

# Young People, Technology and the Future of te Reo Māori

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Mehemea ko te oranga o te reo Māori te kaupapa he aha te take e tuhi ai i tēnei wāhanga ki te reo Pākehā? He whakapēhi anō tēnei i te reo rangatira? E rua ngā take kua tuhia tēnei wāhanga ki te reo Pākehā. Tuatahi ko ngā kaipānui mōhio ki te reo Māori ka mōhio kē ki ngā hua o te taonga tuku iho nei, pai kē ake kia whiua ēnei kupu ki te hunga kore mōhio kia tahuri ō rātou ake whakaaro. Kāore he take o te kauwhau ki te hunga e whai kē ana i te kaupapa o te kauwhau! Tuarua, he hiahia kia ū ngātahi mai ngā whakaaro me ngā kōrero tautoko nō tētahi o ngā kaituhi nei nō Wēra, i te mea he mōhiotanga nōna ki ngā uauatanga o te reo taketake ki te ao hangarau. Kāti. Nei rā ka mihi.

After decades of neglect and, in some instances, suppression, te reo Māori has achieved a degree of recognition and support from the Government and people. Language strategies have been written, schooling is available in both languages, and since 1987 the language has had official status. However, despite demonstrable progress in some areas, it remains a small-minority language. Within New Zealand there are 157,000 speakers of te reo Māori, about 4.1 percent of the population (Statistics New Zealand: Te Tari Tatau, 2007), and the language is classified as ‘vulnerable’ by UNESCO (Mosley, 2010). The language continues to face considerable pressure from English, not just because English is a majority national language but because it is an increasingly global language, with a significant presence in culture, science, media and technology. This chapter considers the relationships between young people, technology and te reo Māori. It argues that technology is an important domain of

use for te reo Māori, particularly the continued use of the language by young people.

### **Language Survival, Youth and Technology**

The transmission of a language from one generation to the next is the foundation of a language's survival (Fishman, 2001). Where the older generation fails to pass the language to the younger, or the younger generation fails to take up the language from the older, intergenerational transmission is interrupted and the future of the language is threatened. While passing the language to the younger generation is necessary, it may not in itself be sufficient to ensure the long-term survival of a language. Not only must those young people have the capacity to speak the language, there must also be opportunities for them to do so, they must have the desire to use the language and, subsequently, to pass it on to the next generation (Grin, 2003). Thus the fundamental process of intergenerational transmission can be seen to be influenced by a wide variety of personal, social, economic and political factors.

A recent report commissioned by the minister of Māori Affairs to review the Māori language sector recommended two main directives: the re-establishment of te reo Māori in homes and a new infrastructure for governance (Te Puni Kōkiri, 2011). The first directive, the re-establishment of te reo Māori in homes, is important because that is where intergenerational transmission of the language is primarily occurring. But young people shouldn't be just learning the language. It needs to be part of their identity and world-view; they need to value the language and have a sense of ownership towards it. They should be breathing it, living it and being a part of the language as the language is a part of them. It is therefore necessary to consider the things that matter to young people and what may help promote this deeper connection with the language.

The younger generation today are growing up in a time of rapid technological change. While their parents may consider mobile phones, the internet, computers or even television as new technologies, as far as the younger generation is concerned, they

have always existed. As at the end of 2011, the internet (3.6 million users, 84.5 percent) and Facebook (2.1 million, 49 percent), have both achieved high penetration in New Zealand (Internet World Stats, 2012). Early intergenerational language transfer between a mother and her baby may not directly use technology, but it is likely that the baby is being raised in a home where technology is increasingly commonplace, being used by parents and siblings, and the young child is exposed to the technology even before they attend pre-school. These technologies are commonplace and ownership of and access to them is taken for granted by many young people. Technology allows them to extend their networks in terms of both space and time. Real-time communication with friends and strangers across the globe is possible. Young people need never be out of contact with their classmates and friends. A young person without a phone to text their friends may be considered disadvantaged and a Facebook page is the norm, often with one identity to share with parents and another private identity where intimate details are shared only with close friends. Young people use headphones to listen to favourite songs and instantly become isolated from their immediate environment. Electronic games may be played with siblings or other members of the immediate family in the same physical place, but they are increasingly played over networks with other players who can be local or international. This new generation is sometimes referred to as the 'iGeneration' (Rosen, 2010) or 'Generation Z'. While socio-economic factors may constrain many Māori communities, it is still rare to see a Māori child without a cell phone.

