

*MATJARR DJUYAL* ‘HAND TALK’: HOW USING GESTURES IN  
TEACHING THE REVITALISED GATHANG LANGUAGE HELPS  
PRESCHOOLERS LEARN AN ABORIGINAL LANGUAGE

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A thesis submitted for the degree of  
Doctor of Philosophy

The MARCS Institute for Brain, Behaviour and Development  
The ARC Centre of Excellence for the Dynamics of Language  
Western Sydney University

December 2022

## **Dedication**

This thesis is dedicated to my mother, Jane Lawrence (nee Holten-Moran), to my grandmother, Josephine Pearl Moran (Little Nan), and to my grandchildren, Shauna Pope, Jolie Brock, James Pope (Jimi), Robert Pope (Bobi), Harlem Brock, Guula Mehan, Gilayn Mehan, Ngaluwi Mairu, and Wayila Mairu.

Unfortunately Mum passed away in August, 2022 before I completed the thesis. Mum said she was proud of me for continuing with my studies. I wish she would have been here to read the final pages. Nan said ‘Get the best education you can’ her words resonated with me as I accepted the scholarship to undertake the research. I know Nan and Mum are with me in spirit. I love and miss them so much.

I hope my grandchildren will read this thesis and be proud of what I have achieved. My aspirations for language revival and survival are in my grandchildren’s hands.

## Acknowledgements

I acknowledge *Ngaya-Barray* ‘Mother Earth’ and *dangaygal* ‘the ancestors’ for guiding me to see the unseen and for keeping me grounded throughout the research journey. A big time I have had over the last 5 years with the COVID restriction and lockdowns, a number of natural disasters, storms, floods and fires affecting our lifestyles, wellness and access to services. My mother’s health conditions kept me by her side many a times. Continuous sad news and sorry business in our Mid North Coast communities has dampened my spirit, and my mental and physical health has suffered from lack of attention. However, all these challenges have not extinguished my passion for the use of hand talk to teach the Gathang language and to complete the research thesis.

I am grateful to my husband, Jon Radley, and my daughters, Trish McInherny, Gulwanyang Moran, Arly Mehan and Jette Webb for their backing. I am especially appreciative of my husband’s labour to do the little things, cleaning and shopping so I had more time to write. Jon’s belief in my ability to succeed kept me going in my darkest hours. The Djiyagan Dhanbaan ‘strong sisters’ have been my saving grace by keeping me connected, inspired and nurtured. I wouldn’t have remained sane without them all.

It has been a pleasure to continually work with the Port Macquarie Community Preschool Centre community and a *marrungbu djuyal* ‘big thank you’ to them for their support over the years. To the children that participated in the research, their enthusiasm to learn the Gathang language brought hope and joy into my heart. To the Educators I interviewed, their open and honest responses and shared insights meant so much to me and to the outcome of the research.

*Marrungbu* to Sam Mehan, Jon Radley and Kathy Graham for their support in recording classroom and testing sessions, to Lori-Ann McKinnon for organising my paperwork, to Maree Hutchison for your AUSLAN guidance.

I am thankful to the many friends that showed interest in my field of research and the following organisations that supplied supporting letters: Birpai Local Aboriginal Land Council, Hastings area Aboriginal Education Consultative Group, Muurrbay Aboriginal Language and Culture Co-operative, Djiyagan Dhanbaan Group, Guulaguba Barray Inc, Port Macquarie Community Preschool Centre.

I am deeply grateful to my deeply inspiring supervisory team, principal supervisor, Professor Caroline Jones for always encouraging me and believing in my abilities to achieve. Doctor Mark Richards for being readily available for a catch up and his gentle guidance. Doctor Jose Hanham for his honest and direct critique of my writing and his support. Doctor Tess Ryan, *barraba djiyagan* 'my sister' has kept me strong and instilled in me a willingness 'just to have a go', her staunchness as an Aboriginal researcher/writer has progressed my thinking and writing. A special mention to Kylie Dowse, Uncle Michael Jarrett (Mikelo), Susan Poetsch, Denise Angelo and Amanda Lissarrague. Kylie for being my mentor, writing host and cuppa tea maker, Uncle Mikelo for being inspirational and co-presenting with me at Puliima, National Language and Technology Conference in Darwin, 2019, Susan for creating opportunities for me to share my research journey with others and all the work she does with Aboriginal mob to keep them strong and inspired in their language work and Denise for sharing knowledge of language structure and her gentle ways of encouragement. *Marrungbu* to all these amazing humans for walking with me on this path and also sharing their knowledge, experience and wisdom with me. Amanda for your courage to undertake the research to produce the Gathang dictionary, a reference book for all Gathang, Birrbay, Warrimay and Guringay nations to start their language revitalisation journey. I could not have done this without them all. I am also appreciative of the financial and resource assistance received from Western Sydney University, The MARCS Institute for Brain, Behaviour and Development and the ARC Centre of Excellence for the Dynamics of Language.

Final *marrungbu*, to all the Language warriors, from many Aboriginal nations around the Country, now known as Australia, especially Jeremy Saunders, Mandy Davis, Benn Saunders, Jonathan Lilley and Sharon Edgar-Jones and a big shout out to the Djuyalgu Wakulda members: Gulwanyang, Moran, Gili Arlene Mehan, Angela Marr, Samantha Wright, Lori-ann McKinnon, Amy Davis, Kathy Graham, Wayne Anderson, Kay Sadler, Maree Hutchison, Jazile Davis, Robert Gardner, Ruth Gardner and Daniel Collins for keeping the flame burning to ignite others to start or continue their language learning. And to Julie Long, Muurrbay Language and Cultural Cooperation, for always being available to give me language guidance and for all the catch-up yarns. A special *marrungbu*, in remembrance and respect to three Birrbay community members for their language sharing and cultural knowledge: Jay Davis for his many calls to yarn about language and culture, I will forever miss his I love you and the end of his calls. Aunty Pam Saunders for her invitations to step into cultural practices with her. Aunty Wilma Morcome for her blessings and always encouraging the young ones to be strong in their identity and to learn language. These legends kept me strong in cultural ways and they will never be forgotten.

Words of thank you are not enough to express my deep appreciation of the time, commitment and effort my principal supervisor, Professor Caroline Jones has given not only to me but also to other Aboriginal researchers and in general to Aboriginal language revitalisation efforts. She is a champion of the highest degree, her integrity and professionalism with a down to earth attitude has enabled my growth as an academic. Bless you Caroline for walking with me on this journey and at times holding my hand.

Rob Waters' poem closed the circle, my thesis ends with his words. For Rob's kindness in sending me the poem and his powerful storytelling I am grateful. 'I will speak now, and you, well you will listen'.

**Statement of Authentication**

The work presented in this thesis is, to the best of my knowledge and belief, original except as acknowledged in the text. I hereby declare that I have not submitted this material, either in full or in part, for a degree at this or any other institution.

A black rectangular redaction box covers the signature of the author. There are some faint handwritten marks around the box, including a checkmark on the right side.

*Anjilkurri Rhonda Radley*

*December 19, 2022*

## **Declarations**

I acknowledge PhD scholarship funding from the Australian Research Council's Centre of Excellence for the Dynamics of Language (ARC CoEDL) through Western Sydney University and from the Badanami Centre for Indigenous Education at Western Sydney University. A professional transcription service was used to generate transcripts of interviews for Study 3. I also acknowledge support in the final phase of thesis editing for the references formatting (Maya Sherchan) and creation of table of contents and long PDF document (Dr Weicong Li).

## **COVID-19 Impact Statement**

The original plan to run a follow-up study to the preschool classroom-based experiments had to be abandoned when COVID-19 restrictions were implemented in New South Wales, Australia, from March 2020 until December 2021. As a result, we had to change the focus of the research to analyse the three datasets that had already been collected during 2019. We also focused on writing and publishing, including Indigenous perspectives. Two chapters were published during the candidature as peer-reviewed journal articles (the methodologies article within Chapter 3, plus the experiment that constitutes Chapter 4).



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## Abstract

This research seeks to expand current knowledge on language revitalisation and the effectiveness of gesturing as a teaching strategy for young children learning the Gathang language. Gathang is a revitalised language of the Birrbay, Warrimay and Guringay peoples located on the Mid North Coast, New South Wales, Australia. The thesis weaves together strands or threads that represent Aboriginal knowing, being and doing, influencing Aboriginal language revitalisation and research. Using gestures (known as 'hand talk') with children and undertaking in-class experiments, the research aims to combine Western-focused theory regarding linguistics and Aboriginal cultural ways relating to storytelling and cultural knowledge.

Two experimental studies measured the effectiveness of gesture, by employing a context in which other variables (e.g., other teaching pedagogies) could be held constant. In Experiment 1 (Chapter 4), participants were forty pre-school children (4–5.2 years of age). Participants were taught Gathang language nouns with gesture and without gesture, alongside verbal and pictorial instruction. In Experiment 2 (Chapter 5) participants were thirty-four pre-school children (4–5.2 years of age). Participants learnt Gathang language, specifically two groups of suffixes, tagged onto nouns previously learnt, with and without gesture, alongside the pedagogical use of verbal instruction, pictures and tangible items.

The two experimental studies were carried out as a series of carefully designed face-to-face classroom lessons at Guruk (Port Macquarie, New South Wales, Australia) during 2019 (i.e. prior to the lockdowns and mask wearing that characterised the experience of the COVID-19 pandemic in New South Wales in 2020–21). In the lessons the preschool children were taught Gathang nouns and suffixes either with a specific set of gestures or without gesture. The use of gesture was counterbalanced across learner cohorts and word sets, so that the children acted as their own controls. After the lessons, each child was assessed for their

receptive and expressive knowledge of Gathang nouns (Experiment 1) and nouns+suffixes (Experiment 2) two days after the lessons at Post-test 1 (termed 'acquisition') and seven days after the lessons at Post-test 2 (termed 'retention').

In Experiment 1 the results showed a statistically significant effect of gesture on children's learning of Gathang nouns. Preschoolers displayed greater receptive knowledge of Gathang words learned with gesture than without, in the retention testing though not in the acquisition testing. In the retention testing, the effect on expressive knowledge also approached but did not reach statistical significance. Experiment 2, however, showed no significant effects of gesture on learning nouns+suffixes, in either receptive or expressive knowledge, at Post-test 1 and at Post-test 2.

Alongside experimental investigation, this thesis investigated the perspectives of the children's regular preschool educators on the use of gesture that they had seen in the experiments. In Study 3 semi-structured individual interviews were conducted with eight educators from the preschool. A thematic analysis of the interviews provided information about their perspectives on the role of gesture in supporting Gathang learning. It also provided some evidence to suggest that gestures functioned as a useful tool in Gathang revitalisation more generally by providing a mechanism for Gathang language to ripple out from the teaching sessions into the preschool, children's homes and community, and to build a broader team of active supporters for language revitalisation particularly by involving the educators in an accessible practice that they viewed as being appropriate and beneficial to the children in their care.

In summary, these findings of this thesis contribute to a growing body of research attesting to the effectiveness of gesture for improving language acquisition amongst learners. The findings provide the first detailed picture of how gesture can be effective in an Aboriginal language revitalisation context, both for the learning of preschool children in classroom

settings, and as a way of involving their mainstream educators. This evidence should embolden language practitioners and linguists to include gesture in the design of language revitalisation programs since gesture also aligns with traditional Aboriginal teaching practices and offers a relatively low-cost strategy for helping teachers assist their students in acquiring Aboriginal languages.

## Prologue

I am a proud Goori<sup>1</sup> woman with strong cultural and family ties to the Birrbay<sup>2</sup> and Dhanggati peoples (Mid North Coast region, New South Wales, Australia) through the bloodlines of my grandparents, William Henry Holten Guula nee Davis and Josephine Pearl Moran. Acknowledging my grandparents enables other Aboriginal people to position me within their kinship structure. In Aboriginal ways, everything is relational and connected: family, culture, language and land. In the Birrbay communities I am also known as Aunty Rhonda, *Baan* ‘Aunty’ and *Anjilkurri* ‘gumtree blossom’.

Born on Birrbay Nation, at Guruk (Port Macquarie), my grandfather's Country, I have strong spiritual ties to this land through being birthed on Birrbay Country and through my Birrbay ancestors. Therefore I have a deep connection to the sounds of Birrbay Barray ‘Country’. In my gut and heart, there is a passion to speak and to revive the language. Many experiences come to mind when I think about my life and my language journey. These experiences have led me to where I am today, ‘breaking the silence for the young ones’.

I cannot start to speak about language revitalization without sharing a little of my family history on the loss of language. In the early 1900s, a lot of my mob were forced off their land and relocated to Government reserves. Aboriginal people across the Mid North Coast region were dispossessed of their traditional lands, disrupting their way of life and cultural practices. On the reserves, which were managed by government officials, to speak any Aboriginal language was forbidden, and doing so could result in severe consequences.

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<sup>1</sup> *Goori*, which is spelled *Guri* in Gathang language, is a term used by Aboriginal people on the Mid North Coast, NSW, to describe the Aboriginal people of this region.

<sup>2</sup> Birrbay is the Language spelling for the Nation, the other most common spellings are: Birpai, from the northern area of the Nation and Biripi from the southern area of the Nation.

Regrettably, though not surprisingly, the Language became dormant. ‘The Language<sup>3</sup> went sleeping’, as I have described it in the past (Radley et al., 2021). Although there was silencing of the Language, the Language existed all around us on Country. It is the vibration of the land and all the land holds. Amelia Turner describes this connection beautifully in her statement to the Australian Government's Inquiry into Language Learning in Indigenous Communities (2012, p. 10):

*Words are given to us by the land and those words are sacred. The land needs words, the land speaks for us and we use the language for this. Words make things happen—make us alive. Words come not only from our land but also from our ancestors.*

The Language did not go sleeping; we went sleeping in that state of silence. However, I imagine that the old people would have been secretly speaking the Language. I am grateful for their perseverance with the Language in difficult times.

When I think of those earlier days, a sadness washes over me knowing the hardship experienced by my mob.<sup>4</sup> My Mum’s early childhood experience was living on the Burnt Bridge Reserve, under government control. In Kempsey, the closest township, she had to deal with racial discrimination. Experiences such as the exclusion from going into the local swimming pool, of always made to sit up the back of the bus, or the exclusion felt at the movie cinema. Mum was made to enter in the darkness once the movie had started, and had to leave in the darkness before the movie was over. This segregation made life simpler for White people living in the area, and all the more difficult for the Aboriginal people who had to hide their very existence. Mum spent time in the Cootamundra Girls' Home<sup>5</sup> exposed to an

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<sup>3</sup> ‘Language’ is conventionally spelled with a capital when it refers to an Australian Aboriginal language such as Gathang. Capitalisation is also current accepted protocol and respectful convention when using other terms used in this thesis such as ‘Country’, ‘Aboriginal’, ‘Indigenous’, ‘First Nations’, and ‘First Peoples’.

<sup>4</sup> ‘Mob’ is a term used by Australian Aboriginal people to mean family or a relational connection to a group of people or things.

<sup>5</sup> The Cootamundra Girls’ Home was established as a training institution for Aboriginal girls who were removed from their families under the Aborigines Protection Act 1909-1969. The girls experienced systematic racial discrimination to remove their Aboriginal identity and alienate them from their families. <https://www.cootagirls.org.au/history-of-the-home/>

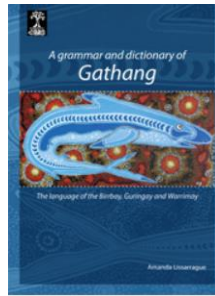
alien, imposed culture, separating her from her family, language, culture and land. These experiences had a devastating effect on my Mum; all her life she carried the trauma from these days. It was only in her later years she was able to talk about the experiences of hearing babies and the younger girls crying for their families, the severe punishment she and others experienced, and the separation from her mother. In conversations with Mum about the Language she said she had learned some words but not achieved language fluency. This meant she was not able to pass on this cultural knowledge. Mum was denied this through the very real fears that consumed parents of the Stolen Generation. Aunty Joyce<sup>6</sup> told me that she 'would often hear Mum and Aunties speaking in lingo but they wouldn't teach the children from fear of having them taken away'.

As a child, I did hear some of the old people speaking to each other in the Language. They were not talking to me so I didn't connect with what they were saying. Growing up hearing the Language words woven into English language made me feel that something was missing. For years, however, there was only talk about bringing the Language back. It was not until the Muurrbay Aboriginal Language and Culture Co-operative (Muurrbay)<sup>7</sup> started doing Gathang language research and consulting with Aboriginal communities across the Gathang language footprint that there was movement in that direction. Even then, people voiced their concerns: 'Should they bring back the Language?', 'Is there enough Language?' and 'What Language?'

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<sup>6</sup> Aunty Joyce Davison is my grandmother's younger sister. Their mother, Nanna Fish, had a number of her children removed and placed into institutions.

<sup>7</sup> Muurrbay Aboriginal Language and Culture Co-operative is a leading regional Aboriginal language centre that supports language revitalisation for seven Aboriginal Nations. The centre works closely with Elders and with local language, culture and educational organisations to research languages, publish accessible grammar-dictionaries and develop effective teaching courses and resources. <https://muurrbay.org.au/about-us/>



**Figure 1 The published grammar and dictionary of Gathang**

An early milestone in the revitalisation of Gathang Language was the publication of the grammar and dictionary of Gathang (Lissarrague, 2010). This work was based on the study of archival materials, such as original manuscripts held at the State Library of New South Wales as well as some audio cassette tapes of Elder, Uncle Eddie Lobban recorded in the mid-20th century. Once the Gathang language dictionary was produced and available, Muurrbay conducted further consultation with communities. At this time, there was excitement in the communities about reviving the Language. I was appreciative of the fact that the dictionary was bringing families and communities together in conversation about Language. Whether people agreed or disagreed, it seemed to create an opportunity for people to talk about Language and other cultural expressions. I believed that language revitalisation would lead to more cultural knowledge about our traditional practices and cultural expressions.

### **Wuruma Ganggali 'The Wind of Change'**

The voice came in the middle of the night and suddenly I was wide awake. The ancestors' messages were always clear and direct. It was a simple message - 'dance' - but my whole physical being protested as I was having trouble walking because of an undiagnosed medical condition. In a state of despair, I knew if I danced, the ancestors would support me in my healing. At the time, I did not know how instrumental this experience would be in

changing the direction of my life, connecting me back to language and culture on a deeper spiritual level. I sang and danced with the *Djiyagan Dhanbaan* ‘strong sisters’ to bring the Gathang language to the ears, minds and hearts of the community. I grew strong in my legs, my language and my culture.



**Figure 2 The dancer, Anjilkurri, corroboree Saltwater (photographer unknown)**

This is why language revitalisation matters, because Language has the potential to unlock doors leading to a deeper understanding and knowledge of our cultural traditions. I have been practicing culture on Country for many years and I strongly feel that Language was one of the key elements that was missing. When we talk about language revitalisation, we are also talking about reviving culture. Dispossession, dislocation, disassociation from our culture has led to our children being separated from their Aboriginal identity. Language has the potential to build a strong cultural identity in our children, connecting them to Aboriginal traditional values, principles and practices.

As a passionate language learner/teacher, I continuously share the Language, embedding it in my everyday talk and writings. Bringing back the Language in its entirety is achievable, but it is not going to happen overnight. It will take generations of people to make



this happen. More people learning the Language leads to more Language speakers including Language in everyday talk. This is likely to motivate others to learn and to keep speaking the Language.

Anecdotally, learners often express a desire to say more in the Language rather than speaking to each other in English. New Gathang words are being developed to meet the demand from Gathang learners to express modern terms in the Gathang Language and to fill the gaps of language loss.

In 2016 at the University of Sydney, I undertook the Masters of Indigenous Languages Education (MILE) degree which included a research project component. For this project, I utilised my TAFE adult language learners as a cohort to investigate the usefulness of gesture as a tool to learn the Gathang language. The results were inconclusive due to the small sample and duration of the study. With this research project experience and my curiosity, I felt equipped to step into academia and accepted the offer of a place in the doctoral program at Western Sydney University with a scholarship through the Australian Research Council's Centre of Excellence for the Dynamics of Language (ARC CoEDL)<sup>8</sup>.

Taking that first step, I felt like I was wearing someone else's shoes. I was coming from a position of Eldership in my community, a place of authority and connection (insider) into place of academia not knowing where to position myself (outsider). Through *ngarrangga*, a way of 'deep listening' to self, others and ancestors, I found some common ground to walk with my PhD supervisors on the journey of sharing my knowledge, experience and cultural expression.

