Increasing the accessibility of information on the Indigenous languages of Victoria

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Abstract

The authors have developed a web resource portal that allows easy access to information about the Aboriginal languages of Victoria. Written records of Victorian Aboriginal languages include language resources gathered in the 18th and early 19th centuries by government officials and interested private citizens. Some material was published at the time of collection, and is available in the reference collections of major libraries. Other material is only available in manuscript sources in research libraries or on microfiche. In the last 50 years linguists have analysed such material producing overview classifications of the languages of Victoria and, in some instances, complex linguistic descriptions of a particular language. These descriptions, called sketch grammars, are not easy to understand without linguistic training. The portal will enable non-linguists to access this vital language information via the web and provides a comprehensive list of sources for all of the major Victorian languages arranged according to the linguistic classification developed by Hercus (1969, 1986), Dixon (1980, 2002), and Blake & Reid (1998).

The resource portal is presented according to geographical regions and languages. It provides a window to information on the languages, their relationship to each other, lists of academic and historical resources, comparative wordlists, simplified grammars with examples, and comprehensive lists of the words collected for each language. It also allows for the uploading of community created resources, such as stories and images, together with an online discussion area. The site has the capability to be expanded to add comprehensive detail for all languages of Victoria, subject to funding constraints.

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Accessing the information provided by the portal may save communities years of preparatory work when they undertake their language revitalisation programs.

Over the last 20 years Victorian Aboriginal people have demonstrated a resurgence of interest in their language heritage as they assert their Aboriginal identity as emerging writers, playwrights, educators and scholars (for example McKay 1996; James 2003; Gascoigne 2004; Walsh & Troy 2005). Aboriginal community initiatives have been undertaken by the Worawa Independent Aboriginal College, the Lodjba Koori Language Centre and, subsequently, the Victorian Aboriginal Corporation for Languages (VACL). The native title process has also made interest in Victorian language heritage more visible. The Yorta Yorta claim, although not successful, involved significant research by Aboriginal and non-Aboriginal people on the Aboriginal history of the Murray-Goulburn area. In 2005 the success of the land claim negotiated with the Government of Victoria by the Wotjobulak people of the western district of Victoria involved important academic and community research, and has also resulted in community-initiated language reclamation research. Other Aboriginal community language reclamation activities have been initiated by interested individuals, such as the introduction of the Gunnai language into early childhood centres in Gippsland by Lynnette Solomon-Dent.

In 1992 the Victorian Curriculum and Assessment Authority (VCAA) developed an *Indigenous languages of Victoria, revival and reclamation: Victorian Certificate of Education study design* in response to a request from Worawa Aboriginal College. The study ran as a pilot VCE study from 1995 to 2003 and was fully accredited in 2004. It has been successfully completed by members of several communities, most recently by a group of Wotjobaluk people in 2008 (see J. Reid, this volume). In all over 30 Indigenous students have successfully completed these studies. The study process requires students to learn to locate historical sources for Victorian Aboriginal languages and to acquire the skills necessary to analyse this material as part of the language reclamation process. Access to key historical and academic resources for Victorian Aboriginal languages is a crucial part of the implementation of this VCE study. In addition individual schools and the VCAA are working on the development of a P–10 curriculum for the Aboriginal languages of Victoria, so access to historical and academic resources for primary school teachers and Koori educators will also be crucial in the future.

**Sources**

Written records of Victorian Aboriginal languages include language resources gathered in the 18th and early 19th centuries by government officials and interested private citizens. Some material was published at the time it was collected and is available in the reference collections of major libraries. Other material is only available in manuscript sources in research libraries or on microfiche. More recently linguists, including Hercus (1969, 1986), Dixon (1980, 2002), and Blake and Reid (1998), have
provided significant classifications of Victorian languages and the classification used in this web portal is based on their research. This classification was also followed by Clark (1990). The languages are presented in linguistic groupings using spellings recommended by VACL, where available:

1. Kulin Languages
   - Western Kulin (North Western Victoria)
     - Wemba Wemba (Swan Hill and Lake Boga)
     - Barabaraba (Gunbower area)
     - Madhi Madhi (Balranald area)
     - Ladji Ladji (Mildura area)
     - Wadi Wadi (Swan Hill)
     - Wadi Wadi (Piangil)
     - Wergaia (Wimmera)
     - Djab Wurrung (Grampians)
     - Dja Dja Wurrung (Loddon Valley)
     - Jardwadjali (Upper Glenelg River)
   - Eastern Kulin (Melbourne and surrounds)
     - Taungurung (Goulburn Valley - southern)
     - Woiwurrung (Yarra Valley)
     - Boon Wurrung (Coastal Melbourne and Westernport)
   - Wathaurong (Geelong/Barwon Valley area)
   - Gulidjan (Lake Colac area)

