Using authentic language resources to incorporate Indigenous knowledges across the Australian Curriculum

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Abstract
The promotion of Aboriginal and Torres Strait Islander histories and cultures as a cross-curriculum priority in the new Australian Curriculum provides both a challenge and an opportunity for teachers and teacher educators. The Living Archive of Aboriginal Languages contains authentic language materials which can assist in resourcing and supporting teachers to meet this challenge across all areas of the curriculum, and to encourage connections with Indigenous cultural authorities.

Introduction
The promotion of Aboriginal and Torres Strait Islander histories and cultures as a cross-curriculum priority in the new Australian curriculum, alongside the other cross-curricular priorities (‘Sustainability’ and ‘Asia and Australia’s engagement with Asia’), aims to “provide national, regional and global dimensions which will enrich the curriculum through development of considered and focused content that fits naturally within learning areas” (ACARA, 2015). These priorities are required to be embedded in all learning areas, and the ACARA website gives the ‘key concepts’ and ‘organising ideas’, allowing teachers great scope to apply them in their own specific context.

Teachers and teacher educators are constantly challenged to adapt to new initiatives in the curriculum space, and many may struggle to include new priorities and content within a program already considered “crowded” (Department of Education, 2014). While it could be seen as an additional burden for teachers to bear, a more positive angle sees it as a new opportunity for professional development, by widening and deepening understanding of these important topics. Research indicates targeted training in Indigenous studies has benefits for teachers engaging in a space that can often be contested and challenging (Craven, et al., 2003; Craven, et al., 2014; Mooney, et al., 2003), and non-Indigenous educators may require support to enable them to incorporate Indigenous knowledge respectfully and appropriately in the classroom. Responses and opportunities may vary between urban, rural and remote schools, depending on existing connections to Aboriginal and Torres Strait Islander peoples and cultures. Rather than just an add-on, the histories and cultures of Indigenous people can be integrated into each learning area to bring new perspectives to existing knowledge and practice, and to encourage interesting and innovative ways to incorporate this knowledge.
An open access online resource available to all teachers and students, the Living Archive of Aboriginal Languages\(^1\) contains thousands of authentic texts which can support the inclusion of Indigenous knowledges across the curriculum. The archive allows teachers and students around Australia to easily access a vast range of literature, art and language, leading them to think about different ways to consider Indigenous knowledge in their own contexts, including exploring opportunities for connection with local authorities, research into culture and language of the area, and even to investigate opportunities to support language revitalisation. Schools and teachers with limited or no connection to Indigenous peoples can easily access materials that can be readily used in the classroom, and those who have connections can also use these resources to support or develop relationships and incorporate knowledge directly from Indigenous authorities.

**Aboriginal Language Resources**

One of the legacies of the bilingual era in the Northern Territory (1974 – 2000s) is the large number of resources developed for classroom and community use, which are finding new life online in the Living Archive of Aboriginal Languages (Bow, et al., 2014). Thousands of items in around fifty languages of the Northern Territory are made available under a Creative Commons license which allows users to share and distribute the materials with attribution of credit to the creators and source, for no commercial benefit to the user and with no right to share derivatives of the material (Creative Commons, n.d.). The original authors, illustrators and other creators (or their descendants) have given permission for their materials to be made available in this way, and many are interested in collaborative work with interested users. The archive was created in line with the protocols set out by the Aboriginal and Torres Strait Islander Library Information and Resource Network (ATSILIRN, 2012), and users agree to use the materials respectfully, in accordance with Indigenous Cultural and Intellectual Property rights, as described for example in the Indigenous Cultural and Intellectual Property (ICIP) Information Sheet (Arts Law Council of Australia, n.d.) and according to the website’s User License Agreement (Living Archive, 2014).