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<sup>8</sup> CoEDL was a research network in the language sciences led by the Australian National University in collaboration with three other universities (Western Sydney University, University of Melbourne, and University of Queensland), funded by the Australian Research Council over the period 2014-22. The legacy website with details about its people and achievements is at: <https://www.dynamicsoflanguage.edu.au/>

I did not step into the language work blindly. I knew it would bring up intergenerational trauma for me. This is trauma held within my family for generations through the direct impact of colonisations that resulted in loss of land, life, children and culture.

It is now time to heal and start expressing ourselves through our culture and Language. Our Language is a form of communication that goes beyond the spoken word. We communicate in so many different ways, expressing ourselves through hand talk and art forms: dance, song, storytelling and music. Breaking the Language silence, we can now merge ancestors' speak into our cultural practices and heal past and future generations. A message to our young ones: be proud of your Aboriginal identity, your culture and your Language, because it is everything. This will connect you to Ngaya Barray 'mother earth' and she will hold you, nurture you, support you and keep you healthy and strong. My efforts of language revitalisation are a legacy I leave for future generations and this makes me happy.



**Figure 3 In play with my grandson, Ngaluwi (photograph by Gulwanyang Moran)**

My intention was to write the thesis in such a way that it would interest and be digestible to people beyond academics. I offer it as a gift to many Aboriginal community organisations and members that have walked with me on this research journey.

# Chapter 1 : Introduction

## 1.1. Background

Currently, there are important efforts being made to revitalise Aboriginal Languages in Australia (Wiltshire et al., 2022). These efforts support, not only the research into Aboriginal languages, but also the research into pedagogically effective and culturally appropriate practices in the processes of language revitalisation. One such pedagogical practice is the use of gestures by teachers and learners. Historically, gesture<sup>9</sup> -- also called 'hand talk' -- has been part of traditional Aboriginal teaching methods and communication. Current research in language teaching and human cognition suggests that gestures, that is, bodily actions to represent actions and transmit information, may facilitate the acquisition of a second language (Andrä et al., 2022; Hoetjes & van Maastricht, 2020; Stam & Tellier, 2022). To date, however, there appears to be little to no empirical research on the use of gesture as a pedagogical tool to revitalise an Aboriginal language. In addition, relatively little research in language revitalisation has been conducted by Aboriginal researchers. As an Aboriginal researcher, community Elder, language teacher and language revival activist, understanding the complexity of performing multiple roles while undertaking research highlights the importance of listening and telling stories. I weave together representation of Aboriginal ways of knowing, being and doing with a Western scientific approach to ensure the research draws on the strengths of both.

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<sup>9</sup> Gesture and hand talk are interchangeable terms used in the context of this research and these terms are used interchangeably throughout the thesis.

### ***1.1.1. Language revitalisation: Why it matters***

The First People of this land spoke about 250 individual languages (Power, 2013) before the invasion by the British in 1788. The First Nations peoples spoke their traditional language and practiced culture, on the land, in their individual nation. Therefore, there were a great number of Aboriginal Nations within the country now known as Australia, and the people of these nations held their own identities and cultural ways for thousands of years. Kelly (2015, p. 6) states,

*We, the First People of Australia<sup>10</sup>, belong to the Dreaming. In a timespan upwards of 70000 years we were the visionaries who created spaces and rituals for higher intellectual and cultural development.*



**Figure 1.1 Map of Australian Languages**

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<sup>10</sup> This article uses various terminology interchangeably to discuss Aboriginal people such as Australia's First Peoples, First Nation People, Aboriginal, Torres Strait Islander, Indigenous, Black, and Goori.

The act of colonisation by the British, however, brought diseases, wars and hardships that dramatically reduced the Aboriginal population. This interrupted the transmission of languages, cultural knowledge and practices on to future generations. The majority of Aboriginal languages in Australia are now ‘revival’ languages<sup>11</sup>. The area now known as New South Wales (NSW) was one of the first parts of Australia to be colonised. This meant the loss of a great number of the 35 languages spoken in NSW prior to invasion. The Gathang Language spoken by the Birrbay, Warrimay and Guringay peoples, Mid North Coast, NSW (Lissarrague, 2010, p. 9) belongs to the Pama-Nyungan family of Australian languages and is one of the languages being revitalised.

This research gives an opportunity to promote the Gathang Language revitalisation efforts and offers a cultural lens. As argued by Radley et al. (2021, p.10), “My cultural standpoint shapes the way I interact with all research stakeholders, people who have a vested interest in or may be affected by the research.” As an Aboriginal community member undertaking the research, it became evident that the complexity of working in this field needed to be voiced. The trauma experienced by Aboriginal people in these early years from the loss of land, culture, language and kin remains within the Aboriginal people’s psyches today.

## **1.2. A starting point: Language revitalisation for Gathang**

Even though the Gathang Language dictionary existed to support language revitalisation, Aboriginal people needed to reclaim the Language by wanting to learn it, speak it and share it. The dictionary enabled a starting point for Aboriginal people to go on that journey. Muurrbay supported Gathang communities to start working together to develop draft

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<sup>11</sup> Revival languages are languages brought back to life by the attempts to stop the decline of the language or to revive an extinct language.

protocols, ways to revive language, and in partnership with TAFE (Technical and Further Education Colleges) to deliver Gathang language courses.

This foundational work led to the establishment of a core group, the Gathang Language Group (GLG), made up of descendants from Gathang nations. The Group members have changed over time due to members passing away and young ones taking their places. The GLG members support each other and have worked with Muurrbay on language revitalisation across the Gathang language footprint. Working within the GLG over the last decade has demonstrated to me that language revitalisation investment requires time, consistency and commitment.

The Gathang language footprint is vast area that covers the three Nations: Birrbay, Warrimay and Guringay. The Birrbay nation itself has two distinct communities, centred on Taree Greater City community to the south and Port Macquarie Hastings Council community to the north. Distance separates the two Birrbay communities, but family, stories and cultural practices unite us. In northern Birrbay the GLG members formed a governance group, Djuyalgu Wakulda 'to speak as one') to manage the many translation requests and to provide professional development for our local language learners/teachers in partnership with Muurrbay. Djuyalgu Wakulda<sup>12</sup> also works with other partners to produce language resources and programs.

### ***1.2.1. Teaching Language***

The challenge for the Djuyalgu Wakulda group and the Language community is to get enough Aboriginal language teachers into the schools. Even though Aboriginal people may have learnt the Gathang language, the Gathang Language Group protocols state that only Gathang descendants teach the Language. This is to ensure the Language teaching is within a cultural context. There had previously been a number of incidents where we had complaints

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<sup>12</sup> Djuyalgu Wakulda provides a platform for Gathang speaking Peoples and the wider public to access Gathang Language information, resources, events and networks. <https://djuyalguwakulda.org.au/>

from parents saying, 'my child was taught this, but that's not right'. The Gathang language teachers know to check in with either Djuyalgu Wakulda, GLG or Muurrbay for language and cultural guidance.

The current situation is that there is a growing need for Language teachers. Understandably, not all Gathang learners have the capacity or desire to teach the Language. Therefore, the Djuyalgu Wakulda group is exploring ways to introduce Language in high schools for the Year 11 and 12 students to consider Language teaching as a career pathway. There is a genuine lack of language teachers and numerous requests are received from school and community sectors for Language programs. Continuous development of both Language and resources will support the language revitalisation work through initiatives such as Language learning apps, Language learning guides and Language immersion camps.

### ***1.2.2. Language Revitalisation Efforts***

Language revitalisation has led to the Language being heard and visible within our community. The broader community gets to hear the Welcome/Acknowledgement of Country spoken in the Gathang Language at school, community and corporate events. There is dual signage for place names and Language is being included in public art spaces. Theme based mini-Language programs have been delivered in education institutions and community organisations. Gathang language revitalisation has built momentum through the hard work of passionate language activists. When we think about where the Gathang language was in the early days, pre dictionary and now post dictionary, there is a big difference.

### **1.3. Language Learning with Hand Talk**

The TAFE Certificate 1 in Aboriginal Language (Gathang) uses the Accelerated Second Language Acquisition Method (ASLA) developed by Stephen Grey-Morning, incorporating repetition and images (Shek, 2020). When teaching in TAFE (prior to the

current research work), I was very animated when introducing a new image and language word and often used gesture. I asked the students if this was helpful or a hindrance to their learning. They said they were having fun and that the hand and body movements were helping them learn. This suggested to me that the use of hand and body movements were a useful tool to teach Gathang Language. One of the Language learners in the TAFE course, Maree Hutchison, an Aboriginal woman, many years ago had worked at the Commonwealth Rehabilitation Service as a receptionist working with deaf clients. She learnt Australian Sign Language (AUSLAN), which makes use of facial expressions as well as hand and body movements to express meaning. AUSLAN enabled Maree to communicate with her clients and a deaf girlfriend. Maree and I collaborated to include AUSLAN with the existing ASLA method.

Over time, I have observed when I used AUSLAN and other hand talk in teaching, the Gathang learners would automatically use the movements when sighting the image before saying the Gathang Language word. These observations made me curious, to what extent hand talk might support the students' learning.

### ***1.3.1. Research Context and Participants***

At the commencement of the research, as I was designing my methodology and considering the participant group, I also was on the Board of Directors, as well as a cultural facilitator at the local Community preschool. It made sense to approach the Community preschool to undertake my research at the Centre using two groups of preschoolers as my research cohort. If you want to change the culture, you start with the young children. When I spoke to the Centre Director about doing the research there, she said, 'please, please, do it here'. She was extremely positive and supportive of the idea. It was crucial for me to have the support of the preschool staff as well as being in culturally safe space. Although my existing roles within the centre enabled me to establish a strong relationship with the centre's staff,



there were no perceived conflicts of interest identified at the time of the study. (See Chapter 3 for more on ethical considerations.)

The community preschool enrolments were predominantly non-Aboriginal children but across the Centre's two sites, there were also a number of Aboriginal children. It was important for me to undertake the research where Aboriginal children and families were supported, as I knew this would make it more likely that the language learnt would ripple out from these families into the wider Aboriginal community. In addition to the strict ethical guidelines to abide by in working with children, as an Aboriginal researcher there were also cultural protocol obligations. I attended many meetings to let the Aboriginal community know about my research resulting in a number of letters supporting my university ethics application (see Chapter 4 on ethics considerations).

#### **1.4. Research Aims and Research Questions**

The overall aim of this research is to investigate the extent to which there are benefits from the use of gesture in teaching Gathang language to preschool learners. Language learning for this age group, at least in heritage or language revitalisation contexts, typically focusses initially on words, particularly concrete objects (nouns) familiar to the children, such as words for people, animals and elements of the natural environment. With such a context in mind, Experiment 1 (see Chapters 4) was designed to investigate to Research Question 1:

**RQ1:** Do preschool learners acquire Gathang nouns more accurately and quickly when nouns are taught with gestures (alongside verbal instruction and pictorial support), than without gestures?

Learning any language is much more than learning vocabulary, of course. Gathang, like many Aboriginal languages, contains a rich set of suffixes that attach to nouns (nominal suffixes) to express various grammatical functions. Mastering suffixes is vital to achieving

any communicative skills in Gathang. Experiment 2 was designed to investigate the effectiveness of iconic gesture in the learning of nominal suffixes. Suffixed nouns present an inherently more difficult task for learners than bare nouns do. Experiment 2 addressed

Research Question 2:

**RQ2.** Do preschool learners acquire Gathang nominal suffixes more accurately and more quickly when they are taught verbally with gestures (alongside verbal instruction and pictorial support), than without gestures?

Six nominal suffixes were chosen for Experiment 2, broadly falling into two groups: three directional suffixes expressing movement or location (corresponding to meanings expressed by the English prepositions ‘in’, ‘on’, ‘at’, ‘away from’ and ‘towards’) and three relational suffixes expressing relations that are less tangible (corresponding to meanings expressed by the English ‘with’, ‘belongs to’ and ‘looks like’). As far as was possible, iconic gestures likely to be transparent to young learners were used with each suffix (this was easier for the directional suffixes which express more concrete relations).

In addition to the experiments, educators’ views about the use of gesture to help teach the Gathang Language and how learning Gathang has influenced the Community Preschool environment were captured through conversational interviews with Community Preschool educators (see Chapter 6). Thematic analysis of educators’ responses targeted Research Questions 3 and 4:

**RQ3.** What are the views of local preschool educators about using gesture to help teach Gathang? To what extent do they think it is useful or appropriate, and why or why not?

**RQ4.** How has learning the Gathang Language influenced the Community Preschool environment?

## 1.5. Research Outcomes

Experiment 1 found that preschoolers had stronger receptive knowledge of words they had learned with gesture than without, in the retention testing timepoint (seven days after learning) though not at the acquisition timepoint (two days after learning). The results of Experiment 2 did not, however, show statistically significant benefit for the use of gesture to support the learning of the nominal suffixes in Gathang, at acquisition or at retention testing timepoints. The educators were generally positive about what they observed about the use of gesture in teaching Gathang to the preschoolers. Their interviews also shed light on effects that gestures had more broadly during the sessions, in the classroom, but also beyond the classroom in families and the broader community. These 'ripple effect' findings are discussed in Chapter 6.

Overall, I conclude that within the early childhood context for Gathang language, and probably for many similar language revitalisation contexts, gesture is useful in several ways. For the preschoolers' learning of bare nouns (Chapter 4), teaching with gesture and pictures is more supportive than pictures alone. There was not a statistically significant benefit for gestures in teaching suffixed nouns, but this does not necessarily mean that gestures are not helpful. There are several possible explanations as to why I was not able to detect an effect within the experiment that I conducted. This could have been for statistical power reasons due to child absences in the flu season (see Chapter 5 for details). It could also have just been the way the classes were taught - somewhat artificially - to ensure there was appropriate experimental control. It is possible that a different pedagogical approach with gestures might be effective for teaching suffixes. The study in Chapter 6 provided some evidence that gestures can also assist the broader context around language revitalisation (beyond the language teacher and the children) by providing an accessible way for educators to support the learning in the classroom when language teacher not there. There is also evidence of the

impact of gestures reaching outside the classroom into the playground as the children continue to practise language in playful ways, and as the children take the gestures home and into the wider community.

In the broader context of Aboriginal language revitalisation, gesture also aligns with our traditional teaching practices and demonstrates the intrinsic value of cultural knowledge and ways of being for stronger education outcomes. I use gesture all the time and I think it is a big part of how Aboriginal people express themselves especially through dancing, song and storytelling; these are ways our young ones learn from us. These art forms are effective strategies of promoting engagement with Gathang language by educators, families and the wider community who have little knowledge of the language outside the formal teaching sessions (see Chapter 6. The ripple effect notion). The fact that the western scientific studies undertaken in Chapters 4-6 found evidence to support the use of gesture in language revitalisation is highly significant: it also demonstrates the intrinsic value of cultural knowledge and ways of being, both for how they can support stronger educational outcomes and a broad teams-based coalition in language revitalisation initiatives.

## **1.6. Supporting Change**

A broader view of language revitalisation in the NSW area is that all language groups are at different stages of revitalising their language. Schools, government and community organisations need to have patience, respect and an understanding that the language community has to do the language work in their time, on their terms and in their way. The NSW government enacted the Aboriginal Languages Act 2017<sup>13</sup> to provide a framework to invest in the revitalisation, growth, promotion of Aboriginal languages. The establishment of

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<sup>13</sup> <https://legislation.nsw.gov.au/view/whole/html/inforce/current/act-2017-051>

the Aboriginal Languages Trust<sup>14</sup> under the Act provides an entity that bridges the divide between the government and Language communities. This structure supports Language communities as drivers to steer when, where and how Language moves forward within their language footprint. Although documents such as the NSW Aboriginal Language Syllabus K-10 provide guidance on the introduction of Aboriginal languages into schools' curriculum, it has to be up to the Language community to say how, when, who and what is possible. Language must be owned and led by the Aboriginal Language communities.

### **1.7. Structure of this Thesis**

The remainder of this thesis is structured as follows. In Chapter 2 I discuss story telling as an authentic method to weave Aboriginal epistemologies within academic research approaches. This relates fundamentally to my positionality as an Aboriginal woman who lives by the stories given by ancestors as the basis of learning and knowledge, and by my philosophy or ways of being in my life journey. Storytelling matters to me, and I argue is of fundamental importance to Aboriginal people in general, because of my outlook as a teacher, and as a steward of knowledge, whose goal it is to heal, shape, educate and empower people through language. Following this explication of storytelling I move to present relevant background on the state of the art in language revitalisation, in Australia generally, but also illustrated in detailed local terms for my Gathang regional context. In that section, there are two main challenges at the present time: the need for more resources to support learning and teaching of Aboriginal languages, and the need to create and maintain strong Aboriginal language teams. Tackling these two challenges is critical for language revitalisation, and for which my thesis seeks to address through research on hand talk. Hand talk, as we know it from our long-term and widespread Aboriginal cultural traditions, is known more generally in

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<sup>14</sup> Aboriginal Languages Act 2017 (NSW) Section 4 (1) There is constituted by this Act a body corporate with the corporate name of the Aboriginal Languages Trust. (2) The Trust is a NSW Government agency. <https://www.alt.nsw.gov.au/>

the academic literature as gesture. Nowadays gesture is recognised as a sophisticated and often systematic part of human communication that has historically received less attention than written or spoken speech and language. I provide background in this section on how hand talk is becoming incorporated within both research and policy in Aboriginal language revitalisation. Next, I present and summarise a range of theoretical frameworks which set out in Western scientific terms why and how gesture is likely to help second language learning or heritage language learning in general (including but not only in language revitalisation contexts). Finally, I identify the research gaps which this thesis addresses, and state the research questions. I explain how the three empirical studies in Chapters 4-6 approach these questions.

Chapter 3 is the methodology chapter for this thesis. The thesis draws on several methodological approaches. It includes a quantitative experimental approach, a qualitative interview methodology, and accompanies these Western research approaches with Aboriginal approaches to research and knowledge creation and transmission such as storytelling.

Chapter 3 begins with a short prelude to the central focus of this chapter, which is a published article ‘Ganggali garral djuyalgu’. In this published article Aboriginal weaving is used to bring story and culture elements together to discuss ethical principles and the complexities of multifaceted roles of an Aboriginal person undertaking research. This explains to the reader the importance of story to me and to Aboriginal people more generally as we navigate the world.

Chapter 4 is the first of three empirical chapters. In Chapter 4 I present the first classroom-based experiment that I ran to test the usefulness of gesture in teaching Gathang to preschoolers. In this chapter, I present the rationale and method of using iconic gesture (hand talk) alongside verbal instruction supported by pictures and the movement of tangible objects to support preschoolers to learn Gathang language. I present the results of the experiment

which involved conditions involving instruction with gesture and instruction without gesture were compared. Notably, conditions were counterbalanced across groups of children who acted as their own controls. The specific teaching and learning focus in the first experiment was using hand talk to help teach bare nouns in Gathang, since basic vocabulary is a common and important focus of early lessons in language for many communities.

Chapter 5 is the second of three empirical chapters. Having tested the effectiveness of gesture for teaching bare nouns in Chapter 4, in Chapter 5 I present a follow-up study, with the same group of preschoolers, to explore if gesture is beneficial for teaching suffixed nouns. This is significant since Gathang, like many Aboriginal languages in Australia, express many grammatical functions through suffixes (e.g., all the subject/object meanings and other grammatical relations that are expressed through word order and prepositions in a language like English, such as location 'in/at/on' and possession 'with/having'). The use of gestures to teach suffix-based meanings has not been explored in previous literature. The experiment presented in Chapter 5 employed generally the same approach as the experiment in Chapter 4, however the implementation, materials, and testing were more complex.

In Chapter 6, the third and last empirical chapter I explore the perspectives of the children's regular classroom teachers on the use of gestures by the language teacher and the children. In contrast to the quantitative approach suited to the experiments in Chapters 4 and 5, in Chapter 6 I take a qualitative approach that is suited to understanding what the educators thought about the use of gestures that they had observed while sitting in on language classes, or after the language teacher had left. I applied thematic analysis to the educators' interviews. The interviews provided valuable insights into the utility of gesture in supporting the broader context of language revitalisation, a space in which mainstream educators who are supportive of Aboriginal education still sometimes struggle to find their place and to know how they can help.

Chapter 7 comprises the discussion and conclusion section of this thesis. I open by presenting a summary of the main findings in this thesis. I then offer comments on what these results mean, and an interpretation in light of the academic literature and my own positionality as an Aboriginal woman, teacher and Elder. I discuss what the thesis has uncovered as to the potential of gesture as a culturally embedded, pedagogical tool to revitalise an Aboriginal language and I also consider the wider impacts that gesture can have on language revitalisation. I evaluate the contributions of the current research and also its inherent limitations, i.e. what it cannot yet speak to. I also comment as an 'insider' on the impacts of the actual research within the longer timeframe of Gathang language revitalisation as I have witnessed it. Finally, I offer suggestions for future research in this space, and some recommendations for language revitalisation in Australia in relation to the findings of this thesis and the meanings that they hold for me as an Aboriginal researcher.



