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**USING A DIGITAL LIBRARY AS A MĀORI LANGUAGE LEARNING
RESOURCE: ISSUES AND POSSIBILITIES**

A thesis

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PAORA MATO

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Abstract

The development of electronic language learning resources, founded on digital library technology, is a capability that, to date, is largely unrealised. The Flexible Language Acquisition (FLAX) project is a digital library initiative at the University of Waikato in New Zealand. The current FLAX activities provide practice for students who are learning English as an additional language. The prospect of extending this resource to include te reo Māori is as exciting as it is groundbreaking. The outcomes of this research inform the issues and possibilities involved in creating such resources.

The World Wide Web has allowed an everyday access to the Internet, but finding and retrieving pertinent information is often a convoluted and time-consuming exercise. The normal outcome is that users are unable to take full advantage of the available resources. Digital libraries have an unprecedented power in terms of organising and storing vast amounts of information and, with built-in retrieval functionality, serve as ideal repositories. The ability to focus the information within these repositories is extremely significant because there is no longer the chaff that normally results from Internet searches. Purposeful learning activities can be presented exploiting an assortment of media and drawing on stored information that can be assembled in a range of formats. Such capacity, flexibility and diversity is normally only encountered at traditional, physical libraries.

The research includes an overview of digital libraries and some of the language learning resources that are currently available on the Internet. Since the target language is te reo Māori, a critical review on the features of kaupapa Māori theory, pedagogy and Māori pedagogy is undertaken. Using the concepts discussed in this review, the language learning activities associated with the FLAX project are analysed to determine their suitability for learning te reo Māori. Further feedback was provided by a sample group following their testing of a selection of activities that were based on text written in te reo Māori.

The analysis suggests the current range of FLAX activities have more benefit to students as tools that allow practice of the learning that has been delivered in face-to-face classroom settings, rather than as a standalone language learning resource. In their present form, the main benefits of the activities predominantly rest in the way they were performed rather than in the activities themselves. Furthermore, commentary from the testing group regarded the activities as more beneficial for practicing sentence structures, grammar and punctuation, rather than actual language learning. The group generally agreed, however, that combining the activities with methods of oral and aural transmission, in te reo Māori, would certainly result in more effective language learning outcomes.

The legitimacy of digital library-based language learning activities lies in designs that promote learner-centred interaction that is consistent with best practice communicative learning theory. When the target language is te reo Māori, it is of the utmost importance that the activities are tailored to embrace a Māori world view in ways that promote the learning rather than the activity or the content.

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Whakatauāki

Ko te manu ka kai i te miro, nōna te ngahere.

Ko te manu ka kai i te mātauranga, nōna te ao.

Ko Te Arawa tōku waka	Ko Mātaatua tōku waka
Ko Tūwharetoa tōku Iwi	Ko Te Whānau-ā-Apanui tōku Iwi
Ko Ngāti Hine tōku Hapū	Ko Te Whānau-ā-Te Ehotu tōku Hapū
Ko Korohe tōku marae	Ko Tūkaki tōku marae
Ko Tongariro tōku maunga	Ko Whanokao tōku maunga
Ko Taupōnui-ā-Tia tōku moana	Ko Mōtu tōku awa
Ko Waikato tōku awa	Ko Apanui Ringamutu te tangata
Ko Te Heu Heu te tangata	

My upbringing in Taupo and ‘the coast’, mainly Te Kaha and Cape Runaway in the eastern Bay of Plenty, where my dad is from, was filled with my three passions at that time: hunting, fishing and sport. My father, an ex-school teacher and army sergeant insisted I approached my schooling with an attitude of achievement. That the pursuit of my passions relied on good grades at school seemed to just be ‘just the way it was’. I didn’t regard schooling with any animosity – it was something that one did on their way to getting something else. This particular journey started out much the same way. However, I didn’t expect to get caught up in the research as much as I have. The development of electronic resources that deliver global learning is both innovative and exciting, especially when they can be tailored specifically for Māori. Even more appealing is the realisation that one does not have to stop hunting and fishing to use them.

The delivery of electronic resources, especially those that can be used on the Internet, I have likened to providing forms of knowledge that makes the world a smaller and much more accessible place. This has also been my reasoning for the use of the particular whakatauāki written above.

Conventions

All references cited follow the American Psychological Association (APA) format. Where the source is a personal communication, however, this has been identified using a footnote rather than in-text citation.

The Unicode character §, or the Section Sign, is used to represent sections within the thesis.¹ For example, §4.3.3 signifies that the relevant information is contained in Section 4.3.3.

Although many Māori words may have multiple translations they have each been used in consistently the same context throughout this thesis. Therefore an English translation, written in italics and contained in parentheses, is included immediately after the first use of each word and in some cases a brief explanation is included as a footnote.

The Acknowledgements and Whakatauaiki (*proverb*) sections contain extended texts written in te reo Māori. Where these texts have not been translated the reader will know that these particular messages are written specifically for people who will understand their meaning.

Where quotes from other authors have been used, they have been inserted verbatim. Conventions such as tohutō (*macrons*) have not been added where they are missing from the quote. Where mistakes in quotations may be construed, such as adding the English possessive format to a Māori word, for example, Māori's, [*sic*] has been inserted within the quote to signify the anomaly is contained in the original writing. Any other modification of quoted writings are contained in square brackets, capitalising the initial letter of the first word in a quote is one such example, as in [T]he.

The term 'Indigenous' refers to specific peoples and so is written with a capital first letter. Where other writers have chosen not to follow this convention, their quoted works have been included as written.

¹ See <http://www.fileformat.info/info/unicode/char/00a7/index.htm> last visited October 2, 2009.

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List of Abbreviations

ARPANet	Advanced Research Projects Agency Network
CD-ROM	Compact Disc – Read-Only Memory
CERN	European Centre for Nuclear Research
FLAX	Flexible Language Acquisition
HCI	Human Computer Interfaces
HTTP	Hyper-Text Transfer Protocol
IBL	Inquiry-based Learning
IT	Information Technology
LAMS	Learning Activity Management System
LMS	Learning Management System
MoE	Ministry of Education (New Zealand)
NGO	Non-Government Organisation
NZ	New Zealand
NZCER	New Zealand Council for Educational Research
NZDL	New Zealand Digital Library
UK	United Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organisation
USA or US	United States of America
WWW	World Wide Web

Chapter 1

Introduction

1.0 Prelude

The last few decades has seen a huge upsurge in initiatives aimed at the revitalisation, retention and survival of te reo Māori (*Māori*² *language*). The teaching and learning of te reo Māori is taking place in a wide variety of contexts and a number of different approaches and methodologies, often accompanied by a range of resources, are being used and recommended. The delivery mechanisms of these approaches and methodologies have embraced a multitude of media, methods and techniques. Increasingly, the resources available have included electronic and digital mediums aimed at adding to the accessibility of tools developed to teach and learn te reo Māori. Computer-assisted language learning using the Internet³ is one such mechanism that has enjoyed rapid increases in use, in a variety of guises. At present, the burgeoning nature of computer-based resources for language learning does not include the use of digital libraries. Digital libraries are a relatively new and untapped computer-based resource that have been offered as a means to address important information management issues and to provide content and contexts that are of relevance to their target audiences.

This thesis is focussed on the issues involved in using a digital library for learning te reo Māori.

² Māori are the Indigenous people of New Zealand. Te reo Māori is also used in the shortened form of 'te reo' or just 'reo'.

³ The Internet is also referred to as the Net and is discussed in *Chapter 2*, §2.2.

1.1 Issue I (Information Management)

The use of digital libraries is a relatively new phenomenon in terms of the Internet and the World Wide Web⁴ (henceforth referred to as the Web). The Web has resulted in everyday access to parts of the vast stores of information available on the Internet. The collection of this information, however, is largely haphazard and uncontrolled. Searching for, and retrieving, information can be an arduous and time-consuming venture at times. The ever-growing stores of information and the meteoric explosion in the number of users has necessitated the requirement for efficient methods of organising and retrieving information from the Internet. The investigation into the design and development of suitable methods of information management began in earnest in the 1990's with a particular focus on digital libraries. As such, digital libraries are a predominantly new and under-utilised resource, especially in terms of language teaching and learning.

Digital libraries have an ability to categorise and organise extremely large stores of information. The libraries store the information electronically and, arguably, are able to bring about the usage of the vast amount of material resource that is currently available on the Internet in a relatively controlled manner. What is perhaps more certain is the ability of these types of computer-based tools to store unlimited amounts of information and provide inbuilt functionality in ways that make searching and retrieval a quicker and far less laborious exercise. Language learning activities for te reo Māori have thus far not been linked to a digital library, however, the Flexible Language Acquisition (FLAX) project at the University of Waikato, New Zealand, involves a digital library prototype for additional language learners of English.

The focus of this research arises from the opportunity to extend the initiatives in the FLAX project to include activities aimed at learners of te reo Māori.

⁴ The World Wide Web is also known as the Web, WWW, or W3, and is discussed in *Chapter 2*, §2.2.

1.2 Issue II (Learning versus Practice)

The designers and proponents of computer-assisted language learning tools advocate these as valid approaches to learning second or additional languages, however, this is not a view shared by some language teaching professionals. These professionals would argue that electronic resources designed for the teaching and learning of languages often appear to focus on repetitive practice, sometimes even involving individual sentences that are decontextualized (or stand-alone)⁵. The majority of these professionals agree on approaches that encourage learners to use the target language in authentic ways in the process of interacting with others to perform meaningful tasks, such as tasks involving problem solving. They generally concur that grammar translation and repetitive drilling are far less likely to lead to what is generally referred to as ‘communicative competence’.⁶ The New Zealand Ministry of Education recommend these ‘communicative approaches’ in their curriculum guidelines for te reo Māori in schools (in common with the guidelines for the teaching and learning of other languages) (Ministry of Education, 2007).

The divergence in viewpoints and philosophies between additional language teachers and proponents of computer-assisted language learning necessitates the discussion on communicative learning theory and a critical, pedagogical analysis of the FLAX-based resources.

1.3 Issue III (Kaupapa Māori)

Given that the target language for this research is Māori, other issues, some of which are culturally-based, need to be addressed. The issues include Māori educational achievement within the New Zealand education system, Māori approaches to learning and their view of the world in general, and ensuring learning strategies and tools are tailored for Māori. Therefore a critical literature review that discusses Māori education, Kaupapa Māori theory and Māori pedagogy is also undertaken.

⁵ Crombie, W. Personal Communication. February 10, 2009.

⁶ Communicative competence and communicative learning theory is discussed in *Chapter 4*, §4.4.

1.4 A personal analogy

In 2004, I was a student in the Te Tohu Paetahi programme at the University of Waikato. This programme aims to teach te reo Māori in an immersed setting where students are in class every day, 9:00am to 3:00pm, Monday to Friday. The course assessments also required varying amounts of out-of-class time for preparation and completion. In 2005, I returned to mainstream classes and completed one further (advanced) Māori language paper in each of the two semesters. These classes consisted of two two-hour sessions per week augmented by a one-hour tutorial. Exercises, enabling revision and practice of the concepts delivered in class, were posted in an online forum that was specific to each of these classes and available on a 24hour basis to the students. I have fond memories of many of the group sessions we organised that would sometimes involve three or more other classmates. Quite often we were in the labs late at night until the early hours of the morning. The sessions were mainly memorable because of the laughter, food, hot drink, guitars and singing - all of which were frowned upon and prohibited in the laboratories in the School of Computing where I was completing my first degree. Quite often I would make my way between the labs of the two schools, under the guise of practicing my reo, to get a hot drink and share in the camaraderie.

While the sessions were enjoyable, it was often disconcerting to realise that without a grasp of the structures, contexts and grammar rules that were imparted in class, I could not complete some of the exercises. Sometimes I relied on the superior knowledge of my classmates and suffered their good-natured ribbing in return. At other times I would guess sequences or words until I happened to chance on the correct answer. It became clear to me then that I was not going to get much benefit from using the online exercises without sufficient in-class understanding. The degree I was completing at that time majored in applied computing with a focus on usability and design concepts. What became patently obvious to me, over the course of that year and in reflective moments since, was: some serious study, thought and strategy would be essential if computers were to be used to effectively deliver language learning - historically the domain of classrooms and other face-to-face settings. This thought underpins the key motivation for this research and informs much of the ensuing discussion.

1.5 Overall Aims

The overall aims of this research are to determine:

- what is involved in the creation of a digital library for use in learning te reo Māori;
- examples of the types of language learning activities that can be created using a digital library;
- which of these types of activities are likely to be most effective from a pedagogic perspective;
- the suitability of a digital library as a te reo Māori learning resource.

1.6 Research Questions and Research Methods

1.6.1 Research questions

1. Digital libraries and learning te reo Māori:
 - a. What is a digital library?
 - b. Why use a digital library?
 - c. What is involved in the creation of a digital library for use in te reo Māori language learning?
2. Digital libraries and language learning activities:
 - a. What are the types of activities that can be created?
 - b. How would these activities differ from what is currently available electronically?
3. Digital library activities and kaupapa Māori language learning pedagogy:
 - a. What are the features of effective language learning from a kaupapa Māori pedagogic perspective?
 - b. Which of the digital library language learning activities display these features?
4. What are the main issues and possibilities with designing language learning activities based on digital libraries?
 - a. What are the reasons this has not been done yet for te reo Māori?
 - b. What benefits, if any, will be generated for learners of te reo Māori by the development of activities based upon a digital library?

1.6.2 Research methods

1. A review of the characteristics of digital libraries.
2. An outline of the types of language learning activities that can be generated, and are currently available, using digital libraries.
3. A review of some language learning systems currently available online.
4. A critical review of literature on the teaching and learning of additional languages, with a particular focus on Kaupapa Māori theory, Māori pedagogy, and communicative learning theory.
5. A critical Kaupapa Māori, pedagogically-based analysis of the activities currently available through the FLAX project.
6. The design and testing of selected FLAX-based activities.
7. The design, circulation and analysis of a self-completion questionnaire intended for a group of testers of a sample of the FLAX-based activities.

1.6.3 Activities testing

A select number of activities, designed for learning te reo Māori using a digital library, was built, using FLAX software, and tested on a small group of university students. Following the testing, the students were asked to complete a brief questionnaire. This enabled them to provide feedback that delivered a form of assessment regarding the value or usefulness of the activities. Capturing their attitudes and impressions following the testing session also enabled them to share their view and opinions of the activities as suitable learning tools for te reo Māori.

Initial, informal discussions tentatively identified the 2009 Rehutai stream in the Te Tohu Paetahi programme as a potentially suitable testing group. Ethical Approval was therefore sought with a view to approaching this group and securing their help for this research by way of testing and providing feedback.

The full testing process and the feedback are described in *Chapter 5*.

1.7 Research Ethics Comment

The main themes of this research, the testing process and the questionnaire means the target participants will be associated with the studies from a Māori viewpoint. The discussions and conversations will therefore be conducted in accordance with Kaupapa Māori Research Principles and, as such, Ethical Approval for this research was sought and gained from the Human Research Ethics Committee of Te Pua Wānanga ki te Ao (The School of Māori and Pacific Development). A more comprehensive discussion on the principles of Kaupapa Māori theory is included in *Chapter 4*.

1.8 Structure

This thesis is structured as follows:

Chapter 1 – An introduction to the research

Chapter 2 – Digital Libraries – Information storage and usability

- includes definitions of the Internet, the Web and digital libraries

Chapter 3 – Digital Libraries and online language learning activities

- e-learning and digital library collections
- a review of other online learning management systems

Chapter 4 – Kaupapa Māori learning pedagogy

- includes a discussion on communicative learning theory

Chapter 5 – Analysing activities based on a digital library

- includes an analysis of FLAX activities, testing and feedback

Chapter 6 – Digital library activities for language learning: Issues and possibilities

- a discussion of the issues arising from the research

Chapter 7 – Concluding analyses and reflection

- includes limitations of this research and further research directions

Chapter 2.0

Digital libraries: Information storage and usability

2.1 Introduction

The amount of information on the Internet is so vast that it is often difficult for the average person to fathom. The Internet contains billions of digital objects from millions of sources (Larsen, 1999, Tyson, 2009). The advent of the micro-computer in the 1980s provided personal computers that were inexpensive and versatile, creating a universal explosion of computers in businesses, institutions and homes (Radlow, 1995, p.26; Sanders, 1988, p.4). Furthermore, computer networking and the development of the Web has created everyday access to the boundless supply of information and knowledge that can be obtained from the Internet. The resulting escalation in the number of users and the steadily growing stream of knowledge has led to an even greater demand for near-instant access to the resources that are stored electronically.

The Internet and Web have demonstrated that professionals, scholars, students of all ages and the general public have a boundless appetite for information of all types (Dysart, 1998, p.32; Griffin, 1999, p.46). This, in turn, has created further demands especially in terms of search and retrieval efficiencies. Crumlish (1996) observes that this is an inherent feature of advanced technology: “The ‘digital revolution’ has given with one hand, creating all kinds of rapid means of electronic communication, and taken away with the other, accelerating everyone’s expectations, constantly moving the goalposts” (p.xix).

As more information becomes available, user expectations increase. Content is added to the Internet continuously and the problems become increasingly complex as a consequence of multiple networks that adhere to no singular structure or architecture. As Corn (1999, p.47) observes “[Whoever] the questioner, the information is likely to be in a variety of locations and in multiple formats, including print, graphics and video”.

The Internet is a largely unstructured resource, extracting information can be frustrating. Witten & Bainbridge (2003, p.xxvi) describe the Internet as a “haphazard collection” and add that the Web, on a daily basis, reinforces the impotence of information in an infrastructure without organisation. Therefore, while the availability of vast amounts of information is potentially an incredibly diverse resource, usefulness of that potential ultimately rests in its usability (Griffin, 1999, p.46; Schatz & Chen, 1999, p.49; Lesk, 2005, p.28). Methods of retrieval begin to become far more important than the actual supply. This is a serious issue underpinned by the dependence of modern society on information technology where the fundamental infrastructure of the Internet has not kept pace with the supply of the information (Schatz & Chen, 1999, p.45; Witten & Bainbridge, 2003, p.xxvi). Schatz & Chen (1999, p.45) observe that: “The functionality of the Net must be boosted beyond providing mere access to one that supports truly effective searches”.

Although it is evident that there are many advantages associated with the Information Age, there are also a number of disadvantages. One of these is the increasing difficulty of finding and retrieving information quickly and effectively (Billingshurst & Starner, 1999, p.57). As Dysart (1998) observes “Too many Web sites are little more than Elephantine filing cabinets floating in cyberspace. There’s plenty of information, but digging for it can be irksome” (p.32). A digital library is one tool that has the potential to seriously enhance the information retrieval experience. In this chapter, there is discussion on the Internet and the Web (§2.2), the attributes of digital libraries (§2.3) and the impact that they have on information management (§2.4), and, finally, their potential contribution in the area of language learning.

The final section of the chapter outlines the practical advantages of using digital libraries as learning and teaching tools for te reo Māori and how these applications may be best used to manage very large collections of varying types of resources. This chapter does not engage in the pedagogical value of these resources, nor are the issues surrounding intellectual property and the ethics of globally shared resources discussed.

2.2 The Internet and the Web: a brief overview

This section provides a brief overview of the Internet and the Web in order to explain the significance of digital libraries as a developing information management technology.

2.2.1 The Internet

The Internet represents an unimaginable amount of information accessible through huge and incoherent networks of hundreds of millions of computers and computer networks. This is reflected in a fairly simple definition offered by Crumlish (1996): “[The Internet is] a collection of networks and computers all over the world, all of which share information, or at least e-mail, by agreed-upon Internet protocols” (p.9).

The Internet is a global electronic phenomenon that is not owned by any one person or group (in fact it isn't owned by anyone), is comprised of networks both big and small, is largely uncontrolled (and uncontrollable), is able to be accessed by pretty much anyone with the proper equipment and protocols, and is unbridled and unrivalled in terms of size, growth and potential (Witten & Bainbridge; 2003, p.xxvi. Tyson, 2009, p.1). In fact, the term itself is derived from this idea of **interconnected networks** (Tyson, 2009, p.1).

The Internet began with ARPANet (Advanced Research Projects Agency Network) at the US Department of Defense and was primarily aimed at research sharing rather than strictly defense applications (Hauben, n.d., p.3) The initial connection in the late 1960s of four host computers in the original ARPANet formed the very first stage of the Internet (Internet Society, 2003, p.1). This has now mushroomed quite dramatically into the current network of millions of computers and computer networks (Tyson, 2009, p.1). The Internet has been uniquely instrumental in revolutionizing computing and associated communications. The introduction of the initial "hot" application in 1972, namely electronic mail, ushered in a new era of “people-to-people” traffic, the enormous

growth of which forms a substantial portion of the activity we now see on the Web (Internet Society, 2003, p.1). By 1985, the Internet was already well established as a technology supporting a broad community of researchers and developers, and was further distinguished by an unprecedented uptake by other communities, including academics, businesses and the general public, for daily computer communications. To describe it as an unrivaled resource for electronic interaction and information sharing is a huge understatement. The global aspect of the interactions and information sharing is reinforced by the Internet Society (2003): “The Internet is at once a world-wide broadcasting capability, a mechanism for information dissemination, and a medium for collaboration and interaction between individuals and their computers without regard for geographic location” (p.1).

One can see that the Internet has grown beyond its primarily research roots to include both a broad user community and increased commercial activity. It has steadily evolved into the gigantic network that we now regard as a single entity (Tyson, 2009, p.2; The Linux Information Project, 2005, p.1).

2.2.2 The Web

The development of the Web, and associated programs known as web browsers, has been a critical event in effecting general access to the resources available through the Internet. In fact, the advent of the Web catapulted the Internet to mass popularity virtually overnight (Hughes & Sheehan, 1999, p.37). Tim Berners-Lee, at the European Centre for Nuclear Research (CERN), invented the Web initially as a way to allow nuclear physicists to exchange working papers over the computer networks (Perkins, 1997, p.1). This was accomplished using browsers which are software applications designed to locate and display Internet information as web pages (Perkins, 1997, p.1; Qualcomm, 2008, p.1). Figure 1 illustrates the rapid growth of the Web where one terabyte is roughly equal to a library that holds one million books.

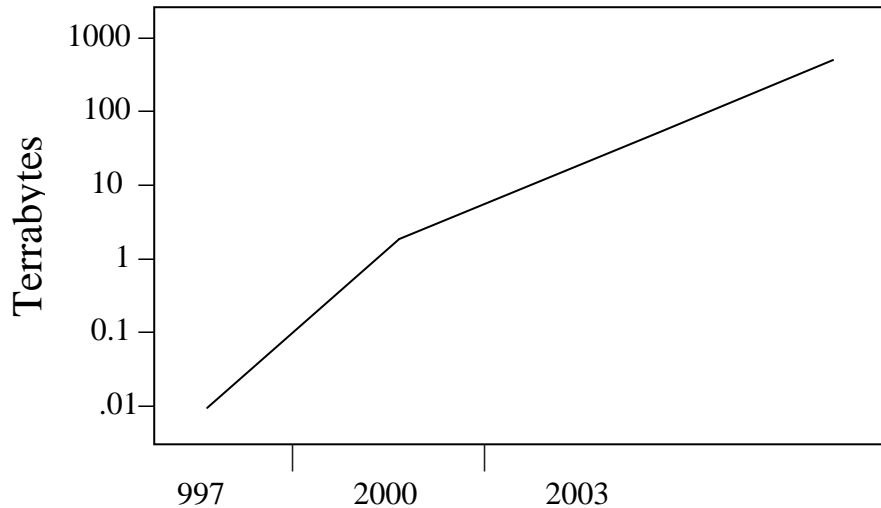


Figure 1 - Growth in size of the Web⁷

The Web is made up of systems of interlinked documents known as web pages. These pages have quickly been recognised as an easy way to access the information scattered across the Internet. It is a common mistake to regard the Internet and the Web as the same entity. In essence, the Web is a graphical interface to Internet resources and can more correctly be thought of as being a part of, or a sub-set of, the Internet (Crumlish, 1996, p.4; Qualcomm, 2008, p.1). Note that the majority of Internet servers are not able accessible through the Web and, as a result, most of the information is unavailable using Web protocols. Crumlish (1996) illustrates this further describing the Web as:

[The World Wide Web is] a sub-set or cross-section of the Internet consisting of all the resources that can be reached by means of the HTTP [Hyper-Text Transfer Protocol] protocol or any other Internet protocols that a Web browser can understand (p.9).

In fact, the Web only allows access to a small portion of the Internet, commonly referred to as the Surface Web. The remaining part of the Internet, or the Deep Net, is estimated to be 500times larger. Quoniam (2008) provides the data for Table 1 from 2002.

⁷ Source – Lesk, 2005, p.26

Medium	2002 Terabytes
Surface Web	167
Deep ⁸ Web	91850

Table 1 - The size of the Internet in Terabytes - 2002

Although the portion of the Internet that is accessible by the Web is relatively small, the growth in the number of web pages has been phenomenal (Figure 2).

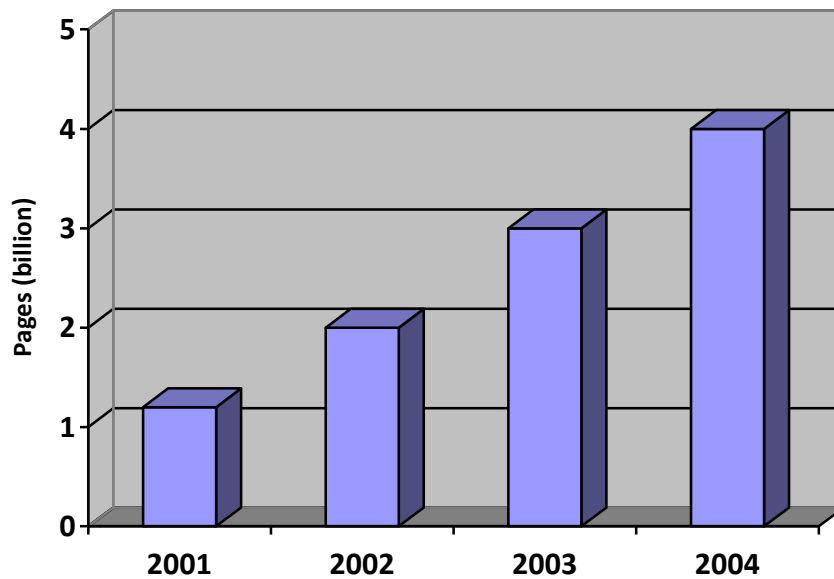


Figure 2 - Growth of Web Pages as reported by Google⁹

These figures provided by Google relate to the reported number of web pages at the beginning of each year and are likely to be understated since Google suspect under-reporting and non-disclosure by some businesses (Lesk, 2005, p.26). This would appear to be supported by Yahoo who, in August 2005, reported an indexing of 19.2billion pages. Current numbers are not available, however, the Netcraft Web Server survey announced an indexing of over 108million websites in February 2007 and some basic extrapolation of the available numbers calculate a likelihood that web pages in February 2007 would number close to 30billion (Boutell.com Inc, 2007, p.1). Website numbers appear to have more than doubled

⁸ The Deep Web is also referred to as Hidden or Invisible.

⁹ Source - Lesk, 2005.p. 26.

since with Netcraft (2009, p.9) recently reporting responses to their July 2009 Web Server Survey from web sites numbering slightly under 240million.

To the vast majority of users, the Internet and Web have become confused to the extent that there seems to be one single identity and the differences appear to become lost (Kovacs, 2000, p.3). What is perhaps more important at this point is to appreciate how the access to, and use of, stored information has been tremendously accelerated by the widespread and rapid adoption of browsers and the Web technology, allowing access to a global supply of linked information (Internet Society, 2003, p.1). Furthermore, while the Web works well as a clever display device, its real power lies in interactivity (Dysart, 1998, p.31). This interactivity has resulted in, among other things, the upsurge of commodity services, that is, the buying and selling of commodities over the Internet. Because of this, many of the latest developments in technology have been aimed at providing increasingly sophisticated information services on top of the basic Internet data communications (Internet Society; 2003, p.1; Tyson, 1999, p.3). This, in turn, has further extended the general ability to navigate throughout the various networks that are a part of the Internet with increasing relative ease.

2.3 Digital Libraries

The development of Digital libraries admirably addresses the issues of storage, location and retrieval of vast quantities of information. They are a powerful means of providing systems that are basically highly organised collections of digitally-stored information. As the term 'library' suggests, this collection involves efficient cataloguing, storing, protecting and retrieving of information. Also, in similar vein to traditional libraries, the collections are not solely text-based. They are able to contain anything that can be sourced electronically including graphical, video and sound objects. "Digital libraries are new tools for achieving human goals by changing the way that information is used in the world" (Witten & Bainbridge, 2003, p.xxvi).

The Digital Library Federation (1998) has offered this definition:

Digital Libraries are organisations that provide the resources, including the specialised staff, to select, structure, offer intellectual access to, interpret, distribute, preserve the integrity of, and ensure the persistence over time of collections of digital works so that they are readily and economically available for use by a defined community or set of communities (p.1).

Witten & Bainbridge (2003) are more metaphoric: “If information is the currency of the knowledge economy, digital libraries will be the banks where it is invested” (p.xxvi). They further define digital libraries as “focussed collections of digital objects, including text, video and audio, along with methods of access and retrieval, and for selection, organisation, and maintenance” (p. xxvi).

One can readily see that, with some slight adaptations, these definitions would apply equally well to the physical libraries that we are more familiar with. In fact, digital libraries combine the functions of structuring, gathering and storing information, that have historically been done by libraries and archives, with digital representation allowing continuous global access (Lesk, 2005, p.xxix). Paepcke et al (1999), when discussing an integration of old and new technologies, assert that “the underlying issue for digital libraries that combine diverse collections is to find the right integration of traditional library facilities and current Web-based approaches” (p.86).

It is important to remember that digital libraries will not replace conventional libraries completely, at least not in the foreseeable future; because it will not be the case that everything stored in conventional libraries will be able to be stored digitally and therefore be available in digital collections (Paepcke et al, 1999, p.86; Witten, 1999, p.xxvi; Kaufman, 2001, p.6). In spite of this, Kovacs (2000) observes:

The Internet has increased access to many types of information resources that previously were difficult or expensive to obtain. Increasingly, more traditional types of information like newspapers, newsletters, journals, books, dissertations, bibliographic databases, and even television and radio news information are being made accessible on the Internet. Some are even published directly to the Internet instead of, or in advance of, printed versions. Resources once only available locally in libraries or agencies are now accessible globally; such as government information, community or campus specific information or library catalogues (p.2).

The ability to store and organise information digitally has resulted in unheralded improvements in access to collections and in keeping the information current (Lee, 2001, p.4). It has also given us a power we never had with traditional libraries, effecting streamlined search results and faster information retrieval (Larsen, 1999, p.47; Lesk, 2005, p.27). Since digital libraries can be focussed collections of information, capable of managing enormous amounts of information in a variety of media, from a variety of locations, it is reasonable to expect better efficiencies for locating and retrieving pertinent information. In fact, the organised compilation of distributed repositories to form coherent virtual collections is fundamental to these types of increased efficiencies and speed. These ‘organised compilations’ reflect characteristics of digital library technology which is able to comprise widely distributed resources that can be maintained autonomously, by different organisations, and will not require adherence to uniform interfaces (Larsen, 1999, p.47).

2.4 Usability

One requisite feature of a digital library is that it is easy to use. Witten & Bainbridge (2003, pp.xxvii, 285) emphasise the need for the design and build of digital libraries to incorporate interfaces that are intuitively usable. Digital libraries must be designed with the users in mind. They are as much a collection of communities as a collection of technologies, and their success is largely

attributable to both satisfying basic community needs, as well as utilizing the community in effective ways that push the infrastructure forward (Internet Society, 2003, p.1). While usability may also be attributable to intelligent interface designs, digital libraries address traditional problems of finding information and delivering it to users (Lesk, 2005, p.29). On the assumption that users want to get everything they require in as few searches as possible, developers must aim for the ability to provide the majority of the required information to users in the least number of searches. That is to say that if what people want is stored (and shared) electronically, they should be able to discover and retrieve that easily and quickly (Lesk, 2005, p.28). This thought embraces the heart of digital libraries; that of information management underpinning shared resources. So, “A digital library can be searched for any phrase; it can be accessed from all over the world; and it can be copied without error” (Lesk, 2005, p.2).

As Schatz & Chen (1999, p.45) observe “[digital] libraries are a form of information technology in which social impact matters as much as technological advancement”. These needs include the quality and accuracy of the information gathered, which can be tested and verified in the design. The validity of the information is something that can be examined by the administrators. Cullen (2001) laments the current situation of searches resulting in retrieved information that may be inaccurate, obsolete, or otherwise of no use to the user: “It is a disturbing trend that finds ... students conducting research on the Internet without exercising, or knowing how to exercise, judgement about what is reliable and what is not” (p.82).