Given young people's importance in language survival and the way in which their technological landscape has recently evolved, some serious questions need to be asked about how technology influences their attitudes towards and use of te reo Māori. Considering the extent to which technology is embedded in the lives of many young te reo Māori speakers, it is not unreasonable to suggest that this is an important domain. If a minority language does not have a presence in the domain of technology, this can only reinforce the minority position of that language and push

it further to the margins of everyday life. At a minimum, this technology should provide an opportunity for te reo Māori use, but its use may have the potential to increase young people's desire to use the language. Through an association with technology a language may be perceived as relevant, modern, cool or even sexy and young people may be more inclined to use it (Eisenlohr, 2004). If a language is seen as archaic, rural or old-fashioned, then people, especially young people, may be less inclined to use it. Given the role of technology in young people's lives, what impression are they getting when they can see that the language of technology is predominantly English? Does it suggest to them that English is a language fit for the twenty-first century and that te reo Māori has no place in this modern world?

### **Te Reo Māori in Technology – Some Moments in History**

While technology can be used to refer to a range of different devices and services, the focus here is on computer software and the World Wide Web (the web). The ability to display te reo Māori on computers has existed since the Unicode Standard was developed in the late 1980s. This standard sought to provide a consistent encoding and representation for most of the world's writing systems. The adoption of this standard by the world's leading computer companies in the early 1990s has meant the display of te reo Māori has been technically possible since then.

Over the past twenty years there have been a number of developments in the use of te reo Māori in technology, starting with the development of software applications, followed by the provision of content and services online through the web. Some moments in history of the development of te reo Māori in technology are presented below.

#### **Software**

Perhaps one of the earliest forays of te reo Māori into the world of technology began in 1993 when the Computer Science Department at the University of Waikato began teaching a computer science

paper, 0657.113 Ngā Tautono Rorohiko, through the medium of the Māori language. Many computer terms were created in te reo Māori that formed a basis for later interface translations (Barbour & Keegan, 1996).

In 1995 *Te Kete Pūmanawa* was produced by Greg Ford who was working for a company called ReddFish. The software was notable for being the first produced with the interface solely in te reo Māori. The software comprised four tools: a clock that set the system clock to show dates in te reo Māori, an interactive story (*Te Mahi Hangarau Ahi*), a counting exercise called *Te Tatau* and a board game called *Mū Tōrere*. The software was originally written to run on Windows 95.

In 1998 *Te Reo Tupu*, a comprehensive Māori–English–Māori CD–Rom dictionary, was released by Wordstream. For the first time, this allowed full-text searching of valuable dictionaries such as Williams (2008), Ngata (1993) and Te Matatiki (1996). Unfortunately, after four short years this resource was discontinued.

In 2003 Microsoft released a keyboard definition – an ability to easily type the macron character without having to resort to non-standard fonts (often termed Māori fonts). Microsoft continued their substantial support of the Māori language by funding the translation of their operating system and primary application software releasing Māori language versions of Windows XP and Office2003 in 2005, Windows Vista and Office2007 in 2009 and Windows 7 and Office2010 in 2011. On 25 June 2013, the same Māori language support was released for Windows 8, which includes regional language support for Windows 8 mobile phones (Kuipers, 2013).