## Chapter 2 : Literature Review

### 2.1. Introduction

I start the literature review with an elucidation of ‘story’ as an enterprise to weave the researcher’s perceptions throughout a Western methodological approach. This is intended to further the reader’s sense of the Aboriginal researcher’s thinking, her cultural guiding principles and the intentions of storytelling. Storytelling is an aspect of the way in which this literature review itself is written. Portions of the chapter contain mainstream reviews and critiques of Western-focused literature given throughout the academy. Alongside this I have also included stories and reflections on this literature and its context that I speak to from my perspectives as a Birrbay Elder in the community.

A guiding principle and visionary purpose of the research is to honour the Aboriginal practice of storytelling within a Western scientific form of research. As an Aboriginal researcher I understand the relatedness between the research undertaken and my positionality and reflexivity. In this research context I consider my positionality, how I place myself as an Aboriginal person and what I know to be true, and my reflective practice, what I do instinctively to ‘respect’ cultural practices and protocols. I align with the understandings in Martin and Mirraboopa's (2003) research, where "Reflexivity is a process that allows us to work from Aboriginal centres and ensure we work with relatedness of self and entities".

The word ‘respect’ can have multiple applications that exist within different contexts. Sheehan (2011) asserted that "Indigenous respect preserves difference opposition and division in the knowledge that we all inhabit a living mutualism". Respect within this research context implies an action of good intentions and the ability to *ngarrangga* ‘listen deeply’. It also

implies fostering awareness to establish open and honest communication between opposing positions of thinking. Nakata (2017) referred to the intersection or the overlapping realm between academia and Aboriginal ways of knowing, doing, and being as a “cultural interface”. *Ngarrangga* is positioned within the cultural interface to cultivate respect for Aboriginal ways inside of Western methodology frameworks.

The researcher’s personal reflections, life experience, and storying accounts enable the connectedness to exist between Western methodological approaches and Aboriginal knowledge grounded in purpose and practice (Martinez, 2021). Stories can allow the transference of knowledge and the diversity of voices to be heard (Bishop, 1999). Like Phillips and Bunda (2018), I prefer and argue for the use of the word ‘story’ as descriptor in research instead of the term narrative. ‘Narrative’ may appeal to scholars, but in Aboriginal ways we would not refer to this term in our interactions. For example, we would not say ‘come tell me a narrative’ (Phillips & Bunda, 2018). The use of the term ‘story’ does not mean the lack of ability to conceptualise the term ‘narrative’. My Aboriginal standpoint is to use the term ‘story’ to invite readers in to listen to retellings of connections to people, experiences, land, language and culture (Tachine, 2018). Although the inclusion of storytelling in research approaches is outside traditional constructions of research, storytelling honours Aboriginal ways of knowing, ways of being, ways of doing and can be seen as a mechanism for decolonizing and Indigenising systems (Caxaj, 2015). As an Aboriginal researcher, Community Elder and language activist, storytelling is one way of instilling my cultural standpoint in the research space and writings and valuing stories shared by others in collaborative processes (Bishop, 2022).

The explanation of why storytelling is an important aspect of Aboriginal practice is that storying is an applied method to weave the chapters together. It gives insights into the

relatedness of hand talk, the studies undertaken, the Aboriginal researcher's experience and language revitalisation.

Language revitalisation is a term used to refer to 'bringing language back', or the revival, renewal and reclamation of language (Hobson et al., 2010). Important steps are being taken to revitalise Aboriginal languages in Australia. There are complexities within each community's language revitalisation process and there is a need for resources (Couzens et al., 2020). Arguably, a key component of language revitalisation is an effective pedagogy for language learning that draws on long-standing communication practices, such as hand talk that is widely used in Aboriginal communities across Australia (Green et. al., 2022). In Gathang Language hand talk translates as *matjarr djuyal*.

In this chapter, I provide an overview of the wider purpose of language revitalisation, and the factors that contribute to success, and pinpoint two specific challenges: learning/teaching resources and team-building. I then provide background on hand talk and discuss several theoretical perspectives and frameworks that articulate why gestures may help learners acquire a second or heritage language. Following this, the gaps in research in second language learning, particularly with regard to language revitalisation with pre-schoolers and limited studies that employ experimental designs will be discussed.

## **2.2. Language Revitalisation**

The benefits of language revitalisation extend beyond the revival of the spoken words of the language. Language revitalisation has the potential to connect Aboriginal people to their identity, to give them a sense of wellness (Dinku et al., 2020; National Indigenous Report, 2020) and to create employment opportunities (Maier, 2010, p. 235). Let me tell you a local story.

A local young Aboriginal woman illustrates how language learning brings opportunities to connect to cultural, obtain paid work and gain a sense of purpose. Amy completed her Certificate I in Aboriginal Language (Gathang) at Port Macquarie TAFE. Her dedication to language revival had been recognised by First language Australia (FLA). Amy received an invitation to attend the National Indigenous Language and Technology Conference, in Cairns, as a young language champion, under the FLA funded program. Whilst there she sang in Language, performing in front of an international audience. Amy is the song woman for the local Aboriginal women's dance group, Djiyagan Dhanbaan Wanggagan 'Strong Sister Dancers' and is a lead singer for the Ngarrgan Mirriyn Barayagan 'Morning Star Choir'. These groups promote the revival of culture through Language and practices. She has grown strong in her language and takes pride in her achievements. Amy is paid for her work in local schools and at community events, to sing in Language and she co-facilitates Language workshops. This brings her a sense of belonging, worth and purpose (personal communication, 2022).

Aboriginal Language communities strongly advocate for self-determination in the revitalisation of their language, meaning that they want to decide the standards for Language and who has the authority to teach the language (Hobson, 2010). Language policy development and language implementation within government agencies and educational systems must therefore be undertaken in partnership with Aboriginal communities (Lowe & Howard 2010). In the development of language policies, the needs of the language community affected must be considered (Simpson et al., 2020). Let us consider how this looks locally for Gathang.

The Port Macquarie Hastings Aboriginal Education Community Group (AECG) organises and facilitates the Connecting to Country program. Participants are local New South Wales Department of Education staff (teachers, principals and administration officers). The

Gathang Language session offered in the program gives the participants a chance to gain an understanding and knowledge of Gathang language ecology, sounds and grammatical structure, and the connection between Language and land, ancestors, and the natural world. Above all else, what it takes to develop a robust language policy is to act in consultation with the Aboriginal language community using a co-design approach. An outcome of these discussions is that school representatives are now contacting the Aboriginal language community, AECG and Djuyalgu Wakulda to engage members in a plenary session to strategise how to move forward to implement language into the school curriculum. Having worked in the Education system for a number of years, I have found that the role of educators (Indigenous and non-Indigenous) is crucial in the introduction of culturally responsive language programs in schools. Moreover, it is critical that these language programs have been developed in partnership with the local Aboriginal language community.<sup>15</sup>

Effective partnerships emerge through respectful interactions, meaningful relationships, the building of trust and working together towards a common goal (Lowe & Howard, 2010,). The New South Wales Aboriginal Education Consultative Group (AECG)<sup>16</sup> advocates for genuine partnerships between schools and Aboriginal communities that can lead to better Aboriginal student outcomes and a higher rate of student retention (Lowe & Howard, 2010). Djuyalgu Wakulda, an established Aboriginal language governance group in the Port Macquarie Hastings area, is working in conjunction with the local AECG to ensure that the Aboriginal language community controls how, when and what language is delivered in the school system. Muurrbay Aboriginal Language and Cultural Co-operative plays a major role in the Gathang language revitalisation process providing language training opportunities, language translation guidance and support for local language initiatives, such as those within

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<sup>15</sup>Aboriginal language community is a term used to describe Aboriginal community members that are invested and active in language revitalisation such as Gathang learners/speakers, Traditional Owners and Aboriginal people living off country. It cannot be assumed that all the Aboriginal people support language revitalisation and are language knowledge holders.

<sup>16</sup>New South Wales AECG is a peak Aboriginal organisation that has a three-tier structure (local, regional and state) to support Aboriginal education and training across educational systems and in community. <https://www.aecg.nsw.edu.au/about/>

the Gumbayngirr language<sup>17</sup> community (Walsh, 2010). Ultimately, the local Aboriginal language community drives language revitalisation and non-Indigenous agencies, such as schools, have to cede authority over this domain (Hobson et al., 2010, p. 307).

Self-determination is the process of groups/individuals controlling their own business. Although the local Aboriginal Language community should be the lead in the language revitalisation process or as termed in Walsh (2010: p. 114) ‘self-determination in language continuation’, the business of Aboriginal Language revitalisation should not rely exclusively on the local Aboriginal language community to resource it. There are opportunities for government and non-government agencies to collaborate with local Aboriginal Language Communities on projects to build the capacity of Aboriginal language educators, to design and develop language-learning resources and to fund language projects (Ash et al., 2010; Dixon & Deak, 2010).

The Djiyagan Dhanbaan ‘Strong Sister’ group is an example of a local Aboriginal community organisation working in partnership with a range of agencies to bring the Gathang language alive through song, dance and other language projects. One such project is the annual Women’s Festival, Nyiirun Djiyagan Wakulda ‘We All Sister Together as One’<sup>18</sup>. The feature of the festival is the highlighting of Aboriginal languages through cultural arts. Multiple government and non-government agencies collaborate with the Djiyagan Dhanbaan group to fund and resource this event. Another project is a teaching resource which includes audio and visual recording of preschool children and the Ngarrgan Mirriyn Barayagan ‘Morning Star Choir’ singing and gesturing three nursery rhymes in Gathang Language accompanied by ‘How to Teach the Songs’ handout. This project was made possible through

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<sup>17</sup>Gumbayngirr language revitalisation started in 1986 with a small group of Elders. The first Gumbayngirr dictionary-grammar book was published in 1992. <https://muurrbay.org.au/languages/gumbayngirr/>

<sup>18</sup>The Women’s Festival 2022 shot a short video of the event: <https://youtu.be/nXGei4Cv80Y>

the partnership of Djiyagan Dhanbaan and local Community Preschool with funding from the NSW Aboriginal Languages Trust (ALT).

Language revitalisation is the business of the local Aboriginal language community. No amount of government assistance through policy and planning will bring the language back or ensure language survival. This sentiment was captured powerfully by John Hobson who stated that "governments will not save your language" (2010, p.3). It takes passion and activism from individuals and sectors of the community to ensure the Language revives and survives (Couzens et al., 2020). Governments have a responsibility, however, to walk with Aboriginal language communities on their language journeys. In 2017, many Aboriginal people gathered at NSW Parliament House to celebrate the passing of the *Aboriginal Languages Act*, a significant moment in Australian history. At the event Uncle (Mr Butcher) spoke these words:

*Put the power back in our people to save our languages and give us the power to control our destiny ... Our language belongs to us, it will never leave our hands.*<sup>19</sup>

Here Uncle sends the Government a strong message reinforcing the fact that Aboriginal languages belong to Aboriginal people and Aboriginal people want the power to control what happens to their languages. Echoes of these sentiments of Language sovereignty, come from Aboriginal communities across the nation. There has been some paradigm shifts in government policies, education and subsequent truth telling of Australian history, something that Aboriginal people have been advocating for years. Language revitalisation is one vital component of this.

In 2022, an official notice was sent out from the NSW State Government announcing the New Aboriginal Languages K-10 syllabus (2022)<sup>20</sup> to be taught from 2024. The

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<sup>19</sup> <https://www.abc.net.au/news/2017-10-11/nsw-passes-unprecedented-laws-to-revive-indigenous-languages/9039746>

<sup>20</sup> <https://www.nsw.gov.au/media-releases/aboriginal-languages-revitalised-nsw-schools>

announcement specifically flagged "new guidance on the need to involve Aboriginal Language communities and knowledge holders when introducing and teaching the syllabus in schools." and a "mandatory 100 hours of an Aboriginal Language in Years 7–10".

These two announcements will have significant impacts on Aboriginal Language communities in NSW. The first statement will give Aboriginal people a substantial voice in the introduction of an Aboriginal Language into the local school system. The second statement will impose pressure on the Aboriginal Language communities to provide human and material resources to meet the demand of secondary schools in their local areas.

Overall, the syllabus will increase the need for learning and teaching Gathang language and extend the call-out for Aboriginal community members to become involved in their schools. Although challenges will exist in the initial introduction of the syllabus, the collaboration between schools and the Aboriginal Language communities can lead to an effective and sustainable school-based language teaching and learning programs that contribute to language revitalisation (Hobson et al., 2010).

Language revival and survival depends on local Aboriginal Language communities implementing a multipronged approach to promote verbal and visual language throughout community with short- and long-term strategies to grow language speakers in the community and introduce Aboriginal language programs within educational systems. Additionally, there is the requirement to design language resources that are culturally appropriate and inclusive of Aboriginal pedagogies. This brings us to the two challenges which I tackle in this thesis: resources, and teams.

### **2.3. Aboriginal Language Resources**

Aboriginal Language resources are required to support language revitalisation. The required resources include learning material, engaging activities and Aboriginal teachings



(Simpson, 2016; Ash et al. 2010). Since the 1990s-2000s, particularly as the world went digital, there has been a surge in language resources being developed across Australia. These resources include dictionaries, apps, learner's guides, lesson materials and language and cultural immersion programs. Hand talk, however, is a resource practice that is readily available, adaptable, culturally appropriate and free. Further research into the benefits of hand talk as a teaching tool to learn a revitalised language would, if benefits were shown, ensure the provision of hand talk as a validated resource.

The second challenge this thesis tackles is team-building for language revitalisation. I will argue that the use of gestures may bring with it a way of building wider, more inclusive and more sustainable teams in language revitalisation.

#### **2.4. Aboriginal Language Teams**

Aboriginal language revitalisation, as explained above, is a community effort. Researchers and commentators on language revitalisation have argued for the value of teams in this work (most recently for example at the November 2022 NSW Aboriginal Languages Trust Conference), so that a range of community, professional, and discipline expertise can be brought to this enterprise. In Language work, a team is typically established over time and strengthens as a result of the commitment towards a common goal. A team approach is not new in language work (Lowe & Howard, 2010), but can vary by community context. Hill and McConvell (2010) showed how a community team approach in the context of a Cape York Peninsula Language documentation project brings broader awareness of the language situation and goals, and builds a picture of the language community's ecology and community networks. A team approach can arguably benefit all Aboriginal language communities. Purdie et al. (2008) equated success in Indigenous language programs in Australian schools with strong collaboration between Indigenous communities, Indigenous Language Centres,

linguists, schools and teachers. Effective collaboration respects the cultural protocols and needs of the community (Czaykowska-Higgins, 2009; Tuhiwai-Smith, 2008) and relies on long-term relationships and direct personal contact on site (Grinevald, 2003). A team approach means workload is shared and language goals are achievable.

Over the last ten years a team approach has been adopted on Birpai Country (Port Macquarie Hastings area), where a team of people has grouped together to propel the revitalised Gathang language forward in the community. The team brings together a number of stakeholders with a range of expertise: Muurrbay, providing linguistic expertise and teaching resources; Djuyalgu Wakulda with a membership including teachers, Aboriginal language educators, Aboriginal community workers and Aboriginal parents invested in language work; The Djiyagan Dhanbaan group promoting revival language through cultural practices; The AECG whose members are involved in a number of different language programs in the community and schools. Members of the general public (Gathang and non-Gathang people) – although not part of the 'inner' Language team, their support for the goal of reintroducing the Gathang language into society has provided encouragement and facilitation.

The Cape York Peninsula and the Birpai context have differences and similarities. A comparative analysis of the two communities shows us that language communities can be diverse but have the same language goals and needs for team structures within language revitalisation. Although these two communities' language stories exist within different time periods the same language support mechanisms are needed.

Both communities are located on the coast. Cape York Peninsula (Queensland) community is considered remote and the Birpai (NSW) community context is a rural regional city. The community location influences people's lifestyle choices, transport accessibility and resource availability. The impact of these factors (in the Birpai context) contributes to readily available resources such as people, materials and technologies. Human expertise together with

good access to materials and technologies can lead to quicker development of reliable language resources and project outcomes, a crucial element in language revitalisation and endangered language documentation. Although these language initiatives in remote areas may take longer to materialise than in cities, the urgency for language documentation and resource creation does not change over time. In both the Cape York and Birpai communities, access to local expertise in a range of domains is needed alongside linguists, community and language speakers/learners to resource language work and encourage teamwork. Strategies of forming a team and the composition of a team may differ in each of the community as they have different language circumstances. In the Cape York Peninsula communities (as at 2010), language was being taught to children, and a large number of language speakers existed although there was only a small number of elderly speakers alive. The main focus of language work was in documenting language knowledge of current speakers (Hill & McConvell, 2010). The Birpai community had no fluent speakers living when Muurrbay commenced community consultation, research and language documentation to produce a Gathang dictionary (Lissarrague, 2010). Since the publication of the dictionary, Gathang language communities (Birrbay, Warrimay and Guringay) have worked strategically together and separately in teams to advance language revitalisation.

Through teamwork both communities have built community networks to sustain language revitalisation. Other community language projects provide similar team approaches to establish communicative pathways to work together towards community language goals such as the Mangarrayi project.

Design-based research investigating the revitalisation of Mangarrayi (Richards, 2020) provides a model of how community members of different ages and levels of Mangarrayi language experience could work together with external non-Indigenous linguistic support as a team to develop digital language learning resources. This work was carried out within the

Jilkminggan community in the Northern Territory (NT) and online with Mangarrayi diaspora. The model relies on the repurposing of archival recordings made by older Mangarrayi speakers, many of whom have now passed away. The researcher had himself been involved in the recordings and their reuse respected the time and effort speakers had put into the recordings. As a strategy for supporting learning, the recordings were edited into short chunks (phrases) modelling authentic Mangarrayi language and organised in framework around topics and language function (ChunkBank) that provided direction on how these could be used for communication. Subsequent collaboration<sup>21</sup> including an external app developer built on this research to develop a phrase-based digital resource (*Warrma Mangarrayi* ‘Listen to Mangarrayi’) to support independent adult Jilkminggan community members to learn Mangarrayi.

Although the *Warrma Mangarrayi* resource was designed specifically for the Jilkminggan NT context, the digital shell underlying it, referred to as *Listen N Talk*, can be used by other Indigenous communities to develop a phrase-based learning resource for their language. A collaborative project now includes a team of Gathang people across the Birrbay, Guringay and Warrimay communities, Djuyalgu Wakulda, Muurrbay, Western Sydney University and app developer eLearn Australia. The team is currently underway using *Listen N Talk* to develop a phrase-based resource for Gathang to support independent adult learning.

In the early childhood sector, the establishment of teams ensures collaborative approaches exist to build a robust framework to sustain language revitalisation. NSW Aboriginal children have been offered the opportunity to learn the local Aboriginal language at preschool centres through government funded programs introducing language into the early childhood sector. Established in 2018, the ‘Ninganah No More’ Aboriginal languages program aims to increase the number of Aboriginal Languages being taught in early children

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<sup>21</sup> Funding provided by ARC Centre of Excellence for the Dynamics of Language CoEDL

services in NSW<sup>22</sup>. Aboriginal children in the Mid North Coast attend a range of preschool centres, some Aboriginal-controlled and some mainstream. There is a need to ensure that the 'inner' revitalisation team within these centres is supported and surrounded by community members, Aboriginal and non-Aboriginal, including educators, who feel positive and empowered to help on a day-to-day basis.

The present thesis research 'Matjarr Djuyal' was undertaken at the Port Macquarie Community Preschool Centre. The research project benefitted from and sustained established links between the Centre and the local Aboriginal language community. The Centre is a recipient of the 'Ninganah No More' program funding which has provided the Centre with an opportunity to engage a Gathang Language educator to deliver activities including gesture as a tool to teach the children the Gathang language. The Centre's staff involvement with the local AECG, Djuyal Wakulda, and Djiyagan Dhanbaan group ensures that the 'inner' revitalisation team within this centre is supported and there are resources and encouragement readily available. Sharing of Language and gesture programs between preschools also brings with it a way of building wider, more inclusive and more sustainable teams in language revitalisation.

## **2.5. Hand Talk within Research and Policy**

In communicating we interact by using our mouths to make language sounds alongside the use of body movements including head, hands and feet (Stam & Tellier, 2022). Since I can remember I have seen hand talk used between mobs of Aboriginal people, in storytelling, in communication between family members and across tables at formal meetings.