For a library to be of use to anyone, it needs to have something in it. Furthermore, the content needs to be managed by administrators and be able to be accessed by users. So, administrators must use content that is of value and addresses the information needs through networked computing (Griffin, 1999, p.46). As discussed earlier, data selection, protection and currency are features of the effective administration of organised collections in the form of digital libraries.

Digital libraries must also encompass growth. Given that the presentation, or the interface, of a digital library is not dissimilar to web pages on a web site, one might begin to wonder why we would bother creating a library when objects can merely be placed onto web pages (Treweek, 2005, p.114). The answer lies in functionality. To add to the library content would not involve labour-intensive adjustments by the administrator (Witten et al, 1999, p.74). In other words, there is no requirement to edit content or manually integrate additional material into the system. Regarding the growth of digital library technology, Lesk (2005, p.17) observes “Improvements in the technology to store digital information have been the most impressive in any field. Cheap storage makes digital libraries not only possible, but affordable, and completely changes our view of what is possible”.

Digital libraries provide a wealth of information at one’s fingertips. They are able to be tailored to a specific set of user requirements and, depending on the reliability of hardware, offer continuous access to pertinent information for a variety of users. Arms (2000) suggests that some scholars and professionals would be better served using a personal computer rather than going to a physical library and adds “The fundamental reason for building a digital library is a belief that they will provide better delivery of information than was possible in the past” (p.4). An added bonus is that although libraries are available over the Web, collections can be made available, in exactly the same form, on CD-ROM essentially creating an off-line, portable version. In both cases they are accessible using web browsers.

Well managed digital libraries are an effective means of sifting out the chaff of information and forming useful resources where information is easy to locate and quick to retrieve. Intelligent design practices will provide a resource that is versatile and flexible and tailored to the needs of the many types of users.

According to Grewal & Heath (2001, p.105):

Providing and maintaining digital content online can be a complex and expensive proposition. However, choosing the right delivery vehicle and designing it as a flexible and versatile tool can be useful in securing maximum leverage across a multitude of applications and projects. A well-designed Digital Library can be such a tool, providing the appropriate vehicle for delivery of online information under diverse requirements.

Although digital libraries may be thought of as being cost effective, in terms of storage, maintenance and logistics (especially when compared to physical libraries) and cost sharing, large and complex libraries may at times involve costs and trade-offs that are associated with new electronic technologies.

There is little doubt that digital libraries provide a means of presenting vast amounts of information in the form of organised systems. The information is continuously available, current and can be shared online. They are also able to be used and shared offline. Digital libraries instil structure and hierarchies that are designed to allow information searching and retrieval to be straightforward and a painless experience for users. They are a powerful resource in a knowledge society where the stores of information are overly abundant, in a multitude of media, and the emphasis by users, administrators and developers alike is on intelligent and practical methods of efficiently managing that information.

2.5 Digital libraries and e- learning

Tailored resources that are well organised collections of relevant information have an obvious value in education settings. It is equally obvious that the benefits of being able to easily access these resources by educators and students alike would enhance formal learning settings. From our earlier discussion regarding the characteristics of digital libraries one would quickly surmise potential benefits to the education system of such technology. Marchionini & Maurer (1995) describe these benefits more comprehensively asserting that:

Digital libraries have obvious roles to play in formal learning settings by providing teachers and learners with knowledge bases in a variety of media. In addition to expanding the formats of information (e.g., multimedia, simulations), digital libraries offer more information than most individuals or schools have been able to acquire and maintain (p.7).

They further comment on the advantages to learning of continuous availability:

Digital libraries are accessible in classrooms and from homes as well as in central library facilities where specialized access, display, and use tools [*sic*] may be shared. Remote access allows possibilities for vicarious field trips, virtual guest speakers, and access to rare and unique materials in classrooms and at home. The promise is one of better learning through broader, faster, and better information and communication services. These physical advantages promise several advantages to teachers and learners by extending the classroom (p.7).

Electronic environments admirably provide a vast array of content for use in education. There is a general agreement that digital information is a valuable resource that is able to successfully support current learning initiatives, however, some researchers contend that students tend to interact far more with the content rather than with teachers and other students (Koper & Tattershall, 2005; Dalziel, 2007; Levy et al, 2008). Their view perceives a large proportion of e-learning that exhibits relatively little understanding of learning in interactive, collaborative environments, which are purported to be key ingredients in education, especially when languages are being learned. E-learning concepts such as Inquiry-based learning (IBL) and 'Learning Design' are part of a drive for design that recognises the importance of engaging students and teachers in learning environments. Levy et al (2008) describe IBL as "An approach to active learning in which open-ended, student exploration, investigation or research drives the learning experience, and

all learning and teaching resources and activities are designed to support the inquiry process” (p.11).

The concept of Learning Design is broadly defined by Dalziel (2007, p.2):

While definitions of Learning Design vary, the main elements tend to include greater focus on “context” dimensions of e-learning (rather than simply “content”), a more “activity” based view of e-learning (rather than “absorption”), and greater recognition of the role of “multi-learner” (rather than just single learner) environments.

Marchionini & Maurer (2007, p.1) advocate that the use of technology means teachers and students must also undertake new learning. They reason that new strategies must be learnt for using electronic tools and multimedia and new disciplines must be realised in environments where face-to-face interaction occurs less often. This is a sentiment previously raised by Neal (1998): “Teachers and students must go beyond a preoccupation with the delivery of online courses and instead focus on the knowledge that needs to be imparted” (p.11).

Most developers would agree that the usefulness of a system lies primarily in its design and how well it provides teachers and learners with effective learning tools. They also agree that electronic mediums are able to provide a fundamental resource for education. As valid language learning resources, Wu & Witten (2007) advocate the use of digital libraries and further discuss some of the features:

Digital libraries have an untapped potential for supporting language learning and teaching. They include an unprecedented supply of authentic linguistic material in the form of top-quality prose. They make language material easily accessible through purposeful searching and browsing. They include rich metadata that can support interesting linguistic exercises. They provide a safe and controlled learning environment. Socially-oriented library software can support

collaborative activities and strengthen and enrich the students' learning experience. Exercise content can be focussed on a particular subject. Last but not least, digital libraries can be distributed to people who lack the opportunity to attend traditional classrooms (p.1).

While ongoing developments and technological breakthroughs may bring the e-learning debate to a head at some stage, this study will concentrate on the use of digital libraries. The focus of the research will identify the types of learning activities that can be created electronically using digital libraries. The merits of those activities will be analysed in *Chapter 5* as part of a discussion that is focussed on kaupapa Māori learning pedagogy.

Chapter 3

Digital libraries and online language learning activities

3.1 Introduction

The use of Internet technology for learning¹⁰ offers a range of alternatives to more time-honoured methods of education that includes face-to-face delivery in formal settings. Given that such resources are available in a variety of media, authored by a multitude of developers, and generally not aligned to any recognised educational standard, it is not surprising that these resources are regarded purely as supplements especially by some academics and learning professionals who question their quality and validity as stand-alone teaching and learning resources. Electronic resources, however, that supplement traditional teaching and learning processes are not new, are widely used and now include an ever-increasing amount drawn from the Internet. This is because this type of learning can be moulded around busy lifestyles where users can start and finish when it suits them, are able to access the resources whenever, and from where-ever, it is convenient, and do not have to deal with the logistical issues of physically attending specific venues to receive their instruction (Seeklearning, 2009). The Internet enables resources to be available to wide, even global, audiences and offer a raft of new possibilities in terms of opportunities for teaching and learning. Some of these are highlighted by New Zealand's Ministry of Education (MoE, 2008a. p.1):

For providers of Tertiary education, e-learning extends educational reach to a larger and more diverse group of students. To a large extent this is because e-learning is less constrained by time and geography. This opens up the possibility of learning opportunities that are more flexible, therefore allowing more New Zealanders to undertake a course of study suited to their needs and circumstances.

This chapter provides a brief discussion on some aspects of e-learning. This is followed by an outline of the New Zealand Digital Library project and Greenstone

¹⁰ usually referred to as electronic learning, eLearning or e-learning

Digital Library software. These initiatives stem from research based at the University of Waikato, New Zealand and have given rise to the Flexible Language Acquisition (FLAX) project. One of the outcomes of this particular project is the development of language acquisition software also known as FLAX. A summary of the flax software is followed by the review of a small sample of websites that promote themselves as learning and language learning resources. There is no attempt to qualify the ‘learning versus practice’ aspects or the pedagogical quality of these types of resources as that will be the focus of *Chapters 4&5*. Rather, the overview of such a small sample is undertaken to draw attention to what may be possible for learning and, perhaps, language learning to occur in online settings.

3.2 E-learning

The Internet has made it possible for people of all walks of life to source information about whatever they have a mind to learn about. In fact, access to resources that have previously been unavailable has fostered online and distance learning in virtually any discipline for any student (Erica.net, 2005; Morrison, 2000). Many secondary and tertiary institutions around the world are increasingly providing e-learning options including degrees that are purported to be on a par with those delivered on a campus (Erica.net, 2005a). Obviously many of these online options are also available to the general public (§3.3-§3.7). According to Seeklearning (2009a), more people are choosing to study university, employer-recognised qualifications while working:

SEEK Learning offers more than 60 undergraduate and postgraduate courses from prestigious institutions including Monash University, Griffith University, Edinburgh Business School and RMIT [The Royal Melbourne Institute of Technology]. All certificates and degrees are **identical to on-campus qualifications** [*sic*] (p.1).

The interactive nature of the Web allows students to enrol in courses involving activities in environments that let them interact with each other and with their tutors (Morrison, 2002; Wu et al, 2007). When one considers that the geographic location of students and teachers can be quite divergent, the ability to communicate in real time settings is a significant benefit of this type of learning. Allee (2000) suggests that e-learning and knowledge sharing is more than just about the individual learners and makes reference to the concept of e-learning communities:

Knowledge is a social phenomenon. We learn through experience, application, and conversation in community with our peers. We are on the verge of an explosion of interest in communities of practice and knowledge networks.

Online resources aimed at language teaching and learning have become a prominent feature of e-learning. Considering the impact that the Internet has had on communication around the world and given that e-learning occurs in such global contexts, the teaching and learning of languages in electronic environments and online is a reasonable expectation. In fact, the Web is regarded by some as a “popular and effective place to learn and teach foreign languages” (Wu et al, 2007, p.1). While the claim of effectiveness may draw little support from language teaching professionals, claims of popularity appear to be supported by a Web search, using the search engine Google, which returned about 82,700,000 hits for the search term “language learning” while “language teaching” returned 40,700,000¹¹. Morrison (2002) comments on the wealth of resource:

The wealth of information available on the Web affords teachers and learners access to language learning resources like never before. Online journals, listservs¹², newspapers and magazines provide authentic material for language learners, while teachers can find lesson plans and ideas, exercises, assessment tools, and other materials for use in their class (p.1).

¹¹ Retrieved July 2, 2009

¹² Software that comprises mailing lists for eMailing multiple users in bulk

Teachers, in general, are able to have some measure of control regarding the electronic learning activities that are selected for their courses and, in some cases, can also have input into the design of relevant customised activities. In general, however, teachers tend not to have the technical skill and knowledge that is necessary to design and administer such activities and courses themselves - especially when they are website-based (Morrison, 2002). This shortfall of requisite skill, however, is becoming less of an issue as software available now, and currently under development, seeks to address the needs of teachers as online course administrators. Examples of this type of software are discussed later in this chapter. The point, however, is well stressed by Koper and Tattersall (2005, p. v) who assert:

To be successful, e-learning must offer effective and attractive courses and programmes to learners, while at the same time providing a pleasant and effective work environment for staff members who have the task of developing course materials, planning the learning processes, providing tutoring, and assessing performance.

Holmes (1999) further cautions that how the information resources are used is equally as important as the availability and declares that “[to] dispel the illusion that the computer by itself can educate, computer professionals need to press for reforms that properly exploit digital technology in the classroom” (p.1).

There is little doubt that there is much material available online that could provide useful resources for language learning. The manner in which these resources are presented, however, and the ability of students, instructors and administrators to interact meaningfully with them, and with each other, is a consideration that is as important as the quality and availability of the material itself.

Digital libraries provide powerful methods for managing huge amounts of information. The New Zealand Digital Library project is a research programme at the University of Waikato that has provided the Greenstone Digital Library

software which is available over the Internet or by CD-ROM¹³ (NZDL, 2007). The project Home page¹⁴ describes a digital library as “a set of collections of information that comprise several (typically several thousand, or even several million) documents, which share a uniform searching and browsing interface” (NZDL, 2007b, p. 1). Given the availability of such huge volumes of resource, the ability to present these as organised collections of knowledge in various formats and media makes digital libraries ideal tools for online learning activities. The organisation and relevance of the information allows for efficient search and retrieval, while additional information can be added in manners that keep the information current and accurate.

3.3 Digital Library Collections

This section contains a brief overview of the New Zealand Digital Library project, the Greenstone suite of software and the Flexible Language Acquisition (FLAX) project. These projects have been undertaken by research teams based in the Computer Science Department at the University of Waikato, Hamilton, New Zealand.

3.3.1 The New Zealand Digital Library Project

The New Zealand Digital Library (NZDL) project information has largely been sourced directly from the project website <http://www.nzdl.org>¹⁵. The NZDL project is a research programme at the University of Waikato that enjoys strong collaborative ties and affiliations with United Nations agencies and Non-Government Organisations around the world, more specifically with UNESCO¹⁶ and the Human Info NGO (NZDL, 2007). The project aims to explore the potential of internet-based digital libraries and their vision is stated on their Homepage (NZDL, 2007b, p.1):

Our vision is to develop systems that automatically impose structure on anarchic, uncatalogued, distributed repositories of information,

¹³ Compact Disk – Read Only Memory : a compact disk that is used with a computer (rather than with an audio system) upon which a large amount of digital information can be stored and accessed

¹⁴ <http://www.nzdl.org/cgi-bin/library.cgi>

¹⁵ Accessed July 2, 2009

¹⁶ United Nations Educational, Scientific and Cultural Organisation

thereby providing information consumers with effective tools to locate what they need and peruse it conveniently and comfortably.

Figures 1 & 2 are examples of the collections that have been included in the NZDL website.



Figure 3 - Sample screenshot (User Contributed and Humanitarian Collections) : NZDL website¹⁷

The Humanitarian and UN sections contain nearly thirty collections. Overall the NZDL website also contains two user collections, eight demonstration collections, four documentation collections and fourteen documented example collections.

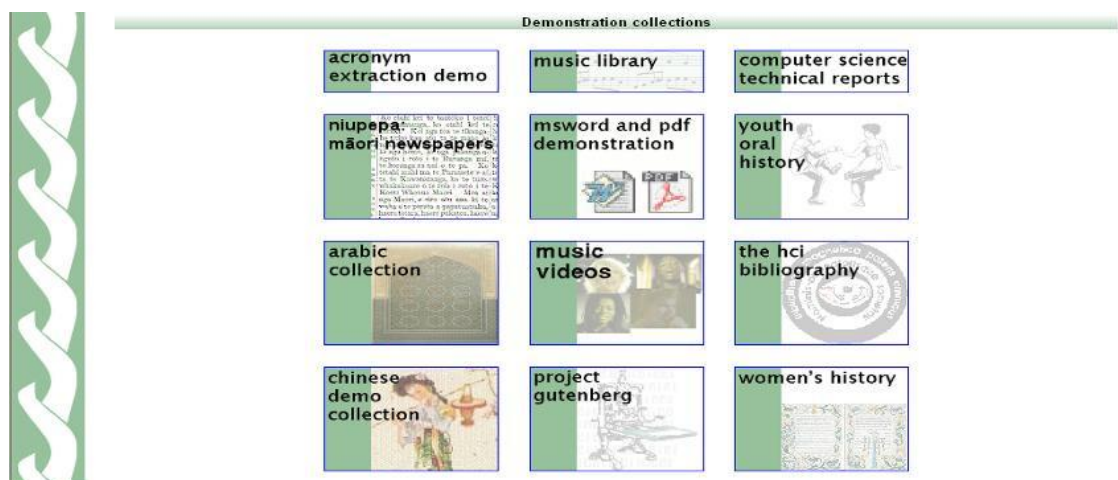


Figure 4 - Sample screenshot (Demonstration Collection) from the NZDL website¹⁷

The New Orleans Disaster Oral History project, which is one of two user-contributed collections, contains oral histories (from interview) from some of the people affected by hurricane Katrina (Figure 4). This collection includes audio files and photographs, as well as text documents, highlighting the versatility of digital libraries in terms of multimedia usage.

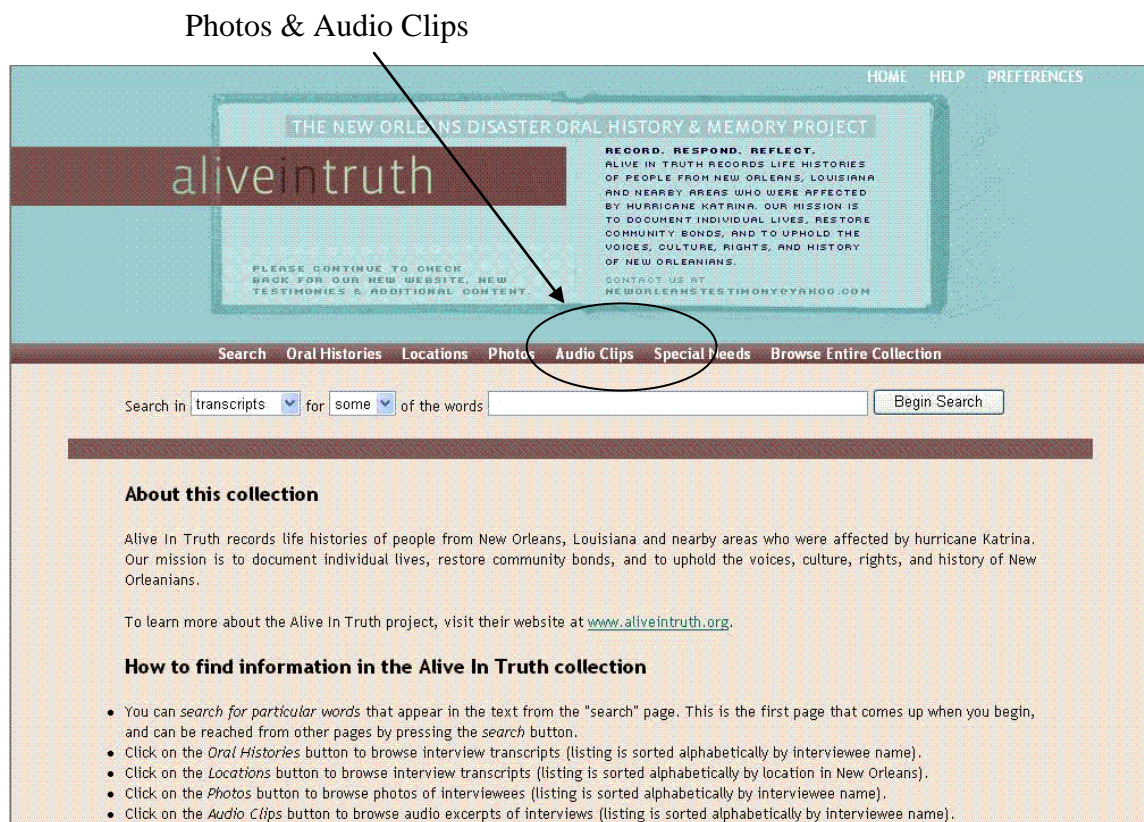


Figure 5 - New Orleans Disaster Oral History and Memory Project¹⁸

Figure 4 is an example that illustrates the search functions and options within the collections. The Researching Education Development library is listed as a part of the Humanitarian and UN Collection. Users are able to use keywords to search titles, chapters and paragraphs. The library also contains a help option that essentially outlines search methods and the best ways of browsing through the information. Searching this collection using the keywords 'language learning' returns 42 documents.

¹⁷ Source - <http://www.nzdl.org/cgi-bin/library.cgi>

¹⁸ Source - <http://www.nzdl.org/cgi-bin/library.cgi?a=p&p=about&c=aliveint>

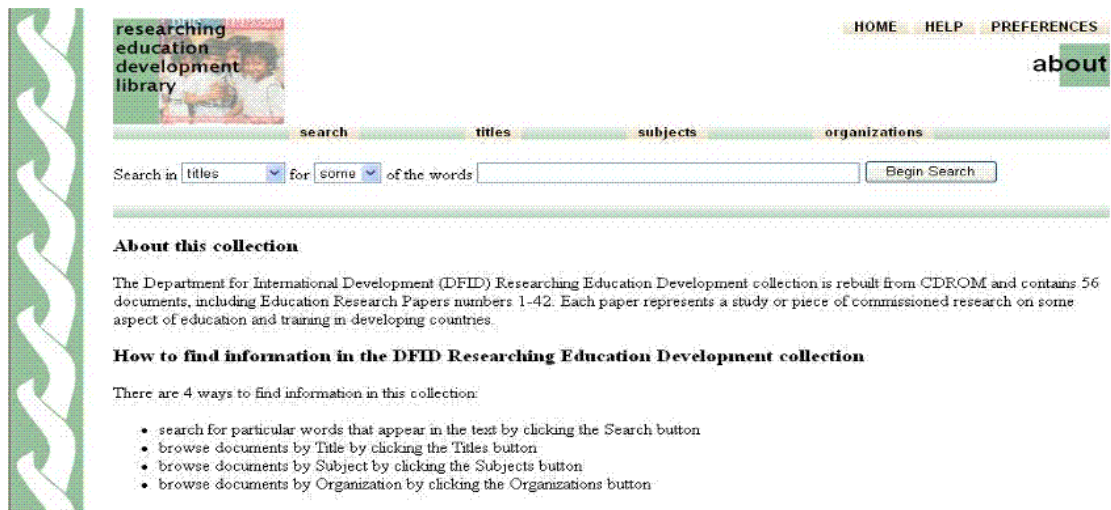


Figure 6 - Researching Education Development collection¹⁹

Of more relevance perhaps to this discussion is the Niupepa (Māori newspapers) collection. The collection was made available by the Alexander Turnbull Library in 1996 and comprised 407 microfiche covering 35 titles and approximately 17,700 facsimiles of newspaper pages (Keegan, 2007). Seventy percent of the text is written solely in Māori with a mere 3% written in English (the balance is referred to as bi-lingual)²¹. Using the Greenstone software, described in Section 3.1.2, the collection was digitised and made available online in 2001 (Keegan, 2007).²⁰ The library display defaults to Māori, however, a choice of interfaces in either the English or Māori language is offered. Although the bulk of the documents have been written (and presented) in the Māori language, English translations have been included within the collection.

¹⁹ Source - <http://www.nzdl.org/cgi-bin/library.cgi?a=p&p=about&c=dfid>

²⁰ For a full description of the process behind making this site available see Keegan (2007, p.10).



niupepa:
māori newspapers

AWHINA KŌWHIRINGA NZDL

kāinga

rapu tānga pukapuka ngā rā

pāwhiriā tēhēhi pātene ki runga ake nei kia pānui ai ngā niupepa

English

Nau mai ki te Kohikohinga Niupepa Māori

Kua whakaemitia mai ki konei he kohikohinga niupepa i tāngia mō ngā kaupānui Māori o ngā tau 1842-1932. E taea te pānui niupepa mā te [rapu kupu](#), i te [rārangi taitara](#), me te [rārangi wātaka](#) hoki. He mea i whakatūria e te kaupapa [New Zealand Digital Library](#), i te [Tari Rorohiko](#), o te [Whare Wānanga o Waikato](#).

Kei raro nei he [kupu whakamārama](#) e pā ana ki te kohikohinga nei.

Ka nui te mihi ki ngā rōpū tautoko i te kaupapa nei. Nā tā rātou tautoko kua kore he utu, mā koutou, mō te tiro ki ngā niupepa nei. Ko te [Tāhuhu o te Mātauranga](#) tērā, me ētahi whare pukapuka e noho mai nei ki ngā whare wānanga o te motu. Tirohia ngā [rōpū tautoko](#).

He Kupu Whakamārama

He nui ake i te 17,700 whārangi, mai i te 34 niupepa kei te kohikohinga nei. He mea hanga i te "Niupepa 1842-1933", te kohinga kua whakaemihia e te [Alexander Turnbull Library](#) ki runga i te kiriata mororiki. E 70% kei te reo Māori, 27% kei ngā reo e rua, ā, kua āhua 3% kei te reo Pākehā. E toru ngā kaupapa matua o ngā niupepa nei: he hāpainga kāwanatanga, he pānui rānei nō ngā iwi Māori, he kupu whakapono rānei nō ngā hāhi.

E whā ngā wāhanga nui o te kohikohinga niupepa Māori:

Figure 7 - Māori Niupepa collection²¹

Searching this library using the keywords 'language learning' returns 49 documents. A brief perusal of some of these documents indicates that they primarily allude to the learning of the English language by local Māori, rather than any sort of commentary on language learning per se.

3.3.2 Greenstone

Greenstone is a suite of software produced by the New Zealand Digital Library project. This description of the software and the project has been summarised from the Greenstone homepage (<http://www.greenstone.org/>) and the Greenstone Factsheet (<http://www.greenstone.org/factsheet>). The Greenstone software is not a digital library but has been designed for building and distributing digital libraries. It is multilingual open-source software and the authors claim it is a new way of organising information and publishing it on the Internet or CD-ROM. NZDL (2007, p.1) says:

²¹ Source - <http://www.nzdl.org/cgi-bin/library.cgi?gg=text&e=p-00000-00---off-0niupepa-00-0---0-10-0---0-direct-10---4-----0-11--11-en-50---20-about---00-0-1-00-0-0-11-1-OutfZz-8-00&a=p&p=about&l=mi&nw=utf-8>

The aim of the Greenstone software is to empower the user, particularly in universities, libraries, and other public service institutions, to build their own digital libraries. Digital libraries are radically reforming how information is disseminated and acquired in UNESCO's partner communities and institutions in the fields of education, science and culture around the world, and particularly in developing countries.

User interfaces are available in approximately 30 languages. However, the complete Greenstone interface, and all documentation, is available in English, French, Spanish, Russian and Kazakh²². As mentioned earlier, Greenstone is open-source which means the software is free and can be downloaded for use and modified by anybody.

3.3.3 Flexible Language Acquisition Project

The Flexible Language Acquisition (FLAX) project is built using Greenstone software. Its primary aim is to enable international students, at the University of Waikato, to learn English. The project objective is "to automate the production and delivery of practice exercises for overseas students who are learning English. The exercises will involve students in a virtually endless supply of collaborative and competitive language activities that are interesting, compelling, and rewarding" (Wu, 2009, p.1).

The activities are provided in a web-based setting that allows teaching and learning to happen in real time even at different locations. The FLAX system runs on ordinary low-end computer systems, works with any web browser and is software that is capable of being translated into any language (Witten, 2007). The digital library software means that text can be extracted and manipulated automatically so that a large variety of exercises can be created using a range of different resources. This also allows administrators to have control over which resources are added and used in the library as a means for designing useful learning activities. The activities can be tailored to different learning situations in

²² The official language of Kazakhstan

that they can be undertaken individually, competitively or in collaboration with other students.

To demonstrate the capability of the software, eight different exercise types have been devised (Wu & Witten, 2006). Exercises can be based on text collected from specific sources which help to provide students with activities using text that they are already familiar with. A brief explanation for some of the different exercise types has been sourced from the FLAX demonstration video.²³

Word Guessing: Students predict words they think will occur in a given article, individually or competitively. This activity is said to help improve their communication skills and vocabulary.

Scrambled Sentences: The words of sentences are scrambled and students must sort them into their original order. This activity is said to help them study sentence structure by providing them with genuine text and allowing them to select suitable materials to practice on.

Image Guessing: A randomly chosen image is shown to one partner (called the ‘describer’), while the other partner (the ‘guesser’) must identify it by asking questions. This activity is said to help improve students’ communication skills and vocabulary [as it is normally performed in the target language].

Matching Words with Definitions: Students match terms (from Wikipedia) with their definitions. ‘Terms’ are words or phrases, and ‘definitions’ are sentences whose subject is missing. This type of exercise is said to help learners study the meaning of words in a particular domain.

Fill-in-the-blanks: Students fill in words or phrases that have been cut out of a Wikipedia article. In this activity, students work together with a partner to fill in the information gaps.

²³ Source - http://flax.nzdl.org/resources/flax_video/flax_video.html.

Activity design

The FLAX software allows teachers to tailor learning activities to suit the levels of comprehension of their students. Teachers are able to decide exactly what the digital libraries contain and which texts will be used for the exercises. In this sense, the quality of information contained in the library can be controlled and managed by teachers. The activities can then be used to reinforce and practice what has been taught in the lessons. Using standardised forms, teachers are able to select a number of preset choices that include comprehension or difficulty levels and the text that should be used. The templates used for designing the exercises have options that are reasonably intuitive and afford the teacher, or designer, a large measure of control of content and control of quality.

The following *Figures (6-25)* provide examples of the FLAX software. They have been sourced from the FLAX demonstration video.²³

Figures 6 & 7 show the design forms or templates that are used for building the scrambled sentence activities. The range of options that can be selected include such things as sentence complexity, difficulty level, tense and whether or not sentences should be active or passive, or both.

The screenshot shows a software window titled "Create Exercises" with a sub-tab "List Exercises". The main area is titled "Scrambled Sentences" and contains a form for designing an exercise. At the top, there is a text input field labeled "-- Enter an exercise name". Below this is a "Select a category:" dropdown menu currently set to "Pre-intermediate (**, level 2)", with an "Add a category" button next to it. The "Select sentences" section includes several options: "Sentence type" with radio buttons for "Simple" and "Complex" (checked); "Voice" with radio buttons for "Active" and "Passive" (checked); "Difficulty level" with radio buttons for "level 1", "level 2", "level 3", and "level 4" (checked); "Tense" with a dropdown menu set to "No restriction"; "Modal verb" with a dropdown menu set to "No restriction"; "Number of words in sentence" with a range from "Min 3" to "Max 30"; and a "Contains word:" text input field. Below the "Select sentences" section is a field for "Number of sentences to choose from" set to "18". The "Activity parameters" section includes: "Number of sentences:" set to "10"; "Number of words to scramble:" set to "3"; and "Number of tries allowed:" set to "3".

Figure 8 - Design form for Scrambled Sentences exercise

The selection of design attributes is quite flexible and straightforward. Default values in some of the selections are very easy to change and the teacher has chosen to do so in this example, concentrating on simple past tense sentences and changing the minimum and maximum number of words in the sentences to be selected. In this case 21 sentences match the parameters chosen (*Figure 7*). Note that the teacher has chosen to create exercises using only ten of the sentences with three scrambled words.

Select sentences

Sentence type: ? Simple Complex

Voice: ? Active Passive

Difficulty level: ? level 1 level 2 level 3 level 4

Tense: ? Simple Past

Modal verb: ? No restriction

Number of words in sentence: ? Min 5 Max 12

Contains word: ?

Number of sentences to choose from 21

Activity parameters

Number of sentences: ? 10

Number of words to scramble: ? 3

Number of tries allowed: ? 3

Order of sentences: ? Fixed Different for each student

Shortest first

Preview ? Display ? Save ?

Figure 9 - Design form for Scrambled Sentence exercise

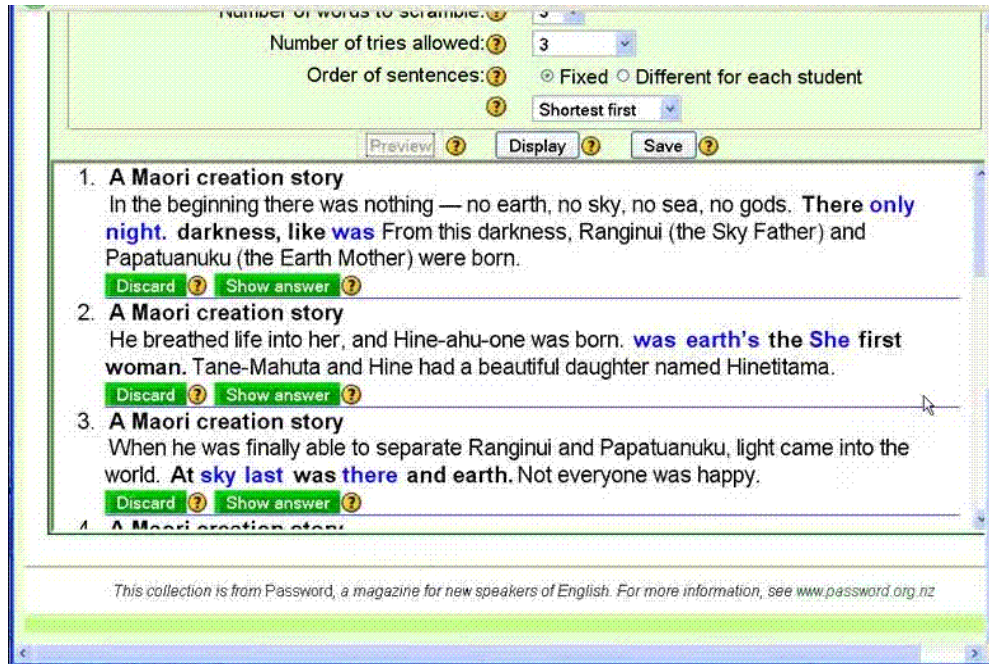


Figure 10 - Preview of Scrambled Sentence exercises

A preview option is available so that the teacher can see what is contained in the exercises that the students will be completing (Figure 8). There is then an option to either discard a particular exercise or view the correct answer. The final act of design will be to provide a name for the exercise before saving (Figure 9).