Learning Management Systems have also been translated into Māori. Moodle was initially translated into Māori by the Waikato Institute of Technology in 2004 with further versions undertaken by the University of Waikato in 2006 and 2011. Waikato University also translated an earlier version of a Learning Management Systems they were using (called PLACE) in 2004 (Keegan et al., 2004). Te Whare Wānanga o Awanuiārangi translated the Learning Management System, eWānanga, in 2005 (Keegan et al., 2011).

## **Web Resources**

The web has become increasingly important over the past decade. The widespread availability of networks and the proliferation of devices to connect to those networks has led to more use by commerce and government as well as by individuals. It has been suggested that the Internet also affords new opportunities for minority languages (Cunliffe, 2007).

The database of Māori language resources called Toi Te Kupu was placed online by Te Pūtahi-a-Toi, the School of Māori Studies at Massey University in Palmerston North, in 1998. The database catalogues and describes published Māori-language teaching and learning materials.

In 2000, Niupepa: Māori Newspapers collection was placed online by the Computer Science Department at the University of Waikato. The collection consists of 17,000 pages that were published between 1842 and 1932, 70 percent of which was written solely in Māori. The collection is served by the department's in-house Greenstone Digital Library software which, along with various browsing options, allows for full text search of the newspapers (Apperley et al., 2002).

A survey was undertaken in 1998 to determine what websites were available primarily in te reo Māori. Forty-eight sites were discovered, with government sites (eleven), publication sites (eight) and personal websites (eight) being the main contributors (Keegan, 1998). A similar survey was conducted four years later (Keegan & Cunningham, 2003) and it found the number of websites in te reo Māori had doubled (to 100) but the number of web pages had increased 100 fold (from 304 to 30,346). This was primarily due to databases such as Toi te Kupu and the Niupepa: Māori Newspapers collection. A shift was also noticed in the focus of the web pages, from one of merely providing information about te reo Māori to one of providing educational information in te reo Māori for teaching resources. It would be interesting to undertake another survey now, ten years on, to see what Māori language resources are available on the web. There is certainly a lot more content available

in te reo including websites by Te Taura Whiri i te Reo Māori, The Ministry of Education (Te Kete Ipurangi), Māori Television and The Encyclopedia of New Zealand (Te Ara) to name just a few.

In 2008 Google's Web Search interface was made available in Māori. Initially the translation sought assistance from crowd sourcing (where the public contribute translations in an unpaid collaborative effort), but after ten years and only minimal progress, Te Taura Whiri i te Reo Māori made available a translator and the work was subsequently completed.

One often-overlooked benefit of bilingual websites is that they provide parallel texts (the same text in two different languages), which are necessary for the development of automatic translation services, such as Google Translate. Where sufficient parallel texts are not available, this is a significant barrier to the development of such services. There are many bilingual countries where there is a legal requirement to treat both languages equally when delivering services to the public. Typically this applies to a range of government organisations but can also extend to some non-government organisations and commercial companies. The digital corpora of parallel texts that are subsequently created can also be directly utilised to increase the accuracy of translation tools, which ultimately enhances translation services and reduces translation costs. Google's version, the translator toolkit, was made available for use by Māori-language translators in 2009.

Aside from bilingual websites, te reo Māori web resources include dictionaries and courses on te reo Māori. Some of the significant dictionaries on-line include *He Pātaka Kupu*, Ngata's *English-Māori Dictionary*, *Te Wakareo* (an online version of *Te Reo Tupu*) and Moorfield's *Te Aka Māori-English, English-Māori Dictionary and Index*. Opportunities to learn te reo Māori on the web include the following sites: Te Whanake, Māorilanguage.net, Cultureflow, and Māori Multimedia.

Some work on introducing te reo Māori into social-networking sites (such as Facebook, Twitter and YouTube) has begun. In September 2012 an app developed by two language activists,

Teana Tuiono and Karaitiana Taiuru, was made available in the Google web store. When downloaded and activated as a web browser extension, the app translates the primary interface strings of Facebook into Māori. The app is not available for mobile devices and isn't a complete translation, but at least it is a start.

