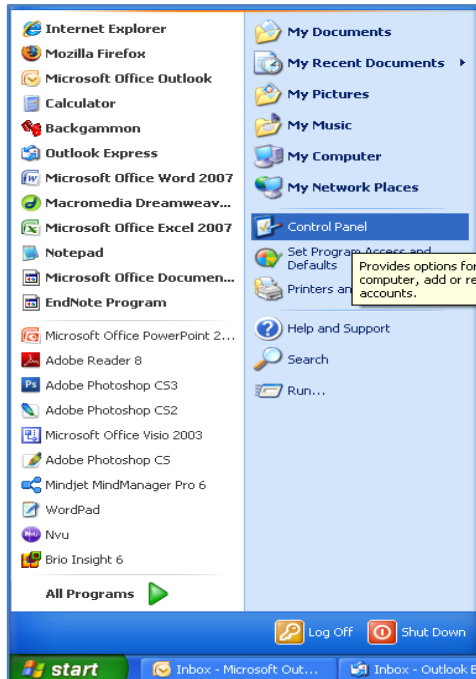
2. Then select **Date, Time, Language, and Regional Settings** if you are using the control panel shown below, or go straight to **Regional and Language Options** (step 3 below) if you are using the **Classic** control panel view**.**
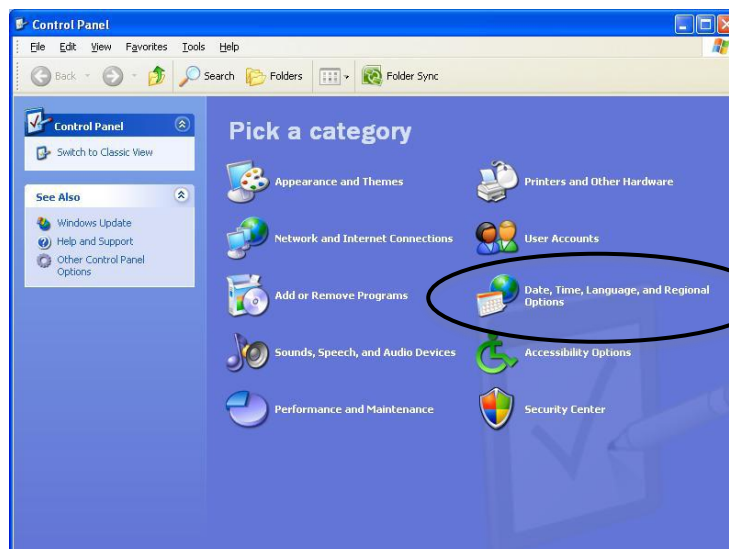
3. Next select **Regional and Language Options.**
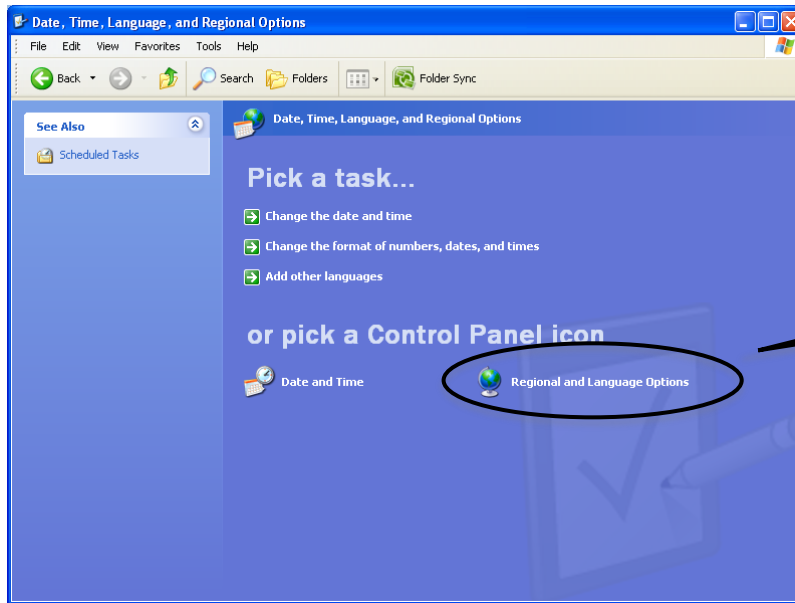
4. Select the **Languages** tab **[4a]**, and then click the **Details** button **[4b]**.
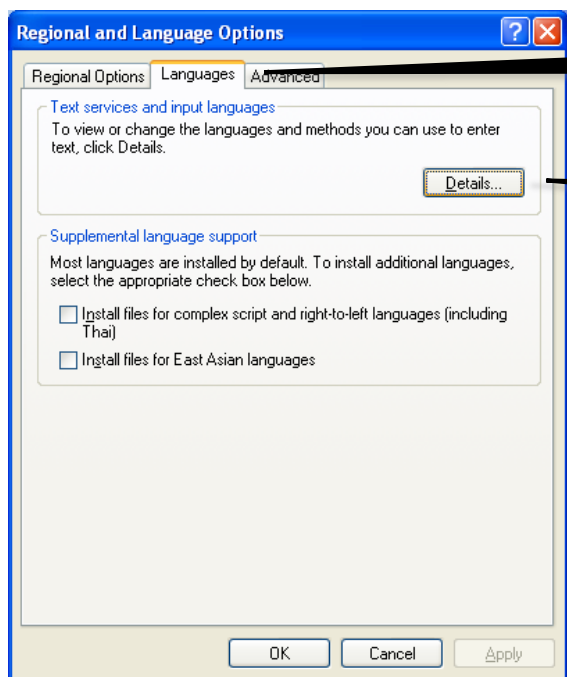
5. In the **Text Services and Input Languages** Window click the **Add**… button.