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<sup>22</sup> In July 2021, the NSW Government released the 'First Steps Aboriginal Children's Early Childhood Education Strategy'. The strategy is the outcome of a process of co-design with the Aboriginal Advisory Group for Early Childhood Education, and places a strong emphasis on First Nations family and community engagement, child-centred services and the promotion of First Nations' cultures and identities in early childhood settings. The provision of Aboriginal language instruction is a specific objective of the Strategy, and the 'Ninganah No More program' has been redesigned to support the delivery of the Strategy's goals. <https://education.nsw.gov.au/early-childhood-education/operating-an-early-childhood-education-service/grants-and-funded-programs/ninganah-no-more>

I noticed while traveling around Australia the use of hand talk with speech and without speech between various groups of Aboriginal people in urban and remote communities.

The literature (e.g., Jassar & Hunter, 2006) supports this notion of the existence of a continuing strong relationship between hand talk and the spoken language in Aboriginal communities in Australia. In some communities there is a complex system of sign language consistently used daily in parallel with speech, or to replace the spoken language, in settings such as hunting, initiation, or mourning (Power, 2013; Kendon, 2015). In addition to these adult exchanges, Gurindji parents and relatives use and value gesture to communicate with young children, including pre-verbal children (Jones & Meakins, 2013). This is widespread in today's Northern Territory communities, so gestures have been included in a newly developed parent checklist of children's communication 0-3 years (Jones et al., 2018). More recently this checklist is being trialled and adapted to an urban NSW context in western Sydney where gestures are also still culturally important among Aboriginal families (Khamchuang et al., 2022). Studies have shown hand talk use has many applications in communicative processes as well as being a teaching tool to learn a second language (Macedonia & Von Kriegstein, 2012).

In Yunkaporta's (2009) 'Eight Ways' Aboriginal pedagogy, the hands-on pedagogy, models ways that don't need words. This includes gesture, total physical response (TPR), activities and replicating body movements. (Hobson et al., 2010). Gesture and nonverbal behaviour can be utilised as a tool to learn a second language and offers a way learners can explore techniques to send and receive language (Brown, 2007). Co-speech gestures are movements with hands, head and bodies accompanied with speech that can enhance the learners' experience (Stam & Tellier, 2022). A further language teaching tool is props, an object used in storytelling (Institute of Teacher Aide Courses, 2022). This is one way to create an animated learning experience (Sinha, 2021).

Although gestures and props are different teaching strategies, combined they can be an effective technique to support learning a revitalised language. For example, Uncle Michael Jarrett, a Gumbaynggirr man, uses gesture to recount a story to teach the Gumbaynggirr language. Uncle Michael uses a doll's house fitted out with furniture and small life-like characters as props to tell the story in Language of children not wanting to go to bed because they are frightened. In the story, the parents insist that the children have no reason to be frightened, and then a storm rolls in. Watching and listening to Uncle Michael speaking Gumbaynggirr language while moving his hands and body reinforced to me the notion that gesture can play a role in the teaching of Aboriginal languages (personal observation at Wollotuka Language Workshops organised by Muurrbay, 2015). The use of hand talk can also focus visual attention on the story telling props (Korbach et al., 2020), as well as providing additional cues to interpret spoken language (Cabrera & Marinez, 2001), in this case the Gumbaynggirr language.

As a reflective practitioner, I have observed over time that when I use gesture in teaching the revitalised Gathang language, the learners often automatically emulate the gesture associated with an image before saying the Gathang language word. The notion of gesture coming before verbal language is supported by evolutionary theories, which suggest that spoken language has motor origins (De Stefani & De Marco, 2019). The finding in a study by Fay et al. (2022) that investigates gesture-first and vocal-first theories of language origin support gesture as a primary method for language creation aligns with evolutionary theories of spoken language has motor origins.

In the field of language revitalisation, gesture use is expanding (Borgia 2014; Gardner & Ciotti, 2018). Government policy documents are increasingly advocating for the use of gesture in education. For example, the NSW Aboriginal Languages K–10 Syllabus mentions gesture several times as a teaching strategy (NSW Government, 2021) and the Queensland

Government recognises gesture as a way to enable better comprehension in teaching Aboriginal Torres Strait languages in the Australian education system. The Teaching Aboriginal Torres Strait Languages Resource Guide Strategy refers to Total Physical Response as an approach and refers to gesture as an inclusion in the mime strategy (Queensland Government, 2016).

In NSW, Donna McLaren, a Gamilaraay teacher, teaches students through Total Physical Response immersion activities, promoting its use in schools (McLaren, 2013). Total Physical Response is based on first listening to a command and then carrying it out with a physical action reinforcing the language instruction. For example, the teacher instructs the learner in Language to ‘go to the door’, and the learner follows the instruction. The repetition of chains of instructions and response actions allows language to be acquired through listening and responding. Notably, it does not appear that this method enables learners to advance past the beginner’s stage, as it doesn’t include speaking and producing language (Macedonia, 2019; Suhendan, 2013). This is also the case for the mime strategy, an approach that involves the use of action, emotion without words, gesture, expression and movement to act out a role, a story, character or thing, for example in language teaching, the teacher introduces a language word *narruurr* ‘sad’, and the facial expressions show the emotion of sadness to convey the meaning of the word. If, however, we combine gesture as it is used in Total Physical Response and mime activities, alongside speaking and strategies to produce language, this can lead the learner beyond the beginner level (Macedonia & Von Kriegstein, 2012).

Including gesture together with other visual representations such as pictorial aids and tangible items can encourage the learner to be actively involved in language learning. Gesture, pictorial aids and tangible items are tools used in active learning processes that benefit the learner’s language efficiency and memory recall as well as enhancing the learner’s experience



and enjoyment (Andra et al., 2020). These participatory activities can motivate learners.

Gesture, pictorial aids and tangible items are therefore beneficial in children learning a second language and for teaching younger age groups (Mathias, 2022).

An important function of gesture in language teaching is to provide a scaffolding measure to link the conceptual learning to verbal teaching (Borgia, 2014), enabling the learner to stay in the second language (L2) and not revert to the first language (L1, i.e. English). For example, the Accelerated Integration Method (AIM - Arnott, 2011 and 'Where are your keys' method (WAYAK - Gardner & Ciotti, 2018), provide techniques to engage the language learner in second language learning without reverting back to their first language. AIM is an instructional method that combines target language use with emblematic gestures in the context of storytelling, drama, songs and dance. WAYAK uses props (tangible items) and gesture as strategies to help learners gain language fluency through avoiding use of translation into their first language. In the case of Aboriginal language revitalisation the avoidance of English through the use of gesture as a communicative tool links the language learner to their own cultural and personal meaning therefore deepening cultural knowledge in the target language (Yunkaporta, 2010). Aboriginal pedagogy of learning language words and phrases using hand talk links the learners not to the English translation but more directly to the Aboriginal culture of the language.

Several other theoretical frameworks support the idea that gesture should be helpful in learning a language, whether an Aboriginal language, a first language, or a heritage or second language. These frameworks are described next.

## **2.6. Other theoretical frameworks on why gesture helps language learning**

### ***2.6.1. Evolutionary Theory***

David Geary's theory of evolutionary educational psychology divides knowledge into two categories: biological primary knowledge and biological secondary knowledge (Geary, 2007, 2008, 2012). According to this theory, at various epochs in human history, there were evolutionary adaptations that resulted in the ability of human beings to acquire certain types of knowledge rapidly and easily, with minimal to no need for explicit instruction. This is evident in folk domains of psychology (language, recognition of faces and facial expressions), folk physics (e.g., navigation, perception of time) and folk biology (knowledge of flora and fauna (Lespiau & Tricot, 2022)). Gesture appears to be universal (Fay et al., 2022) and a biological primary form of knowledge. Secondary knowledge, on the other hand, is knowledge that has emerged through the result of cultural advancements that have occurred over millennia but has not existed long enough to be influenced by evolutionary processes. In contrast to biological primary knowledge, secondary knowledge is cognitively demanding, requiring prolonged periods of explicit instruction in formal educational settings such as schools and universities. Examples of secondary knowledge include reading, writing, and complex mathematics.

It is important to note that the distinction between primary and secondary knowledge is not always clear cut and can be fuzzy (Lespiau & Tricot, 2019). This is due in part to the fact that secondary knowledge builds upon primary knowledge. For example, learning to speak one's native tongue is considered to be biologically primary knowledge. Giving a lecture or oral presentation which involves the use of biological knowledge primary knowledge (i.e., language) is not something that everyone can do naturally, and often requires explicit instruction, placing it in the category of secondary knowledge.

Gesturing is a human universal that even extends to blind people (Fay et al., 2022). Although all human beings engage in gesture, patterns of gesture may vary across geographical locations. For example, moving one's head from side-to-side means yes in many cultures, likewise head movement up and down means no, there are some exceptions. For example, the opposite pattern occurs in Bulgaria wherein up and down head movement means no and side-to-side movement means yes.

Gesture appears to operate on the bridge between primary and secondary knowledge. Because gesturing often occurs naturally, it can be considered biologically primary knowledge. As a largely biological primary form of knowledge, gesture is a strategy that is thought to reduce cognitive load, which refers to the amount of effort being used in the working memory (Wakefield & James, 2015). This is because gesture provides another form of representational system (a different motor channel in addition to the audio-visual intake of spoken language) that can convey information (Jones, et al., 2018). Gestures provide more retrieval cues that can be used by learners to store information in their long-term memory. There is some evidence to support this view with Ping and Goldin-Meadow (2010) finding that gesture lightens cognitive load and supporting learning and the retrieval of non-present information among second and third grade students. It is important to note, that there appear to be limits to the effectiveness of gesture on second language learning, with gesturing shown to be effective of simple information, but ineffective for the acquisition of complex information (Hoetjes & van Maastricht, 2020).

Most Aboriginal people living in NSW acquired English language as primary knowledge and their traditional language is classified as secondary knowledge learned typically through formal classroom settings. Incorporating gesture can potentially be one way of reducing cognitive load to support Language learning within a revitalisation context.

### ***2.6.2. Gesture in Second Language learning***

The second language learning literature highlights the importance of speech and gesture as an interconnected system in second language learning (Gullberg, 2014) and in language development in early childhood (Cartmill et al., 2014). Other studies analysing the use of gesture and speech suggest that gesturing can promote language learning in vocabulary development (Rowe & Goldin-Meadow, 2009). Macedonia, M. (2019) suggest there are a number of studies that have indicated that the body helps the mind to obtain second language acquisition at least for vocabulary in a second language.

### ***2.6.3. Iconic Gesture***

In a seminal paper, McNeill (1992) divides gestures into four major categories: iconic, metaphoric, deictic and beat. The present research specifically explores iconic gesture as a teaching tool to learn the Gathang language.

The term 'Iconic' was first used as class of signs in semiotics in 1932 by Charles Pierce who offered this definition:

*An icon is a sign which refers to the object it denotes merely by virtue of characters of its own, and which it possesses, just the same, whether any such object actually exists or not (Hadar, 1997).*

Iconic gesture can therefore be described as representing specific characteristics of an entity. Iconic gesture combined with verbal utterance (i.e. speech-gesture matches) has been shown to reduce the load on the working memory (Goldin-Meadow, 1993). Iconic gesture representations can relate to a specific culture (emblematic) or be idiosyncratic of an individual conception of a words or phrases. For example, the local Aboriginal women's group, Ngarrgan Mirriyn Barayagan 'Morning Star Choir' uses iconic gesture to teach the Gathang language through song, as the group moves their hand depicting language expression. These representational gestures act as semantic aids to facilitate transference of

knowledge encoded in the bodily movement into comprehensive cross cultural understandings (Hostetter & Mainela-Arnold, 2015).

In this section, I have reviewed a range of theoretical perspectives and frameworks for why and how gestures may help learners, in particular why they may help a learner acquire a second language. In the particular area of language learning there has still been relatively little research into the use of gesture.

## **2.7. Research Gaps**

There are gaps in current research providing empirical evidence for the acquisition and retention of a second language among preschoolers. This section explains the nature of those gaps and why they are significant.

### ***2.7.1 Language Morphology***

Stam and Tellier (2022) argued that the current literature on second language acquisition overlooks the important role that gesture may have in facilitating second language acquisition. For example, the study by Matsumoto and Dobs (2016) investigated the functionality of gesture in a classroom environment focusing on the comprehension of the gestural element for instructional purposes to understand and express grammatical items, time and aspect. However, the study did not go as far as to assess language acquisition, the learner's ability to recall language learnt.

There are a small number of notable papers that have explicitly addressed language learning through gesture. A paper by Macedonia and Von Kriegstein (2012) summarised the theories and supporting evidence as to why the use of gesture can enhance the acquisition and retention of words and phrases compared to speech only. Notably, this review paper highlighted the lack of research employing controlled, experimental designs to collect

empirical evidence on the use of gesture in learning more complex language structures e.g., morphological (forms of words) and syntactic (words and phrases) structures.

There are also gaps in the experimental research literature concerning the use of gesture as a modality for learning and teaching of a second language in language domains other than lexical (words or vocabulary) items, such as grammar and syntax (Macedonia & Von Kriegstein, 2012). Although there has recently been an increase in literature examining the use of gesture in teaching different forms of grammar such as locative prepositions, past tense, demonstrative pronouns and progressive aspect (Matsumoto & Dobs, 2016), it appears that no studies have involved preschool age children learning a revitalised Aboriginal language. Additionally, there is lack of empirical evidence on how iconic gesture may assist in the acquisition and retention of suffixed nominals in a revitalised Aboriginal language.

### ***2.7.2. Language acquisition and retention***

Another understudied aspect is language acquisition over time, or "language retention". There is research in cognitive science findings suggesting that memories are consolidated slowly over time (McGaugh, 2000). Indeed, as noted by Leppink (2020) therefore learning is a longitudinal phenomenon (Leppink, 2020), meaning that acquiring knowledge (i.e., learning) occurs overtime. Literature on schema theory (Bruning et al. 2011) and automation of schemas (i.e., automation of knowledge in long term memory), suggests that learners may be able to acquire knowledge, such as language, but not be able to demonstrate their learning of that knowledge until some automation of that knowledge has occurred. In other words, learning make take place, but may not be visible until a period of time has passed (Staffort & Haasnoot, 2017). As such, an experimental approach that employs delayed testing, that is a testing phase to occur after some time (e.g., days, weeks) may be critical in capturing language retention. It appears that the use of delayed testing in studies of language retention appear to be rare in studies of language acquisition (Sarani, et al., 2013)

and likely non-existent in studies involving pre-schoolers learning an Australian Aboriginal language.

### ***2.7.3. Young children as research cohorts***

Gesture has rarely been researched in formal language contexts with very young (preschool) learners. Many second language acquisition theorists state that introducing a second language (L2) in early childhood will increase the likelihood that the child will acquire and gain proficiency in the L2. It is in the preschool years (3-4) that the use of gesture increases and speech and gesture appear together in synchronicity (Laurent et al., 2015). We know that children integrate information from speech and gesture to learn the meaning of words (Goodrich & Hudson Kam, 2015). More studies are needed to clarify the extent to which gesture may benefit young children learning a second language.

Based on the gaps identified in the literature above, this thesis pursues the following research questions:

**RQ1.** Do preschool learners acquire Gathang vocabulary more accurately and more quickly when the words are taught verbally with gestures, than without?

**RQ2.** Do preschool learners acquire Gathang nominals and suffixes more accurately and more quickly when they are taught verbally with gestures, than without gestures?

**RQ3.** What are the views of local preschool educators about using gesture to help teach Gathang? To what extent do they think it is useful or appropriate, and why or why not?

**RQ4.** How has learning the Gathang language influenced the community preschool environment?

The study will use a mixed methods approach, i.e. quantitative and qualitative methods to provide comprehensive information that utilises the strength of each approach (Ary et al., 2019). The study will also integrate Indigenist methodologies within the research journey of the Aboriginal researcher of this study. The methodologies for the study are laid out in the next chapter.



## Chapter 3 : Methodology

### 3.1. Introduction

This chapter gives an overview of the research methodology and approaches to develop a framework and further develop the cultural interface between academia and the Aboriginal researcher. The chapter begins with a personal reflection and then incorporates a published article (Radley et al., 2021) whose full citation is:

Radley, A., Dowse, K., & Ryan, T. (2021). Ganggali Garral Djuyalgu ‘Weaving Story’: Indigenous language research, the ‘insider-outsider’ experience and weaving Aboriginal ways of knowing, being and doing into academia. *WINHEC Journal: Indigenous Language Revitalization: Innovation, Reflection and Future Directions, 1*, 411-448.<sup>23</sup>

The published article draws on weaving as a method of storytelling to lead the reader into a deeper understanding of the research framework elements and complexities of the researcher’s positionality influencing the research.<sup>24</sup>

Following on from the published article, the present chapter sets out key methodological choices made across the three empirical chapters (Chapters 4-6). These choices are driven by the Aboriginal researcher's perspectives and roles within and outside academia, and an orientation towards combining Aboriginal ways of knowing, being and doing, with Western scientific and humanist orientations.

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<sup>23</sup> Note from supervisors re contributions: As lead author of this article, Anjilkurri discussed with her co-authors the desire to write a collaborative work regarding the nature of Aboriginal ways of being and navigating the research arena. This involved Anjilkurri writing of her lived experience of being a community Elder, researcher and language activist, and together with the co-authors, a position of ‘free-weaving’ as a research framework was developed.

<sup>24</sup> The original section formatting within the published article has been retained within Section 3.2 which contains the whole published article.

### ***Personal Reflection***

The article has given me the opportunity to collaborate with two *djiyagan* ‘sisters’ (sisters not of blood, sisters born out of connection) on publishing a piece that contributes to material on Indigenous research approaches and methodologies while doing a PhD. The experience has reinforced the belief that everything is connected and separation exists within minds but not hearts. The storytelling with my *djiyagan* ‘sisters’ in a circle opened my heart to the possibility of change within myself and within structures that resist change. The article speaks for itself.

### **3.2. Ganggali Garral Djuyalgu ‘Weaving Story’**

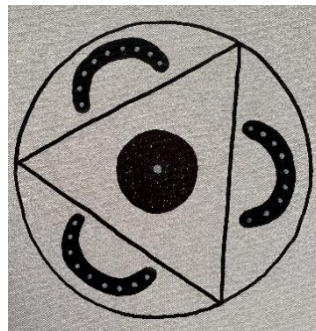
#### **Abstract**

Aboriginal weaving is used as a method to explore new understandings and extend on the notions of the ‘insider-outsider’ in the research space. Just as weaving requires different strands of fibres, the ‘insider-outsider’ researcher finds ways to enable the co-existence of differing authorities, roles and responsibilities as community Elder and emerging researcher alongside the development of culturally resonant research approaches and methodologies. This paper weaves together strands that are a representation of Aboriginal knowing, being and doing, cultural practices that influence Indigenous language revitalisation research. As an Indigenous Australian researcher, community Elder, language teacher and activist, the lead author is experienced in the complexity of performing multiple roles while undertaking research. She relays the tensions inherent in an insider-outsider researcher identity through her research into the revitalised Gathang language (Mid North Coast, NSW, Australia). Aboriginal academics, co-authors Ryan and Dowse contribute to the paper on Indigenising academic spaces, the politics of elevating Aboriginal Protocols to transform research ethics, and the importance of listening and telling our stories in our own ways. Together, the authors

interweave their stories to demonstrate partnerships between research and culture and speak of the importance of Indigenising the academy.

## **Introduction**

*Djiyagan* ‘sisters’ are moving grasses in a free weave motion, meaning there is no set pattern. Grasses can be woven vertically, horizontally or diagonally to fill the spaces to create *butjin* (a basket, carry vessel). Thus, we are telling our stories in ways that go beyond the article’s abstract to capture the interconnectedness that exists within each story. We interweave our stories, at times in the first person, interspersed with academic writing and Gathang language to communicate to the readers the making of something new in a style that is our own.



**Figure 3.1 Sisters Weaving Stories (artwork and story by Anjilkurri)**

**Note. Outside circle: the connection to Mother Earth; semi-circles: sisters sitting; small circles: contributions made from the heart; central circle: creation; triangle: transformation.**

Aboriginal people from (what is also known as) New South Wales, Australia have been weaving for tens of thousands of years, or as we prefer, since time began. Weaving provides a resonant structure for storytelling. Story is a key essence of what Martin and Mirraboopa (2003, p. 208) have referred to as our ways of ‘knowing, being and doing’. It has given us abilities to relate, connect and understand as well as view our world through a lens

which is our own. Story is interwoven into the fabric of our lives. Drawing on weaving as method to express our stories aligns with our cultural practices that see our women sitting in circle weaving and *djuyaliyn* ‘talking’ (see Figure 3.1). We describe weaving as method and cultural process as our individual strands weave together with collective ways of knowing, being, and doing, openly and freely. We extend on Chew’s (2019) metaphor of weaving as cultural practice to convey a model for planning and decision making that acknowledges ancestral wisdom. Weaving is an intangible knowledge process, narrative, belonging, and knowledge transference. This is beyond metaphor, as metaphor<sup>25</sup> suggests our ways are less legitimate than theory or method. It is conceptual framework building in its most resonant form.