The materials in the archive include traditional and modern children’s stories, transcribed recordings of old people telling stories of local cultural significance, creation stories, histories, natural science, instructional materials, ethno-botany, cautionary tales, and many other genres. In addition, there are teaching materials, literacy primers, and translations or adaptions of stories from other languages. Many (though not all) include English translations, and some also include word-lists or glossaries. They represent both traditional and Western knowledge presented for an Indigenous audience in remote Northern Territory communities. The Living Archive itself builds on decades of collaborative research with Indigenous knowledge authorities, including discussion of the role of digital technologies in both developing and storing knowledge work (Christie, et al., 2014; Christie & Verran, 2013; Verran & Christie, 2014).

**Using the Materials**

While considerable effort has gone into making these materials accessible through the Living Archive website, the existence of such a resource is not in itself sufficient. To ensure that it is a ‘living archive’ requires engagement at different levels, from the Indigenous communities of origin to the wider educational landscape in Australia and beyond. Assistance is required to

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guide teachers, students, researchers and other users through the rich set of data available, with guidance in how it may be used in the classroom and in different pedagogical contexts and at different levels. Some teachers may feel intimidated by the ‘foreignness’ of the materials in different languages, particularly those without an English translation, which can be filtered out using search or browse functions.

All the languages are written in a Latin (Roman) alphabet, though the words are not pronounced like English – a useful guide to pronunciation of most Indigenous languages can be found on the Victorian Aboriginal Corporation for Languages website which also includes a useful ‘talking head’ demonstration of the different sounds (VACL, n.d.). Some materials in the Living Archive include audio recordings, as it is not recommended that teachers or students with no knowledge of the languages attempt to pronounce the words. The search function works by word or phrase in English or language, and searches not only the metadata but full texts, and returns results in order, so materials with the search item most prominently or commonly included will be shown at the top of the results page. Search results can be further filtered, and advanced search options are also available.²

An earlier paper (Devlin, et al., 2014) introduced the Living Archive in a curriculum context, and suggested ways in which the materials could invigorate connections between and within schools, researchers, and the traditional owners of Indigenous languages and cultures. The paper demonstrated examples of usage in the classroom and in the wider community, including theme-based work such as: exploring the uses and significance of honey in Indigenous culture; digital knowledge work through development of multimedia skills through the creation of related items such as talking books based on materials in the archive; as a bridge to English language learning; and for the professionalisation of Indigenous educators. The paper also addressed the draft framework for Aboriginal and Torres Strait Islander languages in the Australian Curriculum (ACARA, 2013), and how materials in the Living Archive can serve all three pathways identified there – for First Language Learners, Second Language Learners and Language Revival Learners – specifically focusing on schools with Indigenous learners. The present paper seeks to expand on some of the issues presented there, by identifying specific resources within the Living Archive which can be used in each of the learning areas in the Australian curriculum.

Incorporation of Indigenous knowledges in the curriculum will look different in different contexts. Remote schools in northern Australia can draw on local knowledge authorities across all areas of the curriculum, by inviting elders into the classroom to share their knowledge. In more urban communities, there are often local Indigenous authorities willing to visit schools to share knowledge. These can be found, for example through language centres, a list of which is available online (RNLD, n.d.). Teachers in communities which have difficulty identifying Indigenous people who can speak for the local area and their own knowledge traditions may require additional resources, such as those available in the Living Archive. These resources may be used in isolation, or as part of a suite of materials from various sources. In recent years there has been a significant increase in the availability of online materials relating to Indigenous knowledges and cultures, often produced by and with Indigenous people, and many of which have teaching resources linked to specific curriculum areas, for example Scootle (Education Services Australia, 2016) and Sharing Stories (Sharing Stories, 2014). In Australia’s multicultural classrooms, introducing such perspectives can also encourage vibrant discussion with students from other ethnic backgrounds, creating an even richer conversation.

The remainder of this paper will address each learning area included in the Australian Curriculum (some of which were still subject to final endorsement at the time of writing this paper) and, using the content descriptions that support the knowledge, understanding and skills of the cross-curriculum priorities (presented in ACARA, 2015), identify examples of how materials contained within the Living Archive can be used to incorporate such knowledge in the various areas of the curriculum. Educators are invited to contribute ideas to share with others to encourage more innovative ways to work with these knowledge systems.