6. Select **Māori** from the drop down list as the input language.

This will change the keyboard settings to the Māori keyboard which the University of Waikato was instrumental in adding to the Microsoft settings options.

Then click **OK.**

Add Input Language

Input language:

English (New Zealand)

French (Switzerland)
FYRO Macedonian
Galician
German (Austria)
German (Germany)
German (Liechtenstein)
German (Luxembourg)
German (Switzerland)
Greek
Hungarian
Icelandic
Indonesian
Italian (Italy)
Italian (Switzerland)
Kazakh
Kyrgyz (Cyrillic)
Latvian
Lithuanian
Malay (Brunei Darussalam)
Malay (Malaysia)
Malayalam (India)
Maltese
Maori
Mongolian (Cyrillic)
Northern Sotho
Norwegian (Bokmal)
Norwegian (Nynorsk)
Polish
Portuguese (Brazil)
Portuguese (Portugal)

OK   Cancel

6

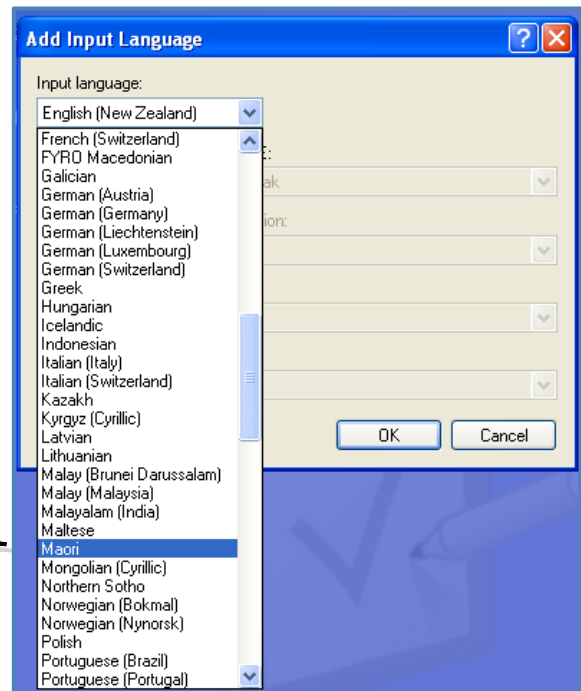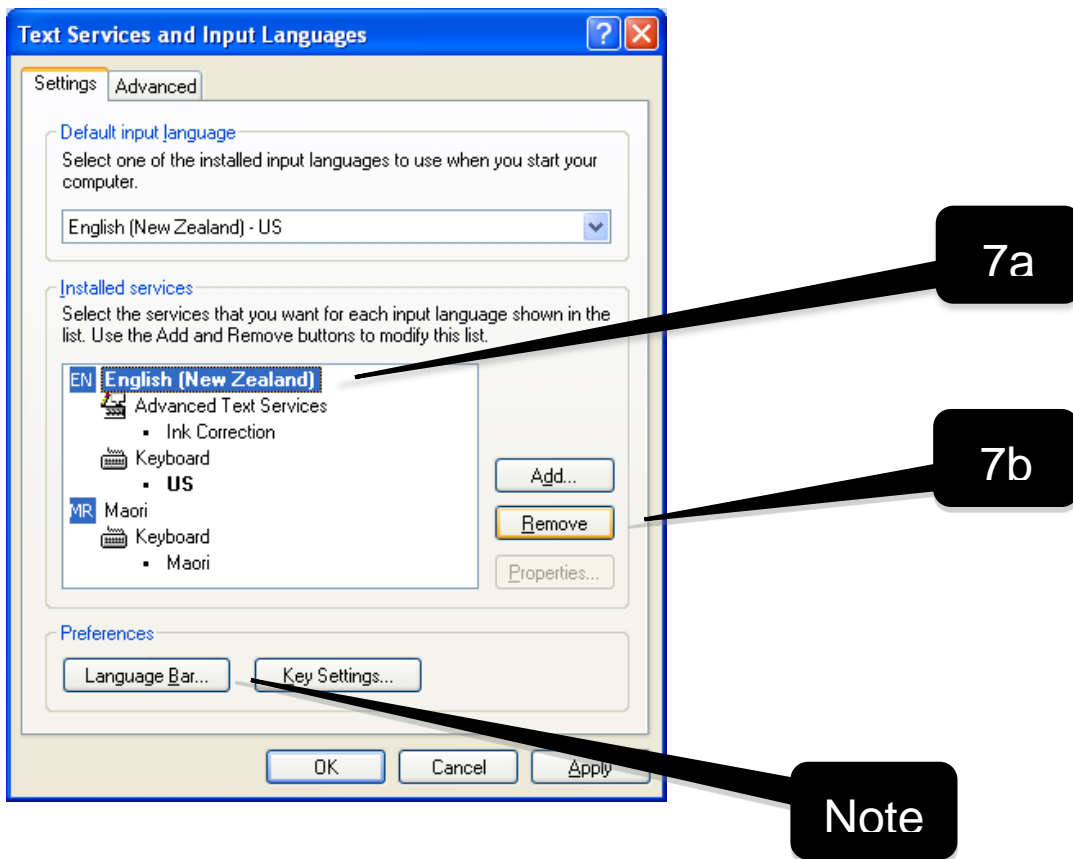**7.** Now select the old **English (New Zealand)** service (or whether contains the **Keyboard US service**) **[7a]** and click the **Remove** button **[7b].**