As we, *djiyagan*, visualise strands of grasses coming together, our stories interconnect to construct *butjin* ‘basket’, which carries our hopes for transforming the academic system. *Butjin* ‘basket’ holds Aboriginal cultural ways of knowing, being, and doing and the space to explore the insider-outsider notion (Smith, 2012); provides insights into what is needed to support Aboriginal researchers to achieve their goals; and gives voice to the importance of honouring Aboriginal protocols alongside the academy’s ethics processes within the context of language revitalisation research.

The three Aboriginal women researchers who are weaving and storytelling are Anjilkurri Rhonda Radley, Tess Ryan, and Kylie Dowse. Anjilkurri Rhonda Radley is a proud Goori<sup>26</sup> woman with strong cultural and family ties to the Birrbay and Dhanggati peoples (Mid North Coast region, NSW, Australia) through bloodlines of grandparents Guula, William Henry Holten (nee Davis) and Josephine Pearl Moran. Acknowledging grandparents enables other Aboriginal people to position Anjilkurri within their kinship structure. Tess is a

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<sup>25</sup>Tuck, E., & Yang, K. W. (2012). Decolonization is not a metaphor. *Decolonization: Indigeneity, Education & Society*, 1(1), 1-40.

<sup>26</sup>This article uses various terminology interchangeably to discuss Australia’s First Peoples such as Aboriginal, Torres Strait Islander, Indigenous, Black, and Goori.

Birrby woman and academic whose research focuses on Aboriginal and Torres Strait Islander women, leadership, representation, and support of students. Tess is part of Anjilkurri's PhD supervisory team. Kylie is a Gamilaraay woman with ties to Bundjalung nation, living on Birrbay country, whose community practice, teaching, and research focus on strengthening Aboriginal-led solutions to problems resulting from colonisation.

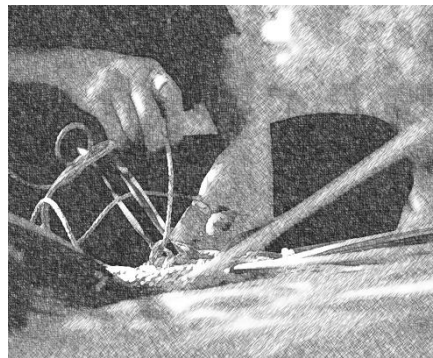
Each *djiyagan* brings unique strands of experience into the weave and through these strands we demonstrate the myriad of discussions required to navigate both the research paradigm and the richness of cultural values and protocols. In a time when Indigenous knowledge is recognised within the university system in Australia, many important conversations are required around homogenising mindsets inherent in the ethics process. Elder knowledge and practice is the significant driving focus of our identity and knowledge building. Their wisdom enacts in us the power to see knowledge as interconnected, therefore allowing our research to have a resonance beyond dominant Western scholarship. Privileging the multi-layered insider and outsider perspectives brought by Indigenous researchers can inform and challenge research processes.

The ways cultural protocols, personal ethics, and university ethics processes interact offer opportunities to broaden the common area between each while keeping people safe in research. In this paper, we will, therefore, draw from Nakata (2017) and refer to the overlapping realm as “cultural interface.” How we align personal ethics with research is evident in our using accessible language to value our readers beyond urges to “sound clever” or somehow prove we belong in academia. Sharing stories to enrich understandings of what we have experienced and why we have made particular decisions in relation to research brings Aboriginal ways of knowing, being, and doing to the research space (Tachine, 2018). We resist deficit-based storying of our people and take note of Senior Kaurna Elder Aunty Barb

Wingard’s call for “telling stories in ways that make us stronger” (Wingard & Lester, 2001, p. 1). Anjilkurri, Community Elder/emerging researcher, takes the lead in weaving story.

*Yukulduwa Ganggali Garral ‘Weaving Through the Heart’*

*Anjilkurri: The weaving of a solid base for butjin (see Figure 3.2) is crucial in supporting the structural design of a carry vessel. As Baan (Aunty and Elder), I start the weave with telling my story of educational challenges, disconnection, and connection to language and language revitalisation research. I construct a context to generate dialogue for djiyagan to contribute. In weaving their strands of grass, telling their stories, butjin grows in capacity and strength to connect us, our stories, and inform a way forward.*



**Figure 3.2 Weaving Through the Heart (photograph by Arlene Maree, image produced by Anjilkurri)**

In telling my story, I share from the heart the journey of *ngarrayn* ‘learning’ to give a contextual narrative and an insight to my cultural standpoint. I left school at 15, to financially contribute to my family’s household. I had the chance to go back to school for a period at 17. I resumed school with a different outlook on life; I found other students unappreciative and immature in their attitude towards their education and others. I had to leave school again due to becoming pregnant with the first of my four daughters. Upon reflection, I loved learning but found the education system to be biased, judgemental, and with no Aboriginal content. In

the 1970s, there was no truthful mention of Aboriginal peoples' history or culture. This experience inspired me to want to work within the education system and support Aboriginal students in their understanding of their history, culture, and identity.

As a mature student, I commenced education at university completing a Bachelor of Teaching, Graduate Diploma in Education, and then later obtained a Master of Indigenous Languages Education (Hobson et al., 2018). Past experiences enabled me to relate to students who were struggling in their learning, and to subsequently develop learning experiences that engaged students beyond the classroom. My teaching philosophy is based on traditional Aboriginal ways of learning. This involves bringing story to life through storytelling, movement, song, dance, the use of symbolism, and connection to land, ancestors, and community.

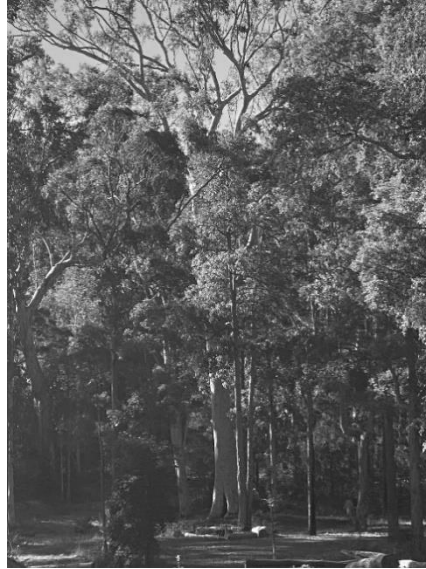
For many years, I have worked in and across Aboriginal organisations, government and non-government organisations, and education systems to give voice to and respond to the needs of Aboriginal people. Over time, I became disheartened in the lack of change within the colonised systems and decided to shift my focus to community capacity building. Language revival and working with Aboriginal women promised a way forward.

In this paper, I reflect on my upbringing where strong Aunties, Mothers and Grandmothers modelled caring for others, a pride in their culture and a desire for the next generation to do well. These women experienced the full force of government policies: welfare intervention, separation from family and other forms of racism. Because of them, I am working to create change and I am using Gathang language as an instrument to drive that change.

*Wiyagi Gathang 'A Call to Language'*

*Anjilkurri: In wuruma 'the wind', language moves through the trees, awakens the people, changes landforms, and sings up the ancestors. Speaking the language of the land connects*

*me to my culture, mob, land, and ancestors. The language of the land was never forgotten; it lived within the land and all she holds.*



**Figure 3.3 Wuruma ‘Wind’ Moving through the Trees (photograph by Anjilkurri)**

The disruption of our language and culture being passed down from generation to generation is a product of colonisation. In the colonising process, foreign laws and policies were introduced to enable the forced removal of Aboriginal people from their ancestral lands and the separation of children from their families and culture. As the late Yankunytjatjara Elder Uncle Bob Randall discussed in the documentary film *The Land Owns Us*, the responsibility to revive and fortify cultural aspects such as language is still ever-present. That connectedness, Uncle Bob said, “to care for my country, care for my mother, care for everything around me . . . the oneness . . . the completeness of that oneness . . . [we] call it Kanyini” (Randall, 2006, 347). Growing up carried a strong sense of family and connection to land, yet I felt deep within my spirit a link to culture was missing. Our family shared language words interspersed in English, but I craved the fluency of the language of my ancestors. After the release of the Gathang dictionary (Lissarrague, 2010) I learnt Gathang language alongside



other family members. I then continued with further studies to become a language teacher and activist. The Gathang language is spoken by Birrbay, Warrimay, and Guringay people located along the east coast of NSW, Australia. Gathang was one of 35 Aboriginal languages spoken in NSW prior to British invasion. Over time, English became the spoken language, with Aboriginal people forbidden from speaking their native tongue (Lissarrague, 2010).

Working in partnership with Muurrbay Aboriginal Cultural and Language Cooperative (Ash et al., 2010) and the Gathang Language Group, I started to become active in reviving the Gathang language. Without fluent speakers and little audio recorded language to draw upon, bringing back language that had been *bubaliyn* ‘sleeping’ seemed almost an impossible task. After years of teaching language, listening now to our language being presented in song, dance, signage, and everyday talk brings pride in the fact I have had a strong influence in making this possible.

I am a community Elder, a title that is earned through sustained leadership, involvement and dedication to community, and accepted knowing and understanding responsibilities and obligations. Eldership elevates status in community as well as requires availability. There is an opportunity here, within this role, for me to do more work in bringing Aboriginal language to the minds and hearts of all communities. I wanted to contribute to the efforts being made to revitalise Aboriginal Languages in Australia.

*Matjarr Djuyal* ‘Hand Talk’

*Anjilkurri: The hands are used with language to tell the story of “Bila Yii Maraliyn.” Mitji Djiyagan ‘Little Sisters’ sing in language, their hands moving fluidly to convey the motion of the flowing river down to the sea (see Figure 3.4).*



**Figure 3.4 The River is Flowing (photograph by Anjilkurri)**

In teaching the Gathang language I continually used gesture, ‘bodily movements to transmit information’. Gesture has long been part of traditional Aboriginal teaching methods to convey the meaning of spoken words (Power, 2013). For example, a movement of hand toward self, directing a person to come, or in storytelling, all-body movements can be used to enhance the meaning of the story. I wanted to formally explore the effectiveness of gesture to learn the Gathang language<sup>27</sup>. Current research in language teaching and human cognition provides evidence to suggest that gesture may facilitate the acquisition of a second (spoken) language by adults and children (Goldin-Meadow, 2014; Gullerg, 2014; Macedonia & Von Kriegstein, 2012). Although gesture has long been part of the communicative repertoire of Aboriginal languages, there is an absence of research examining the efficacy of gesture in facilitating the acquisition of Aboriginal languages in a revitalisation setting led by an Aboriginal researcher.

The decision to undertake formal research in the use of gesture to learn the Gathang language came with some trepidation of stepping into the unknown. How would my community who knew me in the role of Elder and teacher view me as an emerging researcher?<sup>28</sup> How can I use my cultural standpoint to elevate Aboriginal ways of thinking

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<sup>27</sup>Radley, A. et al., (2021) *Matjarr Djuyal: How Using Gesture in Teaching the Gathang Helps Preschoolers Learn Nouns. Languages*, 6(2) 103. <https://doi.org/10.3390/languages6020103>

<sup>28</sup>The term “emerging researcher” is preferred as it better aligns with concurrent Eldership role than “student” or “junior” researcher.

and doing? These questions could only be answered by engaging with my nature of knowing through the research journey with an intention similar to that described in the work of Margaret Kovach, ‘expression of the relevant narrative from personal experiences, those reminiscences of life rooted in our earliest experience that shape our understanding of the world’ (Kovach, 2009, p. 112).

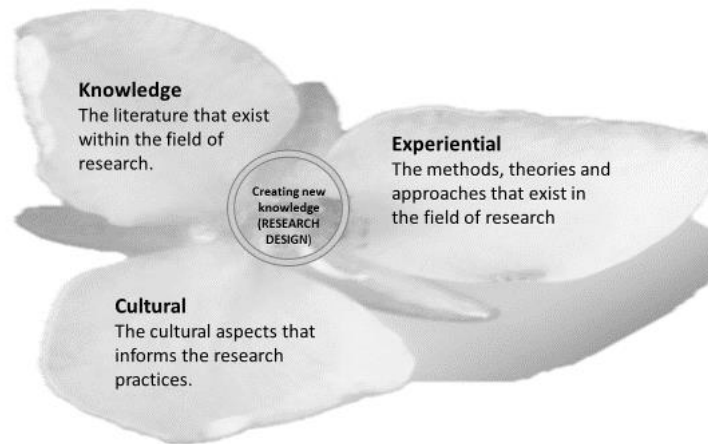
Guided by Caroline Jones, my PhD principal supervisor at Western Sydney University, I explored the possibilities of my research framework to incorporate the use of my cultural standpoint, intrinsic to my ways of knowing. Thus with my ancestors, I stepped into the unknown.

*Ngarralbaa* ‘Learning place’

*Anjilkurri: As I walked over Barray ‘the land’ my understandings of relatedness guided me on, the journey of exploring an untrodden path, developing a framework for language research. In that moment I acknowledged that all things are connected and what I perceive as not knowing is only a lack of connectedness.*

A native flower, the small bush iris, appeared when I was contemplating the importance of this research to my community. This flower image informed the design of the research framework. The flower’s three petals reflect ways of approaching the research and represent the “knowledge” element, the “experiential” element, and the “cultural” element (see Figure 3.5). These elements are pivotal in the research design and the creation of new knowledge for the language research. The research design consists of guiding questions that are central to the collection and analysis data. This will ascertain the extent of new knowledge that will be acquired from the research. Although there is literature outlining a variety of research, theories, and approaches to support the research, it is the cultural practices that will influence how the research is undertaken and how information is correlated and presented.

## Research framework elements



**Figure 3.5 Research Framework Elements**

This approach gives equal importance to the ethical processes and Aboriginal community protocols and embeds the cultural element within the development of the methodology for the research. It was inspired by Indigenous researchers such as Smith (2012) and Yunkaporta (2009). Working within a methodology framework that instils cultural respect to guide the research approach originates models for other emerging Aboriginal researchers to consider. This supports the position that other Indigenous scholars have proclaimed. Wilson (2008, p. 54) states,

*“Indigenous scholars are in the process of shaping, redefining and explaining their positions. They are defining the research, outlining the ethical protocols and explaining the culturally congruent methodologies that can be used at the behest of their communities.”*

University ethics processes and cultural protocols/practices lay the groundwork to engage with the emerging Aboriginal researcher’s standpoint. University ethics processes generally require emerging researchers to think through and plan for possible harms for

people engaged in research. A specific form is completed then submitted to a university ethics committee for approval. Processes vary across universities; however, there is consensus that research engaging Aboriginal people attracts greater scrutiny. Cultural protocol is a broad term to describe intricate codes for behaviour and interaction among Indigenous peoples, lands, and waters. Protocols vary across countries and mobs (nations and clan groups) with a consistent thread of respect woven through. In order to understand cultural considerations, further the validity of the Aboriginal researcher and community Elder, a cultural standpoint (cultural practice) that integrates *ngarrangga* ‘must listen’ is explored.

### *Ngarrangga: A Cultural Practice of listening*

Through the years, we have listened to the stories. In the Aboriginal way, we learn to listen from our earliest days. We could not live good and useful lives unless we listened. This was the normal way for us to learn – not by asking questions. We learnt by watching and listening, waiting and then acting (Ungunerr-Baumann 1993, p. 35).

As an Aboriginal researcher and Community Elder, my cultural standpoint is the embodiment of my nature of knowing, being and doing. This is induced by *ngarrangga*, an important cultural practice. Within deep listening, there is a connection to self, others, ancestors and the oneness of all there is. A place of listening beyond the ears is encapsulated within all senses and brings us into the present. It gives us guidance through a knowing that forges a path to behave in a respectful way. Once you know it, you can’t unknow it - it simply is.

Further evidence supporting *ngarrangga* is beginning to be written about in academic spheres. Senior Elder Miriam-Rose Ungunmerr-Baumann reflects on such principles described in her language Ngan’gityemerri as *Dadirri* (deep listening). She says, ‘*Dadirri* is inner, deep listening and quiet, still awareness. *Dadirri* recognises the deep spring that is

inside us. We call on it and it calls to us.’ (Ungunmer-Baumann, 1993). *Ngarrangga* holds value for research projects in enhancing our ability as researchers to listen to more than spoken or recorded words, instead urging us to seek understanding more fully.

Yunkaporta’s (2009) thesis captures some of the general principles in Indigenous ethics research processes and is evident in my cultural standpoint:

*‘As respecting the living and culturally managed nature of knowledge, being present, listening deeply, learning and enriching community learning, being real, respecting all things, engaging in relations (cultural, environmental, historic and social), and understanding that while these principles may be generalisable, methods arising from them in a particular community are not.’ (Yunkaporta, 2009, p. 8).*

To maintain the integrity of my cultural standpoint within the context of this research is to listen deeply, act respectfully, ensure ethics and protocols processes are woven into research methodologies, there is accountability and to establish cultural safe practices. The interweaving of cultural values and protocols with academic ethics benefits both researchers and the researched (Nakata, 2017). *Nyiirun ngarrangga* ‘we all must listen’.

#### *Djinangga Yuungga* ‘Insider-Outsider’

My cultural standpoint shapes the way I interact with all research stakeholders, people who have a vested interest in or may be affected by the research. Stakeholders include academy, language learners, parents, community preschool staff, all local community members and language cohorts. My cultural standpoint influences positionality and relatedness to the insider/outsider notion. The insider/outsider notion is a concept of positioning of oneself within the realms of research investigation. Researchers over the years have had ways of exploring and defining this notion:

*'Whether the researcher is an insider, sharing the characteristic, role, or experience under study with the participants, or an outsider to the commonality shared by participants, the personhood of the researcher, including her or his membership status in relation to those participating in the research, is an essential and ever-present aspect of the investigation.'*  
(Dwyer & Buckle, 2009, p. 55).

It is suggested that Evered and Louis presented the terms 'inquiry from the inside and inquiry from the outside' (1981, p. 385). Understandings of insider-outsider research are critical in the research process, and within this concept, issues relating to subjective positioning and a privileging of identity must be explored.

Insider and outsider, or 'emic and etic' (Pike, 1954, p. 37) labels in research initially related to potential for scientific bias. There was little appreciation for insider qualitative research and findings were considered questionable and lacking in objectivity. The work of Barbara Myerhoff, a Jewish-American film-maker and anthropologist in the 1970s and 1980s shifted her research lens from examining 'exoticised others' to focusing her research on projects involving and benefitting ageing Jewish women. Myerhoff's approach placed value on nuanced understanding of research as storytelling in and of one's own culture (Myerhoff, 2007).

Other key advantages to being a research insider are described by Bonner and Tollhurst (2004) as holding a greater understanding of the specific culture studied, keeping a flow between the social interaction of the researcher and respondent, and having an existing or established level of intimacy promoting truth-telling within the research process. We are meant to understand the political intersections between who we are as a collective, and what we conclude of the world around us. The dichotomy that exists within insider research is that of collective and familiar knowing and that of individual perspectives.

Karen Martin investigated the ways Rainforest Aboriginal people regulate outsiders and the implications for Western research and researchers in her doctoral thesis and book, *Please Knock before You Enter*. Martin located through the Burngu, Kuku-Yalanji community, three types of relatedness in Indigenous research: *ngarrbal* ‘stranger who is not known’, *waybak* ‘whiteman who is known about’, and *jarwon* ‘friend who is known’. (Martin, 2008, p. 5). This relatedness situates understandings of insider-outsider research from multiple perspectives.

These researchers identify the fact that relatedness to the culture studied and the establishment of relationships determines your position as an outsider and/or insider. I consider myself predominantly an insider, conscious of the impact my role as researcher may have on my relationship with language learners, family and community, knowing I will have to deal with the consequences of my behaviours and processes (Smith, 2012).

Multiplicity exists within my roles in the context of the research undertaken in my local community. I am a Board member for the community preschool where the study is situated. In the study, I delivered the language lessons to the cohorts and conducted testing for individual results. I have long-standing membership of all nine organisations in which supplied support letters to the Ethics Committee for ethics approval. I am a language activist, teacher and learner, Aboriginal Elder and researcher. I navigate these roles freely and respectfully as I am conscious of the privileges they afford me in my community and research investigation.

As an emerging researcher coming from an insider position of Eldership and Traditional Owner within my community, in the world of academia I was as Martin (2006) described ‘stranger who is not known’ (p. 5). Although Martin refers to this within a non-Indigenous context, I perceived myself as the same in the academy, an outsider, a stranger grappling with the lack of status, authority and connection.