Key Ideas

**Figure 1: Conceptual framework for the Aboriginal and Torres Strait Islander Histories and Cultures priority**

At the risk of oversimplifying an extraordinarily complex web of overlapping concepts which make up just a portion of Aboriginal and Torres Strait Islander life and culture, the conceptual framework for this cross-curricular priority is stated in the Australian Curriculum as follows:

...the underlying elements of Identity and Living Communities and the key concepts of Country/Place, Culture and People. Aboriginal and Torres Strait Islander Identities are represented as central to the priority and are approached through knowledge and understanding of the interconnected elements of Country/Place, Culture and People. The development of knowledge about Aboriginal and Torres Strait Islander Peoples’ law, languages, dialects and literacies is approached through the exploration of Cultures. These relationships are linked to the deep knowledge traditions and holistic world views of Aboriginal communities and/or Torres Strait Islander communities. Students will understand that Identities and Cultures have been, and are, a source of strength and resilience for Aboriginal Peoples and Torres Strait Islander Peoples against the historic and contemporary impacts of colonisation. (ACARA, 2015)
This is a useful entry point to a set of histories, cultures and knowledge practices that can then be teased out across different areas of the curriculum. The Australian Curriculum includes a set of ‘Organising Ideas’ for each cross-curriculum priority to reflect the essential knowledge, understandings and skills associated with that priority. Among the organising ideas, which reflect the essential knowledge, understandings and skills for the priority, number four states “Aboriginal and Torres Strait Islander societies have many Language Groups” (ACARA, 2015), a fact which is immediately apparent from the map which welcomes users to the Living Archive site at http://www.cdu.edu.au/laal/. On this map, each language is marked in a distinct colour, and hovering over a region on the map identifies the name of the associated language. Language labels can also be toggled on or off, as can place names. The ‘Browse’ button opens a list of languages which have materials included in the Archive, and the number of items associated with each language. This is a simple yet effective way to introduce students to the sheer number of distinct languages in the Northern Territory, and their links to place. This notion can be further explored on a national level by investigation of the AIATSIS language map (Horton, 1996). Other useful references include the Gambay map (First Languages Australia, 2015) which contains additional information about specific languages and allows users to add content, the Australian Indigenous Languages Database known as AUSTLANG (AIATSIS, n.d.), and the AIATSIS Language and Peoples Thesaurus (AIATSIS, 2007). Students can explore the languages of their region, and investigate the vitality of those languages. Many studies of Indigenous people include information about the strong connections between land and language, and at least one story in the Living Archive (Ganbulapula, Yunupiŋu, n.d.) describes the story of an ancestor using language to sing the land into being.

English

The overview of this learning area also refers to the number of different languages and dialects spoken in Australia, including Aboriginal English and Yumplatok, and that “these languages may have different writing systems and oral traditions … These languages can be used to enhance enquiry and understanding of English literacy” (ACARA, 2015). While Yumplatok is spoken in the Torres Strait Islands and therefore outside the geographic boundaries of the Living Archive, the Kriol language is strongly represented in this resource. An understanding of the existence and significance of Kriol will inform any readings of Kriol texts within the archive (see for example Hammarstrom, et al., n.d.). Kriol is distinct from Aboriginal English (Eades, n.d.), and has a significant body of literature, mostly created through the bilingual program at Barunga School. Since Kriol uses much English vocabulary, is one of the more accessible Indigenous languages. Teachers can use Kriol resources to investigate the differences between written and spoken English, since Kriol uses a more phonetic spelling of largely English words (e.g. ‘woda’ for ‘water,’ ‘ilgel’ for ‘little girl’, etc.). Some of the Kriol ‘instant readers’ or ‘experience readers’ are accessible to teachers and students interested in investigating the nature of Kriol, with more complex texts also available.