Then click **OK.** You will then see a warning message which you can ignore. Click **OK** to accept it, then **OK** again to exit the **Language and Regional Options** panel.

Text Services and Input Languages

Settings | Advanced

Default input language

Select one of the installed input languages to use when you start your computer.

English (New Zealand) - US

Installed services

Select the services that you want for each input language shown in the list. Use the Add and Remove buttons to modify this list.

EN English (New Zealand)
  Advanced Text Services
    • Ink Correction
  Keyboard
    • US
MR Maori
  Keyboard
    • Maori

Add...
Remove
Properties...

Preferences

Language Bar...   Key Settings...

OK   Cancel   Apply

7a

7b

Note

37

Note: You can keep multiple languages installed on your computer. Instead of removing the other services, click the **Language** button and select **Docked in the taskbar** and **Show text labels on the Language Bar.** Then click **OK.**
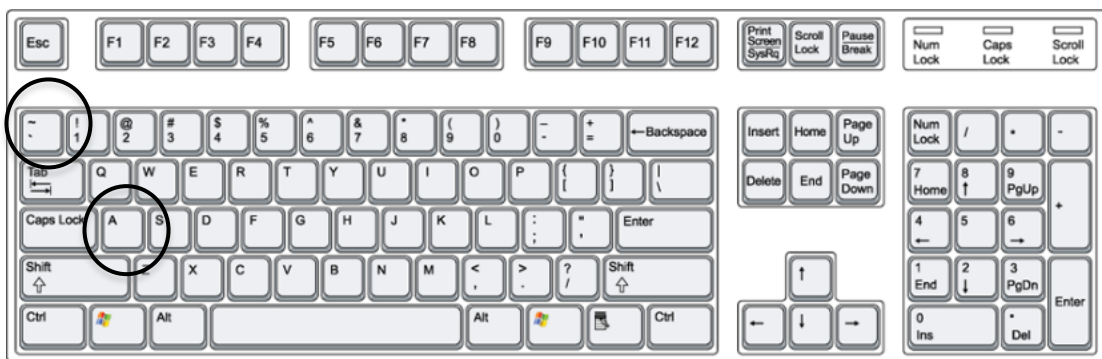
The Language Bar will now appear on the Task Bar. You can alternate between languages at any time.
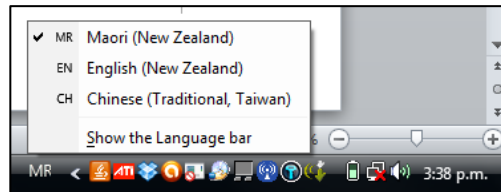
8. In most cases you can immediately use the Māori keyboard to type macronized vowels. For some older documents you may need to Restart the computer to use the new process. You do this by typing the acute/tilde key followed by the macronized vowel you want to add.

For example, [~] + [A] = **ā**

To get the acute sign (`), push the [~] button twice.

Please note that on some computers, you may have to hold down the acute button and the vowel at the same time.

NOTE: The typing of macrons works in applications that support a Unicode format, e.g. Word, Excel, Powerpoint, and only with Unicode compliant fonts, e.g. Times New Roman, Arial, Cambria etc.