My motivation to persist despite uncertainty are language learners, family and community, and knowing language research is both an act of decolonisation and a means to revive language as cultural practice. Within the notion of cultural insider connecting to the academy as an outsider I developed a broad lens to visualise what was needed to support the continuance of my research journey and to develop ideologies to Indigenise the academy. I recognised I was conceding my cultural standpoint when engaging with my non-Aboriginal research supervision team due to my inability to articulate the dilemma of where to position my being within the academy. I struggled initially to find the common ground, the cultural interface, a cultural meeting place where my supervision team and I could converse in greater depth about my research. I considered what further support mechanisms were required. Support materialised in the form of two Aboriginal researchers, sisters Tess and Kylie.

*Djiyagan Djuyaliyn Djuyal 'Sisters Telling Stories'*

*As I stop weaving into the butjin, the storytelling of my research experiences brings our djiyagan circle into the Ngarrangga, a place to reflect. To continue the weave djiyagan 'sisters' share their connection to me, a community Elder and emerging researcher. Their strands of grass find their place to shape the butjin, as their stories find their place within my story to strengthen its capacity.*

*Wubal matjarra djinanggabirang 'Weaving from the inside'*

*Djiyagan Tess is my mentor and a member on my supervision panel. As an emerging researcher, I am grateful to Tess in accepting my invitation to join my supervision panel. At a university, session I attended Tess spoke these words: 'The term 'decolonising' is used regularly in discussions around disrupting the institution, yet I am unsure whether we can do that to its fullest extent. So realigning, resetting, and re-empowering our Black bodies through*

a Western system of knowledge production is how I name what I attempt to do within academic institutions.’ (personal communication, Ryan, 20 July, 2019)

*Anjilkurri: In this moment I had, a knowing Tess would be instrumental in my growth as an emerging Aboriginal researcher. Throughout our many conversations, Tess conveys her understanding of her positionality within the insider-outsider notion in multiple domains. She gives insights into the level of support required for Aboriginal researchers to reach their goals and the value of listening. Tess empathises with the complexity of amalgamating Aboriginal epistemology within the academy. Weaving (storytelling) with Tess has enabled two Birrbay sisters to connect and share the importance of language and culture to one’s identity.*

Baan Anjilkurri and I met through a research capability-building program I was presenting in. It is there that she asked me to join her on her research journey. The pathways that lead us often appear stronger in hindsight, yet my reflections of our connection had a resonance to it I will always remember. It is through our connection that a strong sense of culture exists. Nakata’s ‘cultural interface’ demonstrates that this meeting in those middle spaces where the shared moments of knowing and not knowing create learning and purpose. The engagement between those middle spaces builds in us both deeper philosophical arguments and understandings within the ‘corpus of knowledge’ that is Indigeneity (Nakata, 2007, p. 350).

The dislocation from my country and cultural teachings has motivated my educational career to building an awakening of what was *bubaliyn* ‘sleeping’ and of learning within the western models of the education system. Baan is sharing the knowledge of reviving Gathang language and through that knowledge sharing process; my cultural values are further broadened, as is my sense of belonging and identity. The language of Birrbay culture and those cultural embers live inside the body, consisting of values, protocols, language and

being. Organically it has slept within and showed brief moments of ignition, yet with this shared engagement between Elder knowledge and academic knowledge, that being is now burning strongly between us.

I also understand what it feels like as an Indigenous student within a structure that regularly seems to want us for our knowledge yet wants to shape us through a prism of their own. Previous research undertaken with regards to the Indigenous health researcher workforce demonstrated how integral ‘peer generative power’ was in the context of Indigenous research training (Ewen et al., 2019, p. 8). Through the sharing of experiences, the alignment of knowledge and the challenges faced in approaching Western knowledge structures, a large degree of shared guidance and support is offered within the cohort of students on the PhD journey.

There is immense need for levels of support for Indigenous students and institutions have been acutely aware of this. These levels of support include Indigenous student centres, writing retreats and research capacity building programs that develop higher degree research aspirations (Asma & Page, 2011). Yet one of the failings in the attempt to form structures to support students is the recognition of the legitimate power generated through the shared and collaborative pathways these students create. True also, the value of Black women in spaces of knowledge within the academy has been accepted without recognition of the gift that sharing brings to the academy itself (Fredericks et al., 2014). Baan felt through witnessing me sharing my knowledge that having me on her PhD team gave her what was missing – that being someone who was within the realms of being ‘inside her inside’ (Black women together), as well as being ‘inside what was outside’ (a knowing of the research space within the academy).

As an insider-outsider, I am regularly questioning my weaving (storytelling) through reflective practice. Where are the strands (stories) I carry? What weight do they hold for

myself, my Blackness, and the legitimisation of my being within the academy? The greatest strand I bring to myself is that of power in my learnings as I awaken more language in myself to name all I have felt as an Aboriginal woman. For someone who sits neither firmly inside academic institutions, nor outside of them, I have always considered myself dwelling on the edges of any parameter that tells me 'I should' and rather focus on what I can discover and how it enriches me.

My motivations push me to realign dominant Western systems to consider ways of being as Aboriginal and Torres Strait Islander people – that means different ideas and knowledge, which for many years has been undermined by the institutional structures we sit in. The work I do in supporting other students to build their understanding is paramount, and it is the power in how it is done that holds most value. Many younger or earlier students I speak to suggest that they are learning a new language within English language systems. When in deep conversation with others traversing educational spaces, I talk about nuances in disruption and an element of unlearning compliance to systems of knowledge while still in conversation with them. *Ngarrangga* has taught me to listen, observe deeply and consider how we can speak our ways of knowledge so that it is at the forefront, and not positioned as an afterthought within the academy. This is my construction of decolonising and can be considered as a point for further discussion. Henderson and Battiste (2000, p. 35) affirm that, *'Indigenous knowledge is not a uniform concept across all Indigenous peoples; it is a diverse body of knowledge that is spread throughout different peoples in many layers. Those who are possessors of this knowledge often cannot categorise it in Eurocentric thought, partly because the processes of categorisations are not part of Indigenous thought'*.

My interface with my Aboriginality is that of reclaiming what was removed by dislocation and trauma, and therefore is personalised through those experiences (Ryan, 2019).

Subjectivism suggests that social phenomena are created from perceptions and consequent actions (Beker et al., 2012). My drive to work in areas for change determines that future knowledge building roles will be driven by my subjectivism. As I must observe a stance that embodies how I view knowledge, I therefore perceive my academic work to be focused on a sense of informing through investigation what must change for a better society. As neither fully inside nor outside the university my pathway is firmly focused on the continuation of *ngarrayn* (learning) that is of myself and how I assist in change for Aboriginal and Torres Strait Islander people.

We all carry different strands of experience into our storytelling weave and the acknowledgement of such is an integral element to the work of research.

*Wubal matjarra yuungabirang* ‘Weaving from the outside’

*Djiyagan Kylie is my research mentor and a shining light in the darkness. As Kylie’s Elder and Aunty I am Kylie’s cultural caretaker. I hold cultural authority, which I can and have evoked to influence decisions Kylie makes freely. While this might seem convoluted, it makes visible multiple parallel roles, which we navigate seamlessly. Authority is understood in a different way to Western concepts of dominance, power and hierarchy, instead lovingly enacted with respect, care, integrity and connection. Our connection is strong. Through our connection, our weaving and storytelling highlights what is possible in honouring cultural protocols in academic research and ethics processes.*

As I accept *butjin* to introduce new strands, flashes of memory spring to mind. I do not recall a first meeting with Baan Anjilkurri; instead accept knowing. Knowing describes cellular memory and acquired knowledge. Cellular memory is a complex phenomenon which may be more clearly explained through cultural storytelling practices, Archibald (2008, p. 83) asserts our storying may “vary from the sacred to historical, from cultural traditions to

personal life experiences and testimonials.” The stories I share here sit somewhere between experience and testimonial, drawing on cyclic cultural practices of sharing my learning in order to teach *Ngarrangga*.

We were sitting in powdery red dust under the dappled shade of mulga trees at women’s camp near Uluru carving *wati bunggil* ‘clapsticks’. Not having worked the tough, sun-baked branches of the mulga tree we had harvested, I began applying advanced shaping techniques without been shown. Strangely, I knew what to do as the wood sang to me, revealing its preferred shape as time melted away. Women began asking me how to work *wati*, their words and actions assuming the skill was a familiar one. Working *wati* with the ancient craft practiced by Aboriginal women for eons fused with my knowing, and I’m grateful Baan Anjilkurri was present. Was this why she had brought me to this place of intense heat, swarming flies and swag-sniffing dingoes? ‘When we get back home you can teach the other women’, she said.

This conscious experience of ancestral memory underpins cultural protocols carried into my research through more intentionally trusting ancestors and their gifts of cellular memory to guide me when something is, or is not, right. The ethical processes and protocols are the pivotal aspects of Indigenous research, and as researchers, we understand the responsibility placed on us to undertake research appropriately for our communities.



**Figure 3.6 Wati Bunggil ‘Clap sticks’ (photograph by Kylie Dowse, hand-carved wati bunggil made with mulga sourced near Uluru on Anangu Country)**

This leads into another story more directly related to my research. Cultural protocols surrounding Elders and their revered status in our world supported the identification of Western hierarchical positioning in relation to university research ethics. Too frequently, Aboriginal protocols and ways of knowing, being and doing are reduced to esoteric ‘nice but unnecessary’ permissions from reference groups, much like practices of Acknowledgement of Country can be recited by rote yet void of meaning. It does not have to be this way. I have come to understand that researchers have capacity to shape universities as knowledge is produced. Our work is political and does not require us to choose between culture and academic aspiration. Respectful, meaningful processes carved out through sustained team efforts can offer wonderfully resonant ways to collaborate. A robust pilot partnership between Birrbay people, my PhD supervisors and committee, and University of Melbourne Ethics Committee provides an example of keeping people safe in research by honouring Aboriginal cultural protocols to enhance academic ethics processes.

*Saltwater Ngaluwi ‘Wave’ Local Ethics Committee*

Gathered around a table in an overly air-conditioned hotel lobby in Hong Kong, Vanessa Davis, Anthony Newcastle and I met with our PhD supervisors as a cohort. The cohort was a measured arrangement we negotiated to ensure adequate cultural and collegial support in our various research projects. We had graduated together as Masters of Narrative Therapy and Community Work and insisted on formal Welcome to Country at graduation ceremony where we, along with Justin Butler, collectively delivered the valedictorian speech. The graduation hall was made more elegant by Wurundjeri Elder Uncle Colin, who donned possum skin and ochre, and carried gum leaves to mark the occasion. As part of our cohort requirements, we selected our shared principal research supervisor, David Denborough, whose knowledge of Narrative Therapy and international Collective Narrative Practice we believed essential to support the integrity of our research. It was David's suggestion that later led to Aunty Barb Wingard joining my supervisory team. Appreciation for this insight lingers.

I was explaining that a particular community Elder, *Baan* 'Aunty Rhonda' Anjilkurri, was invested in my community's research project and had ideas on how we might proceed. One of my supervisors (now enjoying well-deserved retirement while writing children's books) is highly experienced and cautioned that university ethics processes had not been followed in engaging with my community Elder 'prematurely'. By seeking Elder guidance ahead of university ethics committee approval, I could likely not write about our conversation in my thesis. Perplexed, I asked if the University had Aboriginal representation among those tasked with determining ethics applications. The answer brought a brief period of silence. 'Not that I'm aware of.' Being a bit cheeky by nature and feeling safe in the relationships built I challenged this notion. 'So, are you saying I'm supposed to seek permission from a group of non-Indigenous people to talk with my Elder?' My supervisor conceded it seemed bizarre when framed that way. It was a pivotal moment in my research journey, as I knew I could not progress until Aboriginal Protocols received proper recognition.



As a team, we worked through inverting cultural protocols and university ethics, formal and informal, big and small. Each time correcting nuanced suggestion that the university was formal or big while the local committee was informal or somehow less substantial. Together, we arrived at a respectful arrangement of a Local Ethics Committee (Birrbay community members and other folks contributing their expertise, like community organisers dedicated to prison abolition) and a Faraway Ethics Committee (the University). A space for research was created where the Faraway Ethics Committee could not provide approval without first satisfying the Local Ethics Committee, however the Local Ethics Committee could provide approval for processes affecting local community in isolation. Birrbay community retains rights to every word written. Baan Anjilkurri spoke by phone with my PhD Committee Chair, which honoured Anthony's suggestion that local mob and university folk converse. Both women were a little unnerved at first, each wanting to demonstrate respect, which was a fortuitous place to start. Aboriginal knowing, being and doing became more fully acknowledged, and the research could progress.

University ethics processes automatically flag Indigenous research projects as risky, and while the intention to protect is not without just cause, paternalism is evident in ways Aboriginal communities are excluded or relegated to tokenistic fringes of many research projects. Western research has led to damage-centred, deficit storying of how we experience Aboriginality (Tuck, 2009).

Stark insight into ways colonising approaches to education fail to appreciate cultural knowledges and render Aboriginal people as outsiders is provided in the documentary, *In My Blood It Runs* (2020). The story relays an Aboriginal boy's experience of two worlds. In Aboriginal cultural ways, ten-year-old Djujan Hoosan is positioned as capable, inheriting his grandfather's gift for healing sickness, which carries a position of great responsibility among his people. Simultaneously, Djujan is depicted struggling at primary school while his teachers

degrade Aboriginal spirituality and question his behaviour and frequent absence from the school. Footage shows Djuwan's joyful engagement with weekly Arrente language classes, the contrast in his participation and interest is striking. A community change project springs from the film, calling for Arrente-led schools.

Much like Djuwan, Indigenous researchers walk in two worlds. The notion of Aboriginal-led universities seems a too-distant concept for many of us presently engaged in research and academic pursuit. Concurrent to the work of those pursuing such enormous change, we can work productively with universities to change existing structures and approaches within them. While I acknowledge it is not the same for all, my experience has been overwhelmingly positive, with university folks surrounding Saltwater Ngaluwi equally enthusiastic about changes we have made together.

*Wakulda Yabang Mayan.gu 'A Way Forward As One'*

*We djiyagan have woven our stands of grasses from the inside and from the outside to tell our stories in our own ways to give meaning to our positioning within the weaving circle. As we continue to weave together the last strands of grasses to finish butjin, our storytelling focuses on the connections as a way forward to bring oneness, wakulda (as one) to the academy.*

The article has applied a unique method of free weave storytelling, sisters sitting in circle, sharing cultural and academic knowledge and experiences. The storytelling demonstrates the need for purposeful conversation and action regarding university ethics, cultural protocols and the need to include greater support for emerging Indigenous researchers. Wilson (2008, p. 54) states,

*"Indigenous scholars are in the process of shaping, redefining and explaining their positions. They are defining the research, outlining the ethical protocols and explaining*

*the culturally congruent methodologies that can be used at the behest of their communities.”*

We call on universities and emerging Indigenous researchers to view university ethics processes as opportunities to broaden, document and formalise the cultural interface. *Ngarrangga*; engaging with nation and clan cultural protocols, seeking advice ahead of approval from Aboriginal Elders, communities and mentors are all ways to support robust research while mitigating risk.

We invite universities to critically examine how ethics processes and committees are structured, their positionality in relation to knowledge production, while privileging Aboriginality among those doing the examining. Working in partnership with Aboriginal people and their communities gives a richer understanding of research needed and the nuanced Aboriginal cultural protocols to be considered (Tachine, 2018).

The engagement of Aboriginal ways of ‘doing’ within universities enhances the quality of research projects and reduces potential negative effects for Aboriginal people. Buoyed by this ‘knowing’, moving beyond research ‘reference groups’ to adopt holistic ways to engage accountable practices which rely on Aboriginal knowledge becomes imperative. It brings the outsiders in and invites the insiders out. It promises opportunities for Aboriginal people to find safe spaces as researchers, and the researched. Research projects engaging emerging Aboriginal researchers or peoples must adopt significant cultural support mechanisms and engage cultural mentors to truly succeed. For example, a seemingly straightforward requirement in research is to undertake a literature review. Non-Aboriginal supervisors must acknowledge such a task will expose Aboriginal researchers to a litany of negative assessments of their knowing, being and doing. However supportive the relationship between non-Aboriginal supervisors and Aboriginal researchers, a shared “being” with

Aboriginal people trusted by the researcher are essential to guide their emergence from research work unscathed.

It is not enough to ask an emerging Aboriginal researcher if they are satisfied with support provided by non-Aboriginal supervisors. The “outsider” positioning identified in *butjin* makes power dynamics visible. While feelings of not yet belonging to universities are not exclusive to emerging Aboriginal researchers, unresolved colonising histories contribute to our experiences as outsiders and the ways power dynamics affect us differently.

Responding to power dynamics between non-Aboriginal supervisors and emerging Aboriginal researchers requires Aboriginal people to populate our research journeys, whether sourced inside or outside academic institutions. Non-Aboriginal supervisors are uniquely positioned to produce sweeping systemic change by asking emerging Aboriginal researchers ‘who might help’ rather than ‘if’ Aboriginal people are needed as mentors, supervisors or panellists (Trudgett, 2014).

The concepts surrounding the insider-outsider exemplar for Aboriginal people are multifaceted and contain levels of connectivity and relatedness, respect for Elder knowledge and individual journeying for those reawakening what lives within our being. It also acknowledges the power of our voices, our world and our ancestors by recognising their footsteps when undertaking research within university spaces.

The recognition of the cultural interface, the overlapping realm that exists between university systems and Aboriginal ways of knowing, doing, and being initiates knowledge and learning experiences. Here within the cultural interface, *ngarrangga* ‘deep listening’ resides, a crucial element for hearing stories, changing, and Indigenising the academy. Through the telling of stories, bringing strands of experience into the weave, we have created a carrier to take forth our understandings, not as an end but an invitation to craft and expand on the stories told, and relationships, experience, and knowledge gained.



**Figure 3.7 Butjin Djuyal ‘Story Basket’ (photographs supplied by Anjilkurri, Tess, and Kylie, image produced by Anjilkurri)**

### *Butjin Djuyal ‘Story Basket’*

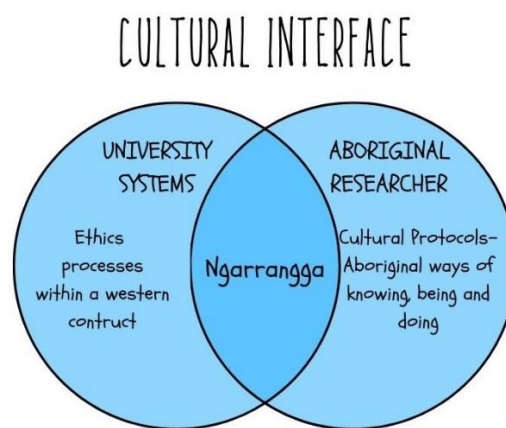
As the ends of the grasses are now in place to secure our weave, we view all the strands woven to form *butjin*. As Master Weaver, Birrbay woman, Patricia McInherny teaches us, ‘no weave can’t be mended and there is always the ability to extend and reshape the *butjin*’ (personal communication, 7 March, 2020). Hence, our stories can change and there are other stories to be told to enhance, expand and strengthen *butjin*. As the *djiyagan* gift the *butjin* (our stories) to you, we close our weaving circle with a blessing.

*Wakulda nyiirun ngarrangga* ‘Let us all listen as one’

### **3.3. Ngarrangga in Practice**

The above published article draws on my experience as an emerging researcher to tell a story in a cultural way that captures the journey of activism in language revitalisation, gesture use to teach the Gathang language, the development of the research methodology framework, building meaningful relationships, navigating academia as an insider/outsider and exploring *ngarrangga* within an academic construct.

Noting the importance of the cultural element within the research methodology framework has been pivotal in the discussions to direct the reader to centre *ngarrangga* within the existence of a cultural interface, a middle ground between the university systems and the Aboriginal research practice (see Figure 3.8), and the application of *ngarrangga* throughout the research.