Further exploration of the Living Archive can point to the storytelling traditions (oral narrative, song, art, dance) as well as contemporary literature of Indigenous peoples. Reading through English translations of many of the stories gives a flavour of many of the storytelling techniques, and affords interesting opportunities for exploring different writing genres. The preface to a story from northeast Arnhem Land states “Narratives from this region … are typically characterised by dramatic turns of phrase, attention to vivid or memorable detail and a sense that the truth is recreated each time the story is told” (Devlin, in Yunupingu, 1981). Since many features of oral storytelling can be lost in the reduction to writing, some stories in the archive include representations of prosodic information – for example, Munungurr (1982) includes instances of “Wä-a-a-y” (where “Wäy” means something like “Hey!”) and “marrtjinana-a-a-a-” (where “marrtjina” means “walk”) to indicate intonation on the word.
Maths

The overview of this learning area refers to sophisticated applications of mathematical concepts in Indigenous societies, and encourages students to investigate “time, place, relationships and measurement concepts in Aboriginal and Torres Strait Islander contexts” (ACARA, 2015). A useful starting point is the book Garma Maths: We’ve heard that you teach maths through kinship (Watson-Verran, 1992), which comes from an Indigenous maths curriculum created in Arnhem Land in the 1980s. Written in English, it gives an overview of the program for non-Aboriginal educators, and stating in the introduction that

…it is not only Aboriginal children who can benefit from learning about maths as something which is based in, and shaped by, human concerns. Our course of study grows from our life as a particular group of people and reflects the concerns of our community. Developing as an expression of Yolngu life, it cannot be used as such in other places, by other communities. But we expect that the ways that we have worked to develop this course of study will be useful to other communities, both Aboriginal and non-Aboriginal. (Watson-Verran, 1992)

Teachers addressing mathematical issues with respect to Indigenous people may come across the myth that the smaller sets of number terms implies a dearth of intelligence – a concept that can be meaningfully discussed in a mathematics classroom, including reference to newspaper articles such as Cooper (2015) and Mundine (2014) which discuss different aspects of Indigenous mathematical systems. There are also a number of programs designed specifically to teach mathematical concepts to Indigenous students, such as ‘Make it Count’ (AAMT, 2011) and ‘Talking Namba’ (DEEWR, 2015) which both include useful teaching resources and numerous references.

Science

The overview of this learning area refers to the longstanding scientific knowledge traditions of Aboriginal and Torres Strait Islander Peoples, and their “particular ways of knowing the world and continue to be innovative in providing significant contributions to development in science” and “traditional knowledge and western scientific knowledge can be complementary” (ACARA, 2015). This learning area is an ideal space to invite Indigenous authorities to share their own knowledge with students, for example about bush food or medicine. Without access to an Indigenous authority, scientific concepts can be presented using resources in the Living Archive, for example, a large number of books describe the collection and use of bush medicine. These include Mirwuma & Garidjalalug (1981), which describes a range of different plants, how they are prepared and what ailments they treat, and Beasley (1998), which describes the use of a specific plant used for treating sores.

Other books describe the life cycle of particular animals, such as books by Marguerita Kerinaiua on the crocodile (1990) and the butterfly (1997). Some give illustrations and names of local species – often in both the Indigenous language and English, sometimes also in Latin – such as Nangan:gold (n.d.) on the birds of the Bamyili (Barunga) region, and Granites Nakamara (2008) on trees from the Yuendumu area. An example of a class activity would be a field trip to explore trees or birds in the local area, and identify any parallels with local trees presented in books in the Living Archive. In discussing the classification of plants and animals in western contexts, it is interesting to compare this to ways in which Indigenous people classify fauna, for example a pair of books from Maningrida called Minyjak an-gubay / Minyjak gala an-gubay (“Animals we eat” and “Animals we don’t eat”) (2005). Another useful class activity is to compare the seasons in different parts of Australia. A series from Arnhem Land (Ganambarr &
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Davis, 1982; Wunungmurra, 2007) gives detailed information about their seasons, and CSIRO Darwin (n.d.) has produced a series of calendars which also include resources for teachers. A number of other sites also deal with Indigenous scientific knowledge in great detail, such as ANU’s Living Knowledge project (2008), NSW’s Aboriginal Perspectives in Science 7-12 (NSW Department of Education and Communities, n.d.) and Western Australia’s GECKOS program (Catholic Education Office of WA, 2012).

