

Transforming Communities: Technologies for Teaching and Learning Endangered Languages

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Māori are the indigenous people of Aotearoa/New Zealand. Māori is one of three official languages of the country, but is not compulsory in schools. Only 4% of Aotearoa/New Zealand's total population of around 4 million can speak Māori and only 23% of Māori are fluent in the language (Te Puni Kōkiri, 2008). Even this percentage of fluent speakers has been questioned by Bauer (2008) as being inflated and not indicative of the number of speakers who actually use the language (p. 63).

With the development of computers, the World Wide Web, smart phones, devices such as the iPad and iPod Touch and the use of Smart Boards and video conferencing, there is a wonderful opportunity to make the learning and teaching of second languages much more interesting, accessible and effective. Importantly, the opportunities for indigenous peoples to record, develop, disseminate and learn their respective languages and cultures are also increasing and provide new avenues to promote those languages and cultures. There is an opportunity to create innovative resources that will engage and inspire learners to learn endangered languages.

Te Ipukarea – The National Māori Language Research Institute was established in 2008 to promote excellence in scholarship, teaching and research in the Māori language. It is a collaboration of community and tertiary Māori language providers. The Institute addresses the need for a coordinated and determined approach to improving the effectiveness and efficiency of Māori language education and of raising the status of the language by taking full advantage of modern technologies (<http://www.teipukarea.maori.nz>).

This paper will discuss briefly six initiatives using modern technology that Te Ipukarea has used to help in the preservation and the teaching and learning of Māori and other endangered languages.

- Te Kāwai Kūmara is a postgraduate Māori language programme for the simultaneous teaching across several tertiary educational institutions using advanced digital technologies.
- The digital resources that accompany the *Te Whanake* series of textbooks, study guides, teachers' manuals and dictionary, for the teaching and learning of Māori.
- Tāmata Toiere is a free to access website for the archiving of Māori *waiata* (sung poetry) and *haka* (chanted posture dances).
- The Te Ara Poutama Intranet, the online digital platform for Māori language classes that is being used by AUT University's Faculty of Māori Development.
- Reo, a prototype digital language learning system that can be used for the revitalisation of endangered languages and is currently being developed, customised and trialled with four endangered languages.
- He Papa Huia and He Pātaka Mātauranga streamed videos of fluent speakers on the Te Ipukarea website.

Te Kāwai Kūmara

Te Kāwai Kūmara¹ was initially a pilot project for the synchronous delivery of a common postgraduate programme in the Māori language across multiple sites. It is now an established Master of Arts (MA) in Te Reo Māori (The Māori Language). All classes are conducted in Māori and all assignments and the thesis are written in Māori.

The aim of this postgraduate degree is to build the research capability and capacity of Māori scholars to advance their skills in teaching and learning through research in the Māori language, supported by advanced digital technologies. The longer term need to support new and emerging scholars to become supervisors of theses, particularly at the PhD level and those written in Māori is also an important goal. This project is a strategic attempt to focus tertiary education institutions on collaborating to build Māori postgraduate scholarship using digital technologies.

The Te Kāwai Kūmara project activities rest on two limbs. The first is the development and piloting of a comprehensive suite of digital technologies that are capable of delivering content and supporting interactive teaching and learning across multiple sites. Three sites are currently involved: one at AUT University; another at the Western Institute of Technology in New Plymouth; and the third at Te Puna Wānaka at Christchurch Polytechnic Institute of Technology.

The second limb is the development of best practice curriculum for teaching and learning of Māori at the postgraduate level. We believe that the use of smartboard, video-conferencing and digital technology has the potential to radically transform the way tertiary institutions offer postgraduate Māori language programmes. There is the potential for the MA in Te Reo Māori to be offered as one qualification delivered out of the eight Aotearoa/New Zealand universities.

Students entering the programme have already acquired a high degree of competency in the Māori language. There is a focus on interactive learning with students taking increased responsibility for their own learning as they progress. These are complemented by digital resources that make AUT University a leader in the teaching of Māori using this medium. At this level, the focus is on research and analytical skills and competencies where the only language of communication is Māori.

The MA in Te Reo Māori is a 240-point programme, which consists of five core papers and a thesis of 120 points. This programme is supported by a website where students can access the course outline and other related material.

There is a shortage of native speakers of Māori who are involved in teaching Māori language in the tertiary sector. What is so special about the MA in Te Reo Māori is that, as a shared programme across tertiary institutions, quality academics from across all the tertiary institutions who teach Māori language can be enlisted to teach in the programme without them having to leave their homes. Students also benefit financially by not having to travel away from their homes or preferred institution to enrol in this qualification. The use of technology, great curriculum and

¹ The Kūmara Vine – the kūmara is a sweet potato, *Ipomoea batatas*. See the following website for further information on this project: <http://ako.aotearoa.ac.nz/te-kawai-kumara>

superb academic Māori language staff makes this a modern and relevant qualification and, as a first of its kind, has the potential to really transform the way universities operate in terms of the qualifications they offer.

