

The impact of new technologies on musical learning of Indigenous Australian children

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PRACTITIONERS ARE INCREASINGLY UTILISING information communication technologies (ICT) with very young children in early childhood settings. A debate is raging in the media as to the pros and cons of ‘virtual-electronic’ versus ‘material world’ active learning opportunities. However, when this scenario is played out with Aboriginal and Torres Strait Islander Australian children, it is even more contentious because the technological changes have resulted in shifting responsibility for teaching and learning of Aboriginal and Torres Strait Islander songs, dances and cultural heritage to a new physical and social environment which may distance musical development from community life. The rate of social change has been enormous, so in many cases there has not been adequate consultation and negotiation as to how early childhood professionals are to effectively implement the national *Early Years Learning Framework* (EYLF) (DEEWR, 2009) with respect for Aboriginal and Torres Strait Islander music culture. The purpose of this paper is to problematise the increasing distance of musical development away from Aboriginal and Torres Strait Islander communities, and to propose new methods for exploring how digital technologies may be utilised for promoting children’s musical development in various contexts. The findings are applied to early childhood practitioner recommendations for future community-led music research.

Introduction

Kathleen Donaghey reports in the *Courier Mail*, February 23, 2013 (p. 3):

Forget crayons, today’s toddlers are colouring in with a touch of their fingertips on tablet screens. Day care centres are introducing children to technology before they know the alphabet ... Mt Coolum Day Care Centre licensee Chris Buck said children did not even have to be taught how to use the touch screen device. They say, ‘I do it, I do it’. They know how to use it, he said.

Information communication technology (ICT) is becoming a normal part of young children’s daily existence. Digital technologies such as smart phones, game consoles, digital and web cameras, tablets, computers, USB sticks, multi-media and interactive whiteboards can be used for diverse communication purposes. According to the *Universal Declaration of Human Rights* (UN, 1948: Article 27), ‘Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits’. This indicates

that even young children are entitled to access the benefits of ICT, but at present there are limitations in understanding how this applies to transmission of Aboriginal and Torres Strait Islander languages and cultural heritage—particularly teaching and learning intangible song and dance traditions. In tribal society, the transmission was the responsibility of certain people within Aboriginal and Torres Strait Islander clan relationships. Now early childhood professionals are required to deliver multi-cultural arts and music education which accommodates children’s diverse ethnic traditions.

Practitioners are increasingly utilising ICT with very young children in early childhood settings to provide culturally relevant teaching and learning, including music education. A debate is raging in the media as to the pros and cons of ‘virtual-electronic’ versus ‘material world’ active learning opportunities. While it is important for early childhood professionals to address the optimal use of technology for all students, there is urgency to investigate the areas that intersect with community responsibility for intangible music heritage and culture of Aboriginal and Torres Strait Islander Australian children. The technological changes

are far more significant for this group because of the change in social roles and responsibilities for teaching and learning Aboriginal and Torres Strait Islander songs, dances and cultural heritage to the new early childhood social environment which may be removed from the natural environment (known as 'Country') and community life. The rate of social change has been enormous, so in many cases there has not been adequate consultation and negotiation as to how early childhood professionals are to effectively implement the national *Early Years Learning Framework* (EYLF) (DEEWR, 2009) with respect for teaching and learning Aboriginal and Torres Strait Islander musical culture.

There are several guiding documents that stipulate that Aboriginal and Torres Strait Islander children should be ready for successful participation and learning at school; and educators provide a culturally competent educational program for Aboriginal and Torres Strait Islander children. The *Melbourne Declaration* (MCEETYA, 2008) commits to improved outcomes for Aboriginal and Torres Strait Islander young people and strengthening early childhood education. The national EYLF (DEEWR, 2009) seeks to extend and enrich children's learning from birth to five years and through the transition to school. The EYLF and the associated national quality standards are intended to govern socio-cultural aspects of teaching and learning as well as the use of ICT. However, when first introduced the EYLF gave no guidelines for implementation with Aboriginal and Torres Strait Islander children—guidelines were to be developed at a later date (p. 6). The Secretariat of National Aboriginal and Islander Child Care (SNAICC) (2012) has since produced a series of factsheets which advise on implementation of EYLF (see www.snaicc.org.au/_uploads/rsfil/02896.pdf).