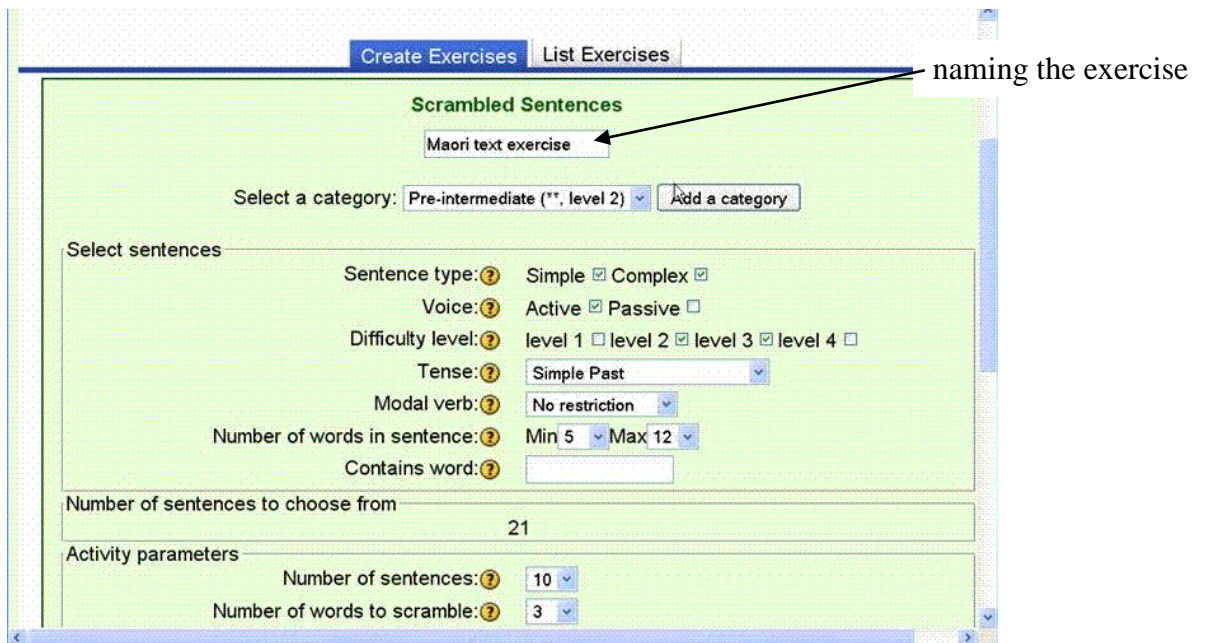


Figure 11 - Naming and saving the exercise

Designing activities for the other types of exercises is, similar to the Scrambled Word exercises, reasonably intuitive using the relevant template design forms.



Figure 12 - Design template for Word Guessing

Note the range of options for category selection and the ability to choose the text that will be used.

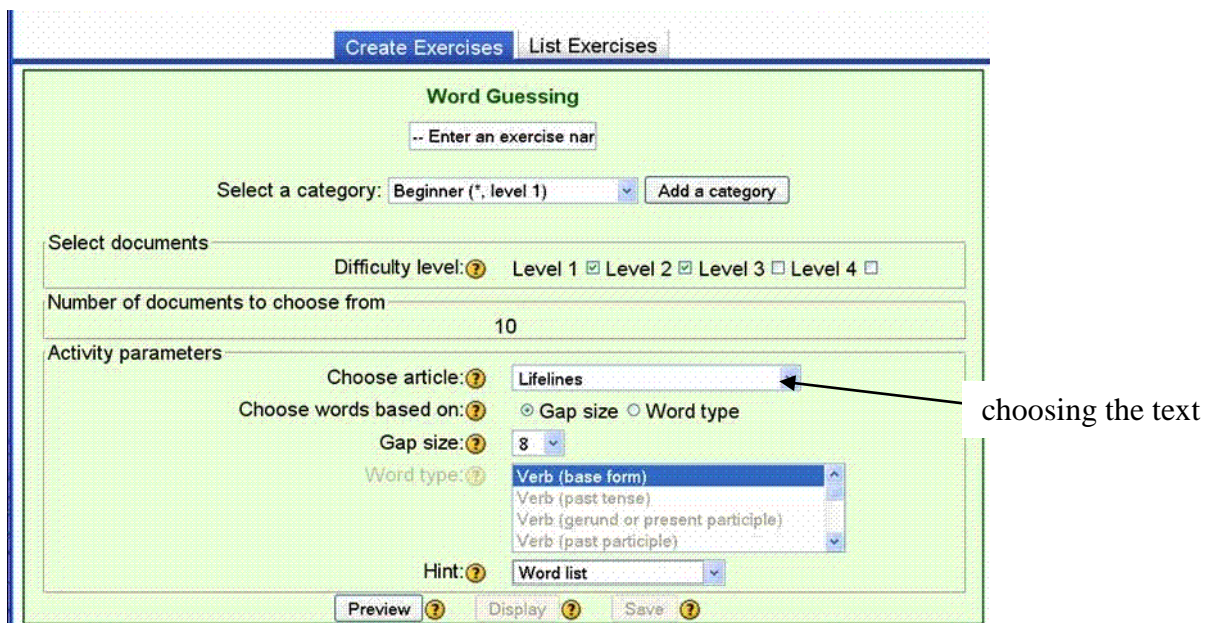


Figure 13 - Design Template for Word guessing



Figure 14 - Preview Word Guessing exercises

Again the teacher has a preview option (Figure 12) and is able to put back words that may not be useful to have missing. In this case the word 'They' is being returned to the text (Figure 13).

Replacing a word

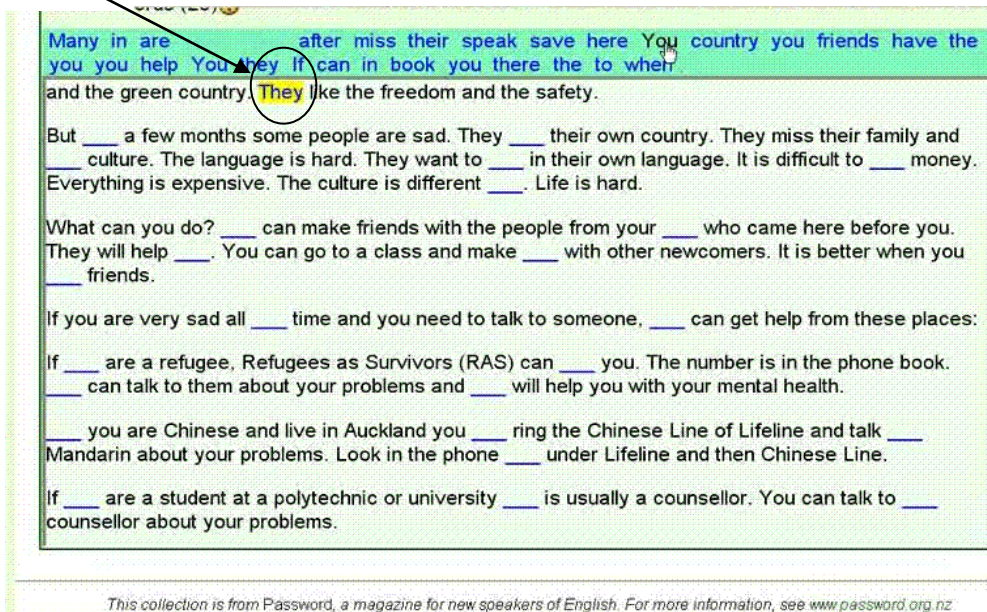


Figure 15 - Modify Word Guessing exercises

The software also provides an option that allows students to receive a hint (*Figure 14*) regarding which word is missing. This is highlighted as working examples in *Figures 23 & 24*.

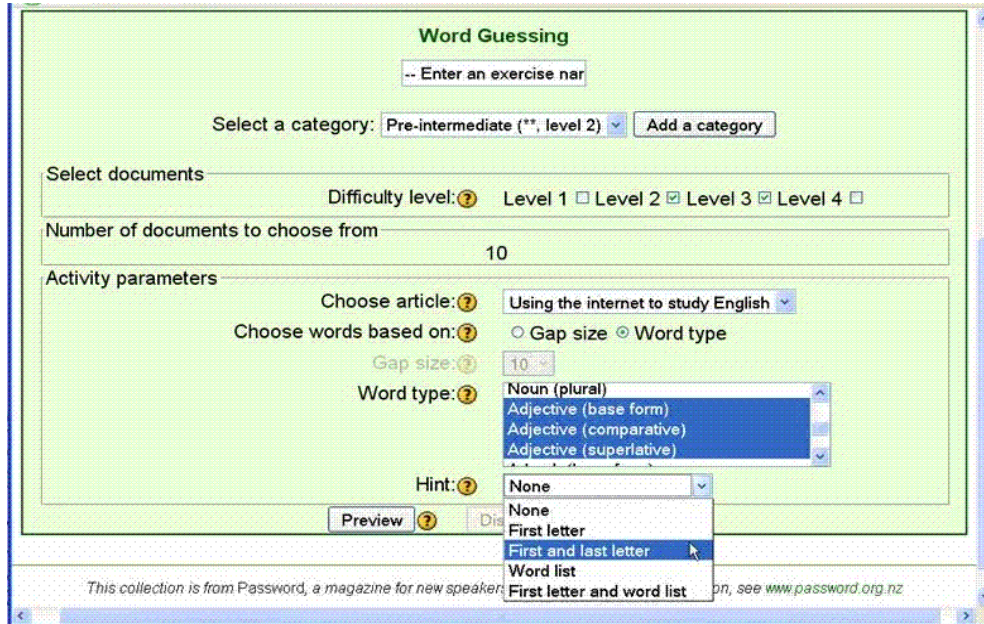


Figure 16 - The Hint option

Once the exercises have been designed and saved, they can be made available to students by using a simple hyperlink and providing the relevant URL²⁴ to the student.

When students access the Scrambled Sentence exercise, they are confronted with an activity that will have a range of sentences. The words are scrambled in one of the sentences (*Figure 15*).

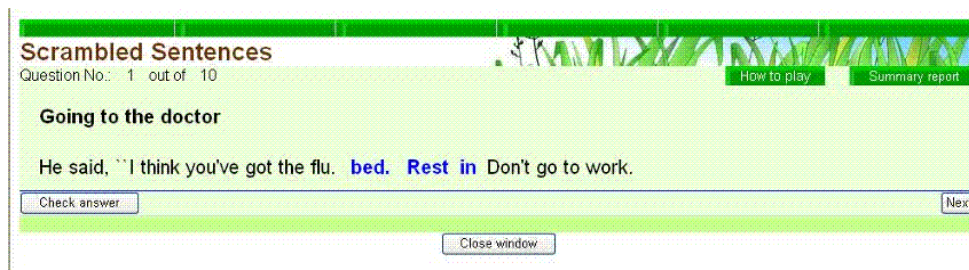


Figure 17 - Scrambled Sentence activity

²⁴ Uniform Resource Locator – a type of electronic address that is used to identify or locate particular web pages (and sites)

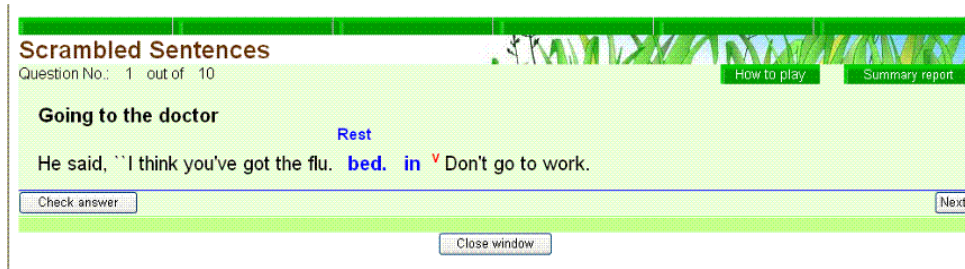


Figure 18 - Scrambled Sentence activity

The student is able to click and drag the highlighted words to the correct position (Figure 16 & 17).

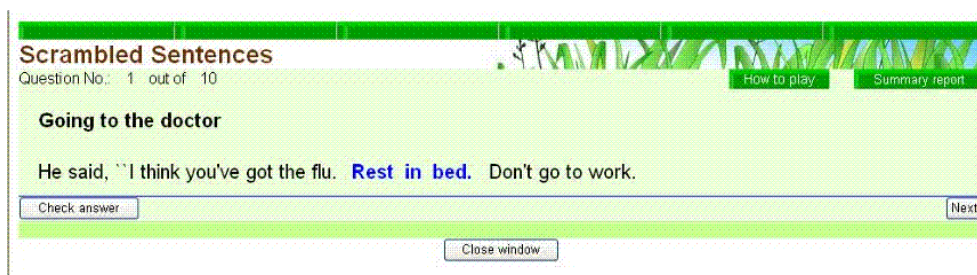


Figure 19 - unscrambling the sentence

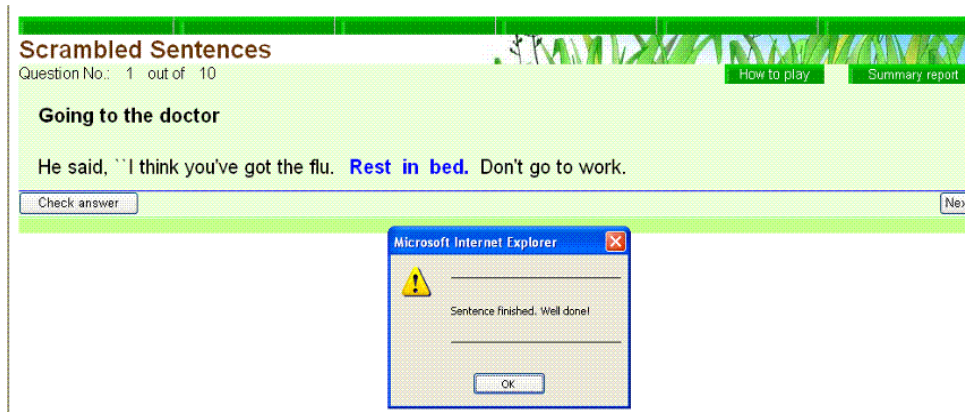


Figure 20 – Checking the answer

When the sentence has been rearranged the students are able to check their answer (Figure 18). Mistakes are highlighted by underlining (Figure 19). Note that while the mistakes are highlighted, students may not know why this is so. This will be discussed in the next chapter.

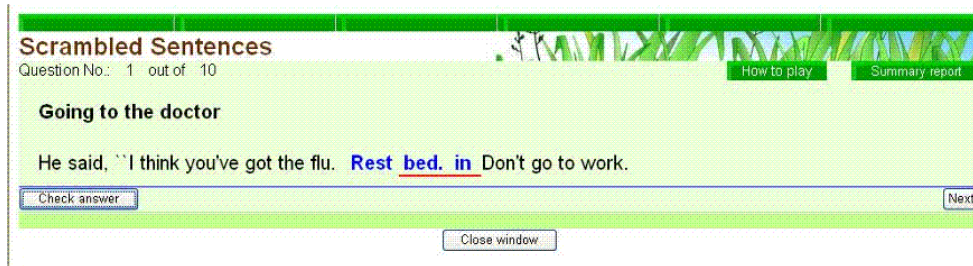


Figure 21 - Incorrect answer

The Word Guessing activity screen shows a range of sentences with missing words (Figure 20) and includes a 'How to Play' selection that will describe how to do these exercises (Figure 21).



Figure 22 - Word Guessing exercise

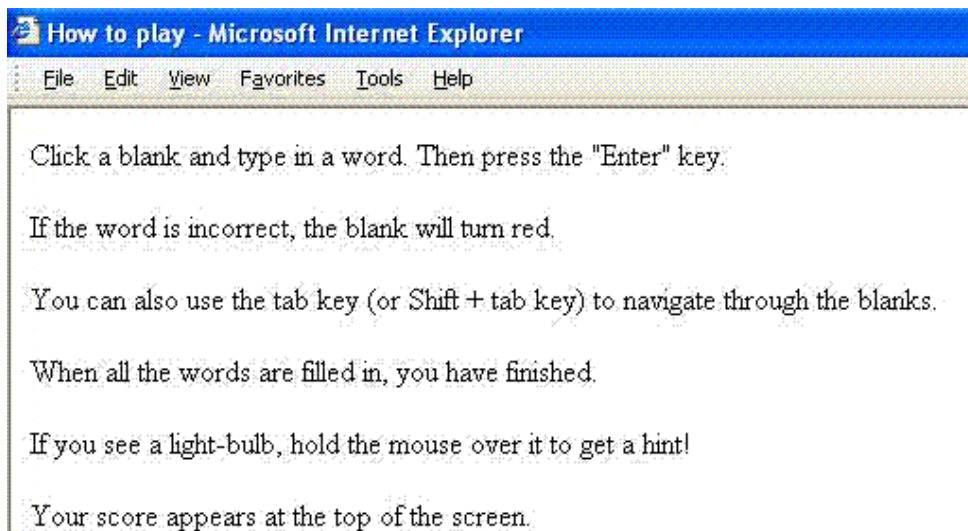


Figure 23 - How to Play screen

When a student correctly guesses a word, it is retained within the sentence. An incorrect guess is highlighted by the box remaining in red around the incorrect word (*Figure 22*).

Word Guessing
Words guessed: 1 out of 77 [How to play](#) [Summary report](#)

Ko Tāwhaki, te tohunga purei whutupōro

Ki te hunga tauhou ki te kāinga nei, he wāhi **korero** Parahaki. He tāwhitiwhiti ngā whare, arā, ki te titiro ² _____, ititi noa ngā tāngata. Engari anō ngā kararehe he ³ pāpā. ³ Ka kitea atu ngā momo hōiho katoa, pākākā, he aha atu, ⁴ _____ ngā poaka "kāpene-kuki" me ētahi momo kāre e kitea ana ⁵ _____ ētahi atu takiwā o te motu.

Nā te mea ⁶ _____ tae mai te makariri o te takurua, kātahi ka tino ⁷ _____ rawa atu te āhua o Parahaki. Kua horahia he whāriki ⁸ _____ ki runga i te whenua. Matotoru ana te takoto mai, ⁹ _____ ana. Kei te auahi mai ngā ahi. Kei te whiti ¹⁰ _____ rā. Marino ana te kāinga mokemoke nei.

I te ¹¹ _____ karaka i te ata, ka puta mai ngā tāngata. Ka ¹² _____ ētahi ki te hopu i ō rātau hōiho. Ko ētahi ¹³ _____ runga i te rori e āta haere ana ki te ¹⁴ _____ o te kura o Parahaki. Kei te waha pēpi tēnā, ¹⁵ _____ te wira tēnā i tāna. Kei mua ngā tamariki e ¹⁶ _____ haere ana, e haututū ana.

Ka roa, ka puta ¹⁷ _____ ngā mea eke hōiho. Kei te kōrerorero ētahi.

Ka ¹⁸ _____ ake a Ngāhehu, "E hoa Tāwhaki, e pēhea ana koe ¹⁹ _____ tō tātau tīma whutupōro? Me purei koe ākuanei."

Ka ²⁰ _____ a Tāwhaki, "Kei te purei koe?"

Ka whakahoki a ²¹ _____, "Me aha hoki, ko au tonu rā te tīma o ²² _____! Ka kore a Ngāhehu, kāre e wini tō tātau tīma!"

²³ _____ mea atu anō a Tāwhaki, "E tama, tō koretake noa ²⁴ _____! Mā te hau noa, kua hinga koe. Māku koe e ²⁵ _____ ki tēnā mea ki te whutupōro. Ka kite ana koe ²⁶ _____ a au e purei ana, kua kite koe i a ²⁷ _____, Nēpia. Ka kite koe a te ahiahi nei!"

Ka ²⁸ _____ a Tame, "Tērā pea ka matakū ngā tāhae nei i ²⁹ _____ tāngata nunui o Waihau. Ka kite ana kōrua, anei ke ³⁰ _____ nunui! Mō te mekemeke, koinā rātau!"

Figure 24 - Correct and incorrect answers

The student clicks on the space and is able to get a hint about the missing word; in this case the first and last letter (*Figures 23 & 24*). In this case also, the hint refers to the form only of the missing word and not the meaning. This will be discussed in the next chapter.

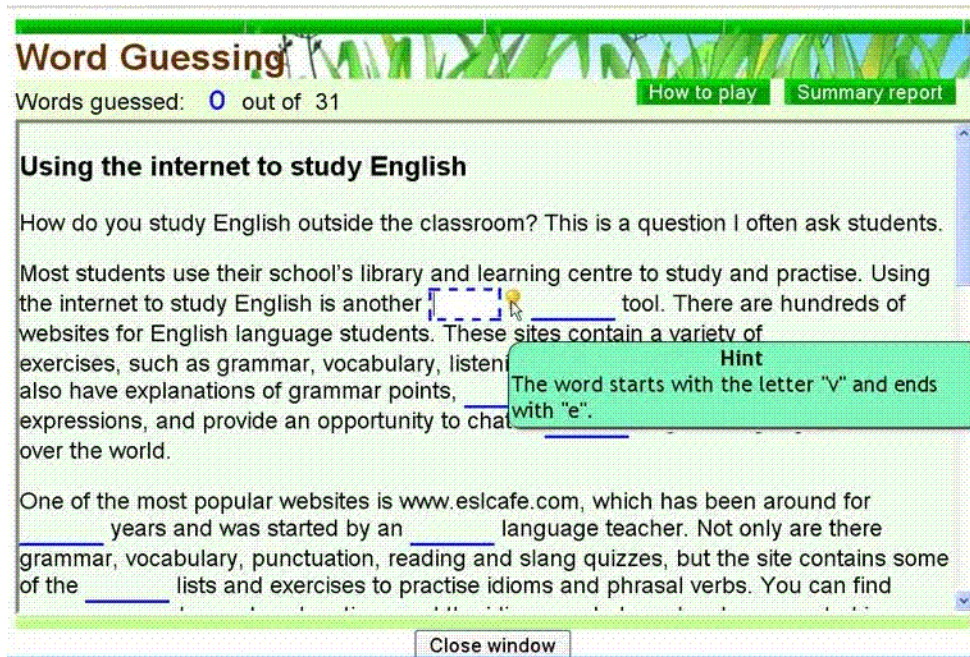


Figure 25 - the Hint feature

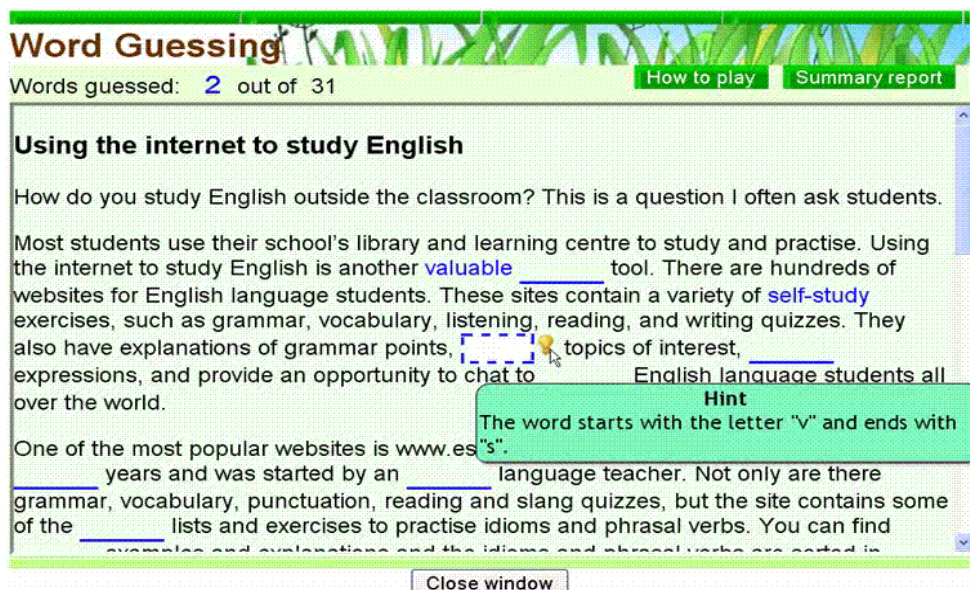


Figure 26 - entering words, getting hints

If the words are entered correctly, they are retained on the screen with no error messages. Note that the missing words do not need to be done in any specific order (Figure 24).

The software can be tried out as a teacher or a student by accessing the flax server and trialling the software at <http://flax.nzdl.org>²⁵. Building and completing

²⁵ Accessed July 2, 2009

exercises is possible using the trial software (*Figure 28*), however, they cannot be saved for re-use at a later date.

About this collection:

This collection contains 20 items originally published in *Password*, a magazine for new speakers of English that contains articles, exercises and teaching notes. They were republished by Puriri Press in *The Best of Password 7*, edited by H. Denny, A. Sachtleben and V. Yee. We gratefully acknowledge the editors' permission to build and distribute this digital library collection.

For more information, or to subscribe to *Password*, see www.password.org.nz

Language activities:

Scrambled Sentences exercises [create an exercise](#)

The words of sentences are scrambled and students must sort them into their original order. This activity helps you study sentence structure by providing you with genuine text and allowing you to select suitable materials to practice on.

Type: Individual

Word Guessing exercises [create an exercise](#)

Students predict words they think will occur in a given article, individually or competitively. This activity helps improve your communication skills and vocabulary.

Type: Individual or Group collaboration

Figure 27 - Exercises that can be played or created

The FLAX software can be downloaded free of charge. Teachers will then be able to build their own digital libraries, design pertinent activities and post them to web locations using the downloaded software. The new web interface will allow them to cut and paste from a web page. This will then build their digital library automatically. Students will be able to access the activities as long as they have computer access to the Web.

3.4 Digital Dialects

The Digital Dialects website was created by Craig Gibson and launched in January 2007. It is the offspring of Gibson's dissertation as part of his Degree of Master of Science in Web Information Management. The Homepage (*Figure 26*)²⁶ displays a selection of 58 languages for which activities have been provided. Literature indicates that this website is still a work in progress and while, to date, only a handful of the languages include examples of pronunciation using the spoken word, Gibson envisages the inclusion of audio files for more languages in the near future (Gibson, 2007b, p.1). Users will require Flash Player to undertake the activities and the link for free download has been provided on the opening

webpage. English has also been used as the base language and English translations are provided for vocabulary and numbers.

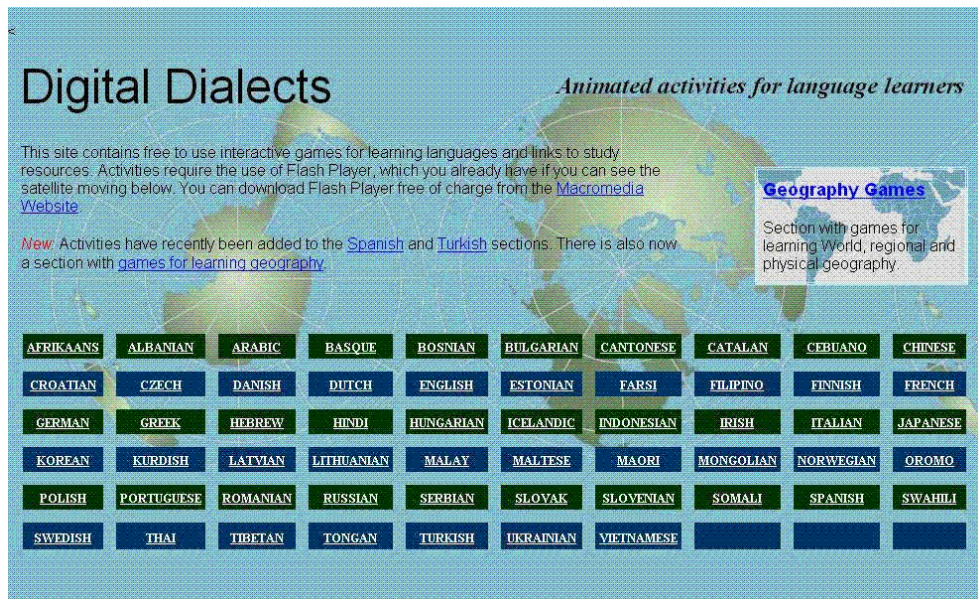


Figure 28 - Digital Dialects Home Page²⁶

Selection of the Māori language button will upload the page displayed as Figure 27.

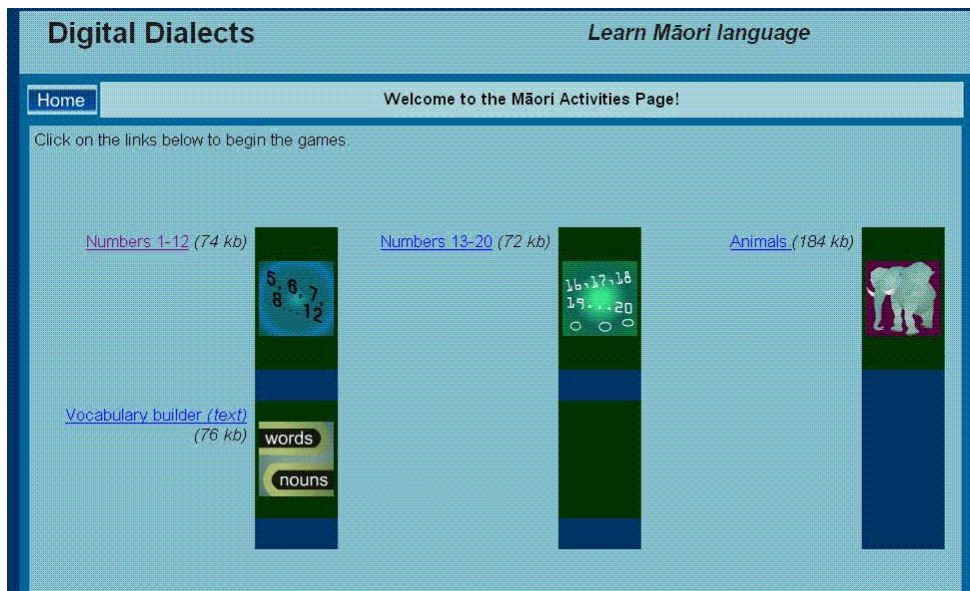


Figure 29 - Learn Māori Language Activity Options²⁷

²⁶ Source - <http://www.digitaldialects.com/index.htm>

²⁷ Source - <http://www.digitaldialects.com/Maori.htm>

The user has four activity choices.

- Numbers 1-12
- Numbers 13-20
- Animals
- Vocabulary builder

Selection of the Numbers 1-12 option displays a word list where the number, English word and the Māori equivalent are displayed in four columns (*Figure 28*).



Figure 30 - Learning the Māori numbers (1—12)²⁸

The user then memorises the Māori words that correspond to the relevant number


and selects the  option to continue with the activity (*Figure 29*).



Figure 31 - Māori number learning exercise²⁹

²⁸ Source - http://www.digitaldialects.com/Maori/numbers_1B.htm

²⁹ Source - http://www.digitaldialects.com/Maori/numbers_1I.htm

A simple addition question is given in Māori to the user who must then choose the correct answer (*Figure 29*). If the answer chosen is incorrect, the question is displayed again using the full table (*Figure 30*) and then the answer is provided after a second or two (*Figure 31*).



Figure 32 - Re-asking the question²⁹



Figure 33 - Providing the correct answer²⁹

This website also has an animal game. This initial screen provides a list of the animal names alongside the Māori translation (*Figure 32*).



Figure 34 - the Animal game³⁰

The user memorises the list then selects **Play game** and the game screen instructions are displayed (Figure 33). Note that the game instructions are delivered in English.