2. Warrnambool Language (Warrnambool-Portland)
   - Dhauwurd Wurrung
   - Keeray Woorroong
   - Tyakoort Wooroong

3. Buandig (Mt Gambier area)

4. Yorta Yorta and Jabulajabula/Bangerang (Murray Goulburn)

5. Dhudhuroa (High Country)

6. Pallanganmiddang (Kiewa Valley area)

7. Gunnai/Kurnai (Gippsland area)
Brataualung (Corner Inlet area)
Krautungalung (Lake Tyers area)
Brabralung (Mitchell River)
Tatungalung (Gippsland Lakes)
Braikaulung (Latrobe River)

8. Ngarigu (Monaro/Snowy)

Linguists, including Hercus (1969, 1986), Blake (1991, 2003a, 2003b), Blake & Reid (1998, 1999, 2002), Blake, Clark & Reid (1998), Blake, Clark & Krishna-Pillay (1998), Bowe (2002), Bowe & Morey (1999), and Fesl (1985) have analysed the available material for particular languages, and much of this work is now available in published books and journals. In addition some linguists (for example Krishna-Pillay 1996) have been sponsored by local Aboriginal groups to write dictionaries and grammars of their heritage language, funded by Aboriginal organisations such as VACL. Bowe, Peeler & Atkinson (1997) is the result of collaborative research that involved Aboriginal collaborators and a linguist, and connected the contemporary language heritage of the Yorta Yorta people with historic sources. This research was initially funded by the Lodjba Koori Language Centre, and its publication was funded by the Aboriginal and Torres Strait Islander Commission, Victoria. Furthermore, work on Aboriginal languages is a routine part of linguistic research in many universities.

Although most of the recently published linguistic descriptions are relatively widely available, those engaged in language research often find these academic works difficult to interpret and wish to have access to the original source material, the bulk of which is not held in Victoria. Linguists working in this area of research have each needed to acquire their own collection of photocopies of historical material by personally visiting interstate libraries and photocopying material, ordering photocopies where possible, and inspecting original documents for clarification purposes.

The resource portal

The portal incorporates multi-layered access to primary source data and primary linguistic research, thus providing a crucial resource for members of the wider community interested in the Aboriginal languages of Victoria. At the same time the level of detail contained in the repository, and the online access to primary resources, is of value to academic researchers. It incorporates a repository containing references to primary (historical) and secondary (academic) resources for each language featured on the site.

The languages of the Murray-Goulburn (Yorta Yorta, Bangerang, Jabulajabula), Melbourne and surrounds (Woiwurrung, Boon Wurrung, Taungurung), Gippsland (Gunnai/Kurnai), and Western Victoria (Wergaia only) have individual vocabulary modules some of which include pronunciation (audio) and a proposed spelling for
each word. Within these modules all source material for each vocabulary entry is linked to that entry. Other material, such as archival audiotapes of the language, can be included in the repository subject to access conditions. A simplified grammar describing the various linguistic elements of the language, with relevant examples where available, is included for each of these languages along with instructions on sentence construction for that language. General information on the location of the heritage language speakers, their social organisation, and their relationship to other languages in the area is also provided.

A particularly useful feature of the site is the Victorian Word Finder, which allows users to select a word in English, and view its equivalent in all languages that have recordings for this word on the site. In addition the site has some basic information on Australian Aboriginal languages in general.

Significantly the portal addresses the problem of access to crucial resources relating to the Aboriginal languages of Victoria. As most of the archival and historical resources are held in research libraries in Melbourne, Sydney and Canberra they are, in practical terms, not easily accessible. Furthermore because of the disparate backgrounds of the early writers and the academic terminology of modern linguistic research much of the information, when it can be accessed, is very difficult for a non-linguist to process. The site uses a database and layered report system to present language information in an accessible format backgrounding analytic reference and explanation for individual extension.