The *Draft Australian Curriculum: Technologies* (ACARA, 2013, p. 8) outlines the proposed use of ICT with Prep to Year 2, and states some general considerations for Aboriginal and Torres Strait Islander students in relation to the EYLF (see www.acara.edu.au). Greater understanding is needed because there are gaps in our knowledge about socio-cultural impact, particularly how to sustain the social roles, community engagement and evaluating the pros and cons of ICT in relation to young children's musical development.

Intangible cultural heritage such as song and dance is especially important for Aboriginal and Torres Strait Islander peoples because so much traditional culture song, dance and languages have been lost through the British invasion and European colonisation of Australia. The resulting sequelae of destruction and disconnection of Aboriginal and Torres Strait Islander peoples with traditional lands, subsistence lifestyles, languages, spirituality and lore has resulted in inequities in educational achievement and crisis in mental health which affects social and emotional wellbeing and attainment of children's developmental milestones. In many countries, the *UNESCO Convention for the Safeguarding of Intangible Cultural Heritage* (2003)

would apply, but this convention has not been ratified in Australia. The principles of the *UNESCO Declaration on Cultural Diversity* (2005) have been ratified in Australia and incorporated into the new *National Cultural Policy* (2013), along with the recognition of the importance of safeguarding Aboriginal and Torres Strait Islander music heritage and culture (see <http://culture.arts.gov.au/>). However, protocols have not yet been developed for transmission of traditional song, dance and stories through the customary select relationships of kinship within families and communities (Kono, 2009).

The purpose of this introductory scoping study is to problematise the issue: How can early childhood professionals support and enable culture bearers, families and communities to engage with digital technologies in a way that safeguards their roles and responsibilities for teaching and learning Aboriginal and Torres Strait Islander musical heritage and culture? This paper raises concern about the need for in-depth analysis of the impact of the use of digital technologies for early childhood musical development—particularly for Aboriginal and Torres Strait Islander children. Since the transmission of song and dance may be intangible and variable from one place to another, it is proposed that an ethnographic study of identified sites of cultural significance would inform the key research questions: How do parents, caregivers and communities currently transmit Aboriginal and Torres Strait Islander music heritage and culture at identified locations in the material or virtual world? How are digital technologies utilised at identified sites? Which sites are culturally significant for transmission of music heritage and culture? Three sites are proposed and discussed as being relevant to this study, which begins to analyse the impact of new technologies on children's musical development in informal, community-led teaching and learning contexts.

Methodology

First, a literature review was undertaken to position this study in relation to early childhood music research and digital technologies. The review reveals that there was little information that directly relates to Aboriginal and Torres Strait Islander early childhood music development and ICT. New knowledge is required about current teaching and learning practices. For this reason, environmental analysis is proposed at three sites of cultural significance to pilot methods that may be effective for future research.

The analysis informs our understanding of what ICT is currently used in particular sites and begins to consider impact and how to best support Aboriginal and Torres Strait Islander children's musical development through digital technologies. The discussion situates the issue within current informal teaching and learning practices and highlights the need for proactive community-led solutions that are developed in collaboration with children, families, Elders, respected culture bearers and early

childhood staff. An action research study is proposed that provides opportunities for informal linkages between children, parents, families, communities to help bridge the community connection and early childhood settings—thereby supporting early music development.

Three sites of cultural significance in south-east Queensland have been selected through convenience sampling, to map and analyse how various ICTs are currently utilised to promote Aboriginal and Torres Strait Islander children's musical development. The sites were identified by the author as being of potential interest due to the distinctly different features of the facilities and services—one being a centre-based music museum, another is an online virtual collaboration experience, and the final one is a community-led cultural festival. The pilot investigation was undertaken by literature review and analysis of information found on websites about each of the sites of cultural significance. If the methods are useful, then the study has potential for extension to analyse further sites of cultural significance through online ICT and fieldwork investigation in identified strategic locations throughout Queensland. This study is still in the exploratory planning stages which is a springboard for community consultation and ethics application for collaborative action research.

In order to discuss features of Aboriginal and Torres Strait Islander Australian song and dance, a distinction between 'traditional' and 'contemporary' music needs to be made. 'Traditional Aboriginal and Torres Strait Islander' refers to song and dance that has tribal Aboriginal and/or Torres Strait Islander cultural features, whereas 'contemporary Aboriginal and Torres Strait Islander' is used to describe Aboriginal and Torres Strait Islander song and dance produced in non-traditional styles. The distinction is somewhat blurred because the term 'music' does not even appear in traditional Aboriginal and Torres Strait Islander languages, but is now commonplace in everyday discussion (Dunbar-Hall & Gibson, 2004).