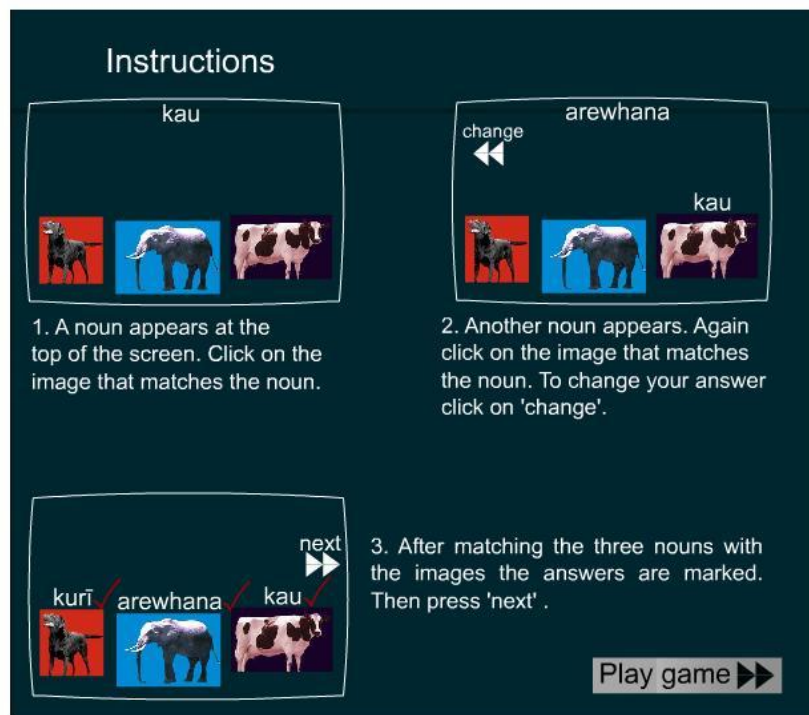


Figure 35 - The animal game instructions³⁰

³⁰ Source - <http://www.digitaldialects.com/Maori/Animals.htm>

The game is relatively simple to play. Click on the picture that you think matches the Māori word at the top. The word then drops on top of the picture you have selected (*Figure 34*).

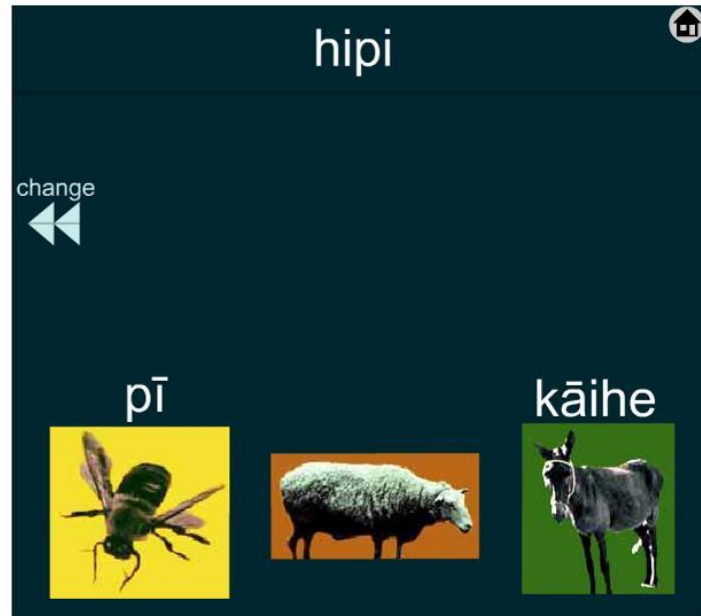


Figure 36 - playing the name game³⁰

The selections are then marked as correct or incorrect (*Figure 35*).

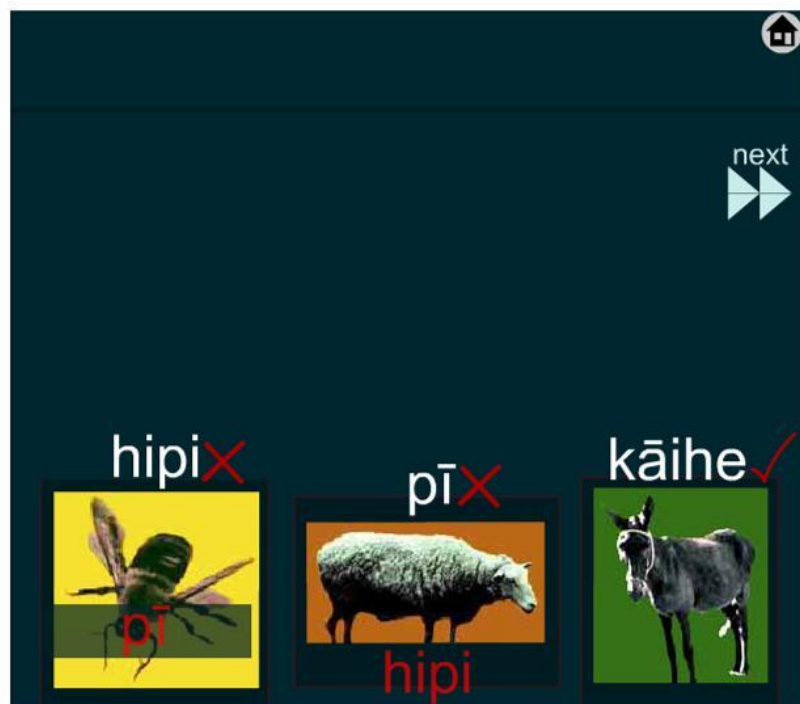


Figure 37 - Marking the answers³⁰

The website also has a range of geography games. These are not really language learning exercises since they deal with the location of various geographical features around the world such as rivers, desserts and mountains (*Figure 36*). These pages are only available in English.

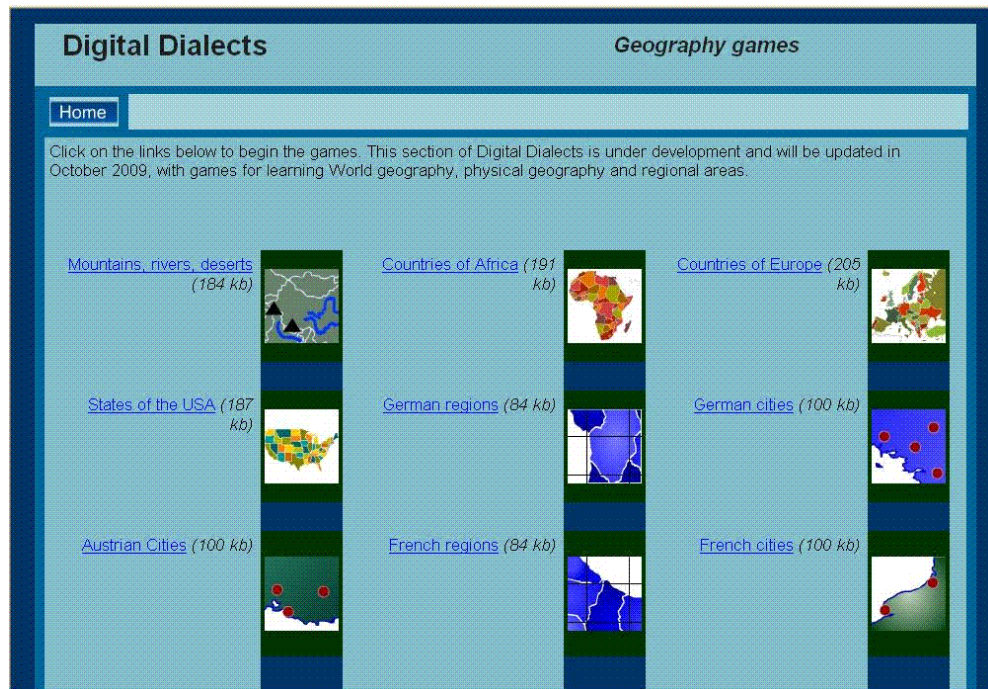


Figure 38 - Geography game-type selections³¹

The website was revisited to confirm the base language used for the English language learning exercises. The pages, however, appear to be undergoing maintenance and, with the Māori language pages, have been out of commission for the period July 23 to August 11, 2009 (*Figures 37 & 38*).

³¹ Source - http://www.digitaldialects.com/geography_games.htm

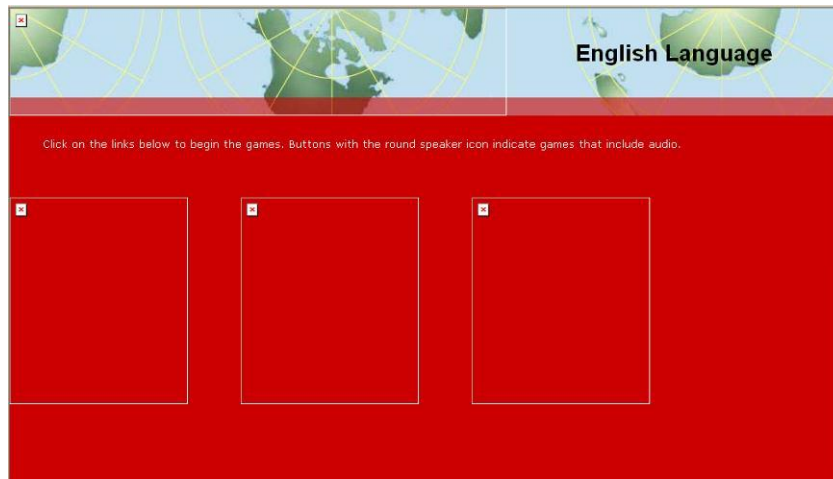


Figure 39 - English language page under maintenance³²



Figure 40 - Māori language page under maintenance³³

These pages were monitored for approximately three weeks and it appears that advertising is being added to these pages. Given that electronic learning is popular because it is widely accessible and available, this type of unavailability would tend to be annoying at the least. This would be even more frustrating if teachers had planned some of their lessons around these exercises.

The Digital Dialects website offers itself as a language learning website and provides “interactive games for learning languages” (Gibson, 2007, p.1). It is difficult to accept that one is able to learn a language using these exercises and this website. To consider them useful as basic practice tools may be more

³² <http://www.digitaldialects.com/English.htm>

³³ <http://www.digitaldialects.com/Maori.htm>

accurate, however, the pedagogic discussion in the next chapter will cover these points in better detail.

3.5 Viel.com

Viel.com is one example of a website that offers electronic and distance learning, software and online vocational training (*Figures 39 & 40*). The programs offered, however, are invariably just links to other websites and programs. This includes the online degrees that are on offer (*Figure 41*).

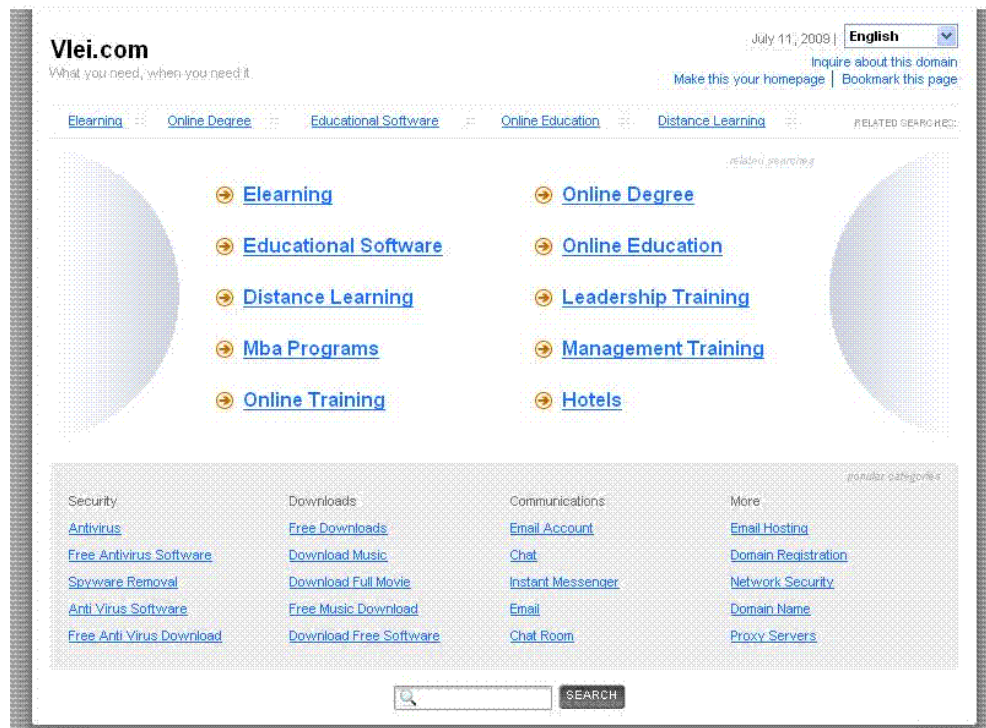


Figure 41 - Viel.com Homepage³⁴

³⁴ <http://www.vu.vlei.com/>

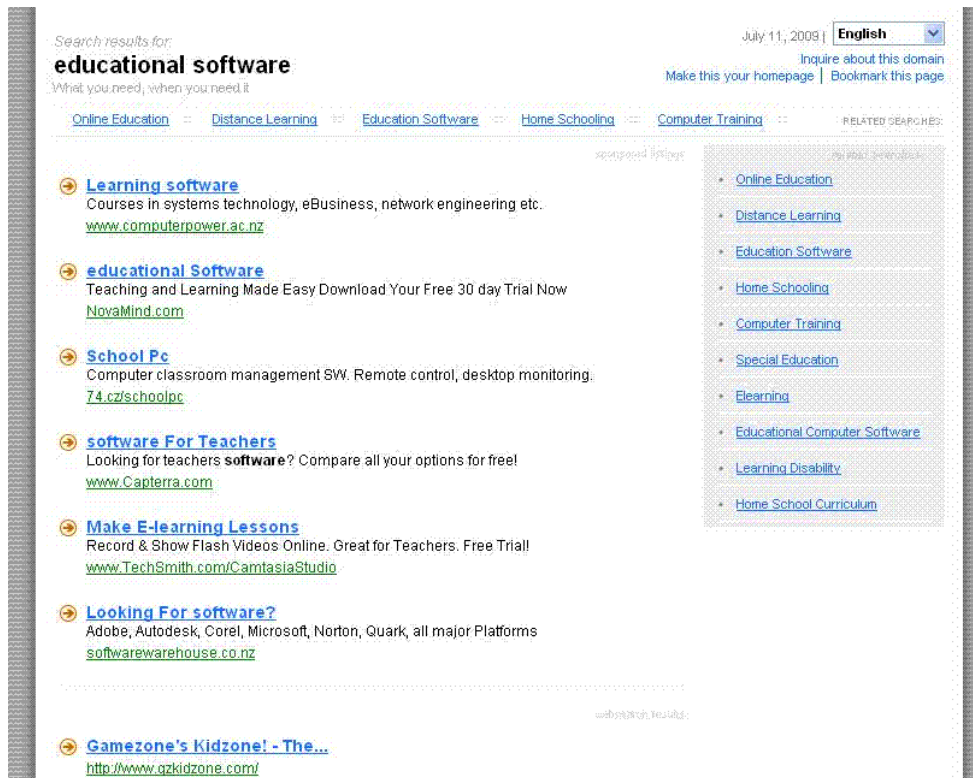


Figure 42 - Viel.com Educational Software³⁴

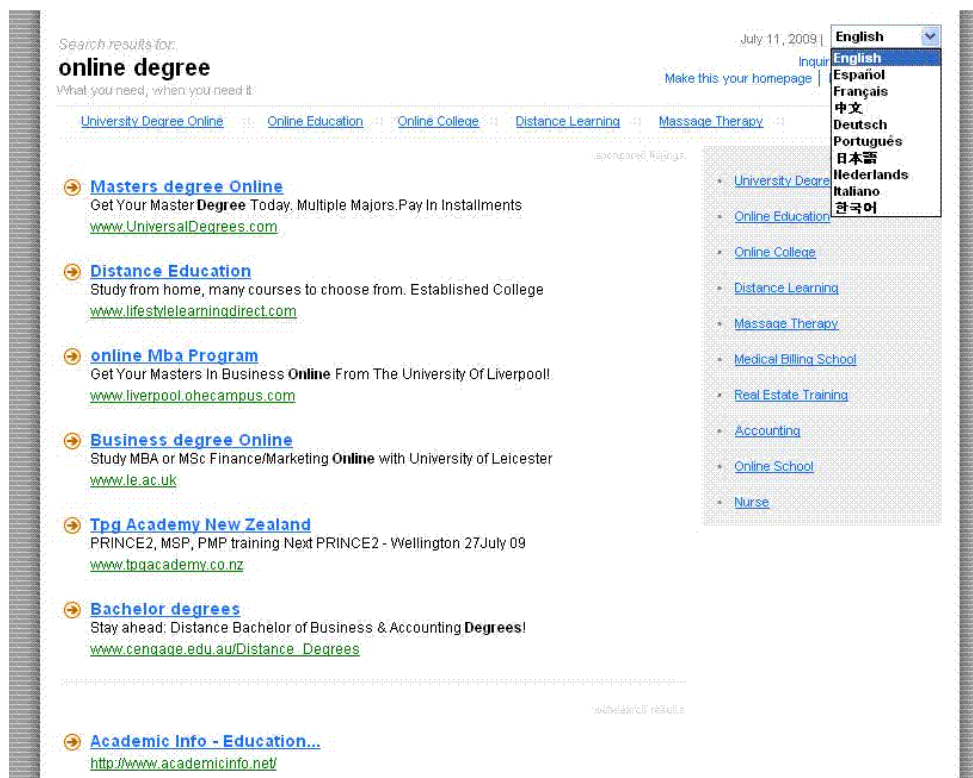


Figure 43 - Viel.com Online Degrees³⁴

It is interesting to note the range of language options that one is able to view the website in (Figure 44). I have selected Chinese as an example (Figure 45).

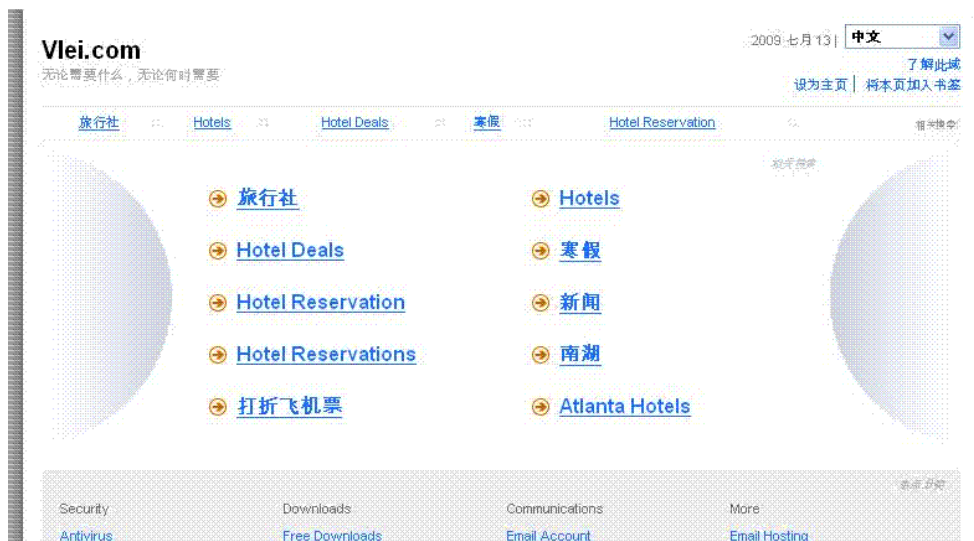


Figure 44 - Vlei.com Homepage displayed in Chinese³⁴

As stated earlier, however, the site only contains links to other sites and pages and, therefore, does not warrant further discussion in this document.

3.6 Te Whanake Online

Te Whanake is a range of resources that include textbooks, compact disks, teacher manuals, study guides, a Māori language dictionary and, more recently, the television series Tōku Reo (Moorfield, 2009, p.1). Te Whanake Online arises as an online extension of the Te Whanake series and the exercises reflect the learning level of the first book of the series - Te Kākano (Moorfield, 2001). This website has been designed to be used as a standalone electronic resource for learning Te Reo Māori. However, students are advised that it would be advantageous to study and become familiar with the relevant chapters in Te Kakano before attempting the activities. Additionally, the documentation advises that for the best progress and results to be achieved, this resource should be used “in conjunction with classes taught by a skilled teacher who is a fluent speaker of Māori” (University of Otago, 2006a, p.1).

Figure 45 - Te Whanake Homepage³⁵

The activities make up fifteen modules, each beginning with a video. Users are advised to read the relevant chapter in the Te Kakano book, use the relevant study guide, and watch and listen to the movie on the website before attempting the activities. The activities that are relevant to the movie clip are listed down one side of the page (Figure 44).

³⁵ Source - <http://tewhanake.otago.ac.nz/kakano/home.html>

The screenshot displays the 'Te Whanake Online' website. At the top left is the University of Otago logo. The main header reads 'Te Whanake Online' with a stylized Maori symbol on the right. A navigation bar includes 'Home', 'Modules', 'Number practice', 'Dictionary', 'Forum', 'Help', 'Maori', and 'English'. The 'Modules' section is active, showing a dropdown menu set to 'Module 1'. Under 'Exercises', the 'Movie' option is selected. The main content area is titled 'Module one' and features a video player. The video shows a woman in a kitchen with subtitles: 'Tēnā kōrua, Kei te pēra tonu, kei te pai. Ko wai tō hoa, Te Hereripene?'. Below the video is a 'Show Subtitles' checkbox (checked) and a language dropdown set to 'Maori'. To the right of the video, text describes the scene: 'Mria is at home cooking when Te Hereripene and Eruera arrive'. Below this, it lists what users will see and hear: 'Different kinds of greeting and address', 'Who people are and how they are', 'Where things are and how many things there are', and 'People using their whakapapa when talking about their whānau'. A play button and a progress bar are also visible.

Figure 46 - Module 1 Movie³⁶

Some background information is provided about the video clip and the spoken word is also written across the bottom of the screen. The movie clips graphics are easy on the eye and the audio is clear and should be able to be followed with relative ease if prior study is completed using the relevant chapter in the textbook. The activities are derived from the movie clip. The Filling-the-gaps exercise arises from the conversation. Users are able to hear relevant parts of the conversation to confirm or source answers which can then be checked straight away (Figures 45 & 46). Answers are able to be changed and then rechecked.

³⁶ Source - <http://tewhanake.otago.ac.nz/kakano/modules/module01/movie.html>

UNIVERSITY OF OTAGO
Te Whānau Wānanga o Ōtago

Te Whanake Online

Home Modules Number practice Dictionary Forum Help Māori English

Select a module
Module 1

Exercises
Movie
Filling the gaps
Finding out people's names
Greetings
How are you?
Saying how you are
Yes and no
Where something is
Where someone is

Whakakīa ngā āputa.
Fill in the gaps.

Whakakīa ngā āputa ki ngā kupu tika mai i te kōrero.
Type in missing words from the dialogue to fill in the gaps.

Whakarongo ki ngā kōrero hei whakarite i ō kupu ki ēra o ngā kōrero.
Listen to the audio of the dialogue to check and compare your words with those in the audio dialogue.

NOTE: For all exercises make sure you use commas, question marks, and fullstops where appropriate. You will also need to use macrons (ā, ē, ī, ō, and ū) when necessary, such as in kōrua or tēnā.

Te Hererīpene: Tēnā koe, e kui. Kei te pāhea ?

Mīria: Tēnā . Kei te pērā tonu, kei te pai. Ko tō hoa, Te Hererīpene?

Check Answer

Te Hererīpene: Ko Eruera .

Correct answer

Unchecked answers

Figure 47 - Filling the gaps activity³⁷

UNIVERSITY OF OTAGO
Te Whānau Wānanga o Ōtago

Te Whanake Online

Home Modules Number practice Dictionary Forum Help Māori English

Select a module
Module 1

Exercises
Movie
Filling the gaps
Finding out people's names
Greetings
How are you?
Saying how you are
Yes and no
Where something is
Where someone is

Whakakīa ngā āputa.
Fill in the gaps.

Whakakīa ngā āputa ki ngā kupu tika mai i te kōrero.
Type in missing words from the dialogue to fill in the gaps.

Whakarongo ki ngā kōrero hei whakarite i ō kupu ki ēra o ngā kōrero.
Listen to the audio of the dialogue to check and compare your words with those in the audio dialogue.

NOTE: For all exercises make sure you use commas, question marks, and fullstops where appropriate. You will also need to use macrons (ā, ē, ī, ō, and ū) when necessary, such as in kōrua or tēnā.

Te Hererīpene: Tēnā koe, e kui. Kei te pāhea koe ?

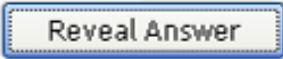
Mīria: Tēnā . Kei te pērā tonu, kei te pai. Ko wai tō hoa, Te Hererīpene?

Check Answer

Te Hererīpene: Ko Eruera .

Incorrect answer

Figure 48 - Filling the gaps activity³⁷

Users are able to re-listen to the relevant part of the conversation to assist them with the activity. After three unsuccessful attempts the  button is automatically made available (Figure 47) and selecting that option reveals the correct answer (Figure 47 & 48).



The screenshot shows a language learning interface. On the left is a sidebar with a 'Select a module' dropdown set to 'Module 1' and a list of exercises including 'Filling the gaps'. The main content area is titled 'Whakakāia ngā āputa. Fill in the gaps.' and contains a listening exercise. The exercise text includes: 'Whakakāia ngā āputa ki ngā kupu tika mai i te kōrero. Type in missing words from the dialogue to fill in the gaps.' and 'Whakarongo ki ngā kōrero hei whakarite i ō kupu ki ēra o ngā kōrero. Listen to the audio of the dialogue to check and compare your words with those in the audio dialogue.' A note states: 'NOTE: For all exercises make sure you use commas, question marks, and fullstops where appropriate. You will also need to use macrons (ā, ē, ī, ō, and ū) when necessary, such as in kōrua or tēnā.' The exercise questions are: 'Te Hereripene: Tēnā koe, e kui. Kei te pāheā koe?' and 'Mīria: Tēnā kōrua . Kei te pērā tonu, kei te pai. Ko wai tō hoa, Te Hereripene?'. The 'Reveal Answer' button for the second question is highlighted with a blue border and an arrow pointing to it from the text 'Revealed answer' on the right.

Figure 49 - Correct answer revealed³⁷

³⁷ Source <http://tewhanake.otago.ac.nz/kakano/modules/module01/exercise01.html>

Where someone is from

Counting

Asking how many

Vocabulary learning 1

Vocabulary learning 2

Play a character

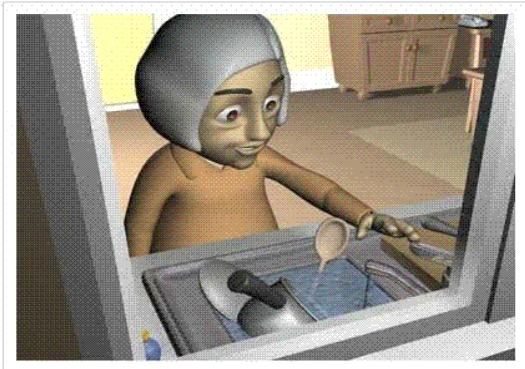
Reading comprehension

Song

Pātai atu ki ia tāngata o Te Whanake "Kei te Pēhea koe?" Ka whakautu rātou. Ask each person of Te Whanake how they are and they will respond.

NOTE: Punctuation and macrons are important. Make sure you use commas, question marks, and fullstops where appropriate. You will also need to use the correct macrons (ā, ē, ī, ō, and ū) when necessary, such as in *kōrua* or *tēnā*.

HINT: You can hold the mouse over the picture to see how they are.



Kei te pēhea koe, Mīria?

Check Answer Reveal Answer

Figure 50 - Greetings exercise

The remaining modules become increasingly difficult, in terms of language comprehension levels, as the users progress. The website is large and will not be entirely summarised here. The fifteen modules each begin with a movie and contain approximately twelve exercises each.

The website also features a number practice options. Users are able to self-test using random number options. The number of questions and range of numbers can be set by the user (*Figure 49*).

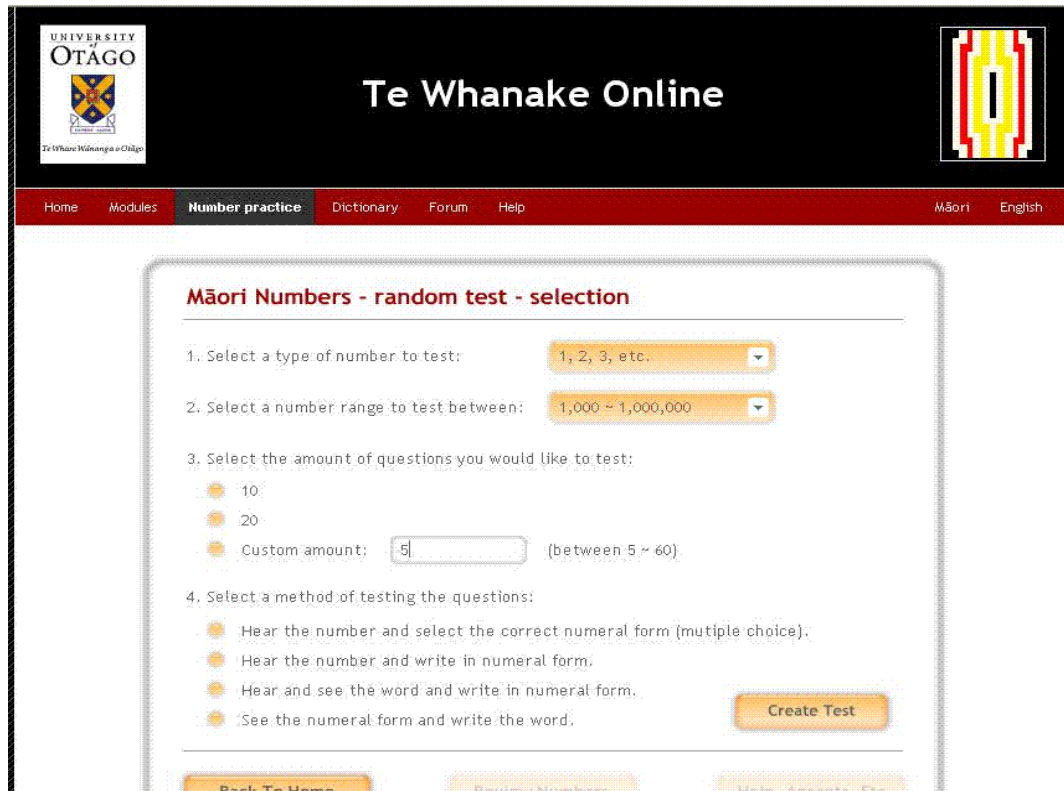


Figure 51 - Random number self-test³⁸

The exercise then allows a range of options where users are able to hear the spoken number and, either select the correct option from a list, or type the answer straight into the form. They may also choose to see the number and write that number in the written form in Māori (*Figure 49*).

This website is specifically available for learning the Māori language only, with English taking the role of the first or base language. Due to the high amount of interactivity, the website needs a fairly recent browser version to operate successfully. This includes Flash Player version 8, which can be sourced from the website, to run the video components³⁹.

3.7 Open source learning management systems

As an increasing number of organisations turn to the Web for their educational and training requirements, a profusion of open source learning management

³⁸ Source - http://tewhanake.otago.ac.nz/kakano/number_practice.html

³⁹ Source - <http://tewhanake.otago.ac.nz/kakano/help/general.html>

systems have provided e-learning applications that serve as viable training and learning options for a broad spectrum that include businesses, learning institutions, government organisations and individuals (Gedda, 2008, p.1). These applications are able to ease the entry to online learning for these groups, not only in terms of cost, but also with regard to features that include administration, course management, re-usable content and community interaction (LAMS International, 2009, p.1; Pappas, 2009, p.3).

Open source refers to software that is free to use. It is also able to be modified, supplemented, and re-distributed pursuant to a handful of restrictions that hinge around the integrity of the original source code, the redistribution of software containing modified code and some licence restrictions. Essentially open source software adheres to principles that revolve around freedom of use, modification and distribution where the community of developers and users are not hindered by cost or the drive to create income from the software (OpenSource.org, 2007; Whatis.com, 2009). “Open source software is usually developed as a public collaboration and made freely available” (OpenSource.org, 2007, p.1).

A learning management system (LMS) automates the administration and management of courses. This includes student registration, tracking progress and results and managing training resources ((PCmag.com, 2009; Robertson, 2007; Whatis.com, 2009). This has been summarised by TechTarget (2009, p.1):

A learning management system (LMS) is a software application or Web-based technology used to plan, implement, and assess a specific learning process. Typically, a learning management system provides an instructor with a way to create and deliver content, monitor student participation, and assess student performance. A learning management system may also provide students with the ability to use interactive features such as threaded discussions, video conferencing, and discussion forums.