**Behind the portal**

Web portal growth began in the late 1990s in the domain of large companies. A portal is an entry point or a gateway to something. It provides access to a number of sources of information and facilities such as a directory of links to other websites, search engines, or email. Web portals commonly have a diverse target audience, therefore their design needs to be intuitive and informative.

When developing a portal it is important to build a site knowing, if not using, all the success factors of user acceptance of a portal. Winkler (2001) has identified a number of these factors. They are:

- **search and navigation** functionality, through presenting to the user appropriate information, suggesting additional information resources or services, allowing the user to search the contents of the portal, and perhaps giving users the ability to personalise resources and tools. However, not all web portals have these functions, as it depends on the prime purpose of the portal itself;
- **information integration**, to provide users with the ability to integrate information from disparate sources, through the use of a news service, wiki or blog;
- **personalisation**, through customisable content or services, or content based on user group or user preferences;
- **notification**, through push technology or email services;
• **tools and services** to improve the flow of the site, through customisation of personal preferences, or tutorial or help;

• **collaboration** among users of the portal, through the use of services such as discussion lists, wikis, messaging systems, and common workspaces (adapted from Winkler 2001).

*Portal architecture*

There are numerous approaches that can be used when developing web-based systems. For the *Aboriginal Languages of Victoria Resource Portal* (ALV-RP) the method used was a combination of the Web Site Design Method (WSDM) developed by De Troyer and Leune (1998) and the engineering approach developed by Lowe and Hall (1999). Both models have a focus on user-centred design in the development of the look and feel of the site and its navigation. WSDM relies on input from use-cases (or scenarios) to determine the requirements of each user type to define the information objects based on the information requirements of the users. The Lowe and Hall approach, among other requirements, suggests that the development is done in incremental steps.

The ALV-RP development team comprised an overall project manager, two sub-teams (information and communication technology [ICT] and linguistics) and two industry groups of stakeholders (government educators and Aboriginal organisations). The ICT team was located in Queensland and comprised a leader, programmers, graphic artist, and a research assistant. The linguistic team, located in Victoria, was composed of a leader, linguist, and research assistant.

During the development process the portal underwent three major iterations, each serving the dual purpose of testing the software development platform, content layout and content (or artefact in the form of text, images, and audio). Each iteration was tested for usability and user acceptance with the feedback used to inform the next stage (Lynch & Bowe 2006).

The development of the portal underwent continual content, programming and interface refinement and development. The choice of the programming language to be used for the site changed during each iteration until the most suitable language (and platform) was found, as the requirements for the site were complex.

The first version of the site was developed quickly to demonstrate the initial proof of concept, and thus used HTML (Hypertext Markup Language) as it is the rudimentary programming language used for presenting content on a web page, is quick and easy to use, and would produce a basic prototype without over-extending the limited resources of the team. This version contained limited content with very little capability for user interaction other than clicking through a few pages of content.

The next version of the site was developed using PHP (which originally stood for Personal Home Page, but has long since lost this meaning). PHP is a widely used, general purpose, open source (that is, free) programming language that is especially suited to web sites that are integrated with a database (in this case, Microsoft Access).
This version also had limited content and allowed little user interaction. However, page design templates were developed that enabled multiple pages to be presented using the same layout without them having to be individually marked up as was done with the first version using HTML. The content was more developed insofar as there was more of it and its display was controlled by database queries. Having the content in a database made the maintenance of the content much more streamlined, efficient and consistent. Most of the content obtained from the linguists was uploaded into the system using spreadsheet data and manually checked for inconsistencies and omissions. The remaining content was manually uploaded via online forms. This version was labour intensive with regard to programming, restrictive in developing a community space, and susceptible to content inconsistencies and omissions.

The final version of the site was developed using Drupal, an open source content management framework and social networking system written in PHP, integrated with a MySQL (Structured Query Language) database. Drupal was selected as the final platform for the development of the portal because it is open source (free and written in PHP) and is in wide use. It also has the flexibility to add characteristics to content type, for example defining access permissions for a particular language (a content type) or a particular piece of content such as an image; has free off-the-shelf applications, such as calendars that can be integrated into the application; in-built functionality, such as searching; and social networking capabilities, such as adding friends.

MySQL was selected as the database platform as it is robust, has advanced in-built security, and is an industry standard.