## **Challenges**

The above history illustrates just how few software applications and online web resources there are. This is especially striking if compared to the software and resources available in the majority language, English. It also reveals a dominant focus on resources connected directly with language and culture, typically provided by organisations that are concerned with language and culture. What is apparent is a lack of penetration of te reo Māori into the wider sphere of services. Technology is used in many other services important to Māori, such as commerce, health, law and the like, but the use of technology in these domains is almost exclusively in English. In particular it is notable how little the interests of young people are addressed. Even where it could be argued that a particular piece of software could be used by young people, it is likely to be in a school environment rather than in their personal life. Thus there is a danger that the limited availability of Māori language software may reinforce the perception that the Māori language is a language of school and of Māori cultural activities only, instead of being their everyday language used with friends, in social activities, hobbies and so on. This is a challenging issue and one faced by many minority-language communities. Taking computer games as an example, typically there is no economic argument to convince the software producers. Consequently, universities and state-funding mechanisms appear reluctant to devote resources to this area.

Influential legislation is not generally seen as an appropriate or realistic approach, either. One possibility is for minority-language television producers to provide online resources to supplement their programming aimed at young people, perhaps in the form of games or communal spaces. Another possibility is to explore relatively



low-cost options such as Smartphone apps rather than attempting to deliver on games platforms. A third option may be to recognise that the actual game may never be produced in te reo Māori, but that the language may still be used whilst playing the game (in player-to-player communication) and in online discussions about the game (sharing tips and cheats for example). This then provides an alternative focus for efforts to support language use.

Social-networking sites are particularly important. They are very popular with young people and they provide the opportunity for people to produce and share content relevant to their own interests and concerns. While the development of a te reo Māori interface for Facebook is helpful, for bilingual users it may be that the language of the interface is less significant than might be imagined. Perhaps what is more important is the extent to which these young people see other people using that language, and the extent to which they feel it is natural for them to use the language themselves. It is possible that English may come to be considered as the language of electronic social networking even when a minority language is used face-to-face in offline social networks (Fleming & Debski, 2007). The issue is whether there is a critical mass of speakers prepared to create content in the language, online. Where the number of people prepared to do this is low, there is a tendency for the discussion to focus on the language and culture itself – so, once again, the domains are limited. Where there is a larger mass of people, it is more likely that there will be a discussion of a wider range of topics (music, cooking, politics, etc.), from a variety of different viewpoints, leading to a more dynamic, vital and self-sustaining community. This will hopefully appeal to and encourage speakers, who will in turn create more content, which in turn may attract and encourage others in a virtuous circle. However, it is difficult to estimate how large the critical mass needs to be, and there are difficulties in measuring what is actually currently available. The *indigenoustweets.com* (Scannell, 2011) website listed only two current blogs (active in 2012) in te reo Māori and eight people tweeting (more than 20 percent of their tweets) in te reo Māori. While seventy-two people tweeted at least

some content in the language, these are still very small numbers considering the speaker population. Given the apparently sparse distribution of Māori language content across social-networking sites it may be that there are simply not enough people prepared to use the language, or it may be that some pump-priming is needed. State intervention on social-network sites is problematic and needs to be considered carefully. One possibility would be to encourage and support Māori-speaking celebrities, sports stars or other people with appeal to use Māori language in the social media. This may encourage others to respond to this content and maybe to start producing their own content.