Sections 3.7.1 – 3.7.6 outline some examples of open source learning management systems that are currently available. Note that in many cases the name of the software is also the name of the developing company.

3.7.1 The Learning Activity Management System (LAMS)

LAMS is an e-learning application based at the Macquarie E-learning Centre of Excellence at Macquarie University, Australia. The designers claim to provide teachers with a “highly intuitive, visual authoring environment” for creating sequences of learning activities (TechTarget, 2009, p.1). Activities can include a range of tasks, small group work and whole class activities based on both content and collaboration. (Gedda, 2008). An evaluation team as part of their final report describes LAMS (Levy et al, 2008, p.9):

Created specifically to enable design, orchestration and sharing/reuse of sequences of learning activity, and placing special emphasis on supporting collaborative and group processes, LAMS can be used in classroom-based or distance learning, either on its own or in conjunction with other tools and environments. Its visual drag-and-drop design interface offers a range of activity types combined with the means to arrange these into sequences and connect associated content.

Furthermore, LAMS is purported to have a general learning management systems philosophy that has a focus on an approach known as Learning Design (Dalziel, 2007, p.1). Learning Design (LD) is hailed as a new approach that addresses the requirement for increased interaction in online learning and is regarded as a significant recent development in e-learning (Dalziel, 2007, p.1). The definitions of LD vary but essentially it is a specification that provides a framework of elements that are then able to formally describe the design of any teaching learning process (Koper & Tattersall, 2005, pp.3&4).

Web site: <http://www.lamsinternational.com/> (visited July 2, 2009).

3.7.2 Moodle

Moodle is widely regarded as number one in the learning management systems software (Kineo, 2009. p.2). It is an open-source software package that has been designed to produce internet-based courses and websites. Moodle “was originally an acronym for Modular Object-Oriented Dynamic Learning Environment” and is now described as “a global development project designed to support a social constructionist⁴⁰ framework of education” (Moodle, 2009a, p.1). Benner (2007) says the rise of this software as an online learning option has been meteoric and describes Moodle as “the de facto platform for online learning (p.1)”.

Moodle does not insist on registration by users of their software and so are unable to report accurate usage figures. Of the users that have registered, however, they report approximately 35,500 registered, validated sites operating in 196 countries in more than 75 different languages and offering almost 2,250,000 courses (Moodle, 2009c, p.1). The Moodle philosophy promotes collaboration, activity-based learning & critical reflection. In fact, Moodle is regarded by many as not just software designed for teaching and learning, but also a community of educators and software developers who collaborate to derive continuous new knowledge and learnings.

Moodle also has an option of viewing and using an interface that is written in Te Reo Māori. From informal discussions with tutors and lecturers of Te Reo Māori from Te Pua Wānanga ki te Ao⁴¹ it is clear that while some of them are aware of the option of the Māori interface, none of them use it citing the time it would take to decipher the computing terms in Māori as the main barrier.

Web site: <http://moodle.org> (visited July 2, 2009).

3.7.3 ATutor

ATutor claims to have been developed with accessibility and adaptability in mind (ATutor, 2009, p.1). Developed by the Adaptive Technology Resource Centre at the University of Toronto, ATutor features modules that are easily and quickly

⁴⁰ Simplistically defined: when groups construct new knowledge for each other, collaboratively creating a culture of new learning, especially through the act of interaction.

⁴¹ The School of Māori and Pacific Development at the University of Waikato.

updated and customised (ATutor, 2009. Gedda, 2008). ATutor (2009, p.1) assert on their homepage that “Educators can quickly assemble, package, and redistribute Web-based instructional content, easily import pre-packaged content, and conduct their courses online”.

Web site: <http://www.atutor.ca> (visited July 2, 2009).

3.7.4 Claroline

Claroline is available in 35 languages and claim to have a large, world-wide user and development community. The Claroline Consortium and regard their software as an “e-learning and ‘e-working’ platform allowing teachers to build effective online courses and to manage learning and collaborative activities on the web” (Consortium Claroline, 2008, p.1). According to Gedda (2008, p.1) “Claroline is organised around the concept of “spaces” related to a course or a pedagogical activity. Each space provides a list of tools that enable creation of learning contents, management of training activities, and interaction with other students”.

Web site: <http://www.claroline.net> (visited July 2, 2009).

3.7.5 Dokeos

Dokeos bills themselves as an ‘open source professional learning suite’ and claim to provide all the resources necessary for e-learning and blended learning management from authoring to reporting (Dokeos, 2009b; para.1. Kineo, 2009, para.2). Dokeos are Belgium-based and are used in over 6,000 installations in 60 countries. Their philosophy is based around providing solutions to their customers, most of whom start an e-learning program to improve flexibility, accessibility and productivity of learning processes. Originally formed as an offshoot of Claroline, Dokeos have since far surpassed that software in popularity (Kineo, 2009, para.14).

Web site: <http://www.dokeos.com> (visited July 2, 2009).

3.7.6 eFront

eFront claim that their software (also eFront) is an easy-to-use e-learning and “human capital development” system founded on sound pedagogical concepts that motivate and guide users (eFront, 2009, p.1; Gedda, 2008, p.1). The software is suitable for business and educational uses and eFront have partnerships with a range of companies offering expertise in e-learning and e-learning solutions.

Web site: <http://www.efrontlearning.net/> (visited July 2, 2009).

3.8 Overview

A wealth of learning and teaching resources is available on the Internet. The use of these resources for online learning, distance learning and other types of e-learning is enjoying a rising popularity. This can be attributed to the sheer volume and variety of resources that are available, the availability and accessibility of those resources and other features that revolve around cost, credibility and reliability of the software that presents these resources as learning packages.

Some sites, such as Digital Dialects and Viel.com, lack flexibility and would appear to have been largely created for use with little or no teacher guidance. Te Whanake Online is a website that has a variety of language learning resources, including a range of activities which are most effective as a supplement to teaching that is delivered by a fluent speaker of Te Reo Māori. This is especially the case where the teaching uses the Te Kāmano textbook. Websites of this kind, however, do not lend themselves to any sort of interaction amongst teachers, students and their peers. Re-design of the activities to vary the content is difficult and they must be re-used without change. That is to say, if teachers wished to re-use the activities, they would have to do so using the same content and questions. Dalziel (2007, p.1) cites these problems as common issues for e-learning developers:

E-learning has a well-developed approach to the creation and sequencing of content-based, single learner, self-paced learning objects. However, there is little understanding of how to create sequences of learning activities which involve

groups of learners interacting within a structured set of collaborative environments, or how teachers can make these sequences easily re-usable.

Dalziel further advocates interaction between teachers and peers as a key dimension to education but one that is “a significant blindspot in e-learning” (Dalziel, 2007, p.1). This notion is supported by Koper and Tattersall (2005, p.v) who cite a general feeling among experts that e-learning offerings were substandard, lacking in the areas of pedagogical quality, portability and adequate tooling. According to Dalziel (2007, p.1) “This is surprising given that “lesson planning” – the process of determining the sequence of activities to be followed by a teacher and students when studying a topic – is well understood in education, but is mainly absent from e-learning”.

This point seems to have been taken on board by developers, as evidenced by the mounting popularity and the widespread adoption of open source learning management systems (LMS). A number of examples have been given of sites that purport to have successfully provided e-learning solutions in the area of online learning management systems where Moodle is cited as the current yardstick (Benner, 2007; Kineo, 2009). These sites enable teachers or course administrators to tailor activities, monitor and report student progress and manage training resources. The students enjoy real time feedback and the ability to interact, in the form of activity collaboration, online chat, discussion forums and video conferencing, with their tutors and peers. Whether or not all this adds up to effective learning, and whether or not developers have been successful in creating software that adequately addresses the concerns of Koper & Tattersall (2005) and Dalziel (2007), will be discussed in *Chapter 4*.

One benefit of the FLAX software is the amount of control that teachers can have over the content used in the activities. They are able to adapt content to ensure the resource is accurate, current, authentic, and valid for the lessons or activities. They are also able to mould the activities to suit comprehension levels of the students and use text or other resources that are relevant to the particular class or student group. Given that the design templates for the activities appear to have a

useful range of selections and that the forms themselves appear to be easy to use, it would seem that a minimum of teacher training would be required to enable them to effectively administer and implement learning activities that they consider relevant to their teaching. The ability to tailor content and activity type using the functionality of a digital library and the FLAX software would seem to provide some serious benefits to online teaching and learning. FLAX software can also be incorporated into Moodle with the added advantage that students need only access the one interface to participate in the activities.

A critical analysis of this software, however, and the available exercises, in terms of language learning pedagogy, will feature in the *Chapter 5*.

Chapter 4

Kaupapa Māori learning pedagogy

4.1 Introduction

That the Internet contains vast amounts of resource, much of which is usable for language learning, is not in dispute. Given that the Internet is accessed globally in a variety of countries and languages, it would seem to have only been a matter of time before such a medium was in use as a language teaching and learning resource. According to Leloup & Ponterio (2000, p.1), “As the Internet has transformed communication around the world, it is natural that it should play a major role in the foreign language classroom.” In terms of minority languages, such as te reo Māori, the Internet also functions well as an easily-accessed depository for specific language-based resources. Cunliffe & Harries (2005) further emphasise this point:

It has been suggested that the Internet will have an important part to play in the future of minority languages, and for some minority languages there will be more minority-language material produced on the Internet than in traditional print or audio-visual media (p.1).

Roa (2006) suggests this is already in motion for te reo Māori.

Information technology is essential to high value functions such as communication, trade and learning in New Zealand and globally. The presence of IT in Māori homes and communities, along with the high level of acceptance amongst children and young people, makes it one

of the few high status domains of extraordinary influence on the crucial area of intergenerational transmission. Māori Language IT took a giant step forward with the translation of Microsoft Office/Windows in 2005 (p.74).

Other notable initiatives, in terms of te reo Māori, include the full translation of Moodle, as discussed in the previous chapter, and the translation of the Google search engine. Another significant development is the creation of the Māori keyboard by Microsoft that enables users to insert tohutō (macrons).

Roa (2006, p.78)) believes information technology (IT) is now “central to the lives of young people and to almost everyone who operates in professional and educational contexts” and suggests it “is also appropriate that IT should play a role in the revival, maintenance, progress, and evolution of the Māori Language”. McKinley (2005) declares language revitalisation to be a major focus for Indigenous minorities adding “for indigenous peoples protecting, enhancing and revitalising indigenous languages are the primary challenge of education this century” (p.232).

The Internet, however, is not merely a static repository of resources. In terms of online activities for language learning, Morrison (2002, p.1) observes:

The development of Web-based language teaching and learning activities is sure to continue to be an exciting and growing field. While computer programmers, instructional designers, and computational linguists steadily push the extremes of the field,

language instructors can use the basic tools of discussion boards⁴², Weblogs⁴³, HTML⁴⁴, JavaScript⁴⁵, RealAudio⁴⁶, and CGI scripts⁴⁷ to create dynamic, interactive, and functional materials for their courses on the World Wide Web.

A number of websites provide information and activities that are proclaimed to be efficacious for language learning by their designers. Some of these were reviewed in *Chapter 2*. There is little doubt that such resources serve as admirable support strategies to enhance face-to-face types of learning such as classrooms and wānanga. The majority of suppliers of online learning sources claim them to be educationally effective and pedagogically sound and therefore valid standalone language learning resources. For example, referring to the *Te Whanake Online* website, Ka'ai, McDonald, & Moorfield, (2006) declare:

While the content of the fifteen modules of *Te Whanake Online* complement the chapters of the book *Te Whanake I Te Kākano*, as much as possible, we have endeavoured to make *Te Whanake Online* a stand-alone resource for learners. Ideally, students will be attending classes with a skilled Māori language teacher and will be using the textbook, study guide, the exercises on the accompanying CDs and *Te Aka Māori-English, English-Māori Dictionary and Index*. However, learners anywhere in the world with access to the internet will be able to use *Te Whanake Online* whenever they wish at no cost (p.66).

⁴² An online discussion site or bulletin board – also referred to as message boards

⁴³ A personalised website in the form of an ongoing journal – more commonly referred to as a Blog.

⁴⁴ **H**yper **T**ext **M**arkup **L**anguage – the language by which information can be displayed as web pages

⁴⁵ A scripting language that allows interactive features to be added to web pages

⁴⁶ Software that allows users to play video and/or audio multimedia content

⁴⁷ **C**ommon **G**ateway **I**nterface – a protocol that allows a web page to run a program or application on a web server

Language learning and teaching professionals, however, would argue that electronic resources designed for the teaching and learning of languages often appear to focus on repetitive practice, sometimes even involving individual sentences that are decontextualized (or stand-alone). The majority of these professionals agree that approaches that encourage learners to use the target language in authentic ways in the process of interacting with others to perform meaningful tasks, such as tasks involving problem solving, are preferable. Grammar translation and repetitive drilling are far less likely to lead to what is generally referred to as ‘communicative competence’ than are genuine interactive communicative activities⁴⁸. Communicative approaches to language learning are recommended by the New Zealand Ministry of Education curriculum guidelines for te reo Māori in schools who assert (Ministry of Education, 2007, p.13):

The teaching, learning, storage, retrieval, and use of vocabulary all play a central role in language learning. Where vocabulary is introduced and practised in communicative contexts (rather than in lists), learners are more likely to see the relevance and to be sufficiently interested and motivated to remember words. If teachers use Māori words and expressions regularly – in, for example, classroom instructions – in ways that make their meaning clear, **receptive acquisition** (where learners can recognise the words and their meanings when they hear them) is likely to take place before **productive use** (where learners can not only recognise words but also use them themselves).

The issues associated with learning te reo Māori in contemporary settings that include electronic media, are further compounded as advocates of Kaupapa Māori

⁴⁸ Crombie, W. Personal Communication. February 10, 2009.

theory and Māori pedagogy argue that specifically tailored teaching approaches, in a Māori context, will best foster learning for Māori students. Such advocates suggest that the philosophies and delivery mechanisms for teaching Māori students need to embrace methodologies and ideologies that are in some ways peculiar to Māori. In terms of learning te reo Māori online then, a discussion will need to take place to determine firstly, the suitability and, secondly, the practicalities of designing resources that align with these philosophies.

This chapter will address these issues in the form of critical analysis of pertinent educational theory. Given that this overall initiative involves presenting online activities that are aimed at teaching and learning te reo Māori, a critical literature review of Kaupapa Māori theory will form the bulk of this chapter and informs what may be considered to be some of the features of Kaupapa Māori pedagogy. In recent years much has been written regarding Māori in education, Kaupapa Māori theory and Māori pedagogy. This review captures a broad range of writings that include background history and some more contemporary definitions of Kaupapa Māori in order to identify some commonalities in terms of characteristics and general principles. While this review does not presume to represent a definitive analysis of Māori education, Kaupapa Māori, or Māori pedagogy, the aim is to derive a range of features, characteristics or principles that may be said, with some level of confidence, to represent Kaupapa Māori learning pedagogy. The defining elements of ‘communicative competence’ and whether or not such attributes are located within Kaupapa Māori education pedagogy will also be briefly reviewed. The expectation is that these reviews will provide the means and/or tools to determine the suitability of online language learning

resources for learning te reo Māori. More specifically, to critique the language learning activities associated with the FLAX software and discuss the appropriateness of using these types of activities for learning te reo Māori. The critique of the FLAX software occurs in *Chapter 5*.

4.2 Background

Much of the literature written over the last two or three decades, with regard to Māori in education and Kaupapa Māori theory, points overwhelmingly to an inability of the education system in New Zealand to adequately cater for Māori students. In fact, a good percentage of those writers also highlight a failing by teaching institutions to sufficiently engage with the wider community – especially where those communities tended to be predominantly Māori. Many of these writers cite an imbalance of control and power leading to a dominant Pākehā education structure that fostered expectations that Māori, as subordinates, should respond by having aspirations to achieve within a one-size-fits-all approach to formal education in New Zealand (Smith, 1991; Bishop & Glynn, 1998; Pihama, Cram & Walker, 2002). Caccioppoli & Cullen (2006) comment:

The compulsory education system is a ‘one size fits all’ and that size is Pakeha. The Pakeha education system was introduced to Maori by the missionaries in the first half of the 19th century. It doesn’t work particularly well for Maori. This has been known for a long time and has been well documented for over 100 years (p.9).

They further assert that “the current compulsory state school sector does not have the capacity to deliver Maori educational achievement. It doesn’t matter how much money the Crown⁴⁹ gives to poorly performing schools, because money is not the problem” (p.10).

Smith (1991) also comments on education policy.

⁴⁹ Referring to the NZ Government

It is acknowledged that Māori needs in education are not homogenous. An unfortunate failing of much of past and present policy directed at Māori tends to be ‘blanket’ policy based on this false assumption and is consequently ineffective (p.4).

An historical pattern of dominance and subordination, and its constituent interaction patterns in education environments, has served to undermine the participation of many Maori in the benefits that successful education can offer (Smith, 1991; Pihama, Cram & Walker, 2002; Bishop, 2003). Bishop & Glynn (1998) assert that “Dominant-subordinate intercultural relationships have a profound effect on language maintenance with consequent impact on cultural retention and identity” (p.40). They comment further on the effect of a dominant majority culture:

These policies (of introduced philosophies and practices of multiculturalism and biculturalism) have ignored the importance of the need to address the relationship between the dominant Pakeha (people of European origin) and the indigenous population because the aspirations of the people are subsumed within the majority culture’s designs for the future of New Zealand (p.38).

Bishop (2003) declares that the effect of the dominant culture, whose proponents remain heedless of the Indigenous predicament, is an intrinsic feature of the current education system.

Indeed, as with indigenous students world-wide, teachers in mainstream contexts have traditionally denied the authenticity of Māori experiences and voice, through control over curriculum and pedagogy, and by means of control over the dominant images and metaphors. In this manner, epistemological racism is perpetual (p.234).

The education reforms during the late 1980s were aimed at improving Māori attainment and narrowing the gap between Māori and non-Māori achievement. According to Smith (1991), however:

The illusion of ‘meaningful reform’ of Māori education on the one hand, and the relative powerlessness of Māori people as a group to control their own lives (within a societal context or unequal power relations) on the other hand, correlates with a crisis of legitimacy of the educational reforms of the moment. The real test as to the degree of success of the present reforms will be in the extent to which they confront and overthrow the most apparent crisis within education and schooling – related to Māori. While Māori people are disproportionately represented in almost every crisis area of education – little is discernible within the whole raft of current reforms which addresses itself to specifically altering Māori education and schooling outcomes (p.3).

Bishop (2003) voices similar concerns about the education system a decade later.

Monocultural pedagogies, predicted on largely unchallenged Pākehā metaphors, have also dominated classroom practices for too long during the history of its schooling. These pedagogies have been successful for the dominant culture, but are increasingly being tested and rejected by even the most compliant of students. A major message from *Kaupapa Māori* educational experiences is the need for an approach whereby teachers can engage in ‘conversations’ with all of their students that go beyond rhetorical questions that already have answers, or pedagogical questions that imply the required direction of the answer (p.235).

Smith (1991) is adamant that “[r]eforms with respect to Māori need to align with the deeply held cultural aspirations of Māori people before they stand a chance to even begin to be successful” (p.12). This sentiment is echoed by Erb (2009):

Ka Hikitia, the Māori education strategy, calls for changes in the education system so that Māori enjoy educational success as Māori. The strategy includes evidence that effective teaching involves active engagement and motivation of students by the teacher. And in the student-teacher relationship, it states that ‘culture counts’ (p.3).

Bishop & Glynn (1998) highlight a more inclusive approach in the control of education by Māori: “Perhaps the most dramatic shift in policy has been from a paternalistic approach to one that argues for “increasing opportunities for Māori to take more responsibility for the control of Education” (p.57). Bishop (2003) further suggests “the solutions to marginalisation do not lie in the culture that marginalises” (p.223). Bishop & Glynn (1998) comment further on Māori self-determination:

This model of self-determination has become a burning issue for an increasingly large proportion of the Maori population. They see language as absolutely essential to their essence, their being, and their identity as Maori. The Maori people want to maintain their integrity, which comprises te reo (language) tikanga Maori (Maori customs) and a matauranga (knowledge) base, the foundation from which Maori people are able to express themselves and participate in the world (p.58).

They also observe: “In contrast to the 1960s, the current focus of Ministry policy is much closer to the Maori’s [sic] aspirations for education” (p.57). Durie (2003) sees this as an important feature of future education: “A starting point, and one that is likely to gain wide approval, is that education should be consistent with the goal of enabling Māori to live as Māori” (p.199). This is a position also advocated by Bishop & Glynn (2000): “What is required is a pedagogy incorporating the

reassertion of Maori cultural aspirations, preferences and practices, here termed Kaupapa Maori theory and practice” (p.1), and reiterated by Pihama et al (2002):

One of the realities is that for over a century and a half the New Zealand education system has failed most of the Māori children who have passed through it. Kaupapa Māori as an educational intervention system was initiated by Māori to address the Māori educational crisis and to ensure the survival of Kaupapa Māori knowledge and Te Reo Māori (p.32).

4.3 Kaupapa Māori theory

It would seem that Kaupapa Māori theory has arisen as a Māori response to marginalising structures and ideologies imposed by a dominant, colonising majority. That is to say, Kaupapa Māori theory may appear to be contemporary philosophy that has been embraced as a means to reassert Māori aspirations and identity within institutions, and a wider society, that have inherently fostered an attitude that the positioning of Māori should be one that is subordinate. Pihama, Smith, Taki & Lee (2004) assert that this is not the case and argue that “*Kaupapa Māori* is not new but has its foundations that reach well beyond the period of the colonisation of these (NZ) lands” (p.8). With reference to New Zealand’s education system, however, they contend:

The marginalisation of *Māori* has meant the privileging of *Pākehā* knowledges over *Māori* knowledges. This privileging originates from processes of colonisation and the imposition of colonial institutions. The existing education system is but one of these institutions. There are many such institutions. This is also an area within which the contestation relating to processes of knowledge selection has been vigorously undertaken by *Māori* (p.8).

As a result and in terms of Kaupapa Māori philosophy and education, Pihama et al (2002) maintain:

The need for a Kaupapa Māori education system grew out of Māori dissatisfaction with a mainstream education system that sought over the history of colonisation in this country to civilise, assimilate, and integrate Māori children and young people into Pākehā culture (p.40).

This plight is not unique to Māori. Kennedy & Jefferies (2005, p.6) claim that “Indigenous people throughout the world, including Māori in Aotearoa, struggle to find a ‘space’ within the hegemony of the majority – and colonising – culture to express, acknowledge and expand their own knowledge, values and beliefs”. Pihama et al (2002) also emphasise the difficulty of implementing initiatives of self-determination by Māori:

There can be no doubt that these initiatives are anti-colonial, and as a consequence the struggle for space has been long and hard. The struggle is also on many fronts: for example, with successive governments that have sought to name, define, and control, and by so doing curtail Māori aspirations; with school boards, principals, and teachers when Māori seek space in mainstream schooling for Māori-medium education initiatives; with Māori parents who cannot see the value of their children being part of a Māori education initiative (p.41).

Smith (1991) stresses the philosophy of Kaupapa Māori theory seeks to rebalance “a ‘societal context of unequal power relations’”(p.3) and, in support of this, Bishop (2003) asserts “*Kaupapa Māori* theory, which builds on experiences in educational settings and research, focuses on the centrality of an analysis of power relations and offers an alternative approach to interpersonal and group relationships and interactions to that commonly promoted”(p.223). Bishop & Glynn (1998) state “Kaupapa Maori responded to the dual challenge of imminent language death and consequent cultural demise, together with the failed succession of government policy initiatives such as assimilation, integration, multiculturalism and biculturalism to sustain Maori cultural and language

aspirations”(p.52). It would seem that, although Kaupapa Māori can be thought of as existing in a pre-European New Zealand context, new life has been breathed into the same philosophies and ideologies and now characterise what has come to be termed Kaupapa Māori in more contemporary times. There can be little doubt that this resurgence has been brought about as Māori aspire to redress the destructive effects of colonising methodologies. Bishop (2003) comments on such methodologies:

Kaupapa Māori educational experiences have identified that the use of impositional methodologies, whether they be in research contexts or classrooms, means the participants will experience having something done *to* them rather than *with* them. As a result they will feel left out of the learning interactions and conversations with other participants (p.235).

He adds “In *Kaupapa Māori* contexts the interrelationships and interaction patterns that develop draw on Māori cultural aspirations and sense-making processes (ways of knowing) rather than on those imposed by another culture” (p.223). Pihama et al (2002) agree and state:

Kaupapa Māori is, therefore, about asserting the right of Māori to be Māori while at the same time building a critique of those societal structures that work to oppress Māori ... Kaupapa Māori education is exemplary in that it is allowing Māori children to be educated in an environment that affirms, validates, and nurtures them as Māori while providing them with more than enough tools to survive in a Pākehā-dominated society (p.41).

Subsequently, the Ministry of Education has undergone considerable policy shifts in response to the growth of Kaupapa Māori educational initiatives (Bishop & Glynn, 1998, p.57). According to the New Zealand Council for Educational Research (NZCER, 2004) one of the aims of the Tertiary Education Strategy 2002-2007 is to develop “robust options for kaupapa Māori tertiary education that

reflect Māori aspirations” (p.59). Pihama et al (2002) observe that as a result “This has led to the creation of Māori-controlled, Māori language-medium education in which children and young people can be immersed in Māori culture and know that being Māori is the norm” (p.30).

Smith (1991) emphasises that Kaupapa Māori education theory should not be an entirely separate initiative and says this about what a quality Māori education entails: “It also acknowledges Pakeha culture and skills required by Māori children to participate fully and at every level in modern New Zealand society” (p.22). This is endorsed by Pihama et al (2002) who emphasise: “It is the context of unequal power that must be challenged and changed” (p.33), and “Kaupapa Māori thus challenges, questions and critiques Pākehā hegemony. It does not reject or exclude Pākehā culture. It is not a one-or-the-other choice” (p.33).

Mahuika (2008) highlights similar notions:

Unlike the dominant Western paradigms, kaupapa Māori does not make claims to universal truth or to superiority over other existing paradigms. Arguably, the ultimate goal of kaupapa Māori research, like much of the scholarship from indigenous and minority peoples, is to challenge and disrupt the commonly accepted forms of research in order to privilege our own unique approaches and perspectives, our own ways of knowing and being. In this way “kaupapa Māori not only challenges ‘legitimate’ or ‘certified’ knowledge claims, but also questions the very process by which such knowledge is produced” (Lopez, p.226). Kaupapa Māori theory then provides a platform from which Māori are striving to articulate their own reality and experience, their own personal truth as an alternative to the homogenisation and silence that is required of them within mainstream New Zealand society. Inherent in this approach is an understanding that Māori have fundamentally different ways of seeing and thinking about the world and simply wish to be able to live in accordance with that specific and unique identity (p.4).

Since it is clear that historical imbalances have led to the birth, or rebirth, of Kaupapa Māori theory, it is timely to analyse some definitions with a view to sifting out the more common features and characteristics of those definitions.

4.3.1 Kaupapa Māori definitions

It seems incongruous to attempt to define Kaupapa Māori philosophy using the language of the colonising majority. It may be argued that it is difficult to develop and define a true kaupapa Māori framework in English since the use of particular Māori words “has emerged as a response to a construct from the English language” (Kennedy & Jefferies, 2005, p.9). The Ministry of Education (2008) recognises this issue:

It is difficult to express all that the research says about Māori pedagogy. Te reo Māori communicates concepts that cannot be expressed easily in the English language, and when these pedagogical concepts are moved into a western context and translated into English they may lose critical elements of meaning (p.1)

Pihama (2001) is more direct: “**Te reo Māori** is ... the only language through which **Kaupapa Māori** can be fully expressed” (p.117).

Even so, Māori researchers are able to offer broad definitions:

“Kaupapa Maori is the philosophy and practice of ‘being Maori’. It assumes the taken for granted social, political, historical, intellectual and cultural legitimacy of Maori people” (Smith, 1992, p.2).

“The term Kaupapa Māori is used ... to refer to Māori centred/based/defined philosophies, frameworks and practices” (Cram & Lenihan, 2000, p.8).

Tino rangatiratanga is perhaps the most fundamental issue associated with the whole Kaupapa Maori movement. A figurative translation, “that of self-

determination, that is, the right to determine one's own destiny, to define what the destiny will be and to define and pursue means of attaining it" (Bishop & Glynn, 2000, p.1) has gained popularity as a definition.

"The positioning of **te reo Māori me ōna tikanga**⁵⁰ as central in **Kaupapa Māori** theory is not simply a theoretical statement but it is part of the lived realities of many Māori people" (Pihama, 2001, p115).

"The term Kaupapa Māori captures Māori desires to affirm Māori cultural philosophies and practices. In short Kaupapa Māori is about being fully Māori" (Pihama et al, 2002, p.30).

"[T]he reassertion of indigenous Māori cultural aspirations, preferences and practices ... focuses on the centrality of an analysis of power relations and offers an alternative approach to interpersonal and group relationships and interactions to that commonly promoted" (Bishop, 2003, p.221)

"*Kaupapa Māori* has become an influential, coherent philosophy and practice for *Māori* conscientisation, resistance and transformative praxis, advancing *Māori* cultural and educational outcomes within education" (Pihama et al, 2004, p.11).

"Kaupapa Māori theory has become used to refer to academic investigation undertaken according to a Māori world view, and based on Māori principles of understanding" (Kennedy and Jefferies, 2005, p.14).

"As it refers to, and incorporates mātauranga Māori or Māori knowledge, kaupapa is in essence, fundamental knowledge" (Kennedy & Jefferies, 2005, p. 15).

"...meaning the underlying and fundamental principles, beliefs, knowledge and values held by Māori" (Kennedy & Jefferies, 2005, p. 15).

⁵⁰ Māori language and its/her/his cultural forms (Pihama, 2001, p.115).

4.3.2 Kaupapa Māori key principles

The rangahau website⁵¹ was inspired and supported by a number of prominent Māori researchers and writers. This website offers a number of key principles of Kaupapa Māori theory collated from the research of noted authors in the field (Rautaki Limited, 2009).

Kaupapa Māori theory is based on a number of key principles. Graham Hingangaroa Smith (1990) initially identified six principles or elements of Kaupapa Māori within the context of educational intervention (Kura Kaupapa Māori) and research. These elements have been expanded by other Kaupapa Māori theorists such as Linda Smith (1997), Leonie Pihama (2001) and Taina Pohatu (2005). Other theorists who have also contributed to the development and growth of kaupapa Māori methodology include Russell Bishop (2005), Kuni Jenkins (2001), Cheryl Smith (2003) and others (p.1).

The following key principles alluded to earlier, have been summarised from the rangahau website, Rautaki Ltd (2009, pp.1-2)⁵²:

- **Tino Rangatiratanga** –The Principle of Self-determination
 - relates to sovereignty, autonomy, control, self-determination and independence.
- **Taonga Tuku Iho** – The principle of Cultural Aspiration
 - asserts the centrality and legitimacy of Te Reo Māori, Tikanga and Mātauranga Māori.
- **Ako Māori** – The principle of Culturally Preferred Pedagogy
 - acknowledges teaching and learning practices that are inherent and unique to Māori, they may not be traditionally derived but are preferred by Māori.

⁵¹ www.rangahau.co.nz – last accessed October 1, 2009

⁵² The full version is attached as Appendix A

- **Kia piki ake i ngā raruraru o te kāinga** – The principle of Socio-Economic Mediation
 - asserts the need to mediate and assist in the alleviation of negative pressures and disadvantages experienced by Māori communities resulting in positive benefits.
- **Whānau** – The principle of Extended Family Structure
 - Whānau sits at the core of Kaupapa Māori.
- **Kaupapa** - The principle of Collective Philosophy
 - The 'Kaupapa' refers to the collective vision, aspiration and purpose of Māori communities.
- **Te Tiriti o Waitangi** – The principle of the Treaty of Waitangi
 - Te Tiriti o Waitangi (1840) is a crucial document which defines the relationship between Māori and the Crown in New Zealand.
- **Āta** - The principle of Growing Respectful Relationships
 - relates specifically to the building and nurturing of relationships.

It is clear from these observations that Kaupapa Māori refers to philosophies and principles of comprehension and practice. The way that Māori view the world is instrumental in creating their own frameworks, methods and ways of doing things. Additionally, Kaupapa Māori speaks to the power of Māori asserting their right to be Māori, to embrace their own spirituality and aspirations and to make their own conscious choices as Māori. In other words, to be self-determining and uniquely Māori, with an assumed legitimacy that is presupposed and valid in its own right. Kaupapa Māori represents a power balance where the Māori world view, based on Māori principles of understanding and nurtured relationships, has a rightful position in New Zealand society that is taken for granted.