Te Whanake digital resources

The *Te Whanake* series is a set of learning resources to develop Māori language ability from beginner through to advanced levels. The series evolved out of the need for Māori language resources for teenagers and adults that reflected modern methods of teaching second languages. It contains a comprehensive set of hard copy Māori language learning resources, including:

- four textbooks with complementary study guides;
- recorded audio and video listening and speaking exercises to accompany each chapter of the four textbooks;
- three teachers' manuals; and
- a Māori dictionary and index to the content of the series for learners and teachers.

The most recent development for the *Te Whanake* series is the incorporation of resources online (<http://www.tewhanake.maori.nz/>).



Figure 1. The Te Whanake homepage showing its seven separate websites. The online digital resources include:

- an enhanced version of the dictionary and index <http://www.maoridictionary.co.nz/>
- animations with self-directed learning materials <http://animations.tewhanake.maori.nz/>

- language exercises as podcasts and streamed videos
<http://podcasts.tewhanake.maori.nz/>
- Māori language television programmes
<http://tv.tewhanake.maori.nz/>
- forums for learners to exchange ideas
<http://forum.tewhanake.maori.nz/>

These websites are all bilingual and free.

Enhanced dictionary and index online

Since December 2006, the hard copy dictionary also has an enhanced free online version, including photographs and sounds (<http://www.maoridictionary.co.nz> and Figure 2). In 2010 special interfaces for small screen devices (including iPhones, iPads, iPod Touches and Android phones) were developed. The online version enables new entries, meanings, photographs and sound recordings to be added at any time using the administration website. Once the new entry and information has been saved it is available to the world on the public website.

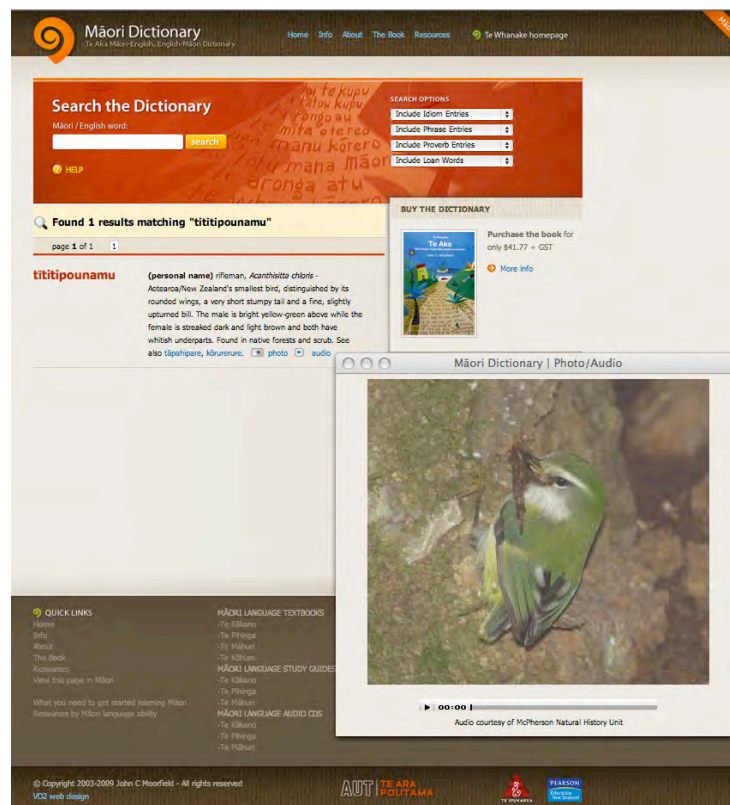


Figure 2. A page from the online dictionary showing an illustration and audio track

The number of visits to all the seven Te Whanake websites has steadily increased over the five years since the sites went live. For the dictionary website for the year ending 16 September 2011 there were 1,355,667 visits, an increase of 33.43% from the same period of the previous year.

Later in 2010 the online dictionary became available as an app. for iPhones, iPads and iPod Touches (Figure 3). With this app. dictionary searches can be done on the phone without the need for an Internet or mobile connection. Updates to the dictionary are made on a regular basis.



Figure 3. The iPhone dictionary app.

Recently an app for Android phones was made available.