Macronized Vowels on a PC (Windows 7)

In order to type macrons using a PC, the easiest and most thorough method is to change the keyboard driver that is used by the operating system, as follows:

1. Open the **Control Panel** from the **Start Menu.**
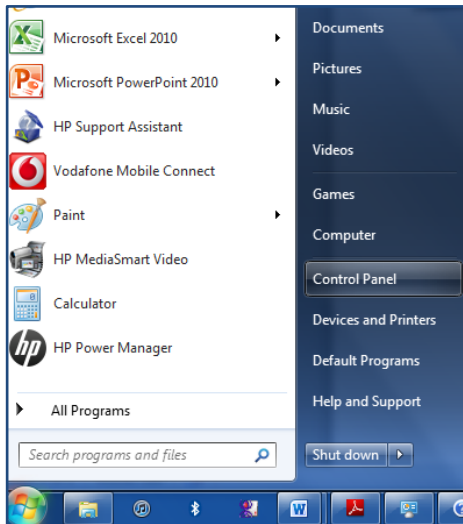
2. In the Control Panel Window select the **Category view** and click on **Clock, Language and Region.**
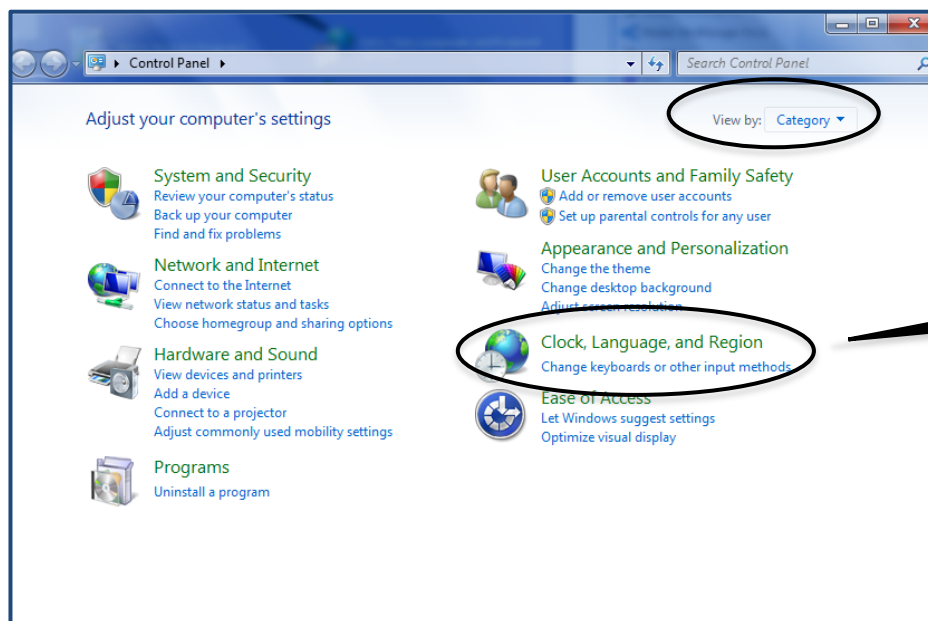
3. Then click on **Region and Language.**

4. Click on the **Keyboards and Languages** tab **[4a]**, and then click the **Change keyboards…** button **[4b]**.
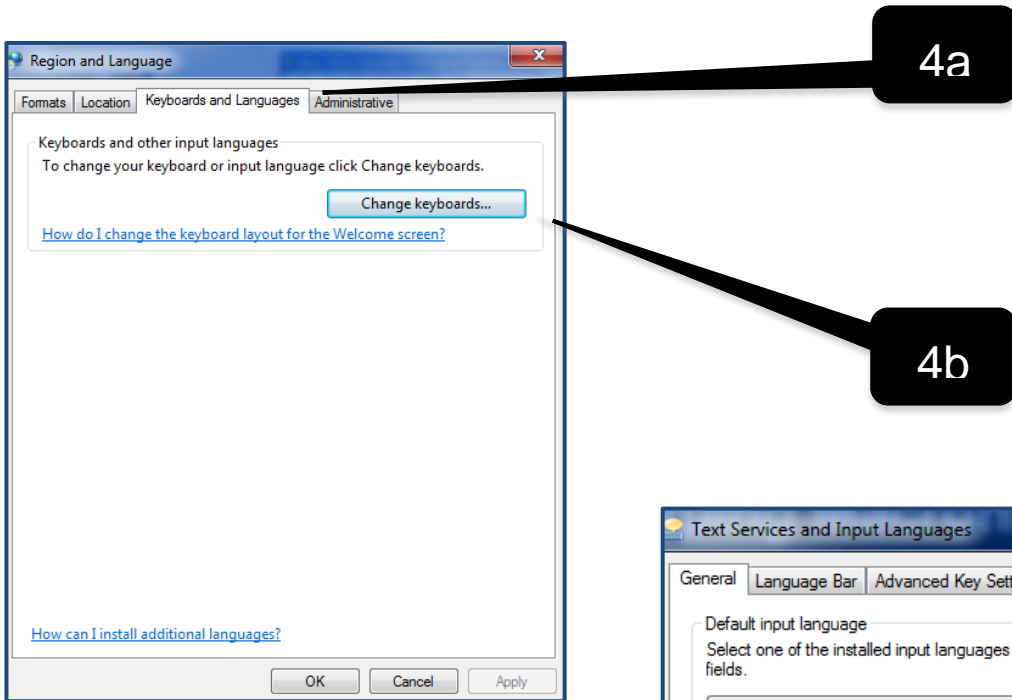
5. In the **Text Services and Input Languages** Window click the **Add**… button.