4.3.3 Pedagogy and Māori Pedagogy

An earlier section (§4.2) of this chapter discusses the failure of the New Zealand education system, in general, to adequately impart knowledge, and therefore learning, to Māori students. Research indicates a disparity between teaching and delivery styles and methods that would best engage Māori students in manners that ensure targeted learning occurs (Smith, 1991; Smith, 1992, Bishop & Glynn, 2000; Pihama et al, 2002, Bishop, 2003; Pihama et al, 2004; Kennedy & Jefferies, 2005, Ministry of Education, 2007). This discussion is focussed on learning theory and begins with some definitions, from various sources, of pedagogy:

Pedagogy *n.*

1. The art or profession of teaching
2. Preparatory training or instruction, and,

1. the principles, practice or profession of teaching

(Farex Inc, 2009).

Pedagogy *noun.*

1. The function or work of a teacher; teaching
2. The art or science of teaching; education; instructional methods.

(Dictionary.com, 2009).

Pedagogy

Study or teaching methods, including the aims of education and the ways in which such goals may be achieved. The field relies heavily on educational psychology, or theories about the way in which learning takes place.

(Encyclopaedia Britannica inc, 2009).

Pedagogy – from MoodleDocs

1. The profession of teaching
2. The activities of educating, teaching or instructing
3. The art or science of being a teacher
4. Refers to the strategies of instruction

5. Style of instruction

(Moodle, 2009b, p. 1).

One can readily see that these definitions of pedagogy focus on teaching. They include the strategies, methods and styles of educating and teaching and are more focussed on the profession of teaching and teaching goals. Puke (2000) describes pedagogy, from a Māori point of view, as the “valid transmission of knowledge” - knowledge that resides in “living repositories” (p.1) and is tied to cultural reality, wider understanding and embracing of whakawhanaungatanga. Puke further contends “Māori people referred to the Māori language as *taonga* ‘treasure’ because it was the means of vocal expression used to traditionally transmit knowledge” (p.1).

According to Hemara (2000, p.6), the definitions of pedagogy include:

... the art, practice or profession of teaching ... the systematic learning or instruction concerning principles and methods of teaching and of student control and guidance ... (Good & Merkel, 1973, p.412)

and:

... [the] Process by which knowledge, attributes or skills are deliberately conveyed – includes the total instructional process from planning and implementation to evaluation and feedback (Millar & Findlay, 1996, p.307).

He further modifies these definitions “to include Māori teaching styles within traditional contexts. These encapsulate a variety of media/curricula, such as:

1. whakapapa (genealogy)
2. waiata (song/poetry)
3. whakatauākī (proverbs)
4. kōrero tawhito (histories)
5. whaikōrero (speech making)” (p.6).

According to Bishop & Glynn (2000),

This suggests a pedagogy where the participants in the learning interaction become involved in the process of collaboration and of mutual storying and re-storying ... This type of pedagogy addresses Maori peoples' concerns about current teaching practices being fundamentally monocultural and epistemologically racist. It recognises that all people who are involved in the learning and teaching process are participants who have meaningful experiences, valid concerns and legitimate questions (p.7).

Bishop (2003) further states:

In short, we need a pedagogy that is holistic, flexible and complex, that will allow Māori students to present their multiplicities and complexities and their individual and collective diversities, rather than a pedagogy that perpetuates teacher images (often wrong) of these students (Bishop, 2003, p.226).

Rau (2001) adds:

Contemporary definitions of Māori pedagogy are being shaped through efforts to successfully blend traditional Māori views of learning with modern principles and practices evolved directly from those valued by the colonising, hegemonic culture in this country (p.3).

So, what features could constitute Māori pedagogy? According to the Ministry of Education (2005),

Māori pedagogy can be thought of as "practices" or ways of learning. Each of these has been categorised below, but they are not necessarily separate. They often rely on one another.

The categories are:

Exposure: Role modelling, listening, observation, imitation, hands-on.

Role: Whereby the deeper learning and understanding takes place in waiata, karakia, and whakapapa.

Ako: This is the term used for both learning and teaching.

Teina tuakana: Peer tutoring.

Groups: Co-operative learning style, for instance kapa haka and heterogeneous groups. Groups can be any number above 1.

Pūrākau: In this context pūrākau means stories and legends. Links are made to: principles to be taught, messages in whakapapa, Māori theories and Māori world view (p.1).

Notice that these later definitions include a focus on the learning and the participants involved in the learning. Furthermore, McKinley (2005) declares:

Traditional Māori pedagogy has been described as reflecting the interconnectedness between all aspects of Māori existence, with the learning process viewed as a co-operative venture, lifelong and intergenerational. It has been argued that many characteristics of traditional Māori education are still relevant for Māori learners (p.236).

It would seem that the case for Māori pedagogy, as a definition of pedagogy that is unique to Māori, rests in a variety of nuances, perhaps most notably, the embracing of most, if not all, aspects of Māori philosophy and culture. The consistent use, for example, of karakia (ritual chants, incantations), whanaungatanga (kinship, family connection), and whakapapa (genealogy, lineage) during the processes of teaching and learning are derived from a Māori point of view. A Māori pedagogic approach is more learning-centred, or more about the student, rather than teaching centred. The teaching and learning relationship is underpinned by Māori values and a world view that encompasses a range of philosophies and practices, the majority of which have been touched on earlier in this section. Arguably, such learning methods could be thought of as

styles of teaching delivery that use resources, or tools, which happen to be unique to Māori; at least in New Zealand. One could also say, however, that the holistic use of such methods reinforces the students' uniqueness as Māori, and as such, enables Māori to be Māori in learning and teaching situations. In other words, the way that Māori view the world is instrumental in creating their own frameworks, methods and ways of doing things. Māori pedagogy and Kaupapa Māori principles ensure that teaching and learning is culturally centred for Māori. This is also consistent with contemporary approaches to teaching languages.⁵³

4.4 Additional language learning

This section discusses communicative learning theory as it relates to additional language learning. A common argument amongst language teaching professionals is that a communicative teaching approach results in learners being able to “use the target language in authentic ways in the process of interacting with others.”⁵⁴ The teaching of additional languages using a ‘communicative approach’ emphasises a focus on interaction as both the means and the ultimate goal of learning a language. This is usually characterised as a broad *approach* rather than as a teaching method with a clearly defined set of classroom practices⁵⁵. Nunan (1989) states that distinguishing between knowing various grammatical rules and being able to use the rule effectively and appropriately when communicating, is characteristic of communicative competence and is a view that has underpinned communicative language teaching (p.12). Peter (2008, p.4) concurs suggesting that enabling students to use the target language in a variety of contexts is the primary emphasis of communicative language teaching.

According to the Ministry of Education (2007):

Any approach that enables learners to communicate real information for authentic reasons is a communicative approach. Classroom-based language learning will inevitably be artificial in some respects. However, communicative language teaching requires keeping such

⁵³ Crombie, W. Personal Communication. September 7, 2009.

⁵⁴ Crombie, W. Personal Communication. February 10, 2009.

⁵⁵ Wikipedia. September 7, 2009.

artificiality to a minimum and avoiding language exercises that are out of context and essentially meaning-free (p.11).

Lightbown & Spada (2006) concede that although grammar and structure-centred instruction is generally more widespread, communicative learning is showing some dominance.

‘Get it right from the beginning’ is probably the proposal that characterises more second and foreign language instruction than any other kind. Although communicative learning has come to dominate in some environments, the structure based approaches ... especially grammar translation, remain widespread (p.138).

The communicative approach to teaching is less concerned with developing a perfect grasp of grammatical structure or pronunciation, but rather on helping learners to apply knowledge of both formal and everyday use of a language in order to communicate proficiently. It is a learner-centred method that emphasises communication and real life situations (Bacon, 2008, p.1). Johnson (2000) states “It is acknowledged within what has come to be termed the ‘communicative movement’ in language teaching and learning that language learning involves more than control of language systems” (p.166). English Raven Educational Services (2007) claim “Teaching students to *use* the language is considered to be at least as important as learning the language itself” (p.1). Lightbown & Spada (2006, p.143) declare that results from various studies “provide evidence that learners benefit from opportunities for communicative practice in contexts where the emphasis is on understanding and expressing meaning.”

Bacon (2008) states:

Communicative language learning also stresses social and situational contexts of communication. For example, in many languages, the form of “you” changes depending on the age and status of the two speakers.

Addressing a person in the proper way can make a big difference in having a successful exchange, even if the verb tenses aren't right (p.1).

Again, this approach emphasises the important of having interactions that are acceptable on a social scale in addition to a focus on being correct grammatically.

Nunan (1989) adds:

A major trend in language teaching in recent years has been the adoption of learner-centred approaches to curriculum development. Learner-centred approaches are characterised by the involvement of the learner, and the utilisation of information about the learner in all aspects of the curriculum process (p.144).

Bacon (2008) provides supporting comment:

The role of instructor in communicative language learning is quite different from traditional teaching methods. In the traditional classroom, the teacher is in charge and “controls” the learning. In communicative language learning the teacher serves as more of a facilitator, allowing students to be in charge of their own learning (p.1).

Nunan (1989) further advocates:

[A] client-centred approach to adult learning on the grounds that adults value their own experience as a resource for further learning, and that they learn best when they have a personal investment in the program and when content is personally relevant (p.144).

Lecturers of te reo Māori at the University of Waikato, New Zealand generally agree that instruction should be a fully rounded experience and, as such, combine

structural and grammatical aspects with elements of oral instruction in the form of conversation and listening exercises.⁵⁶ In order for language learning to be effective, it must contain, or be enhanced with, conversation and/or conversational practice in live settings. While this may be an over-simplification of the issues, it is pertinent to note that communication learning theory involves teaching grammar, not through instruction in ‘grammar rules’, but in similar communicative settings.

4.5 Summary

The main attributes of communicative learning and Māori pedagogy have similarities in that they are learner-centred and embrace methods of instruction that involve and engage the learner in ways that have relevance to the learner. Identifying and acknowledging the needs and aspirations of the student is regarded as a critical factor to successful learning and therefore successful teaching. Given that traditional knowledge transmission by Māori occurred in primarily oral contexts (Puke, 2000), it is not difficult to detect similarities in the features of communicative learning theory and the earlier definitions of Māori pedagogy. In fact, both theories emphasise social frameworks that work to reinforce the importance of culturally-centred language learning experiences.

The main purpose of this chapter was to identify features of Kaupapa Māori pedagogy that might be used to determine the value and suitability of language learning activities in an electronic environment. Since the target language is te reo Māori, this seemed to be a reasonable expectation. The discussion on Kaupapa Māori theory, however, highlighted concepts rather than features. As a means for analysing the FLAX activities, the main themes of the concepts have been abridged into a list of points that may be seen as pertinent tools for the analysis of these activities as language learning resources:

- by Māori for Māori
- cultural-centred learning - a holistic Māori world view
- legitimacy of Māori and Māori aspirations

⁵⁶ Murphy, Ē. Personal Communication. September 29, 2009.

- learner-centred and culture-centred teaching
- interactive and relationship-centred
- aural and oral transmission

Conceptually, communicative learning theory and kaupapa Māori pedagogy involve similar approaches and ideologies. For the purpose of the FLAX activity analysis in Chapter 5, therefore, the abridged list of features representing kaupapa Māori pedagogy will be applied. While it is conceded that this is by no means a definitive list, it can be regarded as an initial, sensible means of analysis for the purpose of this evaluation.

Chapter 5

Analysing activities based on a digital library

5.1 Introduction

In this chapter, the focus is on three aspects of the research: an analysis of the FLAX activities, the findings of user testing and the feedback from the testers.

The FLAX activities were discussed as part of Chapter 3 (§3.3.3). The activities will be analysed from a Kaupapa Māori pedagogical point of view, the concepts of which have been discussed and summarised within the literature review contained in the previous chapter (Chapter 4). The analysis will be confined to determining suitability of the types of the activities for learners of te reo Māori.

The setup and implementation of a tailored digital collection and the selection of specific FLAX activities for user testing is outlined. The process of selecting the testers and an overview of the ensuing user testing will be followed by a summary of the feedback contained on the questionnaires. The questionnaires were completed by the participants following the testing. Video footage of the testing in progress is also analysed and is added as further commentary where it is felt to be relevant. Technical difficulties, however, resulted in the audio component of the video being the most useful part of the footage.

Since the analysis of the FLAX activities is largely an exercise based on theory, the testing and feedback process described in §5.3 has been undertaken with a view to compare findings from the FLAX analysis with actual user feedback.

While it is acknowledged that the sample group is small, the activities undertaken are few, and there is only one testing event, the validity of the feedback, in terms of being indicative of a Māori viewpoint is considered in §5.4.

5.2 FLAX activities

The analysis of learning activities based on a digital library aims to determine the suitability of this type of resource for learning. More specifically, for learners who are Māori and, in the case of this research, for learners who are learning te reo Māori. The general concepts regarding what could be considered as suitable learning resources for Māori learners were discussed in Chapter 4 (§4.3) as a review of a wide range of literature regarding Kaupapa Māori theory, Māori education, and Māori pedagogy theory. These concepts were summarised into a list of attributes or characteristics so that they might then be applied to FLAX activities as an analysis tool (§4.5). The list of attributes is:

- by Māori for Māori
- a holistic Māori world view
- legitimacy of Māori and Māori aspirations
- learner-centred teaching
- interactive and relationship-centred
- aural and oral transmission

Note that this analysis is by no means a definitive judgement on the current design of FLAX and the FLAX activities, but should be regarded as pertinent observation that may be useful should the initiative be extended to include learners of te reo Māori.

5.2.1 The analysis

The activities that were analysed have been constructed as part of the Flexible Language Acquisition (FLAX) project at the University of Waikato, New Zealand. This project is discussed in some depth in §3.3.3, but essentially has been designed “to automate the production and delivery of practice exercises for overseas students who are learning English” (Wu, 2009, p.1). Given that the activities are designed for foreign students and that the target language is English, it is quite obvious that the activities have not been designed ‘by Māori for Māori’. Equally obvious is that ‘a holistic Māori world view’ has not been incorporated into the design, nor has the ‘legitimacy of Māori and Māori aspirations’ been considered. This is hardly surprising given that the activities have been designed primarily for learners of English who are from countries other than New Zealand. Even so, it is certainly an area to be addressed should the project include te reo Māori at some future stage.

The most common exercise types available on the Web have been classified by Wu (2006) as belonging to one of six categories:

- Multi-choice
 - In the form of questions and sets from which the correct answer must be selected
- Matching
 - Requiring the learner to find two items that are similar, related or opposites
- Permutation
 - Learners are required to sort given items into some order
- Fill-in-blanks

- Exercises that require the learner to fill gaps in a sentence or missing words from larger pieces of text
- Spelling
 - Exercises that require the learner to construct a word correctly
- Category
 - Exercises that require the learner to place items into groups according to a particular criteria (pp. 11-14).

The following list of FLAX activities was summarised from the FLAX demonstration video (Witten, 2007):

Word Guessing: Students predict words they think will occur in a given article, individually or competitively. This activity is said to help improve their communication skills and vocabulary.

Scrambled Sentences: The words of sentences are scrambled and students must sort them into their original order. This activity is said to help them study sentence structure by providing them with genuine text and allowing them to select suitable materials to practice on.

Matching Words with Definitions: Students match terms (from Wikipedia) with their definitions. ‘Terms’ are words or phrases, and ‘definitions’ are sentences whose subject is missing. This type of exercise is said to help learners study the meaning of words in a particular domain.

Fill-in-the-blanks: Students fill in words or phrases that have been cut out of a Wikipedia article. In this activity, students work together with a partner to fill in the information gaps.

Image Guessing: A randomly chosen image is shown to one partner (called the ‘describer’), while the other partner (the ‘guesser’) must identify it by asking questions. This activity is said to help improve students’ communication skills and vocabulary [as it is normally performed in the target language].

Wu (2006, p.3) contends that these FLAX activity types are student-centred and provide a communicative learning environment. The discussion regarding communicative language learning in §4.4 of Chapter 4 identifies communicative approaches as placing as much emphasis on the appropriateness of language usage as the accuracy of grammatical correctness. Although a communicative approach to language teaching may be less concerned with developing a *perfect* grasp of grammatical structure or pronunciation, there is a clear focus on helping learners to apply knowledge of both formal and everyday use of a language in order to communicate proficiently. The categories and activities listed above would appear to be more oriented toward language structure, grammar and construction rather than everyday language usage. In terms of language learning and communicative learning, the benefit of these sorts of activities would predominantly rest in the way they were performed. That is to say a collaborative approach, conducted in the target language, where the participants work in groups of two or more, would arguably be of more use than merely completing the activities individually.

The computer ‘chat’ function is defined by chat (2009) as:

A real-time conferencing capability between two or more users on a local network (LAN), on the Internet or via a BBS⁵⁷. The chat is really a "text chat," because the conversing is accomplished by typing on the keyboard, not speaking. Each keystroke is transmitted as it is pressed (p.1).

According to Wu & Witten (2006, p.7) the chat feature is available in digital library language learning activities. Although the chat feature is not included in the subset of activities that forms the basis of this analysis, it should not be discounted since the functionality is actually available. Students who use the chat facility collaboratively, in the target language, to exchange ideas and questions, in conjunction with activities such as fill-a-blank and word guessing that promote correct use of grammar, can be regarded as engaging in communicative learning in an e-learning environment. Given that there is no real requirement to engage in such a fashion, however, it is difficult to regard the activities as communicative when it is quite clear that this definition relies on the way the activity is completed rather than the activity itself. The FLAX activity type that is the exception to this is the 'Image Guessing' exercise. From the summary list of the FLAX demonstration video (Witten, 2007):

Image Guessing: A randomly chosen image is shown to one partner (called the 'describer'), while the other partner (the 'guesser') must identify it by asking questions. This activity is said to help improve students' communication skills and vocabulary.

⁵⁷ Bulletin Board System – a computerised 'bulletin board' that allows people to leave or share messages

In the actual exercise the guesser is shown a collection of images and, by asking questions aims to filter those images until the one held by the describer is found. This exercise may be conducted using a chat facility or verbally, either face-to-face or by some other facility that allows verbal communication, and, when performed in the target language, could accurately be referred to as communicative language learning. The activities that were tested, however, did not have the chat facility or other means of student-to-student interaction built in to them. Since the interaction only occurred as a result of the testing process, rather than as a requisite for completing the activity, the activities tested cannot be classified as suitable Māori language learning activities based on our last three principles of Kaupapa Māori pedagogy. Those were:

- learner-centred teaching
- interactive and relationship-centred
- aural and oral transmission

In terms of learner-centred teaching, apart from being able to control the relevance of the text it is difficult to judge how the activities that were tested could be thought to be learner-centred. The FLAX activities may be generally considered to be useful for practicing grammatical concepts and structures. Should the project be extended to include te reo Māori, further research would be necessary to ensure that the types of learning activities based on a digital library, and the design, presentation and methods of delivery will be appropriate and suitable for learners of te reo Māori.

5.3 User testing and feedback

User testing was undertaken on a select few of the available FLAX activities. As mentioned previously, this trial was undertaken in order to obtain feedback from the participants that could be regarded as having some relevance in that it was provided by first-hand users. The feedback would then be useful as a means to augment the theory-based analyses of the FLAX activities (§5.2), and perhaps provide some validation to those analyses. This section describes the process of the design and testing, and outlines the feedback received from the testing group.

5.3.1 The testing process

A range of text, written in te reo Māori, was provided to the FLAX programmers. The texts were either composed⁵⁸ or obtained from a variety of sources that include lecturers of te reo Māori in Te Pua Wānanga ki te Ao⁵⁹ at the University of Waikato. These texts formed the basis of our test collection, Te Wharekura, located at <http://flax.nzdl.org/greenstone3/flax?a=p&sa=home>.⁶⁰ Not all of the text provided was used in the collection. Additionally, the full range of FLAX activities was not available to us for customised design and testing, however, given that the expectation of the testing process was to provide indicative feedback and that the participating students were bound by time constraints of their own, the partial range of activities was regarded as being sufficient.

The testing session was divided into three parts.

1. The first part of the testing would involve the students working in pairs to correct a range of errors in a piece of written text. The incorrect and correct versions of the text are attached as Appendix B & C respectively. After thirty minutes the corrections were identified and briefly discussed, as a class, to ensure that:
 - a. the students could see which of their corrections were either correct or incorrect, and,
 - b. to ensure that each pairing had a corrected version of the text.
2. The second phase involved students testing the ‘Missing Word’ activity. This activity was based on the entire text that was corrected during the first session. The text contains slightly less than 400 words. For this test the missing word counter was set to ‘ten’ resulting in every tenth word of the text being masked. The setting of the counter meant that there were thirty-eight words missing from the text and that they were not all of the same type, i.e. not all verbs or nouns for example. Since this section of the

⁵⁸ Composed texts were written by Murphy, E. – lecturer of te reo Māori at the University of Waikato

⁵⁹ The School of Māori and Pacific Development

⁶⁰ Last accessed September 20, 2009

testing was targeted to be completed in a forty minute timeframe, the replacement of thirty-eight words was deemed to be a reasonable expectation within the available time. It should be noted that the copies of the corrected text were collected and held separately prior to this phase. The completion of this exercise, therefore, meant the students had to have a reasonable understanding of what was contained in the text.

3. The third phase involved students testing the ‘Scrambled Sentences’ activity. A second text, attached as Appendix D, was used for this particular exercise. Sixty sentences from the text were used and the students were presented with three sentences at a time. The second sentence from each set was scrambled and students were required to re-order that sentence, using the first and last sentences, and their knowledge of correct grammar structures to guide them, before moving on to the next sentence.

The process was explained to the students who were then asked to work in pairs for the testing. Since there was no intention of comparing the results of each pairing, the students were able to select partners as they saw fit. Following the completion of the testing, the questionnaire, included as Appendix E, was completed by each student and some also provided oral feedback. The questionnaires were reasonably comprehensive and designed as the preferred option for capturing relevant information in five key areas:

- Language acquisition
- E-Learning
- Collaborative versus individual learning
- Suitability
- Difficulty and frustration

The summary of the completed questionnaires is used to supplement later discussion and this summary is included as Appendix F. Specific questions were included to ensure the participants understood the overall objectives of the research, the purpose of the testing, their role in the entire process, and the relevance of their feedback within the research. The first forty minutes of the

testing process was also captured on video, although, as mentioned previously, more audio was captured than usable video. The transcript derived from the video, describing what was happening during the testing, and including some of the comments that could be heard, is included as Appendix G and used to augment the discussion, where appropriate, in §5.4.

5.3.2 The participants

The Te Tohu Paetahi programme at the University of Waikato provides an immersion environment for students who are learning te reo Māori. Students undergo an application/interview process to secure a place on this programme and those who have higher levels of comprehension and fluency are normally placed in the advanced stream known as Rehutai. During the planning stages of this research, the 2009 Rehutai class were identified as possible candidates for a sample group that would test our FLAX-based activities. This was because these students were deemed to be:

- an already insular sample
- committed to an immersion environment on a daily basis
- learning te reo Māori
- primarily Māori
- able to augment their in-class study with the programmed exercises
- likely to be sympathetic to the basis of the research.

An application was lodged with the Ethics Committee of Te Pua Wānanga ki te Ao to approach this group of students with a view to soliciting their assistance in the form of performing certain online activities. The application was duly approved and, following some negotiation with the Rehutai lecturer⁶¹, an overview of this research was presented to the students. The presentation is attached as Appendix H and is an abridged version of a presentation given to a Māori Graduates conference September 4, 2009 at the University of Waikato. The students agreed unanimously to support this research by testing the online exercises and providing feedback both verbally and by completing the questionnaire. The consent form template is attached as Appendix I.

⁶¹ Murphy, E.

The group consisted of sixteen students, of which seven were female, all of whom were under the age of 25. Of the males, six were under 25 years of age, one in the age range 25 to 40, and two were over 40 years old. One of the students was enrolled in a Bachelor of Science degree. The rest were enrolled in a Bachelor of Arts degree with a subject major of te reo Māori. Note that the age range and gender of the testing group were captured only as a potential means of explaining unexpected 'spikes' or anomalies, should they occur, in the feedback.

5.3.3 The feedback

In the first section of the questionnaire all of the participants indicated that they generally understood the nature of this research, they were clear on the purpose of the testing, and they understood what was required from their role in the testing. Although the majority completed the exercises, slightly more than half (62.5%) agreed that the exercises were easy while the same ratio agreed that the level of difficulty they encountered in the exercises was what they expected. Only half agreed that their frustration levels were low and no-one disagreed that they really had to think about their answers. 75% of the participants, however, completed the exercises feeling they could have done more. Less than half (44%) of the respondents agreed that it is possible to learn a language using these types of exercises, half agreed that these activities are only useful if there is also face-to-face teaching (31% were unsure), but, surprisingly, 93% agreed that the activities are a useful language learning tool. Most of the group agreed that more exercises and different types of exercises would be more beneficial (86% and 93% respectively).

In section two, the written feedback, 25% of the students cited the Internet as a resource for their study of te reo Māori outside of the classroom. Most of the out-of-class learning involved reading, television and general conversation with friends and family. The majority of the students indicated that the types of activities that they tested were beneficial for learning sentence structures, grammar and punctuation. Only one student saw no benefit to completing online exercises more than once or twice per week while 79% saw benefit in performing

the exercises between three and four times per week. More value was attributed to using these types of resources at home or as tutorials and most students (69%) saw more benefit in these exercises as a resource that could be used for self directed study. The feedback appeared to be evenly divided as to whether or not the resource provided the most benefit to the individual or to the collective. In the case of the resource being suitable for the individual, reasons were given that ranged from the ability to complete exercises at your own pace, avoiding embarrassment for mistakes in front of others, to never having to fight for the mouse, keyboard or chair. Conversely, the ability for discussion and sharing and for helping each other through difficulties were proffered as reasons for using the activities in a more collaborative environment. In terms of embarrassment, when asked that question directly, less than one quarter thought that being embarrassed in front of classmates was a valid hindrance to learning.

Other comments included:

- the activities need to be easy, functional and accessible
- inputting by keyboard can be cumbersome, slow, and frustrating
- very efficient in terms of answers and feedback
- the answers need to have some flexibility [i.e. uses of synonyms]
- vital concepts such as wairua and whanaungatanga are lost [in an online setting]
- the exercises can be tailored for learners at all levels
- would be good for learning the small words like 'i' and 'ki'
- it is possible to solve the problems but not get the learning
- a good way to learn and practice 'a', 'o', 'ā', 'ō' differences
- if it is too hard to use it gets in the way of the learning
- could be useful as a tohutō exercise
- after a couple of attempts we just guessed until it was correct

It is evident that some thought and effort had been put into the feedback and some very insightful comments were received as a result. This feedback is discussed in the following section.

5.4 Discussion

The students embraced the exercises in a variety of ways. In some areas the discussion was quiet and in other areas quite loud. At various times one or two participants would break into song and were sometimes joined by others. Laughter and displays of mirth peppered every activity. It was evident that the students were very comfortable in each others' presence. It was also clear that there was quite a diverse range of learning styles with some students engaging sporadically, others staying with each task for the duration, and others at various levels in between. Even so, it is fair to say from the initial observations and from the review of the video footage that the students certainly embraced their roles as testers without reservation. It is possible, even probable, that this was because it was something different and a change from their normal day-to-day environment. It may also be due to the new tools such as the online activities and the use of technology, or a combination of these factors. What is certain is that the feedback was considered and most useful.

Practice versus learning

The characteristics of the FLAX activities suggest that these types of activities would have more benefit to students as tools that allow them to practice what has been covered in face-to-face classroom settings, rather than as a means to learn a language. The feedback from the user group supports this in that they generally applaud the efficiencies, such as immediate feedback in the form of correct or incorrect answers, but, as a majority, agreed that the activities were more beneficial for learning sentence structures, grammar and punctuation than actual language learning. Furthermore they largely identified interactions spoken in Māori, such as talking with mates, practicing speech with family, watching and listening to Māori broadcasts and listening to cassette tapes and fluent speakers, to be a preferred method of out-of-class study. This sentiment is consistent with the summarised principles of Kaupapa Māori pedagogy (§5.2) that advocate relationships and oral and aural interaction. It also implies that the respondents sensed the usefulness of communicative approaches to language learning even if they were unaware of the theory⁶².

⁶² That the students were unaware of communicative learning theory is an assumption made by the writer

Usability and suitability

Half of the students responded to the questionnaire citing levels of frustration. Comments were received stating the need for the activities to be easy, functional and accessible and tailored in ways that promoted the learning rather than activity. Roa (2006) cited similar findings:

Users took issue with the difficulty of the language: ‘You have to think really hard, and you don’t want to have to do that when using a program like this!’ ‘A first-year second-language learner would be completely lost’ (p.77).

Computer-aided language learning resources are prone to usability challenges that can make learning experiences frustrating, inefficient and unsuccessful (Zaphiris & Zacharia, 2006, p.vi). Where instances of frustration and difficulty become too high, the learner is prone to give up because, in the words of one of the testers, “if it is too hard to use it gets in the way of the learning”.

It was interesting that concepts that were prevalent in the Kaupapa Māori pedagogy discussion were also found in the questionnaire responses. Almost all of the respondents saw value in conversing and listening to other users of te reo Māori especially in settings that involved family and friends. The importance of ensuring that concepts such as wairua and whanaungatanga were not lost when learning te reo Māori online was raised, an issue also identified by Te Puni Kōkiri & Te Taura Whiri i te reo Māori (2003) who assert that “Most Māori language courses currently teach the language in isolation from the wider picture of Māori language revitalisation, and second-language learning processes” (p.27). The need to account for the different learning styles and engagement levels that were evident during the testing process is also an important point to remember.

Some of the feedback referred to design issues. That the exercises needed to be ‘easy’ and ‘tailored for all levels’ really points to ensuring the activities are relevant to the learners and the learning objectives. Comments such as ‘inputting

by keyboard can be cumbersome, slow, and frustrating' can be addressed within the design, for example, by providing options that can be selected by a mouse click. Future design will also need to address such things as allowing flexibility in acceptable answers, such as synonyms, and situations where users resort to guessing rather than engaging with the material thoughtfully.

There was really no clear frontrunner on whether these activities are better done individually or collaboratively, although the responses around the individual were more aligned with convenience in terms of completing the activities in one's own time and not having to compete for the resources. The responses that advocated collaboration focussed on the interactive benefits of learning in groups, mostly referring to being able to engage in discussion that would to help each other and lead to mutual learning.

In conclusion, the respondents were generally ambivalent regarding the usefulness of the tested activities as language learning support resources and very divided as to whether or not one could actually learn a language using these exercises. They were, however, fairly united in agreeing that more exercises of different types would be more beneficial and then practically unanimous (one person wasn't sure) that the activities were a useful language learning tool. Given that the majority confirmed an understanding between language practice and language acquisition, it appears they were quite sure that there would be difficulty in learning a language using the types of activities that were tested. With some adjustments, however, mainly in the form of more or different activities, these activities could then become useful language learning tools.

Chapter 6

Digital library activities for language learning: Issues and possibilities

6.1 Introduction

The availability of a wide range of computer-assisted language learning activities raises more issues than it resolves. Some of these issues have been discussed in previous chapters. The issues and possibilities arising from the use of activities based on digital libraries for learning te reo Māori present some interesting challenges for educators, learners and system designers. For instance, the design and delivery of systems for learning te reo Māori needs to encapsulate and combine a Māori world view with effective language learning techniques and principles. The characteristics of kaupapa Māori pedagogy and communicative learning theory must underpin the construction and presentation of activities designed for learners of te reo Māori. This chapter raises a set of issues and possibilities, arising from the research, that are by no means intended to be presented as complete or prescriptive, but rather, as viewpoints that should be considered by designers and educators intending to provide online activities for learners of te reo Māori.

6.2 Te Ao Māori (A Māori world view)

Activities designed for the learners of te reo Māori must embrace Māori cultural values in order to ensure that learners are able to communicate accurately and appropriately in social and formal situations. According to the E-learning Advisory Group (2002), “the development of e-learning in New Zealand must take account of trends such as the demand for cultural authenticity and identity by Māori learners and the emergence of dynamic Māori language and Kaupapa Māori learning environments” (p.36). This group also advises that:

New Zealand’s e-learning environment must provide a setting where Māori approaches to life and learning can be fully realised. For example, Māori educational aspirations often tend towards advancing

communities, rather than individualistic goals. We must ensure that e-learning developments enable this to happen (p.32).

6.3 Ownership

In terms of online resources for learning te reo Māori it is essential that Māori have a voice. To accurately apply kaupapa Māori concepts that are culturally-centred, expertise must come from within the Māori community. Cunliffe & Herring (2005) consider that:

The notion that the community must ‘own’ the application or technology is particularly crucial when considering issues of linguistic and cultural integrity. According to this view, minority language communities should not be viewed simply as underprivileged or as passive recipients of technology; they have the potential to be active shapers of this technology, able to create their own tools, adapt existing tools to the local needs and create culturally authentic, indigenous content (p. 132).