History

The overview of this learning area invites students to “examine historical perspectives from an Aboriginal and Torres Strait Islander viewpoint” (ACARA, 2015). Specific concepts that are identified refer to Indigenous peoples prior to colonisation by the British, which can be explored through stories in the Living Archive such as Gun-guwarr, in which an old man recalls history from the first people who arrived in Australia: “Their skin was black. We now call them Aborigines from Australia. We were here yesterday, today and will be here forever” (Pascoe, 1995), and traditional practices which pre-date western colonisation. Another comprehensive history is Ngį Balŋaṉa Mawurrku (Marika, 1989), a transcription of a song detailing the creation story of the Yirrkala area, and Djāwa (1979) on the lands around Milingimbi. Such stories invite students to compare historical traditions from Western and Indigenous perspectives, giving an alternative voice to that which often dominates the text books.

The specific Year 9 content descriptions invite students to investigate “the extension of settlement, including the effects of contact (intended and unintended) between European settlers in Australia and Aboriginal and Torres Strait Islander Peoples” (ACARA, 2015), which can be explored through early mission interactions at Haasts Bluff (Ferguson, 1987), the impact of the British on the Tiwi Islands (Waya Awarra Naki Awinjinguwaparrami, 1985), and working on cattle stations (Campion, 1994). A series in Warlpiri entitled Nyurrwiyi manu Jalangu-jalangu (“Then and now stories”) includes comparisons of traditional and modern life in areas such as hunting and funerals. Stories of massacres told from Indigenous perspectives, such as A True Bad Story (Yunupingu, 1981), and the story of the Coniston massacre (Japangardi, 1978), are also available. Stories familiar to non-Indigenous teachers and students can be read from an Indigenous perspective, such as the story of Lasseter’s Reef (Stevens, 1982, see also Ross, 1999 for a different version), and Indigenous experiences of World War II, for example the rescue of an American pilot (Wandjuk, n.d.), and the bombing of the Tiwi Islands (Kerainiau, 1986b) and Milingimbi (Djoma, 1974). The latter book describes the Yolngu response when they heard the Japanese were attacking: “they collected their spears---shovel spears, stone knives and cane spears---for we really didn’t understand; we thought it would be like when Aborigines fight” and names those killed and injured. Such stories add an interesting dimension to general teaching about issues such as exploration, colonisation and conflict.

Geography

The overview of this learning area focuses on “the relationships people have with place and their interconnection with the environments in which they live”, Indigenous knowledge and practices related to the connection to land, water and sky, and “Aboriginal and Torres Strait Islander Peoples’ use of the land, governed by a holistic, spiritually-based connection to Country and Place”. These issues can be explored in various ways through the Living Archive, for example stories of fire management in the desert (Allen, 2005) and the top end (Tipungwuti, 1990); further exploration of the seasons in Kriol (Wesan, 1985), and Warlpiri country (Spencer, 2005).
To bring a different cultural perspective to geographic and environmental knowledge, students can explore traditional stories about how landforms were created by ancestor spirits such as the Djan’kawu in the Yolngu area (Bäriya, 1974) or the rainbow serpent, represented in both the desert region (Inkamala, 1988) and the top end (Kerinaiua, 1986a).

This area is another ideal opportunity to invite Indigenous local authorities to share about the local area, for example in Darwin a local school has developed a website including local Larrakia perspectives on Rapid Creek (Millner Primary School, 2005). The ABC TV documentary on Kakadu (ABC Television, 2013) is just one of many resources available to explore Indigenous understandings of and relationships to land, many of which also include materials specifically designed for teachers.