Te Whanake animations with self-directed learning materials

This website has animated movies with accompanying language development exercises for the chapters of all four *Te Whanake* textbooks. Currently the fifteen modules for the first book in the series, *Te Whanake 1 Te Kākano*, are available free to use online at the Te Whanake Animations website (Figure 4). Each module begins with an animated movie that includes the new language of the module. Between nine and sixteen activities in each module provide practice on a wide range of spoken and written language skills, including listening with comprehension, speaking, reading with comprehension, writing and activities to help learn grammatical structures and vocabulary.

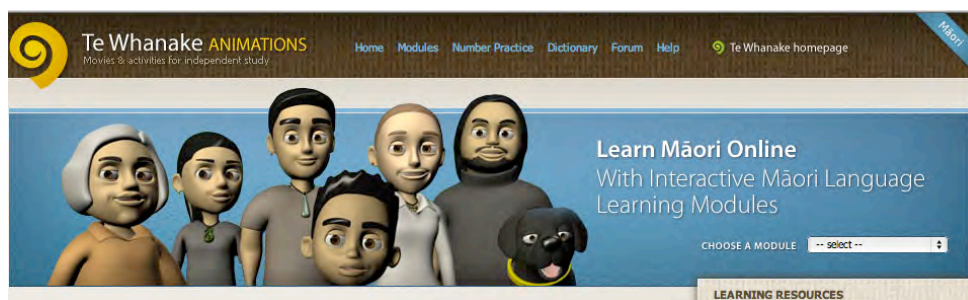


Figure 4. The banner for the Te Whanake Animations homepage. The animations and related activities for the other three books are in production.

Te Whanake language exercises as podcasts and streamed videos

These are listening and speaking exercises that accompany the four textbooks. These were originally on cassette and videotapes, but are now available free as podcasts and streamed videos.

Television series

As a result of a partnership between TVNZ Education Television (eTV) colloquial Māori language courses, called *Te Kai a Te Rangatira*, and *Te Kākano* were designed to complement the first two *Te Whanake* textbooks and resources were produced in the mid 1990s. This first took the two courses based on these materials into homes and institutions throughout the country. These courses were aimed at people throughout Aotearoa/New Zealand who were unable to attend regular classes because of the remote location or because of family ties or work commitments and who, under normal circumstances, would not have had access to learning the language or the chance to improve their Māori language skills.

Both of these TV programmes are streamed online at the Te Whanake TV website (Figure 5). Exercises accompany each episode to ensure that learners develop listening skills and are guided into extracting as much benefit as possible from viewing and hearing the language of each episode.

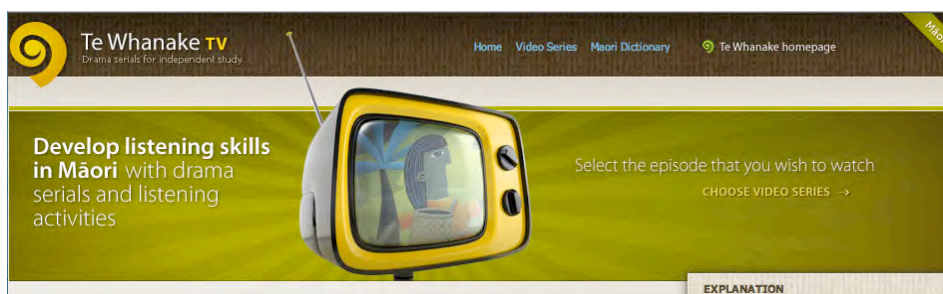


Figure 5. The banner for the Te Whanake TV homepage.

More recently a beginners' Māori language television programme, called *Tōku Reo*, of three hundred half-hour episodes for the Māori Television Service has been produced. It began screening five days a week in peak viewing time in March 2009. This vibrant programme is closely tied to *Te Whanake 1 Te Kākano* and the related resources. There is a dedicated website to supply support resources, including interactive activities, and a forum for learners to discuss language learning experiences as well as to practise new learning. Website material has been developed around the content in each episode. When the viewing stops, the learning continues online. Each televised episode has three main sections: grammar, vocabulary and activities.

Once the contractual agreements with the Māori Televisio

n Service expire, the full episodes will be streamed online so that learners will be able to access them from the *Tōku Reo* website free at any time.

Te Ara Poutama Intranet

This is the name of the online digital platform that is being used by AUT's Faculty of Māori Development Māori language classes. This platform was developed in conjunction with VO2 Web Design to manage the growing use of technology in the teaching of Māori. As previously outlined, the video and audio resources of the *Te*

Whanake collection were upgraded into podcasts and streamed videos. The next step was to provide a place for students to submit their audio responses to the speaking-practice exercises on the podcasts.