Literature review

Benefits of advances in ICT

There are numerous benefits to the use of ICT media in early childhood, but at this stage the expected outcomes cannot be generalised across all cultural groups, age groups or regions. According to Waldron (2013) YouTube™, fanvids, forums, video-logs and blogs enhance the development of convergent online and offline music communities—and it is feasible that this interactivity could facilitate informal music learning. Community building is an important feature of technologies that can enhance social networks for musical development.

ICT applications may be viewed as a form of enculturation that is open to mediation by educators, parents or community members that have the necessary skills, to

enhance literacy or other agendas. Many young children quickly acquire skills in ICT use through sibling and peer support. There is, however, little research available to evaluate the significance of the transmission and mediation of traditional and contemporary Aboriginal and Torres Strait Islander music through digital modalities. The benefits of ICT warrant further analysis in relation to understanding the needs and potential for supporting musical development for Aboriginal and Torres Strait Islander children. Mapping and evaluating sites of cultural significance may inform how to facilitate linkages to support early musical development and to help bridge the early childhood-community connection.

In mid-2013, a new project partnership entitled 'Indigenous Digital Excellence Agenda' (IDEA), was established between Telstra and the National Centre of Aboriginal and Torres Strait Islander Excellence to address the question 'How can we co-create a nation where young Aboriginal and Torres Strait Islanders can thrive in the digital world?' (see <http://indigenouddigitalexcellence.org.au/>). The IDEA study provides some background mapping and consultation on the utilisation of digital technologies by Aboriginal and Torres Strait Islander peoples in locations around Australia, but further knowledge is needed about ICT applications that support musical development for Aboriginal and Torres Strait Islander children. ICT is developing rapidly, which makes it essential to study technologies for musical development as they are evolving in naturalistic and virtual environments. It is not possible to generalise findings from one location, or cultural group, to another. Applications are situation- and people-specific.

Issues of concern with ICT

The problems and concerns about the use of ICT media with young children are extensive and have centred on children's exposure to risks which Anne Grey (2011, p. 77) summarises as: 'content that is inappropriate; contact with inappropriate individuals; commercialism in the form of unwanted marketing and advertising aimed specifically at young children; and the culture of some aspects of online activity, including cyber-bullying and the infringement of copyright laws by downloading music and films'. The length of children's 'screen time' has been associated with obesity, and/or decline in book reading (Plowman, Stevenson, Stephen & McPake, 2012). Grey (2011) contends that cyber-safety education should begin as soon as young children start using ICTs, particularly for the internet; adult guidance is needed to explain the risks and benefits of technology due to children's developmental limitations in social judgement. The ICT tools need expertise to set up and utilise, however differences in being able to access and afford technologies discriminate against families that have fewer resources (Plowman et al., 2012). Peter Radoll, (2012) describes a digital divide, in that many Aboriginal and Torres Strait Islander peoples are disadvantaged in their access to ICT for social and economic reasons.

Educators increasingly utilise visual technologies to capture still and moving images of children for documentation and reflection on their professional practice in online forums and blogs. This raises ethical concerns over power relations during surveillance and the capacity for children to actively participate (Lindgren, 2012). Children may not have been consulted about whether they wish their images and paintings to be displayed on the walls of their classrooms. There can be over-reliance on visual modalities which do not readily capture children's voices or fully document their creative processes (ibid, 2012). The debate over the use of ICT with Aboriginal and Torres Strait Islander children can be problematic because teaching and learning expectations may compromise protocols for transmission of Aboriginal and Torres Strait Islander cultural heritage—bringing about a disjuncture in belonging, being and becoming.

ICT and musical development

Comparative studies of early childhood music education policy and practices in many countries around the world are presented in the journal *Arts Education Policy Review* (2007, 2008). The authors are from Brazil, England, Kenya, Puerto Rico, South Africa, United States, Australia, China, Denmark, Korea, Israel and Taiwan. They highlight similarities and differences in findings which are summarised by Custodero and Chen-Haftech (2008): according to (a) tensions between child and adult culture; (b) competing influences by global, regional and local agencies on standards and curricula; and (c) expectations for teacher knowledge and preparation. There was consensus that pre-service teachers received inadequate training and ongoing professional development to carry out their responsibility for incorporating musical learning into teaching and learning—especially for culturally and linguistically diverse communities. However, community-led music teaching and learning initiatives do not feature very much in the discussions. Aboriginal and Torres Strait Islander musical culture was not discussed—even on the paper about Australian early childhood music education policy and practice (Suthers, 2008). Further research is required—especially in light of the requirements of the new draft Australian curriculum: Technologies (ACARA, 2013).