**Economics and Business**

The content descriptor for this learning area in Year 8 encourages exploration of “the traditional markets of Aboriginal and Torres Strait Islander communities and their participation in contemporary markets” (ACARA, 2015). The archive contains stories of interactions with Macassan traders (e.g. Bopani 1988, plus a number of texts with no English translation), which pre-date colonisation. Another story in the archive describes different working arrangements for Indigenous people in the Katherine area, where some worked for white people on banana and peanut farms, and later cattle stations, firstly for rations and later for money: “They didn’t know much about money and they didn’t even know how to spend their money. So when they got their pay they used to save it in a money box made from tin” (Bennett, et al., 1994). Other stories describe sharing practices, or cautionary tales about the consequences of not sharing, such as Yambal (1974), and Marika (2011), and even advice about buying a car (Martin, et al., 1985). Such stories can be combined with other contemporary stories of Indigenous work practices to flesh out a more complex picture of Indigenous participation in contemporary markets.

**Civics and Citizenship**

The overview of this learning area invites students to explore Aboriginal and Torres Strait Islander customary law. This is demonstrated in books on customary marriage laws (e.g. Nakamarra, 1990), family obligations (e.g. Kerinaiua, 1990), appropriate behaviour (e.g. Kantilla, 1996), initiation (e.g. Egan, 1987) and various ceremonies (e.g. Granites Napanangka, 2008; Marika, n.d.). The opening statement in a book on funeral ceremonies, *Mala-mala-kurlu* (Ross, 2000) states its specific purpose:

> We are going to put into a book for you children so that you can keep it in your head. When we elders pass away you can keep your own Warlpiri knowledge strong here at Yuendumu forever. Do not throw it away.

There are also warnings against excessive drinking (Mununggurr, n.d.; Kerinaiua, 1989) or eating the wrong thing (Djäwa, 1983). These cautionary tales often have dire consequences for the participants and are used as powerful teaching tools, particularly for children. For example, the people who were killed for staring at the moon (Djäwa, 1975) or for building a fire on a sacred place (Cooper, 2001).

A fascinating example demonstrating contemporary Aboriginal and Torres Strait Islander Peoples’ experiences of Australia’s legal system include a text in Warlpiri and English entitled “Milyapungkalu Kardiyakurlangu Jukurpa” or “Know the European Law” which
...arose from the expressed need of Warlpiri people for information about the European legal system for their young people. Warlpiri people are keenly interested in the issue of European recognition of Aboriginal customary law and an equitable resolution of conflict between European and Warlpiri law” (Wayne & Sherman, 1981).

It explains the different levels of government in Australia, the rights of people who have been arrested, rules for police, and explanations of what may happen at the police station, with legal aid, at a court hearing, the appeals process, and other situations.

The Arts

The overview of this learning area invites students to explore the way Aboriginal and Torres Strait Islander art practices can involve combining art forms for both practical and cultural reasons, and how their oral histories and belief systems are contained in and communicated through cultural expression in story, movement, song, and visual traditions (ACARA, 2015). Each of the arts forms (dance, drama, media arts, music, and visual arts) can be linked with materials in the Living Archive.

Dance often appears in books which focus on ceremonial actions, but also in unexpected contexts (for a Western audience). For example, at the end of a hunting story when a man kills a shark, “the man danced the shark dance on the beach just like many Tiwi dance shark today” (Babui, 1991). Such a sentence can elicit further questioning and research can uncover demonstrations such as those at the 2016 Sydney Festival, where the Strong Women’s Group from the Tiwi Islands gave lessons in traditional Tiwi song and dance, including dances for shark, crocodile, turtle and rainbow (Sydney Festival, 2016).

In the area of Drama, a number of books in the collection present as ideal subjects for dramatic interpretation, whether simple early childhood stories which children can dress as animals and act out, or older children could dramatically represent some short texts which display facets of Indigenous community life, such as sharing with strangers (James, 2006), or stories of early contact such as Marlparri (1981) about relations with the earliest missionaries.

The Media Arts curriculum encourages students from Foundation to Year 2 to explore ideas, characters and settings in the community through stories in images, sounds and text, and in higher levels to compare media artworks from different social, cultural and historical contexts. In addition to the multiple opportunities to explore and compare, there are opportunities to create multimedia versions of stories in the archive with permission from the story owners. The Living Archive project site gives instructions and examples of how to do this, including suggestions for contacting story owners (Living Archive, 2015a), which could begin valuable collaborative work between schools and remote communities.