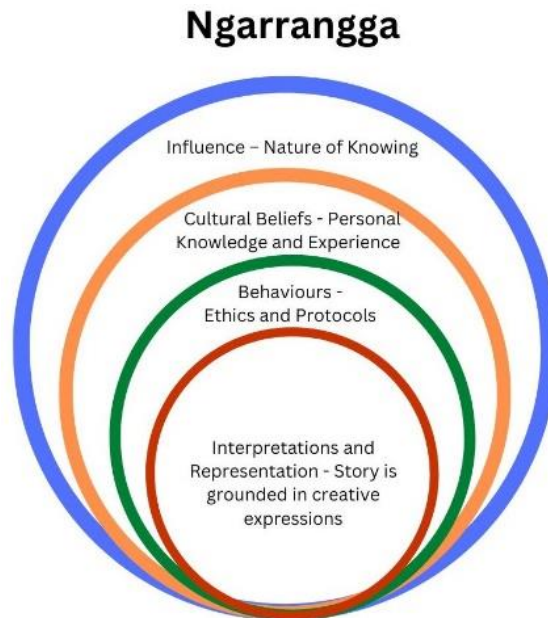
**Figure 3.8 Cultural interface**

Influenced by my nature of knowing, Aboriginal epistemology has enabled me to define a cultural standpoint, a position to decide how and why research is undertaken and information is correlated and presented (Kovach, 2018, pp. 218-219). Figure 3.9, *Ngarrangga*, below gives insight into the considerations that have influenced the researcher’s practice. This concept was adapted from the works of Margaret Kovach (Kovach, 2018, p. 229). *Ngarrangga*<sup>29</sup> within this context describes the deep listening that was required to understand one’s nature of knowing. This stems from a cultural belief gained from personal knowledge and experience and enacts behaviours to follow certain ethics and protocols. The interpretations and representation of research structures includes story that is grounded in

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<sup>29</sup> Other Aboriginal Nations have their own word for this expression, such as Dadirri (Ungunmer-Baumann, 1993).

creative expressions allowing a multi-faceted approach to listening and presenting information.

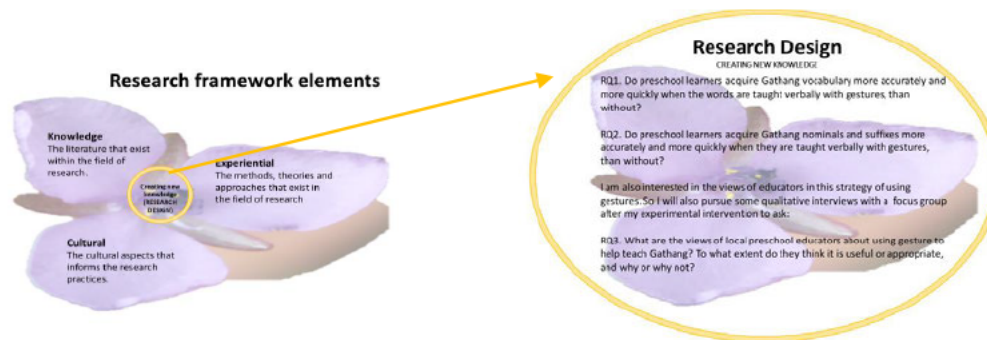


**Figure 3.9 Ngarrangga**

***Note.* The Ngarrangga underpins my cultural standpoint throughout the research design and beyond.**

### **3.4. Research Design**

The research framework centres the research design guiding questions as these questions are fundamental to the process of data collection and data analysis (see Figure 3.10). The inquiry into these questions will inform the creation of new knowledge acquired from this research.



**Figure 3.10 Research framework elements**

### ***3.4.1. Structure of the Research***

The research is divided into three studies: two studies applying a quantitative approach (Chapters 4 and 5 - Experiments 1 and 2) and one study applying a qualitative approach (Chapter 6 - Educators' Interviews). Tables 3.1 and 3.2 below provide research structures for each study.

### ***3.4.2. Quantitative Studies***

A quantitative, experimental approach has both strengths and weaknesses. Quantitative analysis within a Western scientific experimental approach tends to limit the scope in which Aboriginal ways of knowing and learning can be embedded (Yunkaporta 2009). In quantitative analysis, however, the application of inferential statistics can tell us in statistical terms if, and to what extent (effect sizes), gesture improves acquisition and retention of Gathang bare nouns and suffixed nouns (Chapters 4 and 5, respectively). In analysing the data, the test results will inform the finding of these experimental studies.

Experimental research is used in settings where variables defining one or more 'causes' can be manipulated in a systematic fashion in order to discern 'effects' on other 'variables'. This method is therefore commonly used to test the effectiveness and impact of an intervention in controlled conditions where factors, that is, independent variables, are manipulated to assess impact on one or more dependent variables (Cohen et al., 2000). Controlled repetition of the experimental research method among multiple sample groups



(between-participants design) or with repeated measures on the same participants (within-participants design) is important. This enables confident reporting of generalised research findings through the study (Ary et al., 2019). Table 3.1 below includes additional information.

**Table 3.1 Research Structure - Quantitative**

Study	Experiment 1	
Research Question 1.	Do preschool learners acquire Gathang vocabulary more accurately and more quickly when the words are taught verbally with gestures, than without gestures?	
Participants	Forty children (aged 4-5.2 years) enrolled at the Community Preschool Centre.	
Data Collection		Data Analysis
<ul style="list-style-type: none"> <li>• Data collection commenced after a learning phase (class groups were taught one of the noun sets with gesture and one noun sets without gesture).</li> <li>• The two noun sets, counterbalanced across class groups and conditions, assessed the effect of gesture use independent of the actual word set learned.</li> <li>• The testing phase began two days after the last lesson. Children were tested individually to see whether they had</li> </ul>		<ul style="list-style-type: none"> <li>• To test the hypothesis that the use of gesture alongside verbal and pictorial instruction for Gathang nouns would result in higher accuracy scores for children in subsequent testing (receptive and expressive testing).</li> <li>• Four paired-samples t-tests were conducted.</li> <li>• There was one paired-samples t-test for each of receptive Post-test 1, receptive Post-test 2, expressive Post-test 1, and expressive Post-test 2.</li> </ul>

<p>learnt the Gathang nouns (Post-test 1) and then tested five days later (Post-test 2).</p> <ul style="list-style-type: none"> <li>In both of these tests, there were two components: the child was asked to respond to verbal language (receptive) and to speak language (expressive).</li> </ul>	<ul style="list-style-type: none"> <li>The paired-samples t-tests were one-way t-tests given the directional hypothesis that gesture would benefit children's learning of the Gathang nouns.</li> </ul>		
Study	Experiment 2		
Research Question 2.	Do preschool learners acquire Gathang noun+suffix more accurately and more quickly when they are taught verbally with gestures, than without gestures?		
Participants	Thirty-four children (aged 4-5.2 years) enrolled at the Community Preschool Centre.		
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; background-color: #cccccc;">Data Collection</td> <td style="width: 50%; background-color: #cccccc;">Data Analysis</td> </tr> </table>		Data Collection	Data Analysis
Data Collection	Data Analysis		
<ul style="list-style-type: none"> <li>Data collection commenced after the learning phase. Each class group was taught one of the suffix sets with gesture and one suffix set without gesture.</li> <li>Two sets of suffixes, the counterbalancing across class groups allowed the researchers to assess the effect of gesture use independent of the actual set learnt.</li> </ul>	<ul style="list-style-type: none"> <li>To test the hypothesis that the use of gesture (alongside verbal, pictorial instruction and the movement of tangible objects) for Gathang suffixes would result in higher accuracy scores for suffixes for children in subsequent testing (receptive (stamping and toy) and expressive testing).</li> </ul>		

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• Each child was tested for acquisition ‘post-test 1’ two days after the final learning session and then five days later for retention (Post-test 2) for each of Set 1 and Set 2 – that is, suffixes learnt with and without gesture.</li> <li>• In both of these tests, there were two components: the child was asked to respond to verbal language (receptive) and to speak language (expressive).</li> <li>• The first receptive task tested the child’s knowledge and understanding of a spoken noun+suffix combination by matching it to an image representing the combination.</li> <li>• The child had to stamp the correct image out of three choices on a printed worksheet page.</li> <li>• The second receptive task further tested the child’s receptive knowledge of the suffixes. In this task, the child used toy props (soft fluffy dog and bird) to act out a phrase said by the researcher, to demonstrate his/her understanding of the spoken Gathang phrases.</li> </ul> | <ul style="list-style-type: none"> <li>• Six paired-samples t-tests were conducted.</li> <li>• There were two paired-samples t-tests for each of receptive (stamping and toy) at Post-test 1, receptive (stamping and toy) at Post-test 2 and one paired t-test for expressive at Post-test 1, and expressive at Post-test 2.</li> <li>• The paired-samples t-tests were one-way t-tests given the directional hypothesis that gesture would benefit children’s learning of the Gathang suffixes.</li> </ul> |
|--|--|

<ul style="list-style-type: none"> <li>• In each of the suffix Sets 1 and 2, the child was given an expressive task to test their ability to verbally produce the Gathang noun+suffix combination. All three suffixes in each set were tested, resulting in a score out of three for each set.</li> </ul>	
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### 3.4.3. Qualitative Study

A qualitative approach involving the collection of interview data and application of thematic analysis of the interview transcripts was adopted in this study. The interview conversations involved the researcher and the educators at the Community Preschool Centre. The interview participants attended the preschool during the duration of the experimental research (Experiments 1 and 2). The educators provided responses each to ten questions that were designed to extract observations and comments from the educators to respond to Research Questions 3 and 4 (see Table 3.2 below).

**Table 3.2 Research Structure - Qualitative**

Study	Educators' Interviews
Research Question 3.	What are the views of local preschool educators about using gesture to help teach Gathang?  To what extent do they think it is useful or appropriate, and why or why not?

Research Question 4.	How has learning the Gathang language influenced the Community Preschool environment?’
Participants	Participants were eight female educators with an age range of 32-58 years employed on a part-time or full-time basis at the Community Preschool centre.
Data Collection	Data Analysis
<ul style="list-style-type: none"> <li>• The data were collected from interviews conducted with the participants (educators).</li> <li>• Each interview included a broad range of questions (10) designed to capture educators’ thoughts about the role gesture played in the Gathang language lessons and the influence of Gathang language learning on the community preschool environment.</li> </ul>	<ul style="list-style-type: none"> <li>• The educators' audio interviews were transcribed and edited to provide material for an iterative and thematic analysis.</li> </ul>

### 3.5. Summary

In this chapter, I introduced our article ‘Ganggali Garral Djuyalgu (Weaving Story): Indigenous language research, the ‘insider-outsider’ experience and weaving Aboriginal ways of knowing, being and doing into academia’. The article explored a premise similar to Smith’s (2012) stance that Indigenous knowledge can exist alongside Western knowledge. The article highlights the importance of the practice of *ngarrangga* ‘to listen deeply with respect’ (Sheehan, 2011). This published article sets the basis for the thesis in methodological, ethical

and ontological terms. Flowing from the perspectives in that article, a specific set of methodological choices was made. These included a pair of quantitative (experimental) studies within an 'intervention' type study which brought intrinsic benefits to child participants within a real-world community setting on Country. To complement the quantitative approach, which measured effects (learning benefits) for children of using gesture to teach Gathang, a third study took a qualitative approach. This third study focused on the views of educators about the teaching of Gathang using gestures. In the final sections of this chapter, the overall structure of the research methods was laid out, including key aspects relating to participants, data collection and analysis. In the next chapter, Chapter 4, I will present Experiment 1, 'How using gesture in teaching Gathang helps preschoolers learn nouns'.

## **Chapter 4 : Experiment 1: *Matjarr Djuyal*: How using gesture in teaching Gathang helps preschoolers learn nouns**

### **4.1. Prelude**

#### ***Personal Reflection***

The opportunity had arisen to publish the findings of experiment 1 in the international journal *Languages* while doing my PhD. I embraced the double peer review process as it enabled me to refine my academic writing skills through addressing the feedback provided by the reviewers. Although one of the reviewers recommended that the ethical considerations section should be presented in a more concise form, I retained the section in its entirety. This was in order to give the reader an understanding of my positionality within the research and the need to meet specific ethical requirements and protocols as an Aboriginal researcher (as described in Chapter 3).

This chapter presents an experimental investigation into Research Question 1: Do preschool learners acquire Gathang vocabulary more accurately and more quickly when the words are taught verbally with gestures, than without gestures? The chapter begins with the presentation of the published article (Radley et al., 2021). The full citation is:

Radley, A., Jones, C., Hanham, J., and Richards, M. (2021). Matjarr Djuyal: How using gesture in teaching Gathang helps preschoolers learn nouns. *Languages*, 6(2), 103.

<https://doi.org/10.3390/languages6020103><sup>30</sup>

The published article discusses theories and approaches that advocate the benefits of learning and teaching with gesture. The data collection and analysis are presented, as well as the results and findings of the experiment. The article leads the reader into an academic style text encapsulating the formalities required to publish in the journal *Languages*. The following section presents the abstract from the published article and begins the article itself.

### ***Abstract***

There are important efforts being made to revitalise Aboriginal languages in Australia, which are both pedagogically and culturally appropriate. This research seeks to expand the current knowledge of the effectiveness of gesturing as a teaching strategy for young children learning the Gathang language. An experimental method was used to investigate the effectiveness of gesture by employing a context in which other variables (e.g., other teaching pedagogies) could be held constant. Participants, age range 4–5.2 years, were taught Gathang nouns with gesture and without gesture, alongside verbal and pictorial instruction. After the teaching sessions, each child was assessed for their receptive and expressive knowledge of the Gathang nouns, at two time points, two days after instruction (Post-test 1) and seven days after (Post-test 2). At Post-test 2, children had stronger receptive knowledge for words they had learned with gesture than without. These findings contribute to a growing body of research attesting to the effectiveness of gesture for improving knowledge acquisition

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<sup>30</sup> Note from supervisors: The idea for the experiment was Anjilkurri's, and as a PhD student she led the design, wrote the literature review and the ethics application, consulted with local community, taught the classroom experiment and gathered the data on the children's learning of Gathang nouns that allowed her to carry out the statistical test of whether the children learned the words more accurately and quickly that they learned with gesture than without. Anjilkurri wrote the article, submitted it to the journal, and responded to reviews. In this whole process, Anjilkurri was supported by three members of her PhD supervision team who are non-lead co-authors on the paper as is typical practice in scientific research and PhD work in this area.



amongst learners. In the context of Aboriginal language revitalisation, gesture also aligns with traditional teaching practices and offers a relatively low-cost strategy for helping teachers assist their students in acquiring Aboriginal languages.

*Keywords:* Aboriginal languages; teaching; language acquisition; gesture; language revitalisation

## **4.2. Introduction**

### ***4.2.1. Background***

Upon the invasion of Australia by the British, there were approximately 250 individual Aboriginal languages spoken (Power, 2013). Gathang, the language of the Birrbay, Warrimay and Guringay, is one of thirty-five Aboriginal languages spoken in New South Wales (NSW). Gathang belongs to the Pama-Nyungan family of Australian languages and many grammatical relations are expressed through the use of suffixes (Lissarrague, 2010). Aboriginal languages in NSW were severely impacted as NSW was one of the first parts of Australia to be colonised (Lowe & Walsh, 2009). Over time, English became the predominant language in NSW, as Aboriginal people were forbidden from speaking their languages (Lissarrague, 2010).

Currently, there are significant efforts being made to revitalise Aboriginal languages in Australia (Hobson et al., 2010). In 2010, Muurrbay Aboriginal Language and Cultural Co-operative (Muurrbay) launched the Gathang Dictionary to support the revitalisation of the language. While at the time of the publication of the dictionary there were no longer any fluent Gathang speakers, there is now a body of language activists/teachers/learners, *Djuyalgu Wakulda* ‘to speak as one’ group, that are working together to revive Gathang. Although Gathang has not been incorporated into any local school curriculum, there has been a surge of interest to use Gathang on signage and to use basic words in everyday life, for

example *wiyabu* ‘hi’, *marrungbu* ‘thank you’, and *gapu* ‘goodbye’. However, there is a need for more Gathang teachers, the development of more Gathang teaching resources and a stronger evidence base around effective teaching strategies in language revitalisation, to expand language learning within the schools and community. The research discussed in this article aims to make a practical contribution to developing the teaching and learning of Gathang through an investigation of the effectiveness of gesture or *matjarr djuyal*<sup>31</sup> as a strategy to promote the learning of Gathang nouns in a pre-school context.

The present research study advances the field in three ways. First, learning nouns is an early and vital step in any language revitalisation or revival effort; in fact, the very challenges it presents in an Aboriginal revitalisation setting with few resources make the acquisition of vocabulary an important test case from a research angle that can inform the teaching of Aboriginal languages other than Gathang. Second, the present research study seeks evidence for how to maximise success in language revitalisation with young preschool learners, to capitalise on their language learning abilities. Gesture has rarely been researched in formal language contexts with very young (preschool) learners; this research contributes to addressing that relative gap. Finally, although gesture has long been part of how Aboriginal languages have been taught and communicated, there is an absence of research by Aboriginal researchers examining the efficacy of gesture in facilitating the acquisition and retention of Aboriginal languages in a revitalisation setting. An Aboriginal researcher can bring the insider out and the outsider in to broaden the scope of the study through embedding Aboriginal ways of thinking; for further details on this last point, see Radley et al. (2021).

#### ***4.2.2. Gesture and Non-Verbal Communication***

The use of body language or kinesics is an intrinsic part of human communication, although strategies vary from one culture to another (Brown, 2007). There is clear evidence of

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<sup>31</sup> In Gathang, *matjarr djuyal* means to gesture or use the hands 'to talk'.

the existence of a continuing strong relationship between sign language or hand talk and spoken language in Aboriginal communities across Australia. Research from central Australia, for example, indicates that a complex system of sign language has been and still is consistently used daily in parallel with speech or to replace the spoken language specifically in specific settings such as hunting, initiation, mourning and some everyday communication (Green, 2014; Kendon, 2015; Power, 2013).

Gesture is an important mechanism in both first and second language acquisition as a precursor to spoken language (Cartmill et al., 2014; Gullberg, 2014; Macedonia & Von Kriegstein, 2012), and the use of gesture in the field of language revitalisation is expanding (Borgia, 2014; Gardner & Ciotti, 2018). Gesture is part of traditional Aboriginal teaching methods to convey the meaning of spoken words (Power, 2013), for example, a movement of the hand toward self, directing a person to come, or whole-body movements in storytelling to enhance the meaning of the story. Non-verbal behaviours can be utilised as a tool to learn a second language and support verbal communication, as they offer a way for learners to explore techniques to send and receive language without using words (Brown, 2007). Non-verbal learning is one of the eight key elements in Yunkaporta's Eight Ways pedagogical framework representing a 'synergy' of important Aboriginal and Western ways of learning (Yunkaporta, 2009). From this perspective, gesture is both a strategy to avoid English translation as well as a means of conveying deeper cultural knowledge associated with the target language:

*"The Aboriginal teacher uses facial expressions, body position, mime and gesture to communicate the meaning of language words and phrases, and this ensures that students are linking their language not to an English translation, but to their own cultural and personal meaning" (p. 43).*

### ***4.2.3. The Role of Gesture in Language Learning***

Evolutionary theories propose that spoken language has motor origins and that gesture served as the forerunner in the development of spoken language (De Stefani & De Marco, 2019). This is important from an embodied cognition perspective which posits that bodily actions can influence cognition. It is believed that the acquisition of semantic knowledge is intimately connected to sensory-motor systems in the human body (De Stefani & De Marco, 2019), and it has been shown that words are represented in the brain as a network incorporating linguistic, sensory, motor and emotional features (Macedonia & Von Kriegstein, 2012). Multimodal teaching methods involving, for example, verbal and pictorial instructions are thought to lead to richer more complex representations of knowledge suggesting that the addition of gesture could play a part in deepening and enriching this network. The use of hand gesture can also focus the visual attention of students more acutely on the instructional material, as well as providing additional encoding and retrieval cues (Korbach et al., 2020).

According to David Geary's theory of evolutionary educational psychology, knowledge can be categorised as biologically primary knowledge or biological secondary knowledge (Geary, 2007, 2008, 2012). Primary knowledge refers to categories of knowledge that we have evolved to acquire such as the languages of the communities in which we are reared, including the dominant languages spoken in the community and the heritage languages spoken at home (Scontras et al., 2015), as well as non-verbal behaviours and facial cues. The acquisition of primary knowledge usually occurs through immersion in society, requiring minimal conscious processing and generally very little, if any, explicit instruction (Geary, 2012; Sweller et al., 2011). In terms of language acquisition, some people acquire primary knowledge from both the dominant language spoken by the community in which they are reared and the language that is spoken at home (heritage language). During their pre-

school years, these heritage speakers can develop language skills in both the dominant language of the community and their heritage language. However, over time, heritage speakers tend to socialize with others in the dominant language which then often results in a weakening of their heritage language skills (Scontras et al., 2015).

In contrast to primary knowledge, secondary knowledge refers to the knowledge that has been generated and passed on through generations via cultural advancements. Examples include complex writing systems, algebra, chemistry, amongst others. This category of knowledge is cognitively demanding and requires many years of formal instruction in order for learners to demonstrate proficiency. Second language learning, particularly when bound to a formal classroom setting, can arguably be classified into the secondary knowledge category.