A national survey of perceptions of Aboriginal and Torres Strait Islander music education was conducted more than 10 years ago (Dunbar-Hall & Beston, 2003). A study of high school music education for Aboriginal and Torres Strait Islander students in New South Wales found that 'teachers are responsible for educating students about Aboriginal music(s) and culture(s) within a mandatory focus on Australian music' (Power & Bradley, 2011, p. 22). However, an overview of Aboriginal and Torres Strait Islander music education concluded that teachers have inadequate training to fulfil this responsibility (Murphy-Haste, 2010). The internet provides a rich source of examples of YouTube videos and websites produced by

Aboriginal and Torres Strait Islander community members who provide cultural education, including music, song and dance. There are also numerous websites for cultural festivals and music museums that promote safeguarding of Aboriginal and Torres Strait Islander cultural heritage, language, song and dance. This represents living culture that is amenable to further community-led development.

Requirements for safeguarding Aboriginal and Torres Strait Islander music heritage and culture

The UNESCO Cultural Heritage website (2013), states: 'The concept of heritage in our time accordingly is an open one, reflecting living culture every bit as much as that of the past'. Aboriginal and Torres Strait Islander musical heritage and culture falls into this concept of living culture, but unlike the visual arts, musical traditions tend to be more ephemeral and intangible—usually transmitted through oral traditions, but in recent times increasingly recorded through text and digital technologies.

Changes have occurred in sharing recordings that are removed from performance in time, place, and social relationships, which necessitate negotiation of cultural protocols. There are positive examples where social roles of Aboriginal and Torres Strait Islander community members have been maintained in school settings, such as the YouTube video of *Damarda pekpek class 5b Our Lady of the Sacred Heart College, Wadeye*, Northern Territory (2013), shows Elders singing and dancing with students (see www.youtube.com/watch?v=PlcjV7mpD3k). This performance is part of a weekly culture lesson that relies on the availability of community members who are willing and able to share Aboriginal and Torres Strait Islander song and dance traditions.

It is recognised that the intention of the Council of Australian Governments (COAG) is to develop effective partnerships with communities to close the gap between Aboriginal and Torres Strait Islander and non-Aboriginal and Torres Strait Islander educational achievement in a decade. However, the place of young children may be problematic in these discussions because formal education has recently extended to compulsory attendance for four-year-old children in preschool, and there is little research on the socio-cultural impact of relocating Aboriginal and Torres Strait Islander musical development away from the context of community living prior to school entry.

Many government cultural institutions have measures in place to safeguard Aboriginal and Torres Strait Islander music heritage and culture, but the need is far greater than the resources available. The Australian Institute of Aboriginal and Torres Strait Islander Studies (see www.aiatsis.gov.au), and the National Recording Project for Indigenous Performance in Australia (see www.aboriginalartists.com.au/NRP.htm) are making some advances, but it appears that early childhood musical development has not been a priority in curatorial research to date.

The first author has developed musical tutorials for use with preschool Aboriginal and Torres Strait Islander children through support from Gunawirra Service, via the Tracking the Milky Way website (see <http://trackingthemilkyway.com/music-page/>), and Music Health Australia (www.musichealth.com.au). The Music Outback Foundation provides some music development services to children in schools in New South Wales but funding for this outreach work is limited (see <http://musicoutback.com.au/>). Aunty Wendy's Mob has some commercially available music teaching resources available through their website (see www.auntywendysmob.com/). This brief survey indicates that approaches to early childhood music education are very fragmentary for Aboriginal and Torres Strait Islander children at least until they leave school and may be accepted to attend vocational training at the Aboriginal Centre for the Performing Arts in Brisbane, the Centre for Aboriginal Studies in Music at the University of Adelaide, or the Wilin Centre for Indigenous Arts, associated with Faculty of Victorian College of the Arts and Melbourne Conservatorium of Music in Victoria. A Harold Blair Scholarship was offered through the Melba Opera Trust in 2012, however, in most cases parents are required to fund private music lessons for students who wish to excel in musical careers, and that is not feasible for those families that cannot afford private tuition for their children. Literacy through reading and writing takes priority in schools, regardless of the traditional tribal custom of oral transmission through song, stories and dance. To find further knowledge and understand the impact of ICT on musical development in community settings, it is necessary to review several sites of cultural significance for children's musical development in Queensland, and globally through virtual networks. This selection takes advantage of new ICT interconnections, as well as local cultural opportunities.