6. Click on the addition sign next to **Māori (New Zealand)** in the list. Then do the same for the **Keyboard** tab and select **Māori**.

This will change the keyboard settings to the Māori keyboard which the University of Waikato was instrumental in adding to the Microsoft settings options.

Then click **OK.**

7. In the Text Services and Input Languages Window select **English (New Zealand)** or whatever contains the **Keyboard US** service **[7a]**, and click **Remove [7b].** Māori will become the default input language if there are no other installed services. Click **Apply** and **OK,** and exit out of any other open windows.

41

Note: You can keep multiple languages installed on your computer. Instead of removing the other services, go to the **Language Bar** tab and select **Docked in the taskbar** and **Show text labels on the Language Bar.** Then click **OK.**

The Language Bar will now appear on the Task Bar. You can alternate between languages at any time.

8. In most cases you can immediately use the Māori keyboard to type macronised vowels. You do this by typing the acute/tilde key followed by the macronised vowel you want to add.

For example, + = **ā**

To get the acute sign (`), push the button twice.

Please note that on some computers, you may have to hold down the acute button and the vowel at the same time.

NOTE: The typing of macrons works in applications that support a Unicode format, e.g. Word, Excel, Powerpoint, and only with Unicode compliant fonts, e.g. Times New Roman, Arial, Cambria etc.

Appendix II – Ethics – Project Details

<table>
<tr><td>Application for Approval
Outline of Research or Related Activity</td><td>THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato</td></tr>
</table>

Ethics Committee, Faculty of Computing and Mathematical Sciences

Details of Proposed Activity
1. Identify the project

1.1 Title of Project:

Reo Māori ki ngā Rorohiko o te Kura – A survey to determine numbers who use software with a Māori language interface by Māori medium schooling of New Zealand

1.2 Researcher(s) name and contact information:

Tara Dalley; tpmd1@students.waikato.ac.nz; 027 3705088

Paora Mato; pjm20@students.waikato.ac.nz

1.3 Supervisor's name and contact information (if relevant)

Dr. Te Taka Keegan; tetaka@waikato.ac.nz; 07 838 4420

1.4 Anticipated date to begin data collection

1 February 2012

1.5 Does your application involve issues of health or disability with human participants? If so, please refer to the guidelines as to whether your application needs to be submitted to the Northern Y Regional Ethics Committee.

No.

2. Describe the research or related activity

2.1 Briefly outline what the project is about including your goals and anticipated benefits. Include links with a research programme, if relevant.

This survey seeks to discover the number of staff and students in Māori medium education who are using software that has a Māori language interface. If software is being used in te reo Māori, which particular packages are being used and how often? If the software is not being used in te reo Māori, why isn't it and what could we do to increase this usage?

Ultimately the research is about assisting the promotion and propagation of te reo Māori, with a focus in the computing environments of Māori medium education.

2.2 Briefly outline your methods.

Contact all Māori medium schools of New Zealand by phone and ask if they are willing to answer a quick survey on their use of software in te reo Māori. Initially the principals of the schools will be contacted and asked if they are willing to answer the questions. Permission will be also sought from school computer administrators, and other teachers and students who will be asked to answer the survey on-line.

2.3 *Describe plans to give participants information about the goals of the research or related activity.*

A participant information sheet will be sent to the Ministry of Education to acquire their consent before any schools are interviewed. The participant information sheet is attached.

Participants at individual schools will be given information in three ways;

    a) The participant information sheet will be explained to the schools over the phone when they are first contacted about undertaking the survey.

    b) The participant information sheet will be emailed to schools who agree to take part in the research.

    c) The participant information sheet is made available on-line to participants who answer the on-line survey.

2.4 *Identify the expected outputs of this research or related activity (e.g., reports, publications, presentations).*

A report will be written summarising the results. This report will be made available to the Ministry of Education's Te Reo Māori Schooling Group (TRMSG) and will be submitted for publication in journals and/or conferences.

A report will also be provided to Ngā Pae o te Māramatanga as part of the requirements for the 2011/2012 summer internship.

The information may be summarised in journal articles and conference presentations.

2.5 *Identify who is likely to see or hear reports or presentations arising from this research or related activity.*

The project is led and supervised by Dr. Te Taka Keegan. A report summarising the results will be made available to the Ministry of Education's Te Reo Māori Schooling Group (TRMSG), Ngā Pae o te Māramatanga and may be submitted for publication in journals and/or conferences.

2.6 *Identify the physical location(s) for the research or related activity, the group or community to which your potential participants belong, and any private data or documents you will seek to access. Describe how you have access to the site, participants and data/documents. Identify how you obtain(ed) permission from relevant authorities/gatekeepers if appropriate and any conditions associated with access.*

The survey involves Māori medium schools of New Zealand. Access to the schools will be by telephone.