Up until the end of 2010 teachers were using AUT Online; a platform based on the Blackboard learning management system. As a MA research project has shown, this system was insufficient to deal with the needs of the language programme (Duder, 2010) which were:

1. to provide an area where students could have access to the digital resources on and off campus; and
2. to manage the interactivity between the students and the digital resources.

Through the Te Ara Poutama Intranet, teachers can create assignments from the podcasts and videos, students can submit the exercises they complete (including audio recorded exercises) online, and teachers can mark the assessments, provide feedback and post these for the students to see. The system is paper-less and immediate.

The Te Ara Poutama Intranet was launched in February 2011.

The digital platform includes:

- access to all the assignments for all of a student's courses, including the due date for each assignment
- descriptors of each course and can who the lecturers are
- teachers can upload links to other resources, class handouts and the course handbook
- the modules for each course giving students access to the digital and online podcasts relevant to each chapter of the textbooks
- the ability for students to record, upload and submit their assignments. The majority of the online assignments are for students to practise their listening and oral skills. The student responses are recorded and uploaded for the teacher to listen to and assess
- a message or email facility with other enrolled students. Students can also contact the teachers, and there is also the facility for attachments to be added
- a message tab on the main welcome screen that shows new and recent messages in the inbox
- an announcements tab on the welcome screen that students log into. Only teachers and administration staff have the ability to create announcements
- blog posts for students about a particular topic the teacher has assigned in class. In higher level classes, where students have a sound knowledge of the language, blogs provide a digital space to encourage critical thinking in the Māori language on topical issues.
- the facility to add new features as required

The Te Ara Poutama Intranet will continue to be an ongoing project as both teachers and web developers work together to maintain its systems, and look to new ways of incorporating dynamic and relevant technology into the classroom. The features mentioned above are only a starting point for the teaching of Māori. The potential for this system to aid in the teaching of the Māori language is immense.

Tāmata Toiere – a digital repository of *waiata* and *haka*

Waiata is a traditional medium for the transmission of knowledge including tribal history, politics, historical landmarks, genealogy and environmental knowledge while also acting as a traditional form of expression for the articulation of anger, hatred, sadness, love and desire. *Waiata* and *haka* have been likened to the archives of the Māori people, preserving important historical and cultural knowledge. Furthermore, *waiata* offer us an alternative view of the history of Aotearoa/New Zealand to that based on mainstream history books and archives. However, many of these *waiata* are being lost through time and with them, our knowledge regarding the meaning of the words. This is exaggerated by the fact that *waiata* contain the highest form of language, utilising proverbs and figurative speech.

The aim of this website is to provide comprehensive information about *waiata* and *haka* and to highlight the importance of the knowledge contained within them. The website is free to access. The site is comprehensive and has the capacity to hold print, images, and media files, both audio and visual. Included in this are: the lyrics, a translation, an explanation of the context behind the composition and the reasons it was composed, a biography of the composer, an audio file, a video file, any photos of relevance, and a list of references for further study. This means that the user will have all of the information about a composition in one place, including references to undertake further research.

He Papa Huia and He Pātaka Mātauranga streamed videos of fluent speakers

The Te Ipukarea website includes two main sections devoted to providing quality Māori language by native speakers for advanced learners of Māori and to capture important Māori knowledge. (<http://www.teipukarea.maori.nz>)

1. He Pātaka Mātauranga gathers key repositories of Māori knowledge and language from all over New Zealand to discuss important customs and concepts of the Māori world. Currently there are thirteen streamed videos of these online.
2. He Papa Huia was a series of nine interactive Māori language seminars held over the Kiwi Advanced Research Network (KAREN). The speakers included those at the forefront of Māori language revitalisation, research and creative writing. Their presentations are streamed online.

Reo online language systems

This system is for the revitalisation of endangered languages and is currently being piloted with four endangered languages. Reo is an online tool to help develop people's fluency in their languages. It is also a repository of indigenous language material and learning activities, a social network for language learners, teachers and advocates. Each language group has a website customized to its needs.

Conclusion

As language teachers, we must constantly think about how we can improve the way we teach and find better ways to help students learn. This paper has discussed the application of various technologies for the improved access to the resources to learn Māori and other endangered languages. While it is acknowledged that not all potential and existing learners of Māori are digitally literate or have easy access to the internet, there is an increasing proportion of the population who are. The current development of the offline desktop dictionary and the developments for mobile phones will increase access to Māori language learning materials and enhance the status of the language for the younger generation. These developments add to the range of resources available to learners to cater for a variety of learning styles. Video conferencing and smart board technology, the online and offline resources and the current developments for mobile phones pave the way for other minority languages to benefit from these developments for second language learners and teachers.

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