They further contend: “Thus it is no longer sufficient to think in terms of design *for* a community or design *with* a community; rather design *by* the community should be the model” (p.132). This is a concept that Nichols, Keegan, Bainbridge, Dewsnip, & Witten (2005) extend saying: “Digital libraries have a crucial role to play in the preservation of international cultures in general and minority languages in particular. Libraries and their close relatives, museums, have always been involved in preserving culture” (p.1).

6.4 Learning approaches

Contemporary approaches to language learning emphasise the effectiveness and appropriateness of communicative learning theory and kaupapa Māori pedagogy. These approaches are learner-centred, embrace the culture associated with the language, and focus on the accurate and appropriate use of the language. Therefore the presentation and use of computer-assisted language learning

resources must be cognisant of, and designed to include, the features that these approaches suggest as being of critical importance.

Blandford & Buchanan (2003, p.8) observe “In the longer term, a deeper understanding of user behaviours and user needs, and user-oriented design techniques will be necessary. Arguably this will demand a paradigm shift in the ways digital libraries are designed and deployed”. Houia-Roberts (2006, p.31) declares that those involved in Māori education need to move past the immediate needs of current students and think beyond the current imperatives to ensure initiatives are thoughtfully planned for longer term successes. The New Zealand Council for Educational Research advocates the need for further development to serve the needs of learners and quote part of the report from the E-learning Advisory Group (2002) “New Zealand needs an e-learning vision that fits within the overall vision for learning in the tertiary sector and is underpinned by a learner-centred approach. Technology alone will not serve our goals” (NZCER, 2004, p.5).

Furthermore, according to the E-learning Advisory Group (2002):

An effective e-learning strategy must be more than technology itself and web content. It also relies on critical factors such as building a learning culture, supportive leadership, utilising an appropriate business model and integrating the e-learning strategy throughout an organisation (p.40).

6.4.1 Engagement

There is little point in providing activities that don't encourage participation or learner engagement. Designers must use content and design in ways that ensure learners take part in the learning activity. Furthermore, the activities need to be presented in ways that ensure the learners remain meaningfully engaged. According to the English Language Institute (ELI) (1991), the use of good techniques will encourage learners to engage with and process the material in a thoughtful way (p.2). Additionally, “The learners must want to pay attention to the message. For this reason, the messages must be interesting and must involve

the learners, so that the listening becomes a truly active process” (p.12). The NZCER (2004) adds “Weaving e-learning into existing teaching and learning practices adds more ways for students to be actively and deeply involved with subject area materials” (p.vi).

The Institutes of Technology and Polytechnics of New Zealand (2006) build on themes embracing learning communities that engage students in community-building activities. They suggest:

Activities could involve the following:

- Setting up online skills exchange in a dedicated forum so *akonga (students)* can deepen links later. (This resource aims to share skills and knowledge throughout the group).
- Early networking so that future problems, queries and issues (technical or related to teaching and learning) can be settled within the group with minimal input from the facilitator.
- Using other technologies such as landlines, cell phones and email for *akonga* to keep in touch.
- Regular online tutorials (p.49).

They also advocate regular face-to-face contact, and suggest the inclusion of *kaumātua (elders)* in this setting. At the end of the course a *poroporoaki (farewell)* should be conducted, either face-to-face or by using a community chat room (p.43). The Ministry of Education (2007) also advocate an active engagement as a means to successful language learning.

Students reach higher levels of competence in te reo Māori when they are actively engaged in the language, that is, when they are taking part in tasks related to subjects that they find genuinely interesting and relevant. As students learn to use te reo Māori with increasing accuracy and appropriateness in relevant, meaningful contexts, their confidence and proficiency will grow (p.11).

As proficiency and confidence increase learners will be less likely to feel embarrassed or be reticent about using the language in social settings (§6.4.2).

6.4.2 Whakamā (embarrassment)

The majority of feedback from the group of student testers suggested embarrassment should not be permitted to adversely affect the learning of te reo Māori. They suggest that this is something students should face and overcome themselves supported by the class and teacher. It could be that this groups' higher levels of proficiency with the language foster this general mindset, but even so, almost 20% of them suggest that computer-assisted learning would be useful and beneficial for those who may have a fear of making mistakes with the language in front of others. With regard to fear of making mistakes Selby (2006) observes:

The fear of failure, especially for Māori learning their own language, can create a high level of anxiety. Since language learning typically involves engaging with others in order to practice and progress, errors are committed in what can be seen as a very public arena. The fear of being exposed in front of peers, children, elders, family and so on, can have quite an impact on the learner. For most learners, feelings of embarrassment, inadequacy and ignorance can impact negatively on the ability to learn effectively. For some, the fear of failing publicly is enough to prevent them from engaging in the learning program at all. For these reasons, an e-learning environment presents some interesting possibilities (p.79).

and,

It was found that learning in the context of an e-learning environment [for the teaching and learning of an aspect of *te reo Māori*] in which anonymity was assured, learners could learn in their own spaces and at their own pace and there was no pressure to perform in front of peers and tutors had the potential to reduce the potentially negative effects of *whakamā* [*sic*] (p.79).

6.4.3 Interaction

There is little doubt that there is much material available online that could provide useful resources for language learning. The manner in which these resources are presented, however, and the ability of students, instructors and administrators to interact meaningfully with them, and with each other, is a consideration that is as important as the quality and availability of the material itself.

Conversely, Selby (2006) states “This work is in its infancy but early indications are that there is much potential in a language learning environment which offers limited contact with others, is self-directed and contains manageable learning chunks” (p. 85). With regard to a one year project begun in September 2004 by a research team at Te Wānanga o Raukawa, New Zealand, Selby (2006) cites the success of language learning where students “were able to learn without a tutor in an e-learning environment” (p.84).

The NZCER (2004) believe effective teaching and effective learning do not happen automatically. They caution against approaches that simply place course resources online with no access to interaction with a teacher.

Such courses have high drop-out rates because the electronic transfer of information to learners, while efficient in some respects, does *not* give adequate support for their learning. Rather, e-learning courses need to be planned for, and grounded in an understanding of the roles of teachers and learners, and of how students learn (p.19).

Moodle (2009b) advocate:

- An activity-based model that guides participants through learning paths.
2. We learn particularly well from the act of creating or expressing something for others to see
 3. We learn a lot just by observing the activity of our peers
 4. A learning environment needs to be flexible and adaptable, so that it can quickly respond to the needs of the participants within it (pp.1-3).

Discussions in earlier chapters indicate the need for students to interact communicatively in order to effectively learn and use the language. While this interaction may not necessarily include other people, some form of interaction is certainly a requirement for language learners who aim to express themselves appropriately and accurately in the language they are learning. Digital library technology is certainly able to cater for various types of interaction that could include the use of audio and video activities, conferencing and networking, chat functionality and Internet-based telephony such as Skype. Skype allows communication between two or more users, over the Internet, in the form of audio and video conversation, file transfers, text chat, video chat and videoconferencing (TechTarget, 2009a, p.1).

6.5 Legitimate resources

The burgeoning nature of online learning resources, in ways that do not conform to universally recognised standards, has generated broad diversities in quality and content. According to the E-learning Advisory Group (2002) “A wide range of quality is already evident in web-based courses overseas, ranging from information dumped on-line without any quality check to highly-supported interactive learning experiences” (p.24). De Szendeffy (2005) discusses the widespread use, variety of media and global accessibility:

Computers are playing an increasingly important role in second and foreign language instruction as they are in virtually all fields of instruction. No longer a specialty among a clique of language teachers, computer use for instruction is widespread. The *digital* format of audio, video, images, and text (*multimedia*) enables a student to randomly access practically limitless pedantic and authentic models of target language materials and, through the Internet, do so from any connected computer in the world (p.3).

As the design, application and degrees of use advance computer technology from tool to tutor, perceptions are high, with some validity, that a lack of consistent

resource quality and content control outweigh the benefits that such resources can potentially provide. The E-learning Advisory Group (2002) note:

However, there are considerable differences of opinion among academic staff about the potential of the new technology and whether it should be used to enhance existing teaching practice or to revolutionise it. The Internet could be used simply to dispense information and course notes or it could be the platform for a teacher-led tutorial or an interactive experience which may not include academic staff directly at all (p.24).

The Group assert many teachers have general concerns about the validity and quality of learning using online resources. “These concerns are reinforced by the lack of agreed standards for academic quality and resource development” (E-learning Advisory Group, 2002, p.13).

6.5.1 Training

It is important to realise that effective language teachers are not automatically effective in e-learning situations. The E-learning Advisory Group (2002) state:

It needs to be acknowledged that many, if not most, academics have no training in e-teaching. Unfortunately teacher competence in a traditional campus environment does not automatically translate to success as an e-educator in a very different environment (p.42).

Kassen & Higgins (1997) ask the question: “How can teachers gain the skills necessary to make effective use of technology to enhance their students’ learning?” (p.264). Holmes (1999) further cautions that how the information resources are used is equally as important as the availability and declares that “[to] dispel the illusion that the computer by itself can educate, computer professionals need to press for reforms that properly exploit digital technology in the classroom” (p.1). Leloup & Ponterio (2000) contend:

Ultimately, it is incumbent on the foreign language teacher to integrate these tools into the curriculum in a pedagogically sound and meaningful way. Clearly, target language communication and cultures are easily accessible through current and emerging technologies, and information about using these resources is readily available online (p.2).

It seems doubtful that a single profession, such as a computer professional or a foreign language teacher, would successfully implement valid computer-assisted language learning exercises. Rather, it may well be the case that the successful design, implementation and use of online language learning activities would be more likely to result from the collaboration of a wide range of experts (§6.6).

6.5.2 Content

Teachers are normally able to have some measure of control regarding the electronic learning activities that are selected for their courses and, in some cases, can also have input into the design of relevant customised activities. In general, however, teachers tend not to have the technical skill and knowledge that is necessary to design and administer such activities and courses themselves - especially when they are website-based. Since digital libraries are focussed collections (Witten & Bainbridge, 2003), content is always able to be relevant. Cunliffe & Herring (2005) declare the importance of relevant content:

[W]hen minority language communities have appropriate tools to create content, the possibilities expand beyond simply consuming Internet content or communicating through email and chat: Minority speakers can increase their languages' online presence with content that is aligned to their communities' needs and aspirations (p.132).

In terms of digital library software, Cunliffe & Herring (2005, p.134) discuss the necessity for Indigenous peoples to have control of content: "A major motivation behind the Greenstone project is the distribution of the *capacity to create collections* rather than collections themselves, allowing indigenous peoples to have an active role in the preservation and dissemination of their own culture."

6.6 Design

The design of online language learning activities needs to address a host of issues, some of which are mentioned here, and should include the collaborative efforts of a range of relevant specialists and experts. In terms of digital library building, for instance, it may not be enough to combine the expertise of a librarian and a computer programmer. Blandford, Stelmaszewska, & Bryan-Kinns (2001) cite many cases, relating to this example, where decisions taken by computer scientists and librarians have had unanticipated consequences (p.10). Neal & Collier (2006) have identified:

[T]hat a significant factor in the successful application of e-Learning techniques in the case of Māori learners is the relationship between individuals who understand *kaupapa* Māori and those who understand e-Learning. Within the context of respect for one another's different knowledge, skills and understanding, participants can build new knowledge, skills and understanding, learning from their experiences and continuing the improvement cycle together (p.72).

Additionally, the use of multimedia has the potential to enhance the learning process by enabling communicative interaction for language learners. This is also an observation made by Lafford & Lafford (1997):

More recently multimedia capabilities have broadened the scope and enhanced the potential application of computers in foreign language education by providing useful student-centred learning environments with cultural presentations and interaction tailored to the needs and interests of individual learners (p.215).

This is a view shared by Morrison (2002) who declares:

A wide range of basic language skills can be enhanced with the use of Web-based activities. Vocabulary practice, grammar lessons, comprehension exercises, reading and writing tasks, and even

pronunciation exercises can be put on the Web and made interactive (p.1).

Oral and aural transmission is critically important for language learning and must therefore be considered a significant development priority for designers of e-learning activities for language learners. Pretorius & Bosch (2003) assert:

Moreover, given that humans interact and communicate most easily and effectively by means of natural language, either spoken or written (i.e., the auditory and vocal and the visual modalities), we must recognise and acknowledge the fundamental role that natural language plays in HCI⁶³ (p.57).

6.7 Summary

This research highlighted a set of issues regarding the use of a digital library to teach te reo Māori. These issues were:

- building the digital library, in the first instance, must be done from a Māori point of view, involve Māori and be designed by Māori.
- the activities must be designed to embrace Māori cultural values
- the activities must be learner-centred and focus on the appropriate and accurate use of the language
- the activities must be designed and presented in a way that ensures learners participate, and are engaged in, the learning
- methods of useful interaction must be incorporated into the design
- further research and design interrogation will be necessary to provide a valid learning resource
- educator training needs to occur for e-learning environments
- design, content and presentation are critical areas for success

It has also revealed some possibilities:

⁶³ HCI- Human Computer Interaction

- tailored activities will ensure teaching methods match learning styles
- the activities can be tailored to suit Māori
- the accuracy and quality of the content can be assured
- activities are reusable and content can be dynamic
- the content can be focussed on the target audience e.g. Hapū, Iwi
- the libraries can also be used as a cultural repository
- the provision of learning activities will involve a wide community and a variety of experts
- the concept of about Māori, by Māori, for Māori is intrinsic

A list of summarised principles of kaupapa Māori pedagogy was derived in *Chapter 4* (§4.5). The principles were:

- by Māori for Māori
- cultural-centred learning - a holistic Māori world view
- legitimacy of Māori and Māori aspirations
- learner-centred and culture-centred teaching
- interactive and relationship-centred
- aural and oral transmission

Interestingly, each of the issues raised in this chapter, in some way address at least one of the above principles and each of the principles are discussed by at least one of the sections in this chapter. In terms then of designing relevant computer-assisted language learning activities for te reo Māori, considering each and all of the principles and the issues raised in this chapter, would appear to be an initial step in the right direction.

Chapter 7

Conclusions

7.1 Language learning activities based on a digital library

The current FLAX activities, in their present format, are unsuitable for learning te reo Māori in an electronic setting. Even though digital libraries are an unrivalled electronic resource, and as a repository, have the capability to intelligently store a vast amount of information, in varying types of medium, current examples of language learning activities using digital libraries have been found to be wanting. It has become clear that these activities currently reflect the attributes of practice tools rather than effective language learning tools. They do not account for Māori in any discernible way, nor do they reflect aspects that would encourage Māori to engage with a view to meaningful learning experiences. As mentioned earlier in this thesis, these shortfalls are not surprising given that the project and the activities are targeted toward International students who are learning English as an additional language.

According to Leloup & Ponterio (2000, p.2), “The Web is so extensive that good tools are needed to help us find authentic materials that correspond to the topics of the foreign language curriculum.” Digital libraries can be regarded as tools that provide a knowledge platform from which a range of options can be explored. For example, the capacity of digital libraries to store all sorts of taonga (*objects that are special to a whānau, Hapū, Iwi*⁶⁴), complete with functionality that streamlines the more mundane processes of organising, searching and retrieving, provides a resource that can be tailored to individual communities, including Hapū (*communities*) and Iwi (*nations*). In terms of the learning activities that can be based upon this resource, one soon realises that because the content can be tailored to suit the target audiences, any sort of activity based on the tailored content will have meaning and relevance.

⁶⁴ Taonga - normally translated as treasure but in this context refers to whakapapa (*genealogy*), history & heirlooms

7.2 A recommended course of action

A great deal of work remains if the activities based on a digital library are to be used effectively for learning te reo Māori. Further research will be needed to determine the best concepts, features and design that will result in activities which are learner-focussed, culturally-centred and interactive. In effect, to develop standalone resources that can be said to be usable as true language learning instruments for te reo Māori. It is critical that design and development captures the features of effective language learning for Māori, as discussed as part of *Chapter 4*, and addresses the issues raised in *Chapter 6*. It will be important that the activities can be defended as being pedagogically sound, from a Māori point of view, while embodying contemporary language learning approaches within an electronic environment. It will be even more important, however, to ensure learners participate and become appropriately engaged.

7.3 What are the benefits for learners of te reo Māori?

Some of the shifts in thinking will create benefits that go well beyond the more obvious aspects of availability and accessibility of a customised resource. For example, te reo Māori learning activities that are designed and presented by Māori, and that embrace a Māori holistic world view, reaffirm a legitimacy and viewpoint that says it is a totally valid proposition that Māori want to learn and to aspire as Māori. What is more, no-one's permission needs to be sought to do so.

7.4 What are the types of activities that can be created?

The FLAX activities that were tested and analysed were created previously for a separate target audience. This research question was not answered from the research because there are many issues that need to be addressed prior to designing and building learning activities (§7.2). Determining the types of possible activities will more likely result from defining appropriate design, presentation and learning methods.

7.5 Shortfalls and limitations

This research suffers limitations of its own in that it is largely based on an existing model that has not been designed with Māori, or learners of te reo Māori, in mind. Furthermore, the types of digital library-based activities that were available for testing and consequent analysis were really only a small sub-set of the full collection, which, currently, is also limited in its variation and application. As such there has really been no point in undertaking and in-depth comparison with other learning management systems that are offered online.

7.6 Future research opportunities

Further research needs to address the issues that have been raised within this thesis. The development, design and presentation of the te reo Māori learning activities must occur with te reo Māori, Māori culture, and Māori learners as the central focus.

Consideration, for further research will also need to be cognisant of initiatives that are currently in action. Two examples are:

- the development of a natural language parser that will enable the identification of various parts of Māori language, such as verbs and nouns, and make the language immediately recognisable to the computer
- the development of a machine translation tool that will automatically convert electronic text, whether it be in the form of web pages or text documents, from English into Māori

Both these initiatives are expected to require at least the next two years to realise.

According to Cunliffe & Herring (2005), a non-exhaustive set of issues in need of further research might include:

- How does interface design influence language behaviour, e.g. how can design be used to promote minority language use in bilingual contexts, or to better support users accessing content in their non-native language?

- What are the costs and benefits of technology compared with other revitalisation methods, and how do open-source and indigenous production influence these factors?
- How should the impact (whether positive or negative) of technology on minority language use be measured and quantified?
- Should technology be included as a factor in existing typologies of ‘threatened’ language status, and if so, how? (p.136).

In the short term, however, the focus should be more about appropriate content, design and presentation of the learning activities. “E-learning can improve understanding and encourage deeper learning, if there is careful course design and choice of technology in relation to learning objectives that aim to encourage deeper learning” (NZCER, 2004, p.vii).

7.7 In closing

The heading of an article in a recent newspaper caught my attention. The heading read “Online teacher training in a class of its own” McCarthy (2009) (I’m sure the play on words was intended). This particular training results in the acquisition of the Bachelor of Primary Teaching – Mixed Media Presentation at the University of Waikato. Students undertaking this course of study must find a local primary school that is prepared to act as the student’s base for the first eighteen months of the course. Each week students spend one day at the school and are also expected to complete a further thirty hours of readings and assignments that include online discussion forums. They attend three one week block courses each year concluding with an eight week block in the third year. Teaching practicum, where students are actively involved in teaching, occur each year. One can readily see that this course is delivered with a good deal of face-to-face instruction and daily contact with the target audience and, as such, is not strictly an online course (although much of the course resources are available online). Perhaps, in terms of designing language learning activities based on digital libraries, the balance of online delivery with face-to-face interaction is a logical next stage in the longer-term development of fully online language learning activities for te reo Māori.

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Appendices

Appendix A - Key Principles of Kaupapa Māori

The following key principles are sourced from the rangahau website, Rautaki Ltd (2009, pp.1-2):

Tino Rangatiratanga – The Principle of Self-determination

Tino Rangatiratanga relates to sovereignty, autonomy, control, self-determination and independence. The notion of Tino Rangatiratanga asserts and reinforces the goal of Kaupapa Māori initiatives: allowing Māori to control their own culture, aspirations and destiny.

Taonga Tuku Iho – The Principle of Cultural Aspiration

This principle asserts the centrality and legitimacy of Te Reo Māori, Tikanga and Mātauranga Māori. Within a Kaupapa Māori paradigm, these Māori ways of knowing, doing and understanding the world are considered valid in their own right. In acknowledging their validity and relevance it also allows spiritual and cultural awareness and other considerations to be taken into account.

Ako Māori – The Principle of Culturally Preferred Pedagogy

This principle acknowledges teaching and learning practices that are inherent and unique to Māori, as well as practices that may not be traditionally derived but are preferred by Māori.

Kia piki ake i ngā raruraru o te kainga – The Principle of Socio-Economic Mediation

This principle asserts the need to mediate and assist in the alleviation of negative pressures and disadvantages experienced by Māori communities. This principle asserts a need for Kaupapa Māori research to be of positive benefit to Māori communities. It also acknowledges the relevance and success that Māori derived initiatives have as intervention systems for addressing socio-economic issues that currently exist.

Whānau – The Principle of Extended Family Structure

The principle of Whānau sits at the core of Kaupapa Māori. It acknowledges the relationships that Māori have to one another and to the world around them. Whānau, and the process of whakawhanaungatanga are key elements of Māori society and culture. This principle acknowledges the responsibility and obligations of the researcher to nurture and care for these relationships and also the intrinsic connection between the researcher, the researched and the research.

Kaupapa - The Principle of Collective Philosophy

The 'Kaupapa' refers to the collective vision, aspiration and purpose of Māori communities. Larger than the topic of the research alone, the kaupapa refers to the aspirations of the community. The research topic or intervention systems therefore are considered to be an incremental and vital contribution to the overall 'kaupapa'.

Te Tiriti o Waitangi – The Principle of the Treaty of Waitangi

Pihama (2001) identified another principle to be taken into account within Kaupapa Māori theory: Te Tiriti o Waitangi (1840) is a crucial document which defines the relationship between Māori and the Crown in New Zealand. It affirms both the tangata whenua status of whānau, hapū and iwi in New Zealand, and their rights of citizenship. The Tiriti therefore provides a basis through which Māori may critically analyse relationships, challenge the status-quo, and affirm the Māori rights.

Āta - The Principle of Growing Respectful Relationships

The principle of āta, was developed by Pohatu (2005) primarily as a transformative approach within the area of social services. The principle of āta relates specifically to the building and nurturing of relationships. It acts as a guide to the understanding of relationships and wellbeing when engaging with Māori.

Appendix B - Ētahi tikanga Māori – text (with errors) for Phase I testing

Ētahi tikanga Māori – kei ngā hē e rua tekau mā whā [contains 24 errors]

KA NUI ngā tikanga Māori e āhei ana a tātou tamariki ki te ako. Me āta tohutohu, nōte mea ko ēnei whakatohutohu he mea āta waiho iho nā ō tātou tipuna mai anō, maianō. Ko ō tātou tipuna he iwi mōhio ki te tohu i a rātou taonga, i a Tatou kaihoki. Tēnā pea, ētahi ō tātou kei te pātai, he aha te painga o ēnei tikanga, o ēneitohutohu? Ko ō tātou tipuna i mua he iwi tūpato, he iwi whakapono. He iwi mōhio kite tiaki, ki te whakataka kai hoki.

E mea nei ētahi tikanga hei tirotiro, hei whiriwhiri, hei whakaaro iho mā tātou. Tēnā pea kei koutou anō ētahi tikanga .hei whakapiri mai ki ēnei.

Kia mahara ki ēnei tikanga anā haere koe ki te moana ki te mahi kai, ki te hi ika rānei. Ngā wāhine, kia mahara. Kaua rawa atu e hangahāngai, e pikipiki rānei i ngā aho a te tangata. Ko tēnei tikanga hoki e pā ana ki ngā āhua kai katoa a te tangata. Kāhore hoki te wahine e hāngai atu i runga o te tāne, e whakairi rānei i ōna kākahu i runga ake i te mātenga o te tāne.

Kia pai te tiaki i ngā toka hi. Kaua rawa atu e unahi, e poka ika rānei i runga i ngā toka. Kaua e mimi, e waiho toetoengā māunu rānei i konei. Kia pai te tiaki ngā toka kaimoana. Kaua e panga kota pipi, pāua, aha atu rānei ki ēnei wāhi. Kaua ngā kōhatu pāua e hurihuria, ka waiho. Me āta whakahoki anō.

I mua, kāhore te tuna e whakamāoritia i muri i te tōnga o te rā.

Mehemea ka whati ngā wae o te kōura i roto i te rua, me mau mai ki uta. Kei kitea te rua e te ika kai kōura, ka ngaro.

I ngā rā o neherā, anā ū te hāpuku ki uta, kia anga tonu te mātenga ki uta-kāhore ki te moana.

Ko te moki he tino ika. Nā, i ō tātou tipuna, kāhore tēnei ika e tapahia ana. Hei a tunu-puku tonu.

Ko ēnei tikanga katoa i tohungia e ō tātou tipuna hei mea kia toe ai ā tātou kai Māori. Ka kore ēnei tikanga e mahia, ka ngaro te kai.

Appendix C - Ētahi tikanga Māori – text (corrected) for Phase II testing

Ētahi tikanga Māori

Ka nui ngā tikanga Māori e āhei ana ā tātou tamariki ki te ako. Me āta tohutohu, nō te mea ko ēnei tohutohu he mea āta waiho iho nā ō tātou tīpuna mai anō, mai anō. Ko ō tātou tīpuna he iwi mōhio ki te tohu i ā rātou taonga, i ā tātou kai hoki. Tēnā pea, ētahi o tātou kei te pātai, he aha te painga o ēnei tikanga, o ēnei tohutohu? Ko ō tātou tīpuna i mua he iwi tūpato, he iwi whakaponu. He iwi mōhio ki te tiaki, ki te whakataka kai hoki.

E mea nei ētahi tikanga hei tiro tiro, hei whiriwhiri, hei whakaaro iho mā tātou. Tēnā pea kei a koutou anō ētahi tikanga hei whakapiri mai ki ēnei.

Kia mahara ki ēnei tikanga anā haere koe ki te moana ki te mahi kai, ki te hī ika rānei. Ngā wāhine, kia mahara, kaua rawa atu e hangahāngai, e pikipiki rānei i ngā aho a te tangata. Ko tēnei tikanga hoki e pā ana ki ngā āhua kai katoa a te tangata. Kāhore hoki te wahine e hāngai atu i runga o te tāne, e whakairi rānei i ōna kākahu i runga ake i te mātenga o te tāne.

Kia pai te tiaki i ngā toka hī. Kaua rawa atu e unahi, e poka ika rānei i runga i ngā toka. Kaua e mimi, e waiho toetoengā māunu rānei i konei. Kia pai te tiaki i ngā toka kaimoana. Kaua e panga kota pipi, pāua, aha atu rānei ki ēnei wāhi. Kaua ngā kōhatu pāua e hurihuria, ka waiho. Me āta whakahoki anō.

I mua, kāhore te tuna e whakamāoritia i muri i te tōnga o te rā.

Mehemea ka whati ngā wae o te kōura i roto i te rua, me mau mai ki uta. Kei kitea te rua e te ika kai kōura, ka ngaro.

I ngā rā o neherā, anā ū te hāpuku ki uta, kia anga tonu te mātenga ki uta-kāhore ki te moana.

Ko te moki he tino ika. Nā, i ō tātou tīpuna, kāhore tēnei ika e tapahia ana. Hei a tunu-puku tonu.

Ko ēnei tikanga katoa i tohungia e ō tātou tīpuna hei mea kia toe ai ā tātou kai Māori. Ka kore ēnei tikanga e mahia, ka ngaro te kai.

Appendix D - Ko Tāwhaki, te tohunga purei whutupōro – text for testing

Ki te hunga tauhou ki te kāinga nei, he wāhi mokemoke a Parahaki. He tāwhitiwhiti ngā whare, arā, ki te titiro atu, itiiti noa ngā tāngata. Engari anō ngā kararehe he maha. Ka kitea atu ngā momo hōiho katoa, pākākā, he aha atu, me ngā poaka "kāpene-kuki" me ētahi momo kāre e kitea ana i ētahi atu takiwā o te motu.

Nā te mea kua tae mai te makariri o te takurua, kātahi ka tino mokemoke rawa atu te āhua o Parahaki. Kua horahia he whāriki hukapapa ki runga i te whenua. Matotoru ana te takoto mai, mārō ana. Kei te auahi mai ngā ahi. Kei te whiti te rā. Marino ana te kāinga mokemoke nei.

I te tekau karaka i te ata, ka puta mai ngā tāngata. Ka haere ētahi ki te hopu i ō rātau hōiho. Ko ētahi kei runga i te rori e āta haere ana ki te takiwā o te kura o Parahaki. Kei te waha pēpi tēnā, kei te wīra tēnā i tāna. Kei mua ngā tamariki e oma haere ana, e haututū ana.

Ka roa, ka puta mai ngā mea eke hōiho. Kei te kōrerorero ētahi.

Ka mea ake a Ngāhehu, "E hoa Tāwhaki, e pēhea ana koe mō tō tātau tīma whutupōro? Me purei koe ākuanei."

Ka pātai a Tāwhaki, "Kei te purei koe?"

Ka whakahoki a Ngāhehu, "Me aha hoki, ko au tonu rā te tīma o Parahaki! Ka kore a Ngāhehu, kāre e wīni tō tātau tīma!"

Ka mea atu anō a Tāwhaki, "E tama, tō koretake noa iho! Mā te hau noa, kua hinga koe. Māku koe e whakaako ki tēnā mea ki te whutupōro. Ka kite ana koe i a au e purei ana, kua kite koe i a Hori Nēpia. Ka kite koe a te ahiahi nei!"

Ka kōrero a Tame, "Tērā pea ka matakū ngā tāhae nei i ngā tāngata nunui o Waihou. Ka kite ana kōrua, anei ke te nunui! Mō te mekemeke, koinā rātau!"

Ka ki ake anō a Tāwhaki, "E tama, kua koroua kē ēnā tāhae. Kāre he take mō te oma. Heoi anō tāu he oma, kāre e mau i aua tāngata nunui."

Ka kōrero ngā taitama nei, ā, ka tae ki te kura o Parahaki, kei reira hoki te papatākaro mō te iwi. Ka tae ngā motokā, ngā kāta, ngā hōiho, ngā mea haere mā raro, ngā wāhine waha pēpi, ngā kuia, ngā koroua, ngā taitama, ngā kōhine, ngā tamariki, me ngā kurī. Turituri ana i te nui o te tangata. Ehara kē tēnei i te wāhi mokemoke.

Ka tahuri ētahi o ngā pakeke ki te mahi hāngi, ki te tahitahi rīwai, ki te raranga rourou, ki te tapahi wahie, me ērā atu mahi mō te hāngi. Kei reira ngā taitama nei e mātakitaki ana. Ka kite tētahi o ngā pakeke i a rātau, ka kī atu, "E hoa mā, haere mai ki konei ki te tapahi wahie mō tā tātau hāngi."

Ka kōrero atu a Tāwhaki, "Ko Ngahehu te tohunga mō tēnā mahi! Māna e mahi!"

Ka mea ake a Ngāhehu, "He pai tonu tēnā, engari me haere a Tāwhaki ki te tahitahi rīwai."

Ka mea anō a Tāwhaki, "Kei te nui ngā ringaringa kei reira. Nē rā, wāhine mā?"

Ka kī mai ngā wāhine rā, "Haere mai, e Tāwhaki!" Ka kata ngā hoa o Tāwhaki ki a ia, ka ākina atu kia haere. Haere ana a Tāwhaki me te kōrero anō, "Ānei a Te Tomo rāua ko Tame hei mahi rourou. Kare hoki he mahi mā rāua!"

Ka oma a Te Tomo ki te tapahi wahie, ka haere a Tame ki ngā pūtia ki te tapahi miti. Ka mahia ngā mahi mō te rā nei, mō te ope whutupōro o Waihau.

Ko te kura o Parahaki, he mea hanga ki runga i te hiwi. He kura pakupaku, engāri he kura tino ātaahua. Tawhiti noa atu ngā motokā, ngā motorore rānei, ka kitea atu e ahu mai ana. Kei te titiro pērā ngā iwi o Parahaki, kei te whanga ki te tīma o Waihau.

Ka mea a Tāwhaki, "Kei te matakū pea te iwi nā ki a tātau. Kāore e haere mai kei patua e Parahaki!"

Ka kōrero ake tētahi, "Nā wai hoki tāu. Kare tērā iwi e mōhio ana ki te matakū. He iwi māia tērā mō te whawhai. Kei a rātau te mana me te wehi o tēnei mea o te tangata whawhai. Me tūpatō koe kei kāinga koe e te iwi rā!"