3. Obtain participants' informed consent without coercion

3.1 *Describe how you will select participants (e.g., special criteria or characteristics) and how many will be involved.*

This survey intends to contact all primary and secondary Māori medium schools in New Zealand.

3.2 *State clearly whether this is an application under section 10 of the Ethical Conduct in Human Research and Related Activities Regulations: Large Random Sample Surveys.*

This is not an application under section 10 of the Ethical Conduct in Human Research and Related Activities Regulations: Large Random Sample Surveys.

3.3 *Describe how you will invite them to participate.*

The principal of the schools will be contacted via telephone. The survey will be explained and they will be asked for their consent for their schools to take part in the survey. If consent is given they will be asked the survey questions over the phone.

The principal will then be asked for consent to contact other staff members or students to take part in the survey. These other staff members or students' consent will be obtained from the on-line survey.

3.4 *Show how you provide prospective participants with all information relevant to their decision to participate. Attach your participant information sheet, cover letter, or introduction script. See document on informed consent for recommended content. Information should include, but is not limited to:*
- *what you will ask them to do;*
- *the context in which information sheets and consent sheets will be used. When (e.g. just before the study, a week before etc), where (e.g. in a laboratory environment, in a field setting etc) and in what form (e.g. paper, email etc) information will be provided to prospective participants.*
- *how to refuse to answer any particular question, or withdraw any information they have provided at any time before completion of data collection;*
- *how and when to ask any further questions about the study or get more information.*
- *the form in which the findings will be disseminated and how participants can access a summary of the findings from the study when it is concluded.*

Information will be provided at 3 levels.

1. The Ministry of Education has a letter of explanation sent to them and will have a letter of consent sent to them for their approval and signiture. These are attached to this application.
2. Information for the school principals will be provided verbally when they are contacted and further information, in the form of the Participant Information Sheet, will be supplied by email.
3. Participants undertaking the on-line survey will have a link to the Participant Information Sheet. This sheet does include contact details if further information is required, and is attached to this application.

3.5 *Describe how you get their consent. (Attach a consent form if you use one).*

Consent to undertake this project will first be sought from the Ministry of Education, as this survey is a nationwide survey.

Consent will also be sought verbally from the principal of each school, when the schools are contacted by phone.

The on-line survey and the verbal survey will ask exactly the same questions. The on-line survey can be answered in Māori or in English. The on-line survey has a statement that says by submitting the form participants have given permission for the research to be undertaken.

3.6 *Explain incentives and/or compulsion for participants to be involved in this study, including monetary payment, prizes, goods, services, or favours, either directly or indirectly.*

There will be no incentives offered to take place in this study.
However the schools will be offered instruction sheets for typing macrons, installing Māori language packs, and a current listing of web sites that offer a Māori language interface regardless of whether or not they participate in the surveys.

4. Minimise deception

If your research or related activity involves deception – this includes incomplete information to participants -- explain the rationale. Describe how and when you will provide full information or reveal the complete truth about the research or related activity including reasons for the deception.

There are no elements of deception in this research. The full disclosure of the purpose of the survey will be disclosed to the participant when they are contacted.

5. Respect privacy and confidentiality

5.1 *Explain how any publications and/or reports will have the participants' consent.*

Consent not required as publications and reports will not identify individuals or individual schools.

5.2 *Explain how you will protect participants' identities (or why you will not).*

Participants' privacy and confidentiality will be maintained at all times. No details of individuals will be collected in the surveys, and the contact details of the schools' computer administrators will not be retained beyond 6 months of the completion of the report.

5.3 *Describe who will have access to the information/data collected from participants. Explain how you will protect or secure confidential information.*

Only the researchers and supervisor will have access to the information provided by participants from the interviews and from the on-line survey. Once the report is completed the information collected from the participants will be kept in a secure cabinet in the research supervisor's office. Two years after the publication of the report all of this information will be destroyed.

6. Minimise harm to participants

'Harm' includes pain, stress, emotional distress, fatigue, embarrassment and exploitation.

6.1 *Where participants risk change from participating in this research or related activity compared to their daily lives, identify that risk and explain how your procedures minimize the consequences.*

There is no foreseeable risk in this research.

6.2 *Describe any way you are associated with participants that might influence the ethical appropriateness of you conducting this research or related activity – either favourably (e.g., same language or culture) or unfavourably (e.g., dependent relationships such as employer/employee, supervisor/worker, lecturer/student). As appropriate, describe the steps you will take to protect the participants.*

The researchers are of New Zealand Māori descent which is likely to be the same ethnicity of the participants. This is favourable as it may allow us to relate to them more easily, creating a comfortable atmosphere for the telephone surveys.

6.3 *Describe any possible conflicts of interest and explain how you will protect participants' interests and maintain your objectivity.*

The researchers are of New Zealand Māori descent which is the same ethnicity as the study group.