For the Music curriculum, the Living Archive features a selection of song books and books based on songs, which can be identified using the category filter ‘Song.’ Some include translations of English songs, so the tunes would be familiar to many, such as the song book Burarra Manakay (2009) which includes versions of ‘12345 Once I caught a fish alive’, ‘Incy wincy spider’, and ‘The wheels on the bus’ mixed with local songs. Others include chords and sometimes recorded audio versions of the songs, such as the Kaytetye song Wampere wampere which students can learn to sing along to (Turpin, 2005).

A number of units in the Visual Arts curriculum invite students to engage with works by Indigenous artists. Materials in the Living Archive include a wide variety of artistic styles, from simple line drawings, to watercolour paintings, to detailed digital creations, plus more
traditional art forms such as bark paintings (Yunupingu, n.d.), and body paintings (Yawarrka-kurlu, n.d.). There are also stories of children learning how to paint their dreamings (Granites, 2006) and stories of artists traveling internationally for exhibitions (Gallagher, 2007). A visit to a local exhibition of Indigenous artworks would be a useful accompaniment to this learning area, or an invitation to a local Indigenous artist to talk about or demonstrate their own work to the class.

**Technologies**

The overview of this learning area invites students to “identify, explore, understand and analyse the interconnectedness between technologies and Identity, People, Culture and Country/Place. They explore how this intrinsic link guides Aboriginal and Torres Strait Islander People in sustaining environments, histories, cultures and identities” (ACARA, 2015). The Living Archive provides an opportunity for students to view how Indigenous people in the Northern Territory have incorporated technologies into their knowledge transmission, in the creation of hundreds of books in language during the era of bilingual education (Bow, Christie & Devlin, 2016). Dating back to the 1970s, when the printing process was comparatively basic, there is a huge range of technologies represented, from simple offset printing of line drawings and hand-written text, to typed text and two-colour printing, through to interesting and creative presentations done with desktop publishing software and equipment. Some stories can be tracked across the different eras, such as the story of *The Little Frog*, which appears in several different versions in a number of different languages (see Figure 2).

**Figure 2: Different versions of ‘The Little Frog’ from the Living Archive of Aboriginal Languages.**

![Living Archive of Aboriginal Languages](http://laal.cdu.edu.au/)

The Digital Technologies curriculum is an ideal place to encourage interaction and collaboration with Indigenous communities across the country. As in the Media Arts curriculum, there is space to create multimedia versions of the materials in the archive, with the permission and collaboration of the story owners. Numerous software packages allow creative combinations of text, image and audio files, and guidelines for a digital story competition promoted by the Living Archive project team in 2015 give step-by-step instructions on how to take a story from the archive and bring it to life, and seeking permission from the story owner to make such a
derivative and upload it back to the archive (Living Archive, 2015b).

Other aspects of design technology that can be identified in the archive include instructional materials on design and traditional technologies, such as how to make a bark armband (Munkara, 1991), a ceremonial hat (Egan & Gallagher, 2008) or other ceremonial items (Gallagher, 2009). Indigenous design technologies such as boomerangs, yidaki, woomera, etc., appear in many of the items in the collection, and can be explored for aspects of their design and purpose. More contemporary explorations of Indigenous engagement with technology can be found through projects such as Indigenous Digital Excellence (National Centre of Indigenous Excellence, n.d.).

**Health and Physical Education**

The overview of this learning area invites students “to explore the importance of family and kinship structures for maintaining and promoting health, safety and wellbeing within their community and the wider community” (ACARA, 2015). Besides some game stories in the Living Archive (such as books on building toy cars (Wilton, 2005) and playing marbles (Rice, 1994b)), there are also a number of books relating to sports, such as football (Kámbaladda, 1984; Kintharri, 1980), and basketball (Rice, 1994a). Researching a topic such as the role of football and other sports in Indigenous communities would make an interesting classroom project.