One of the major challenges faced in producing software for a small language community is the issue of funding. This doesn't only include the initial costs of development, but also the costs of ongoing maintenance and updating. Typically the economic power of a small language community is not sufficient to justify developments on a commercial basis, particularly when that language community is bilingual and the majority language presents a more viable economic proposition. Much of the software in te reo Māori has been developed on a non-commercial basis, either by universities and official bodies, or for philanthropic reasons in the case of Microsoft. One area where there appears to have been limited success is in empowering the Māori community to develop or assist in the development of software and resources. Many minority-language communities have successfully crowd-sourced translation efforts (for example the Facebook interface), content production efforts (for example articles on Wikipedia) or have localised software (for example the Open Office software suite). In some cases, events have been held to bring together speakers of a particular minority language who have an interest in technology, to facilitate networking and to organise small-scale, unfunded cooperative developments. A limiting factor here may be the number of technologically adept Māori speakers potentially able to undertake such work, but it still appears to be an untapped resource. Where the number of speakers of a language is small there

is a greater need to empower them and for them to take personal and collective action to develop the language online.

A challenge for the Māori language in technology is the restricted number of domains it operates within. Very few of the software online services or content that a Māori speaker might wish to make use of are available in the Māori language. It is not possible for a Māori speaker to conduct their daily online activities through the Māori language. The resources available for the development of te reo Māori software, online content and services are limited, while the range of software, online content and services available in English is extensive. It is therefore necessary and appropriate to target the available resources to provide those services which would be of most use to te reo Māori speakers, or which will have the most positive influence on the maintenance of te reo Māori. However, what these would be is not obvious, and there is a need to conduct research in order to best target the resources that are available, to set priorities, and to establish long-term strategies.

### **The Future Outlook of te reo Māori in Technology**

Earlier in this chapter some software and online resources in te reo Māori were listed. It should be noted that providing Māori language resources such as these is only a small part of the story. How many Māori-language users of technology are using these resources and how many are even aware of them? Very little research has been undertaken on the use of technology in te reo Māori. For example, in 2011, Two Degrees Mobile released a smartphone with an interface that can be displayed in te reo Māori. How many of these phones have been sold and are being used in te reo Māori? It is important that research such as this is undertaken so that the effectiveness of these tools and their usage can be analysed and encouraged.

One important area is schooling. While technology is a subject in its own right, technology is also used in teaching and learning other subjects. With this in mind, a survey was recently undertaken to see how many Māori-medium schools were using technology through a Māori-medium interface (Mato et al., 2012). The survey showed

that only 45.8 percent of the schools were using tools with a Māori language interface, and of the schools that weren't, 31 percent said they didn't know these existed. Clearly a greater awareness needs to be given to sectors that have the potential to use technology in te reo Māori.

For a language to survive it must be used normally across a range of natural situations. A language that is only spoken in certain domains (for example, in religious or cultural settings) is a language that is not growing and adapting to a changing world, and it may consequently be seen as increasingly irrelevant to the lives of young people. Existing efforts, while welcomed, appear piecemeal. Nor is it clear to what extent the efforts are based on understanding the needs and aspirations of Māori speakers. There appears to be a focus on software and services closely related to the Māori language and Māori culture, generally produced by organisations with a similar focus. While this may be an appropriate starting point, there is a need to broaden the scope of organisations involved and the software and services they provide.

Ultimately there are some critical areas where awareness and support for te reo Māori in technology needs to be addressed. Māori language planning, at a government level and at a tribal level, should have explicit consideration for the use of te reo Māori in technology. Māori-medium environments, including schools, should be made aware of and be supported in their use of te reo Māori in technology. A group of experts is needed to advise the best way to develop te reo Māori in technology, with particular regard to young people. Avenues should be investigated to encourage and support crowd sourcing, volunteer localisation efforts and the sharing and collaboration on translation tools.

Te reo Māori is at a critical juncture. Existing measures are producing young people with the capacity to speak te reo Māori, but opportunities to use the language within the critical domain of technology are limited. These limited opportunities and the lack of visibility of the language in technology may negatively impact on young people's more general desire to use the language. It is vital that young speakers see te reo Māori as a modern language fit for the

twenty-first century. There is a pressing need for those responsible for ensuring te reo Māori's long-term survival to recognise this as a crucial issue and to take appropriate action. Without this, young people may see the language as increasingly irrelevant, the language will cease to develop and intergenerational transmission may diminish further, along with the future of the language itself.

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