One of the advantages of using Drupal is that it contains a broad range of relevant features that are continuously developed by a large community of open source developers. The use of this platform enables this project to leverage knowledge and ideas in the ICT community to enhance the architecture and construction of this web portal. Drupal enables the consistent collection and template-based presentation of content by defining content types with custom field names that are meaningful to programmers and linguists alike.

Content is of two types. Project content has been placed on the site during the development process by the project team. This includes general information about the portal, languages addressed in the project, references, language sources, a glossary, and biographies of recorders and researchers. The richness of the portal is through the presentation of wordlists from a wide range of historical sources and sketch grammars for each of the languages represented, a word finder enabling a comparison of Aboriginal words among languages, and a generic search on any word in the portal. This content is static in the sense that it cannot be edited by anyone other than the project team.

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4 Our current implementation leverages the following key Drupal modules: CCK, Views, Biblio, TinyMCE, MCE and Organic groups. In addition we have developed custom code and templates as needed, where there is not already a community-developed solution for the features required.
On the other hand, the social or community content is dynamic as it can be constantly changing. It is placed on the site by the community, which is any individual who wishes to share their content, information or knowledge with others as a whole, or within a specific group. Community content is open for editing, comment, and discussion. It can be categorised according to tags decided upon by the person who provides them. Through the use of these tags the community content can be displayed in a number of places in the resource. For example when a person registers as one who is interested in Yorta Yorta, all content and user profiles that have been posted with the tag Yorta Yorta will be displayed. The community content facility has significant potential as a means of engaging all users in the ongoing development of the portal as it benefits from additions, edits, and discussion.

During the development process, standards were refined with others defined, for example, file name and type conventions, citation word order and presentation, English words, headers and footers for downloadable documents, and source naming conventions. As the portal’s development progressed, requirements were more clearly defined in regard to the hierarchy of menus, linking, content, artefact type (text, audio, or video), access permissions and community-posted content.

**Portal interface design**

The aim of the interface design for the ALV-RP is to be intuitive, engaging, easy to navigate, and to have a look that is acceptable to the Aboriginal communities of Victoria. Alongside the iterative development of the portal’s architecture and content, its interface was incrementally developed. Initial artwork and the site theme was basic with little artwork to give it an Australian Aboriginal feel. The second version employed the assistance of a graphic artist, therefore the imagery and colours were richer. However it was not suitable for a Victorian Aboriginal website which needs to reflect the heritage of its content. The current version is based on artwork by a Victorian Aboriginal artist, Vicki Couzens. This artwork is vibrant and suits the portal well. The artwork has been used to develop a theme for use throughout the portal giving it a true and legitimate Victorian Aboriginal feel.

During early usability evaluations of the site’s navigation it was found that moving around the site was not intuitive, nor complete, as the users missed important content leaving them with a very basic understanding, not only of the portal itself, but of the value of the content held within it. A number of users indicated that they were lost in the portal not knowing for certain which language or region they were reading about. This feedback, together with further trials and demonstrations, has led to a change in the interface design to one that is more intuitive and engaging. This has been achieved through the use of ‘breadcrumbs’, highlighted menu items, themes for individual geographic regions, and a rearrangement of the menu items.

Furthermore, the social or community content needed to be presented with impact to encourage or initiate engagement with the site, and to differentiate it from the more static content. To this end a small video introduction to the social content has
been embedded and is programmed to play automatically when the user enters this component of the site.

Conclusion

The ALV-RP provides information on Victorian languages that has been carefully examined, analysed and synthesised by linguists, thereby providing a reliable source of information to Victorian Aboriginal communities researching their heritage language. It also allows for the language reclamation process to be fast-tracked as the data has already undergone rigorous, academic processes that otherwise would need to be carried out prior to revitalisation of the language. The input of the partner organisations has contributed to the design of the site and has helped make the portal more accessible to educators and relevant to Aboriginal community members. One significant change made as a result of the input of Aboriginal partner organisations was the decision that the web portal should use the term Aboriginal rather than Indigenous. This work is still in progress at the time of writing.

The portal design has been developed using a combination of the web site design method proposed by De Troyer and Leune (1998) and the engineering approach suggested by Lowe and Hall (1999), as both of these models focus on user-centred design. While the linguistic content of the site is undoubtedly of enormous value to those investigating Victorian Aboriginal languages, it is the community content that makes the portal more than just a repository, as it is no longer looking outward but is a place where Victorian Aboriginal languages can be revitalised. Language reclamation can only occur when the language is embraced by its heritage community.

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