Ka kī mai a Ngāhehu, "Taihoa ka kite koutou i a Hori Nēpia e purei ana. Koinei a Hori, ko Tāwhaki Nēpia." Kātahi ka karanga a Te Tomo, "Arā te pahi! Arā te pahi o Waihau! Kei te haere mai!" Ka titiro te iwi ka kite atu ka koa ngā ngākau. Kua tae mai te manuhiri ki runga i te whenua o Parahaki.

Ā, ka roa, ka tae mai te pahi ki te kura, ka pōhiritia te ope, ka tangata whenua. Ka haere ngā taitama ki te whakatikatika i a rātau mō te tākaro whutupōro. Ko te kaiwhakahaere o te tākaro kei runga i te papatākaro e tū ana, e titiro ana ki tana wati, e tatari ana. Ko te tangata nei ko te kura māhita tonu. Pai ana tana tū mai i roto i ōna kākahu mā! Ka titiro anō ia ki tana wati, ka whakatangihia tana wīhara. Ka haere mai ngā kuia, ngā koroua, ngā wāhine waha pēpi, ngā tamariki, ā, ngā tāngata katoa, ki te taha o te whira tatari ai. Ka titiro anō te kaiwhakahaere ki tana wati, ka tangi anō te wīhara, ka whanga anō. Ka whanga hoki te iwi mātakitaki, me ngā kurī o Parahaki! A ka puta mai ngā tīma.

Ko Kaihuka te kapene o Parahaki, ko Hoani Muturangi tō Waihau. Ka haere ake ngā tīma. Ka pakipaki te iwi mātakitaki. Ka tae ngā tīma ki waenganui ka tū mai. Kei reira a Tāwhaki me ōna hoa, a Ngāhehu mā. Ko ngā tīma nei, he tīma tino karukaru nei ki te titiro atu. Kāre he putu o ētahi, kare he tōkena, anā he tāngari ngā tarau o ētahi. Ko ngā makawe o ētahi he pēnei i ō te wahine te roroa. He pāhau o ētahi.

Ka mutu ngā korero a te kaiwhakahaere ka tīmata te purei. Ka pahupahu ngā kurī. Kei te pai te tū a te hunga mātakitaki. Kua puta mai te pōro ki a Parahaki. Ka tīwaha a Ngāhehu, "Hōmai ki a au!" Ka hoaturia, ka oma te tāhae nei. Kei muri a Tāwhaki e whai atu ana. Ka oma kotiti haere a Ngāhehu, ka karo. Kātahi anō ka tāia e Waihau. Kei raro e putu ana! Ka rere atu a Tāwhaki ki te pōro, ka kīkia ngā ringaringa e te hoariri. Haere ana te pōro i tana haere. Ka whai haere ngā tāngata nunui o Waihau me te whakakorakora i te tīma o Parahaki. Ā, ka tae. E toru āWaihau. Ka kīkia te pōro, ka rima. Ka koa ngā iwi o Waihau, ka tarapeke ki runga, ka whiu i ō rātau pōtae ki te rangi. Ka karanga tētahi koroua, kāre e tino mōhio ana ki te reo pākehā, "Ka māna Waihau! Ka māna Waihau!"

Ka haere tēnā tākaro, ka haere. Ka mau anō a Ngāhehu ki te pōro. Pau katoa tana oma. I tana mahi kotiti haere ka āhua māraakerake te whenua o te hoariri. Ka rongō ia i te reo o Tāwhaki, "Hōmai ki a au, e hoa!" Ka hoaturia e ia. He mīharo, i mau i a Tāwhaki! Ka mea atu ia ki a Tāwhaki, "Haere Hori!" Ka oma a Tāwhaki, pau katoa tōna kaha. Kua kore e mau! Kua umere ngā iwi o Parahaki, kua tīmata te haka me te tarapeke ki runga. Kua tata ki te raina, ka hinga noa a Tāwhaki engāri

waimaria i hinga ki tua. Ka toru āParahaki. Ka haruru te whenua i te koa o Parahaki!

Ka kī atu a Ngāhehu ki a Tāwhaki, "E hoa, kāre a Nēpia e hinga noa iho pēnā i a koe nā! Tata tonu kāore koe i tae. Nā te aha koe i hinga ai? Nā te hau?"

Ka kata atu a Tāwhaki, "E hoa nā te tere o ōku waewae ki te oma! He tere atu ahau i a Nēpia, koirā au i hinga ai!" Ka mea anō a Ngāhehu, "Ki taku mōhio nā te hau noa iho koe i pupuhi atu! Anā hoki, me tarai anō koe."

Ka kī atu a Te Tomo, "Kātahi a Kuia ka tino pīrangi ki a koe, e hoa!" Ka kīkia e Kaihuka te pōro nei, kāre i whiti. Ka noho e toru ā Parahaki, e rima ā Waihau.

Ka haere anō te purei. Kua āhua ngenge ētahi. Kua tino tē ngā mea mōmona o ia tīma. Kua tīmata te whutupōro ināianeī, arā, ngā mahi ngau taringa, mekemeke, patu tangata. Ka purei, ā, ka whakangā, ko aua tarai anō.

Tangi mai ana te wīhara a te kaiwhakahaere ka purei anō. Kua tae mai te pōro ki a Parahaki. Kua riro anō i te tāhae nei, i a Ngāhehu. Ka hoatu ki a Te Tomo, ki a Tame, ki a Tāwhaki anō. Ka oma anō a Tāwhaki. Kua whakaaro te tīma o Waihau ka raru rātau i te taitama nei. Me tino karawhiu kia kore ai e kaha ki te oma. Ei, kātahi, ka karawhiua, ka tāia e tētahi, ka kīkia e tētahi anō! Kei raro te tia o Parahaki e mamae ana!

Ka tīwaha mai tētahi o ngā koroua o Tāwhaki, "Pokokōhua ma, me mutu ēnā mahi kōhuru! Hei, Rewheri puta dose wharas off da whira! Pokokōhua mā!" Ka kōrero atu tētahi o ngā koroua o Waihau, "Ko wai ēnā e pokokōhuatia nā e koe? Turituri koe! Waiho mā te kaiwhakahaere ngā kōrero!"

Ka kī mai anō te koroua tuatahi, "E kī, me turituri ahau!"

Nā tēnei, whawhai tonu atu ngā koroua nei me te kanga i a rāua anō. Ka rere mai te amapaea mā runga i tana hōiho ki te whakarata i ngā koroua nei. Kātahi ka tino hē rawa atu, kātahi hoki ka tino nui te whawhai. Kua whawhai hoki ngā hoa o Tāwhaki ki te tokorua nā rāua nei i patu tō rāua hoa. Ka rere atu te kaiwhakahaere ka rīria ngā taitama nei mō ā rātau mahi whawhai. Kāre ia i kite i te patunga i a Tāwhaki.

Ka tau te rongo-ā-marae i waenganui i ngā kaipurei, engari kei te mura te ahi i tāhaki. Hoihoi ana ngā awaawa o Parahaki i te whawhai nei. Ka tahuri te kura māhita ki te whakarata i ngā koroua pukuriri nei. Ā, roa noa atu ka pai anō, ka haere anō te purei. Kua totitoti haere a Tāwhaki engari kāore i whara kino. Ka aki ngā kāpene i ō rāua tīma. Ahakoa ngā mahi a tēnā tīma, kore rawa he tarai. Kua tata te mutu kua puta mai anō te pōro ki a Tāwhaki. Ahakoa te mamae kotahi atu ia mō te raina. Ka kī ake tētahi tangata o Parahaki, "Anei anō tā tātau tia e oma nei!" Ka whāia a Tāwhaki, ka mau, ka tāia ki raro. Koinā te mutunga o te tākaro a Tāwhaki, arā, a Tāwhaki Hori Nēpia!

Ka kite mai a Kuia e hikitia ana a Tāwhaki ki tahaki, ka aroha atu, ka huna i tōna kanohi kei kitea ōna roimata, te tohu o tona aroha nui mō te tāhae nei mō Tāwhaki. Ka hinga te toa o Parahaki, a Tāwhaki te tohunga mō te purei whutupōro! Hinga ana hoki te tīma o Parahaki, engāri i te hākari i muri iho pai ana te kai, te katakata, te kōrerorero a te katoa. Ka waiho ngā whawhai o te rā nei, hei kōrerorero mā rātau, hei kīnaki i ngā kai mō ngā rā i muri iho!

Appendix E - Questionnaire

Participant # _____

Research Project Title: “Using a digital library as a Māori language learning resource: Issues and possibilities.”

Please detail the tertiary qualification that you are currently studying toward. E.g. Bachelor of Science, Bachelor of Arts					
1. _____					
Please indicate age and gender					
2. under 25 <input type="radio"/>		25 - 40 <input type="radio"/>		40+ <input type="radio"/>	
Male <input type="radio"/>		Female <input type="radio"/>		Rather not say <input type="radio"/>	
3. Please rate how much you agree with these statements.					
	Totally disagree	Disagree	Neutral	Agree	Totally agree
			Don't know		
The purpose of this trial has been clearly explained to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understood what I was required to do during the exercises	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The activities were easy to do	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I successfully completed the activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The difficulty level of the exercises were what I expected	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The exercises made me think about my answers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
During the exercises my frustration levels were zero (or low)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I completed the exercises feeling I could do more	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. Please rate how much you agree with these statements.	Totally disagree	Disagree	Neutral	Agree	Totally agree
I understand the differences between language acquisition and language practice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The exercises are only useful if there is also face-to-face teaching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is possible to learn a language using these types of exercises	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The exercises stimulated my interest to learn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
More exercises would be more beneficial	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Different types of exercises would be more beneficial	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think these exercises would suit either an individual or group environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The activities are a useful language learning tool	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. How do you mainly study te reo Māori outside of the classroom?

6. How do you think that these exercises would benefit your learning?

7. Would it benefit you to complete on-line exercises more than once or twice per week?

Yes No

How many times?

8. Would these exercises best suit a group or singular situation? Group Individual

Why?

9. In what situations do you think these activities would suit someone learning te reo Māori? (Please tick all that apply)

In class Tutorial Self-directed While travelling At home Other

10. Please comment on the value of online learning for students who may experience embarrassment learning in front of others (*whakamā*).

11. Please comment on whether or not these types of exercises would be useful to learners of te reo Māori.

Appendix F - Summary of questionnaire feedback

The respondents

Gender	under 25yrs	25-40	40+	Total	BA	BSc
Male	6	1	2	9	8	1
Female	7			7	7	

Male - Q3.

	Totally disagree	Disagree	Neutral	Agree	Totally agree
The purpose of this trial has been clearly explained to me				8	1
I understood what I was required to do during the exercises				5	4
The activities were easy to do		1	4	2	2
I successfully completed the activities		1	1	3	4
The difficulty level of the exercises were what I expected		1	3	4	1
The exercises made me think about my answers			2	1	6
During the exercises my frustration levels were zero (or low)		1	4	4	
I completed the exercises feeling I could do more			3	3	3

Female - Q3.

	Totally disagree	Disagree	Neutral	Agree	Totally agree
The purpose of this trial has been clearly explained to me				2	5
I understood what I was required to do during the exercises				4	3
The activities were easy to do			1	3	3
I successfully completed the activities			1	3	3
The difficulty level of the exercises were what I expected		1	1	3	2
The exercises made me think about my answers			1	3	3
During the exercises my frustration levels were zero (or low)			3	1	3
I completed the exercises feeling I could do more			1	4	2

Male - Q4.

	Totally disagree	Disagree	Neutral	Agree	Totally agree
I understand the differences between language acquisition and language practice			3	5	1
The exercises are only useful if there is also face-to-face teaching		1	2	5	1
It is possible to learn a language using these types of exercises		2	2	4	
The exercises stimulated my interest to learn			2	4	1
More exercises would be more beneficial			2	2	3
Different types of exercises would be more beneficial			1	3	3
I think these exercises would suit either an individual or group environment				4	3
The activities are a useful language learning tool				6	1

Female - Q4.

	Totally disagree	Disagree	Neutral	Agree	Totally agree
I understand the differences between language acquisition and language practice			3	1	3
The exercises are only useful if there is also face-to-face teaching	1	1	3	1	1
It is possible to learn a language using these types of exercises			1	3	
The exercises stimulated my interest to learn			3	3	1
More exercises would be more beneficial				4	3
Different types of exercises would be more beneficial				6	1
I think these exercises would suit either an individual or group environment			1	3	3
The activities are a useful language learning tool			1	3	3

Q5. How do you mainly study te reo Māori outside of the classroom?

Asking others for help, like a teaching environment

Talk it

Reading the exercises in my book, using the internet, writing te reo, and listening to my Māori broadcasts (esp Te Karere, Te Kaea *me* Waka Huia).

Also practising with my wife and kids.

Talking to friends, Māori T.V.

Read notes, talk with as many as people e mōhio i te reo

Talk Maori to mates

Books, reading, kanohi ki te kanohi interaction. Television, hui

Read books, go over my homework

A waha [spoken]

Ngā rīpene [cassette tapes], kōrero ki aku tama [talking with my sons], ngā waiata me aku tama [singing with my sons]

Read books, television, internet dictionaries etc

Reading books and internet

With book the internet and my family

Speaking

Talking with other fluent language speakers, reading books, watching Māori tv

Books, internet, family, on the marae, television

Q6. How do you think that these exercises would benefit your learning?

Learning all the little 'ki's and 'i's

They make you really think about the structure of te reo

It is hard to tell, the benefit is that there are interactive exercises available, however I found I was trying to solve the exercises as opposed to learning and absorbing what I was seeing. For example, I did not feel I was understanding the language

Just showing the wrongs and rights of sentence structure

Would be of some help

It would make it better because it gives it a change in environment

Writing and reading skills only

By buying me a laptop

Au wa hoki [doesn't know]

challenging

a great deal, would help to remember vocabulary etc

They would majorly benefit, I didn't really think about these things before this

A lot cause there [they're] way harder than what we do in class

Sentence structures

It will help with grammar and punctuation. Extend on what is being done in class, it will help practice and exercise the knowledge learned in class.

Give me more resources to learn

Q7. Would it benefit you to complete on-line exercises more than once or twice per week?

Yes 13 No 1

How many?

3, 3+, 3, 2, 1, 4, 5 or 3, - 3-5, 3-4, every second day, 10, 2, 4, 3+

**Q8. Would these exercises best suit a group or singular situation? Group 7
Individual 4 Both 5**

Why?

They are competitive

If you were stuck on a question help would be nearby

Either all [or]. Depending on the exercise

Because you get more ideas when there are a few brains

Nā te mea ka taea te whakawhiti kōrero [able to discuss]

Because everyone can help each other to learn if one/some don't know

Because you can help each other out, but individually is good too

Fight over the mouse or keyboard – different answers [advocate for individual exercises]

I [it] will make it easy for me to learn what and how to complete [complete] it

Answer check are good because you can do it yourself, check it yourself and won't be embarrassed

You are able to do the exercises on your own at your own pace.

Q9. In what situations do you think these activities would suit someone learning te reo Māori?

In class 3 Tutorial 5 Self-directed 4 While travelling At home 4 All 7 other – at work 1

Q10. Please comment on the value of online learning for students who may experience embarrassment learning in front of others (whakamā).

This is a great program, if you are shy you need not worry becoz it is only you.

I am not sure. I found the threat of embarrassment was motivational to forcing me to learn.

There will be huge benefits because if there are tests for all levels, you can do it yourself

Good for homework situation

They just got to get hard embarrassment isn't an excuse

What is lost in online learning is the one-to-one interaction, despite online learning positives, this is it's own downfall, and it's a big one

Don't worry about anyone

Valuable because that person can correct themselves before being in a group environment

If you are embarrassed and don't feel that you know the answers you don't have to ask in front of the whole class

That it's private and not so open, if your not confidant than your not forced to do it like you may in class

It's really good but don't make it too hard

It's all self-directed and self-taught therefore there is not room for embarrassment

There's no need to feel embarrassment because you can do these exercises in the comfit of your own home.

Q11. Please comment on whether or not these types of exercises would be useful to learners of te reo Māori.

It benefitted me so I would have to agree, it would help.

I think they are useful, however they need to be easy and functional and accessible.

It is a very efficient method to use, better than reading and finding answers in the dictionaries, but sometimes inputting by keyboard is cumbersome, slow and frustrating. So it has good points and not so good.

Awesome

These would be useful but need flexibility with answers

It gives a change of environment, so yes is beneficial

These exercises would be beneficial for those learning, but for more advanced students, it would not be so helpful I think. There is only so much you can learn

online and the more important things such as wairua, whanaungatanga, this is lost and these concepts are vital in the learning of the language

Of course

Yes I think they would definitely benefit learners of te reo Māori

These exercises would be very useful. Good to have all levels of language skills also.

Yes!! They would. It's good because times a changing and reo has to keep up and stay alive

It's really good I can't think of anything else

Nice and easy for beginners

They will be useful as these exercises are easy to follow and also easy to use.

These exercises would benefit any learner at any level to learn te reo Māori

Appendix G - Video transcript of the activities testing

Te Mahi Tuatahi-Exercise One

E ngunguru ana te rere o ngā kōrero i te wāhanga tuatahi nei, e rāngona ana te kaha hāngai o te aro ki te mahi nei, engari, mō te kapo atu i tētahi kōrero ake, auare ake ana.

Kei te nui te whakawhitiwhiti haere o te kōrero, e rongō ana i ētahi e whio ana i ētahi wā, e paku waiata ana i ētahi wā, i te kōrero e piki ana, e heke ana. E rongō hoki ana i ngā ākongā e kotahi ana ki te whai i te mahi 1. Kāore ētahi i te rāngona e kōrero ana mō kaupapa kē. Tērā hoki ētahi reo Pākehā e tataua ana i ngā hapa kua kitea.

Kei te takoto kau te kāmera ki runga i te tēpu, ka mutu, kāore rātou i te kitea e mahi ana.

E rongō ana i ētahi e kimi ana, e patapātai ana inā kei te takoto te kupu, kāore ana tohutō, he tohutō rānei. E rāngona ana ētahi e kōrero ana ki ngā reo e rua.

Is it e mahia, or e mahi/ He tika tērā mea, o good one. Is it recording, kāore, e kapo ana i tō tātou reo.

Ko ērā e waiata ana, kei te rere pekerangi te tangi.

Kia kakama, kia hohoro, mahia ngā mahi

O shit, like what?

The camera is on, kei hea?

Kei a koe he moni i tō ---account.

This is mine.

Mahia ngā mea e rua. Create exercises.

Whakamāoritā,

E rongō ana i te kata.

E rongō ana i te ngahau o te mahi tahi i ngā mahi.

Kua tahuri tētahi ki te whāwhā i te kāmera.

Kei te rongō i a au e mea ana ki tētahi i tana huri atu ki tana imēra, he pai tō mēra?

Te kīhanga atu e rima mēneti kei te toe e Pāora, kua āta hāngai anō te titiro ki te whakatutuki i ngā mahi.

Kei te rāngona ahau e āta whakautu haere ana i tētahi pātai, engari, ko tētahi kei te waiata, ko te nuinga o ngā kōrero kāore i te āta māramatā ake te kōrero.

Kua tae ianei ki a Pāora e kōrero ana e māka haere ana. Kei te rongō i te harikoa. Ngā kōrerorero e haere ana mō ngā whakatikatika. Ka pai te wānangananga haere o ngā ākongā me ngā kata, me ngā hapa. Kei te nui te kata, kei te rongō i te kōrero, Turituri. Shhh, Kei hea tātou?

Is tātou or rātou, next one.

Kua hopukina atu e tētahi te kāmira, e mea ana kua e numinumi, nā Pita tēnei, ko Toko kei te mareti haere, heoi, atu i te tokorua nei, kei te hāngai te titiro o te katoa ki runga tonu i te mahi.

kei te pai tērā arā. Ko te tokorua kei te whakaatuhia e te kāmira, kei te kitea ahakoa te mārō o te whai i te tīmatanga kua huri kē ki te whawhewhawhe mō tētahi wā, ā, kua hoki mai ki te tiroiro.

Kei hea a Wiremu.

Kei te kitea anō nō taku tiki atu i te whakahaere i te mahi kua nui atu te ū a ngā ākongā ki te mahi inā rā te tere, ko au tonu ki te pānui, kāore he angoango e tupu ai te kōrero, e huri ai ngā whakaaro ki wāhi kē, engari kei te kotahi te titiro ki te mahi.

He aha te mahi, word guessing.

Kei te huri haere te kamera ināinei, kua kitea tētahi e purei kāri ana.

Kua tae ki ngā whakamārama a Paora mō ngā mahi e rua kei te haere.

Kei te ngunguru anō te karaehe i te mahi hōu nei, kua tukuna iho te kāmira kia hāngai anō te titiro ki te mahi hōu, kua tipu anō te katakata, ā, kei te nui ngā kōrero kei te rāngona e haere ngātahi ana, ka uaua ki te wāwahi, heoi, kei te rere ngā kōrero i roto i te pai me te ngahau ki te mahi tonu. Ai, kua tīkina anōtia te kāmira.

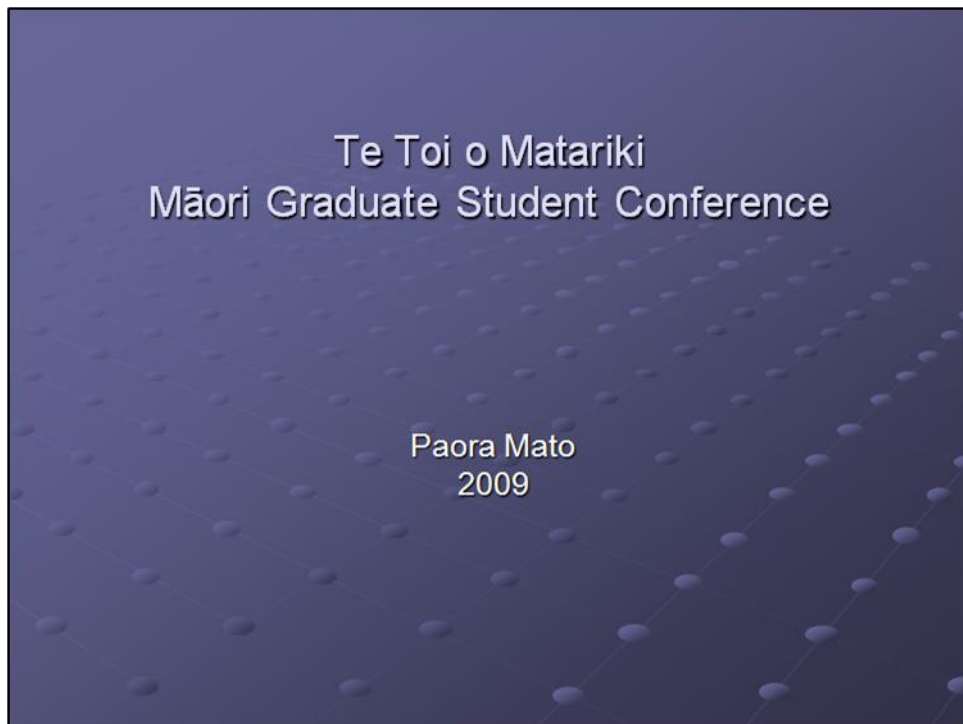
Kei te rāngona ko ngā kōrero katoa e haere ana mō runga tonu i te mahi. Kāore i te rangona ētahi e waiata ana, heoi kei te hāngai kē te titiro ki te mahi tonu.

Kei te rāngona e mea ana, o yea... arā, kua taka te kapa.

Kei te kitea tētahi e purei kāri ana, ka tahuri ki te hōmai rīpoata mō ngā kēmu kāri i te rorohiko me te whakaatu haere i aua kēmu.

Kua tīkina anōtia te kāmira, ā, kua pātai atu, me he kōrero a tētahi tokorua kua kīa kō, kore.

Appendix H - Research presentation



Thesis title

Using a digital library as a Māori language learning resource: Issues and possibilities

Overview

- Introduction
 - Aims
 - Research questions
 - Methodology
- the Internet and the World Wide Web
- digital libraries
 - definitions
 - Benefits
 - New Zealand Digital Library (NZDL)
 - Greenstone Software
 - Flexible Language Acquisition (FLAX)
- demonstration (time permitting)
- conclusion

Aims

This research proposes to determine:

- what is involved in the creation of a digital library for use in learning te reo Māori?
- what types of language learning activities can be created using the digital library
- which of these types of activities are likely to be most effective from a pedagogic perspective
- the suitability of a digital library as a te reo Māori learning resource.

Research Questions

1. Digital libraries and learning te reo Māori:
 - What is a digital library?
 - Why use a digital library?
 - What is involved in the creation of a digital library for use in learning te reo Māori?

Research Questions

2. Digital libraries and language learning activities:
 - What are the types of activities that can be created?
 - How would these activities differ from what is currently available electronically?

Research Questions

3. Digital library activities and Kaupapa Māori language learning pedagogy:
 - What are the features of effective language learning from a Kaupapa Māori pedagogic perspective?
 - Which of the digital library language learning activities display these features?

Research Questions

4. What are the main issues and possibilities with designing language learning activities based on digital libraries:
 - What are the reasons this has not yet been done for learning te reo Māori?
 - What benefits, if any, will be generated for learners of te reo Māori by the development of activities based upon a digital library?

Methodology

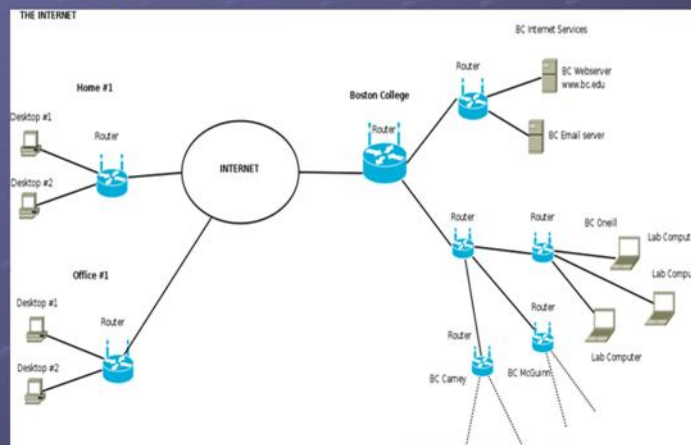
1. A discussion on Internet-based learning resources
2. Review of current software
 1. Definitions
 2. NZDL, Greenstone, FLAX
 3. Review of some available software
3. Critical review
 1. Kaupapa Māori language learning pedagogy
 2. Analysis of FLAX activities
4. User feedback
 1. Activity design and testing
 2. User survey

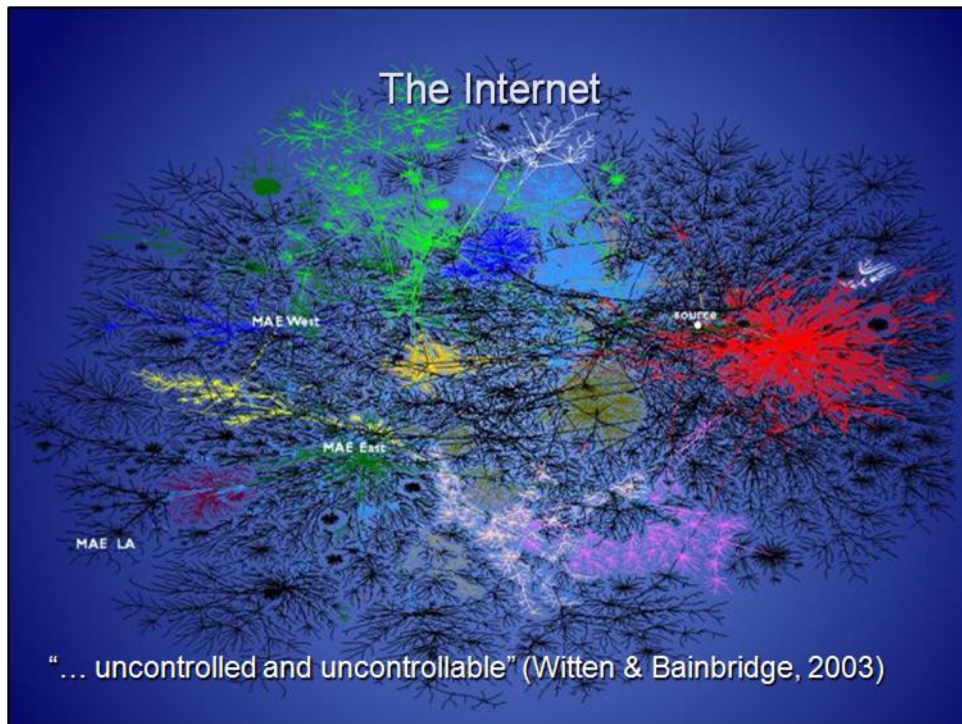
Focus

- Information Management
 - Procurement
 - Storage
 - Relevance
 - Validation
 - Retrieval

The Internet

An interconnected network of computers and computer networks (Tyson, 2009)





World Wide Web

- exchange information
- browsers (such as Internet Explorer)
- 30 billion web pages
- 240 million web sites
- but wait ... there's more

The World Wide Web

Table 8.1: The size of the Internet in terabytes.

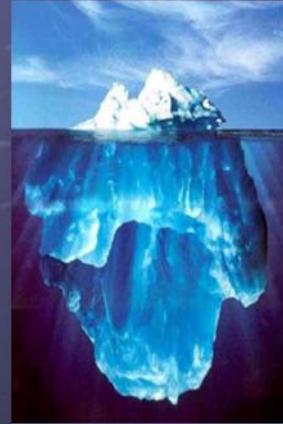
Medium	2002 Terabytes
Surface Web	167
Deep Web	91,850

Source - <http://www2.sims.berkeley.edu/research/projects/how-much-info-2003/internet.htm>

Surface Web
170 Terabytes

Deep or Invisible or Hidden
500 times larger

Source – Quoniam, 2008



Digital Libraries

“Digital libraries are organisations that provide the resources, including the specialised staff, to select, structure, offer intellectual access to, interpret, distribute, preserve the integrity of, and ensure the persistence over time of collections of digital works so that they are readily and economically available for use by a defined community or set of communities”

Source – Digital Library Federation (1998, p8, p.1)

Digital Libraries

“Digital libraries are focussed collections of digital objects including text, audio and video, along with methods of access and retrieval, and for selection, organisation and maintenance” (Witten & Bainbridge 2003, p. xxvi).

“If information is the currency of the knowledge economy, then digital libraries will be the banks where it is invested” (Witten & Bainbridge 2003, p. xxvi).

Digital Libraries

- structure
- gather
- store

- cf physical libraries and archives

- digital representation

(Lesk, 2005, p. xxix)

Digital Libraries

Benefits

- accuracy
- validation
- currency
- re-usability
- control

- streamlined searching
- faster information retrieval

Conclusion

What now?

- Critical review of the features of Kaupapa Māori language learning pedagogy
- A critical (Kaupapa Māori) pedagogical analysis of the language learning resources associated with FLAX
- User testing and survey analysis

Conclusion

Limitations

- currently based on an existing model
(not customised for learners of te reo Māori)
- no in-depth comparison with other learning management systems

Further research

- Development of customised activities
- Intelligent comparisons with other learning management systems
- Parsing and machine translation

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Participant Consent Form

Research Project Title:

“Using a digital library as a Māori language learning resource: Issues and possibilities.”

Dear (participant)

Tēnā koe.

Kei te mihi atu anō mō tōu whakaae ki te āwhina mai i roto i taku mahi rangahau.

(Thank you for agreeing to participate in my research project.)

The information and insights gained from you with regard to the usefulness of e-Learning tools for the learners of Māori language will provide relevant information for consideration against the researched literature.

This document records your consent enabling me, Paora Mato, to undertake this survey. Should there be any concerns whatsoever, please feel free to contact me.

Ph. **027 293 2100**, eMail **pjm20@waikato.ac.nz**

or my supervisor: **Enoka Murphy, (07) 838 2889 ext 8184, or,**

eMail **emurphy@waikato.ac.nz**

Participant Declaration

1. I have read the Research Information Sheet for this study and have had details of the study explained to me.
2. My questions about the study have been answered to my satisfaction, and I understand that I may ask further questions at any time.
3. I also understand that I am free to withdraw from the study at any time, or to decline to answer any particular questions in the study.
4. I agree to provide information to the researchers under the conditions of confidentiality set out on the information sheet.
5. I wish to participate in this study under the conditions set out in the information sheet.
6. I would like my information: (circle your option)
 - a) returned to me
 - b) destroyed
 - c) other(please specify).....
7. I consent/do not consent to the information collected for the purposes of this research study to be used for any other research purposes. (Delete what does not apply)

Participant's Name: _____

Participant's Signature: _____

Date: / /

Contact details: _____

Researcher's Name: Paora Mato

Researcher's Signature: _____

Supervisor's Name: Enoka Murphy