Family and kinship structures are a common theme in the archive materials, and their connection to health, safety and well-being are exemplified in books such as Mununggurr (n.d.) which describes the dangers of drinking and its effect on family and culture.

A useful activity would be to explore different perspectives on some of the health issues affecting Indigenous communities around Australia, and see how these are presented from the perspective of the Indigenous people themselves, including discussion of how sickness is caused. The archive contains books which discuss common diseases such as trachoma (Boulden, et al., 1989), scabies (Gununwanga & Miwulga, n.d.), the health of eyes (Patrick & Jagamara, 1978) and ears (Rrikawuku, 1993), and books including simple instructions for children to stay healthy, based on initiatives such as Breathe, Blow, Cough (Kurdur-kurdur Nyinanjaku Pirrjirdi, 2005; see also Fatnowna, 2008). There are books about the danger of things such as flies (Gununwanga, 1993) and general books about food and health such as Garidjalalug & Zampech (1977) which describes good foods to eat (both bush foods and western-style foods) and warn against too much fat and sugar in the diet.

**Languages**

The overview of this learning area invites students to make “interlinguistic and intercultural comparisons across languages, including Aboriginal and Torres Strait Islander languages, to develop understanding of concepts related to the linguistic landscape of Australia and to the concepts of language and culture in general” (ACARA, 2015). As discussed earlier in this paper, an overview of the range of languages in the Living Archive demonstrates the vast range and complexity of languages spoken in the Northern Territory (and by extension around Australia).

In a Languages Other Than English (LOTE) context, it is possible to research connections between the target language speakers and Indigenous people, for example, an Italian teacher might refer to one of the earliest documentations of a Top End language which was made by an Italian missionary, Angelo Confalonieri (1847). A French teacher might find useful references in a site dedicated to French anthropologists researching Australian Aboriginal groups at
AusAnthrop (Dousset, 2003). As noted previously, there are a number of references to the Japanese interactions with northern Australia during WWII, and an Indonesian class may find it interesting to note words borrowed from the Macassan traders, such as djorra and rrupiya. Other books speak of the importance of language to the identity of Indigenous Australians, such as Marika (1991) on clan classifications, and Morrison (n.d.) who describes language shift in Warumungu over the last few decades.

Work Studies

This learning area is an optional component of the year 9 and 10 curriculum, and invites students to explore “how social and cultural factors can influence work behaviours and the expectations and prosperity of population groups, and engaging with role models and reflecting on historical perspectives in Aboriginal and Torres Strait Islander employment” (ACARA, 2015). Indigenous understandings of work may be very different to non-Indigenous understandings, for example family obligations are considered work, as are certain ceremonial tasks, and looking after country, which may not be remunerated in the same way as other kinds of employment.

A number of books in the Living Archive demonstrate the involvement of Indigenous people in different work practices, such as “Local heroes” (Kapurna nyinami nyampupiya, 2015) which documents a project by schoolchildren in Yuendumu interviewing local people about their work and life, and Bennett et al (1994) which describes old people’s memories about work experiences in the Barunga area.

Conclusion

The existence of an accessible set of authentic texts in Indigenous Australian languages creates great opportunities for the inclusion of Aboriginal and Torres Strait Islander histories and cultures across the Australian Curriculum. The respectful use of these materials can allow both Indigenous and non-Indigenous educators to access an insider perspective, as many of the books were written by Indigenous people for teaching the children in their own community, and thus gives a voice not often heard in the multitude of resources ‘about’ Aboriginal culture written by outsiders or specifically for non-Indigenous people. The resources in the Living Archive can be linked to existing resources, such as textbooks and other websites, to enrich and enhance the presentation of Indigenous knowledges and cultures. While there is a danger of selecting information at random without sufficient understanding to present it appropriately, the involvement of Indigenous authorities can bring significant depth to the discussion by engaging both students and teachers in a dialogue about these different perspectives. Rather than viewing the requirement to include such perspectives as a cumbersome addition to an already full curriculum, genuine respectful enquiry can bring great understanding, insight and awareness to the next generation of Australians of all backgrounds.
References


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