Review of sites of cultural significance

Environmental analysis 1: International Space Station (ISS)

The gamut of ICT exploration by young children has ranged as far as sharing their paintings with Chris Hadfield, astronaut and first Canadian commander on board the International Space Station (ISS). On 20 March, 2013, Sarah Stephen tweeted to Hadfield, 'my little artist came home with this today' (a young child's cardboard sculpture of a space scene) (Stephen, 2013). This is an example of how parents have mediated a way for children to communicate through creative modalities with people living on the ISS—even before they start school. Space travel is of particular fascination for many children; Donaghey (2013, p. 3) reports, 'Within the program [tablet screens] are used a lot to understand something children may be interested in, for example, one group was able to watch the space

shuttle launch on the NASA website'. The socio-cultural aspects of this creative collaboration through technology are only just beginning to become apparent, but the full ramifications are not yet known. The ISS has some of the most cutting-edge technologies for research so is of particular interest in the way that it promotes creative collaborations for educational and other purposes.

The YouTube video of Don Pettit (2012), NASA Astronaut, playing what he calls 'the didgeridoo' on the ISS, was posted as part of the *Science Off the Sphere: Episode 9, 'Space Soundwaves II—Electric Didgeridoo'*. (see www.youtube.com/watch?v=mIQPjvTkjok). Pettit explains how he modified his astronaut uniform t-shirt by cutting off the sleeves so that he looks more like a 'musician who plays the didgeridoo'. While this is all part of the fun of playing around with scientific experiments in space, children are exposed to a musical performance on an electric vacuum hose that purports to be a didgeridoo. The lesson directs children to focus on scientific questions about the physics of playing the device.

Karl Neuenfeldt (1997) highlights the socio-cultural evolution of didgeridoo playing which is believed to have started in Arnhem Land and was taken up by other Aboriginal and Torres Strait Islander Australians to the point that the music tradition became iconic to Australia. Didgeridoo playing was translocated into cross-cultural diversification through people of many different nationalities playing didgeridoo-like instruments all over the world. As people disseminated and globalised the musical tradition, the function of the didgeridoo in musical traditions changed and it became dislocated from the ceremonial role in traditional Aboriginal and Torres Strait Islander Australian lifestyles. Connections with land, social context, traditional languages, lore, spirituality and cultural practices were lost because there was no requirement for consultation or negotiation with culture bearers and little recognition of the value of safeguarding the Aboriginal and Torres Strait Islander Australian musical transmission conventions.

On the other hand, the ISS has recently been recognised for positive innovations in musical performance through remote connectivity with musicians on Earth—including advocacy for a music education campaign on 6 May, 2013. Astronaut, Chris Hadfield, rose to prominence in the *Time Newsfeed* for recording the first Earth to ISS musical performance with Ed Robertson, vocalist of the Bare Naked Ladies Canadian rock group, and the Wexford Gleeks children's choir on 15 February (Grossman, 2013). The lyrics of 'Is Someone Singing', were composed by Hadfield and relate to his experiences aboard the ISS. This remote connectivity in musical performance reveals the immense potential for musical collaboration with children through digital technologies beyond the Earth's surface. The technological change is significant to promoting Aboriginal and Torres Strait Islander musical heritage and culture; but socio-cultural sensitivities need to be considered in tandem with education about scientific advancements.

Environmental analysis 2: Purga Music Museum and community storytelling

The children's educational resource, *The Purga Music Story and Harold Blair* (Kirkwood, 2005), was developed in consultation with local people, and descendants of the Purga Aboriginal Mission in Ipswich, Australia. Oral history video-recordings of Aboriginal Elders speaking about their memories of music in the region are available in the Purga Music Museum. Some of the Elders have passed on, but their legacy of memories remains for future generations through the stories they shared. The Purga Music Museum is a meeting place for stakeholders to gather and to share or perform their musical heritage and culture.