To mitigate any conflicts and bias in the survey there will be weekly discussions with the supervisor about the findings. The supervisor will advise as to whether the survey is biased and give his point of view about its objectivity.

7. Exercise social and cultural sensitivity

7.1 Identify any areas in your research or related activity that are potentially sensitive, especially from participants' perspectives. Explain what you do to ensure your research or related activity procedures are sensitive (unlikely to be insensitive). Demonstrate familiarity with the culture as appropriate.

There are no areas of this research that are potentially sensitive.

7.2 If the participants as a group differ from the researcher in ways relevant to the research or related activity, describe your procedures to ensure the research or related activity is culturally safe and non offensive for the participants.

The participants and researchers are from the same ethnic background. Therefore, the researchers are aware and able to conduct themselves in the appropriate protocols, teachings and idiosyncrasies that need to be adhered too.

Appendix III – Consent Form for Ministry of Education

Research Consent Form	THE UNIVERSITY OF **WAIKATO** *Te Whare Wānanga o Waikato*

Reo Māori ki ngā Rorohiko o te Kura - An investigation into the use of software with a Māori language interface by Māori medium schooling of New Zealand

Consent Form for Ministry of Education, Te Reo Māori Schooling

I have read the **Participant Information Sheet** for this study and have had the details of the study explained to me. My questions about the study have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I also understand that the Ministry of Education is able to have this study discontinued if there are any concerns and individual schools, including their staff members and students are free to withdraw from the study at any time, or to decline to answer any particular questions in the study. I understand that participants in the study can withdraw any information that has been provided up until the researchers have commenced analysis on their data.

The Ministry of Education agrees for schools to participate in this study under the conditions set out in the **Participant Information Sheet**.

Signed: _____

Name: _____

Date: _____

Researchers:
Tara Dalley,
Summer School Intern,
Computer Science Department,
University of Waikato, Hamilton
tpmd1@students.waikato.ac.nz

Paora Mato,
PhD candidate
Computer Science Department,
University of Waikato, Hamilton
pjm20@students.waikato.ac.nz

Supervisor:
Dr. Te Taka Keegan
Senior Lecturer
Computer Science Department
University of Waikato, Hamilton
tetaka@waikato.ac.nz (07) 838 4420

Appendix IV – Participant Information Sheet

Participant Information Sheet

THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

Project Title
Reo Māori ki ngā Rorohiko o te Kura - An investigation into the use of software with a Māori language interface by Māori medium schooling of New Zealand

Purpose
This project seeks to determine if computer software is being used in te reo Māori by staff and students of Māori medium schooling in New Zealand. The research is supervised by Dr. Te Taka Keegan, Computer Science Department at the University of Waikato. A full report of the findings will be presented to the Ministry of Education.

What is this research project about?
This research seeks to discover whether Māori medium education is using software that has a Māori language interface. If software is being used in te reo Māori, which particular packages are being used and how often? If the software is not being used in te reo Māori, why isn't it and what could be done to increase the uptake of Māori medium software?

Ultimately the research is about assisting the promotion and propagation of te reo Māori, with a focus in the computing environments of Māori medium education.

What will you have to do and how long will it take?
You will be asked to answer no more than six questions about your use of computer software in the Māori language. The questions may be asked verbally (in a phone conversation) or by an on-line survey. This should take no longer than 5 minutes. You will be asked to give consent prior to answering questions on the phone. Consent to undertake the on-line survey is assumed by completion of the online survey.

What will happen to the information collected?
The information collected will be used by the researchers and supervisor to produce a report summarizing the use of Māori language in computer software at Māori medium schools in New Zealand. This report will be made available to the Ministry of Education's Te Reo Māori Schooling Group and will be submitted for publication in journals and/or conferences. Only the researchers and supervisor will be privy to the raw data that is collected and this data will be destroyed 2 years after the completion of the report. No identifying information will be used in any publications.

Declaration to participants
If you take part in the study, you have the right to:
- Refuse to answer any particular question, and to withdraw from the study before it's completion on 30 April 2012.
- Ask any further questions about the study that occurs to you during your participation.

Who's responsible?
If you have any questions or concerns about the project, either now or in the future, please feel free to contact either:

Researchers:
Tara Dalley,
Summer School Intern,
Computer Science Department,
University of Waikato, Hamilton
tpmd1@students.waikato.ac.nz

Paora Mato,
PhD candidate
Computer Science Department,
University of Waikato, Hamilton
pjm20@students.waikato.ac.nz

Supervisor:
Dr. Te Taka Keegan
Senior Lecturer
Computer Science Depart.
University of Waikato, Ham
tetaka@waikato.ac.nz
(07) 838 4420

Appendix V – Questionnaire

Questionnaire (Phone survey)

THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

Reo Māori ki ngā Rorohiko o te Kura
An investigation into the use of software with a Māori language interface
at Māori medium schooling of New Zealand

English Language Version

1. Are you a student, teacher or other?

2. Do you write in te reo Māori on your computer?

3. Do you use software with a te reo Māori interface?

       3(a) If the answer to the above question was *No*, why don't you?

       3(b) If the answer to the above question was *Yes*, which of the following do you use in te reo Māori:

Microsoft Office (e.g. Word, Excel, Powerpoint)	☐
Microsoft Windows	☐
Google (web search)	☐
Moodle	☐
Other (please explain)	☐

4. Do you think children and staff of Māori medium education should use software with a te reo Māori interface? Please explain…

5. What do you think prevents users who are fluent in te reo Māori from using software in te reo Māori?

6. Do you have any further comments about software with a Māori language interface?

Thank you very much for taking the time to answer these questions.

Patapatai Reo Māori

1. He aha tāu mahi? Ākonga, kaiako, tētehi atu rānei (whakamārama mai)

2. Ka tuhi koe i te reo Māori i runga i tō rorohiko?

3. Ka whakamahi koe i ētehi pūmanawa rorohiko e kōrero mai ana i te reo Māori?

    3(a) Mehemea i whakautu **Kāo** koe ki te pātai kei runga, he aha i kore ai?

    3(b) Mehemea i whakautu **Āe** koe ki te pātai kei runga, ko ēwhea o ēnei ka whakamahia e koe (i te reo Māori):

    Microsoft Office (e.g. Word, Excel, Powerpoint)   □

    Microsoft Windows   □

    Google (web search)   □

    Moodle   □

    Ētehi atu (whakamōhio mai ki raro)   □

4. Me whakamahi ngā pūmanawa reo Māori e ngā ākonga me ngā kaiako o kura kaupapa Māori me ngā wharekura? Whakamārama mai ō whakaaro…

5. He aha te take ka kore ngā tāngata mōhio ki te reo Māori ka whakamahia ngā pūmanawa reo Māori?

6. He kōrero anō āu mō ngā pūmanawa reo Māori?

Ka nui rawa atu te mihi mō tāu tautoko i te kaupapa nei.

Appendix VI – Facebook Survey

facebook

Search

Te Whakamahi o te reo Māori ki runga rorohiko

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English Version

He uiuinga 5 meneti noa iho tēnei e pā ana ki tō whakamahi o te reo Māori ki runga rorohiko. Kia whakawhānaui ake ngā kōrero mō te mahi rangahau nei, whakapā mai ki konei.

Kia mōhio mai; nā te tuku mai o āu whakautu e whakaāe ana koe kia mahi rangahau mātou pērā ki ngā whakaritenga o te Participant Information Sheet.

Ka nui rawa atu te mihi mō tāu tautoko i te kaupapa nei.

1) He aha tāu mahi? Ākonga, kaiako, tētehi atu rānei (whakamārama mai) *

2) Ka tuhi koe i te reo Māori i runga i tō rorohiko? *
- ◯ Āe
- ◯ Kāo

3) Ka whakamahi koe i ētehi pūmanawa rorohiko e kōrero mai ana i te reo Māori? *
- ◯ Āe
- ◯ Kāo

3a) Mehemea i whakautu Kāo koe ki te pātai 3, he aha i kore aī?

3b) Mehemea i whakautu Āe koe ki te pātai 3, ko ēwhea o ēnei ka whakamahia e koe (i te reo Māori):
- ☐ Microsoft Office (e.g. Word, Excel, Powerpoint)
- ☐ Microsoft Windows
- ☐ Google (web search)
- ☐ Moodle
- ☐ Other

4) Me whakamahi ngā pūmanawa reo Māori e ngā ākonga me ngā kaiako o kura kaupapa Māori me ngā wharekura? Whakamārama mai ō whakaaro... *

5) He aha te take ka kore ngā tāngata mōhio ki te reo Māori ka whakamahia ngā pūmanawa reo Māori? *

6) He kōrero anō āu mō ngā pūmanawa reo Māori?

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Using te reo Māori on computers

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Uiuinga i te reo Māori

This is a 5 minute survey about your use of software with a Māori language interface. For more details about the purpose and intended outcomes of this survey, click Here.

Please note that by submitting this survey you give consent for us to use this information as outlined in the Participant Information Sheet.

Thank you very much for taking the time to answer these questions.

1) Are you a student, teacher, or other (please specify)? *

[   ]

2) Do you write in te reo Māori on your computer? *

○ Yes
○ No

3) Do you use software with a te reo Māori interface? *

○ Yes
○ No

3a) If the answer to question 3 was No, why don't you?

[   ]

3b) If the answer to question 3 was Yes, which of the following do you use in te reo Māori:

☐ Microsoft Office (e.g. Word, Excel, Powerpoint)
☐ Microsoft Windows
☐ Google (web search)
☐ Moodle
☐ Other

4) Do you think children and staff of Māori medium education should use software with a te reo Māori interface? Please explain... *

[   ]

5) What do you think prevents users who are fluent in te reo Māori from using software in te reo Māori? *

[   ]

6) Do you have any further comments about software with a Māori language interface?

[   ]

[Submit]

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