The stakeholders realise the value of gathering and utilising music history storytelling through video-recordings that can be archived in local repositories and shared on the terms specified by the Elders and respected culture bearers. Some would argue that recording the stories actually freezes the oral tradition and reduces dynamic changes, but in another sense recording safeguards the stories to allow more open access and broader geographical distribution over time (Kono, 2009). The social environment of the Purga Music Museum facilitates processes for negotiation of cross-cultural exchanges and negotiations which relate to safeguarding stories from the neighbourhood that once contained the Purga Aboriginal Mission (Kirkwood, 2010). The ethics of re-telling stories, songs and dances from the community-of-origin's oral tradition require special consideration in specific teaching and learning contexts.

Environmental analysis 3: LINES in the SAND art festival

An example of a community-led response to Aboriginal and Torres Strait Islander cultural heritage management is the Stradbroke: LINES in the SAND Art Festival, an event which has run annually since 2009. The activities range from 'Culture and Country' to 'Art and Ecology' (see www.linesinthesand.com.au). Artists use materials found in the natural environment to create artworks in public places at Point Lookout, Stradbroke Island. 'LINES in the SAND defines its own style of environmentally sustainable art, incorporating Aboriginal cultural forms with community input and children's creativity, and even spontaneous happenings. It also embraces new media: sound, conversations, digital technologies' (Cooper, 2012, p. 5). The valued connection between children, community arts, natural environment and digital technologies becomes apparent in the way that island residents welcome the festival each year.

Aunty Joan Hendricks, Ngugi Elder and Traditional Owner of Quandamooka, states:

We welcome the creation of ephemeral artworks using natural materials such as reeds, sticks, feathers, sand, shells, leaves and bark. We acknowledge the wisdom of incorporating the detritus of modern life—such as eroded plastics washed up on our shores—

to make art that draws attention to and celebrates the environment. We appreciate how LINES in the SAND engages with our own Aboriginal traditions of painting and weaving, and also with island families. Art workshops based on the beauty of nature introduce young creative minds to the possibilities for making art, telling stories and valuing the environment ... using art as a lens through which to perceive and understand our island (ibid, p. 4).

This reveals that communities have developed unique ways of showcasing their cultural heritage. Involving children in the arts is part of enculturation processes that support creative exploration and play. The inter-generational features may facilitate social relationships and build community capacity through mentoring and co-creative discovery. The interactions are likely to enhance social inclusion and foster economic benefits of cultural tourism. There is a need to evaluate the transactions in these informal settings that promote musical development of Aboriginal and Torres Strait Islander children and to extricate how ICT is used by community members.

Recommendations for future research

This study has presented findings from literature review and exploration of three sites of cultural significance to inform understanding of Aboriginal and Torres Strait Islander Australian children's musical development and new ICTs. Environmental analysis has been useful for identifying examples of culturally engaged implementation of the EYLF (DEEWR, 2009) in community settings, but further details could be gleaned through participant-observer research at some of the sites. The findings highlight that formal early childhood musical education initiatives fall short of realising the national vision: [that] 'All children have the best start in life to create a better future for themselves and for the nation'. The significance of this study lies in the potential for new methods of environmental analysis of sites of cultural significance to reveal 'pathways that link early childhood development to human capital' showing benefits for children immediately, adults and society in the long term (COAG, 2009, p. 34).

The findings of this introductory scoping study reveal that little has been written about Aboriginal and Torres Strait Islander children's musical development and the impact of ICT in the research literature—especially in relation to specific sites of cultural significance. Cultural heritage management has focused mostly on safeguarding traditional languages and preserving landmarks in the physical environment rather than analysing how to actively promote transmission of intangible musical heritage and culture, or to restore social relationships and responsibilities for teaching and learning. This article challenges early childhood professionals to consider how to foster community engagement through technologies that promote Aboriginal and Torres Strait Islander children's musical development.

Place-based planning between early childhood professionals, children, families and Elders as respected culture bearers appears to be extremely important. Examples of partnerships in research and projects have been cited as examples of a way forward for future participatory action research with communities. The findings of this study have broad significance for the development of new research methodologies for understanding how digital ICT may support early childhood music development for Aboriginal and Torres Strait Islander children. Environmental analysis paves the way for communities and early childhood professionals to understand and negotiate cultural sensitivities locally and globally. A formal research study is proposed that would involve coordination of further environmental analysis of sites of cultural significance to Aboriginal and Torres Strait Islander children's musical development in Queensland. Researchers and co-researchers could determine the most effective way to share findings that are ethical and respectful. ICT social networking or digital technologies may be important to maximising exchange of learning between centres and communities which advances early childhood music education in the twenty-first century.

Biographies

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