Notably, it is argued that primary forms of knowledge can assist in the acquisition of secondary knowledge and alleviate some of the cognitive demands of secondary knowledge (Korbach et al., 2020). Gesturing is considered to be biologically primary knowledge and when incorporated in second language acquisition can offset some of the cognitive demands associated with language learning. In their review of current behavioural and neuroscientific research into the impact of gesture on the learning of lexical items, Macedonia and Von Kriegstein (2012) suggest that gesture can enhance the acquisition and retention of words and phrases. Wakefield and James (2015) demonstrated that the use of gesture can help children learn a new concept when they are at a point in their development where they can benefit from instruction. Ping and Goldin-Meadow (2010) provide more specific evidence that gesture is effective in lightening cognitive load, therefore, supporting learning and the retrieval of information among second and third grade students. Studies analysing the use of gesture and speech suggest that gesturing can promote language learning in vocabulary development (Rowe & Goldin-Meadow, 2009) and increases learning of mathematics (Church et al., 2004). Other studies have also highlighted the importance of speech and

gesture as an interconnected system used for second language learning (Gullberg, 2014) and in language development in early childhood (Cartmill et al., 2014). In language revitalisation, there are, however, with the exception of Borgia (2014), very few previous studies examining the utility of gestures with very young learners, despite the popularity of revitalisation approaches targeting this age group (e.g., language nests).

#### ***4.2.4. Gesture as a Teaching Strategy***

As gesture is a common human complement to speech, it is very likely to form a part of a language teacher's interaction with learners. However, there are few language teaching methods that incorporate the systematic use of gesture as a teaching strategy. Total Physical Response (TPR) is a second language teaching methodology developed in the 1960s. TPR provides one example that seeks to use gesture as a teaching strategy. The learners listen to a command and then physically enact it, enforcing the language instruction and avoiding the need for translation (Asher & Price, 1967). The method relies on listening and responding to support learning, although the focus on commands and comprehension makes learning past the beginner's stage difficult (Er, 2013). More recently, other language teaching methods have been developed with an explicit focus on gesture, such as the Accelerated Integration Method (AIM) (Arnott, 2011) and the 'Where are your keys' (WAYK) method (Gardner & Ciotti, 2018).

The bodily movement associated with TPR typically involves the learner enacting a command, for example, 'Go to the door'. However, more symbolic gesture could equally be used to simulate or represent an action, for example, 'drinking' (Macedonia & Von Kriegstein, 2012). These gestures can either be drawn from the repertoire of gestures recognised and used within a specific culture (emblematic) or they can be more idiosyncratic, reflecting an individual conception of the target word or phrase which might be more or less closely tied to the semantics of the action through the use of more universal iconic imagery

(Church et al., 2004). Church et al. (2004) give the example of the gesture where thumb and index finger form a circle (which means ‘OK’ in some cultures) as an emblematic gesture and making a large circular gesture to represent the statement ‘It was big and round’ as a ‘representational’ gesture. Unlike TPR, the AIM and WAYAK methods incorporate both emblematic and representational gestures.

McNeill (1992) divides gestures into four major categories: iconic, metaphoric, deictic (pointing) and beat (related to the rhythm of speaking). It has been shown that iconic gesture alongside speech (speech–gesture matches) reduces the load on the working memory more than speech–gesture mismatches (Goldin-Meadow, 1993); hence, to maximise learner success, in this research, we have used iconic gesture matched with concrete objects. The gesture used for the experiment was either borrowed from existing gesture systems, such as Auslan, or Australian Aboriginal hand talk, if the gesture was judged to be iconic, or developed specifically for this research by the lead researcher. Three parameters were used to construct iconic gesture—hand shape, hand position in relation to the user’s body and path of movement.

### **4.3. Method**

#### ***4.3.1. Research Hypothesis***

Based on the empirical findings and cultural and theoretical backgrounds discussed above, this study tests the hypothesis that the use of iconic gesture to teach Gathang nouns (alongside verbal and pictorial instruction) will result in higher scores for children in subsequent testing of receptive and expressive knowledge of Gathang nouns compared to instruction without gesture. We included both receptive and expressive testing because it is well established that receptive knowledge typically precedes expressive language skills, in first and second language learning. Although it was expected that oral production of Gathang

nouns was likely to be a difficult task for pre-schoolers, it was not clear in advance the exact difficulty level that the learning would pose, particularly given individual learner variation. We therefore included both receptive and expressive testing in case of ceiling or floor effects (if the task was too easy or too hard, respectively). Participants were tested for acquisition ‘Post-test 1’ (two days after the last learning session) and retention ‘Post-test 2’ (seven days after the last learning session). Retention testing was included as there are long standing findings in memory research (see McGaugh, 2000) that memories are consolidated slowly over time. One of the consequences of this is that knowledge and skills can improve when there is a gap between initial acquisition and follow-up testing, even in the absence of active rehearsal (Stafford & Haasnoot, 2017). In the context of this study, this means that experimentally it might be only possible to measure learning—and so assess the effectiveness of gesture use—after a period of time had elapsed (i.e., in the Post-test 2).

#### ***4.3.2. Ethics Considerations***

In conducting the research, the lead author, a proud Goori<sup>32</sup> woman, language activist, teacher/learner and Aboriginal Elder, is under specific ethical requirements to meet local Aboriginal protocols as an Aboriginal researcher. As a Gathang teacher and community elder supporting decolonisation through the revival of Gathang, she is an insider (Smith, 2012). As an observer testing a research hypothesis, she is stepping into an outsider role. Bonner and Tolhurst (2002) describe the research insider as holding a greater understanding of the specific culture studied, keeping a flow between the social interaction of the researcher and respondent, and having an existing or established level of intimacy promoting truth-telling within the research process. Both roles require critical thinking about actions and processes; however, the insider is accountable to the community in a way the outsider is not (Smith,

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<sup>32</sup> Australian First Nations people on the Mid North Coast, NSW, use the term 'Goori' to identify themselves as Aboriginal people from this region.



2012). In recognition of this, before beginning the research, cultural protocol obligations were observed, and discussions were held with all relevant local Aboriginal organisations and communities. These practices are consistent with the Guidelines for Ethical Research in Indigenous Studies (AIATSIS, 2020) for working with communities on language projects.

As preschool-aged children are the focus of this research, the research design draws on the 'Ethical Research Involving Children (ERIC) project' approach which views children as individuals with agency (Graham, 2015, p. 26). ERIC positions children as capable of providing informed consent when given age-appropriate information about the study. A tiered model of consent was introduced, where, in addition to parental consent (see Appendices 1 & 4: Information and Consent Forms), informed consent of the child was also sought. The children were individually asked if they wanted to participate in the language lessons and the testing task, and educators who knew them were present to support any who wished to opt out. It was the case that some children opted out. Ethics approval for the project was granted by the Western Sydney University Human Research Ethics Committee (H13060).

#### ***4.3.3. Experimental Approach***

The experimental research method is used to test the effectiveness and impact of an intervention in controlled conditions where factors of interest (i.e., independent variables) are manipulated to assess impact on one or more dependent variables (Cohen et al., 2000). In this study, the main independent variable was iconic gesture use in teaching and learning.

#### ***4.3.4. Participants***

The study was conducted in the context of a preschool centre. In support of Gathang language revival, the local Community Preschool Centre offered their service to provide a cohort and facility for the study. Forty children attending the preschool aged between 4 and 5.2 years participated in the study.

The children had already, as part of regular teaching, been placed by the Community Preschool Centre within two class groupings, classroom Wati (A) and classroom Buna (B). The considerations for placement had included sibling relationships, peer groupings, special needs and days of enrolment. In both class groupings, there was a small number of children who spoke, or were exposed to, a language other than English at home. One child with Birrbay heritage in the Buna group had had previous exposure to Gathang at home. However, checks made with his family confirmed that Gathang nouns introduced within the teaching program were not known to him. Although there were other children of Aboriginal origin in the study, their families were not from Gathang speaking nations. Discussions with parents and educators indicated that no other child had exposure to Gathang outside of the community pre-school environment and had no knowledge of the Gathang nouns used in the study. All families were in support of their children participating in the experiment.

As shown in Table 4.1, the participants ( $N = 40$ ) had an age range of 4–5.2 years. The class groups were broadly similar in demographic makeup. There were more boys than girls in both class groups. The children were predominantly from non-Aboriginal families (not of Australian Aboriginal origins) in both class groups. The children with special needs were already distributed across the two groups prior to the research, as were the children from non-English-speaking backgrounds.

**Table 4.1 Characteristics of child participants**

<b>Set 1—Nouns</b>	<b>Group Wati—With Gesture</b>	<b>Group Buna—Without Gesture</b>
		18 March 2019 Monday
Lesson 1 (40 min)	18 March 2019 Monday	20 March 2019
Lesson 2 (30 min)	20 March 2019 Wednesday	Wednesday

Post-test 1 (individual)	22 March 2019 Friday	22 March 2019 Friday
Post-test 2 (individual)	27 March 2019 Wednesday	27 March 2019 Wednesday
Set 2—Nouns	Group Buna—With Gesture	Group Wati—Without Gesture
Lesson 1 (40 min)	1 April 2019 Monday	1 April 2019 Monday
Lesson 2 (30 min)	3 April 2019 Wednesday	3 March 2019 Wednesday
Post-test 1 (individual)	5 April 2019 Friday	5 April 2019 Friday
Post-test 2 (individual)	10 April 2019 Wednesday	10 April 19 Wednesday

#### ***4.3.5. Materials and Procedures***

The learning materials comprised ten nouns in Gathang; five to be taught with gesture, and five without. The pairing of the two sets with and without gesture was counterbalanced across the Buna and Wati class groups. In this way, the children acted as their own controls in that each child was taught half the Gathang nouns with and half without gesture.

The number of ten nouns was chosen as an achievable target for the preschool class lessons. The rationale for the selection of nouns was based on each set containing semantically similar items: language names for people, creatures and tangible objects whose semantics are relatively well known to the learners. It was important that the items could be easily associated with iconic gesture and pictorial (image) support. We also balanced each set to have a similar phonological difficulty level (e.g., word length in syllables, phonotactics). Figure 4.1 shows the nouns together with the associated images used in teaching. The nouns are in two sets (set 1 and set 2), and there are five items in each set.

Set 1				
				
<i>burray</i> 'boy'	<i>mitjigan</i> 'girl'	<i>guying</i> 'bird'	<i>bikan</i> 'platypus'	<i>butjin</i> 'basket'
Set 2				
				
<i>guri</i> 'man'	<i>galbaan</i> 'woman'	<i>mirri</i> 'dog'	<i>gunggang</i> 'frog'	<i>bakan</i> 'rock'

**Figure 4.1 Noun sets**

The experiment involved a learning phase, followed by a testing phase. The lead researcher taught all phases, with classroom support from the children's regular educators. Each class group was taught one of the noun sets with gesture and one without gesture in two 35–40 min lessons. As there were two sets of nouns, the counterbalancing across class groups allowed the researchers to assess the effect of gesture use independent of the actual word set learned. The testing phase began two days after the last lesson. Children were tested individually to see whether they had learnt the Gathang nouns (Post-test 1) and then tested five days later (Post-test 2). In both of these tests, there were two components: the child was asked to respond to verbal language (receptive) and to speak language (expressive).

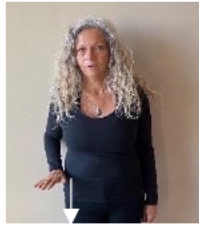
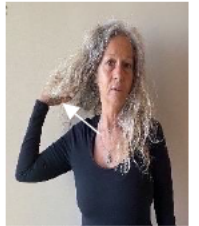

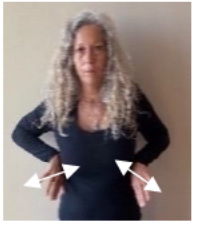


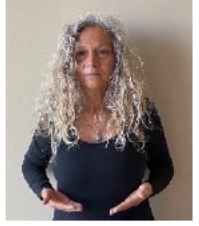

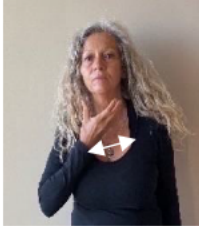

The teaching program was created in consultation with the Community Preschool staff. Table 4.2 provides details of the schedule.

**Table 4.2 Teaching program**

<b>Set 1—Nouns</b>	<b>Group Wati—With Gesture</b>	<b>Group Buna—Without Gesture</b>
Lesson 1 (40 min)	18 March 2019 Monday	18 March 2019 Monday
Lesson 2 (30 min)	20 March 2019 Wednesday	20 March 2019 Wednesday
Post-test 1 (individual)	22 March 2019 Friday	22 March 2019 Friday
Post-test 2 (individual)	27 March 2019 Wednesday	27 March 2019 Wednesday
<b>Set 2—Nouns</b>	<b>Group Buna—With Gesture</b>	<b>Group Wati—Without Gesture</b>
Lesson 1 (40 min)	1 April 2019 Monday	1 April 2019 Monday
Lesson 2 (30 min)	3 April 2019 Wednesday	3 March 2019 Wednesday
Post-test 1 (individual)	5 April 2019 Friday	5 April 2019 Friday
Post-test 2 (individual)	10 April 2019 Wednesday	10 April 19 Wednesday

**4.3.6. Learning Phase**

The lessons for each of the noun sets were two days apart. The first lesson was to present/practise new content, and the second lesson was to revise/consolidate content. Each group received the same learning program. For the lessons that were taught with gesture, an iconic gesture was used to introduce each noun in the set (see Figure 4.2) and the same gesture was used thereafter throughout the two lessons.

				
'burray' boy, right hand is closed around the chin moving in downward motion to hip level (as for gesture for man) then hand is open and turns on a 90-degree angle to arm and positioned at the side of the body continuing on a downward motion (gesture for little)	'mitjigan' girl using the right hand to flick the hair away from away from the head	'guying' bird, holding the right hand to the side of the face close to the lips, index and thumb fingers, opening and closing together to mimicking the bird beak	'bikan' platypus bringing two hands together to each side of the body, waist level, moving hands in a paddling motion	'butjin' basket, bending arm from the elbow, raising arm up and down in short motions, as in carrying a bag
				
'guri' man, right hand is closed around the chin moving in downward motion to hip level	'galbaan' woman, both hands are cupped under each breasts	'mirri' dog, hitting the top of leg in continuous motion as if calling the dog	'gunggang' frog, holding the hand at the front of throat, moving the hand to and from the throat area	'bakan' rock, bringing two hands together in a closed fist moving one hand on top of the other in an upward and downward motion

**Figure 4.2 Iconic gestures for nouns in Experiment 1**

Children were encouraged to use the gesture in these lessons (as well as to say the words verbally, as in the without-gesture condition). The lesson design enabled the children to explore the language in different ways using an interactive approach. Short activities



throughout the lessons were used to introduce and/or consolidate the children's language learning (see Appendices 5-8: Lesson Plans). These activities included: Call and Response—children say the words loudly gradually becoming softer (turn up and down volume) and then using different kinds of voice (deep, squeaky, growly); Rhythm and Beat—children clap and say the words, breaking the words into syllables (e.g., *Mi tji gan*); Memory Game—children find matching picture cards and say the Gathang words for the card. The activities allowed the children to hear and respond repetitively to each noun set shown in Figure 4.1.

#### ***4.3.7. Testing Phase***

Each child was tested for acquisition in 'Post-test 1' two days after the final learning session and then five days later for retention in 'Post-test 2' for each set 1 and set 2—that is nouns learnt with and without gesture. The children were tested individually by the researcher with whom they had become familiar over the course of the teaching sessions. Testing took place in a small private room in the centre. Post-test 1 and Post-test 2 both comprised a receptive and an expressive task. First, the child was given a receptive task. This tested the child's ability to match an image with a spoken Gathang word. The child was given a sheet with four images, one of which matched the Gathang word. The researcher said a word in Gathang and the child was asked to stamp the image that represented the word. The children were familiar with this kind of activity from the learning sessions. The images used in the testing were different from those used in the learning sessions (see Appendices 15 & 16: Testing Sheets) to ensure that real semantic learning had taken place, not just associative learning of the noun and a particular image. Second, the child was given an expressive task. The child was asked to say the Gathang word represented by an image. The researcher showed the child an image representing one of the Gathang nouns and said *Minya yii?* ('What is this?'); *yii* ('this is ...'). The child was familiar with these phrases from the learning sessions and understood that they should say the Gathang word represented by the image. All

five nouns in the set were tested, resulting in a score out of five. One point was awarded for each word the researcher judged had been pronounced correctly. At the end of the testing sessions, the children were not given any feedback on their results other than receiving praise for their efforts. This reduces concerns of practice effects in post-test 2, as the children did not know whether they had answered correctly. The same testing sequence and pictures were used for Post-test 1 and Post-test 2.

#### ***4.3.8. Data Analysis***

The overall design involved a single independent (treatment) variable, gesture, which had two levels (with gesture and without gesture). Gesture was a within-participants' variable. The effect of gesture was assessed for each child at two time points (Post-test1/Post-test 2) across two modes at each time point (receptive/expressive). The data analysis (see Appendix 34: Data Sheet-Experiment 1) focused on inferential analysis of the test scores, which were recorded for each child at two time points: Post-test 1 (two days after the last learning session) and Post-test 2 (seven days after the last learning session). The scores were noted during testing on paper and then transcribed into a spreadsheet. Overall, each child received eight scores in testing, four per noun set: two scores for post-test 1 testing (receptive and expressive) with gesture; two scores for Post-test 1 testing (receptive and expressive) without gesture; two scores for Post-test 2 testing (receptive and expressive) with gesture, and two scores for Post-test 2 testing (receptive and expressive) without gesture. If a child did not attend a testing session, there was no score recorded.

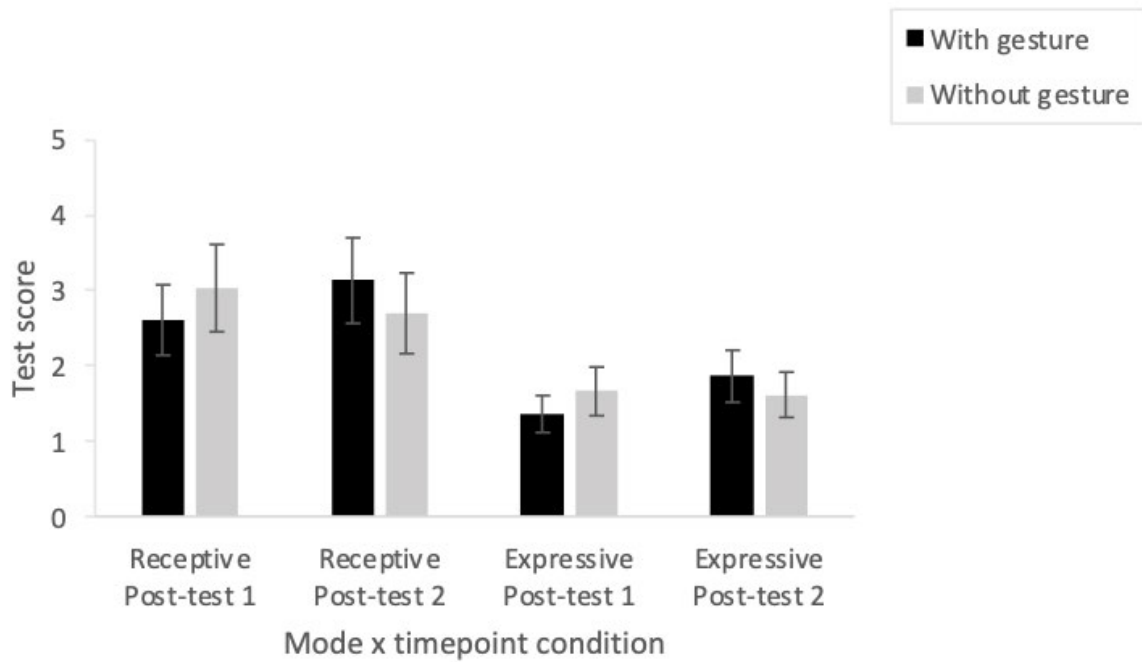
To test the hypothesis that the use of gesture alongside verbal and pictorial instruction for Gathang nouns would result in higher accuracy scores for children in subsequent testing (receptive and expressive testing), four paired-samples t-tests were conducted. There was one paired-samples t-test for each of receptive Post-test 1, receptive Post-test 2, expressive Post-



test 1, and expressive Post-test 2. The paired-samples t-tests were one-way t-tests given the directional hypothesis that gesture would benefit children's learning of the Gathang nouns.

#### **4.4. Results**

Across the time point x mode conditions, children's scores for words learned with vs. without gesture are shown in Figure 4.3. (Error bars represent the standard error of the mean.) The maximum score in all cases was five. Descriptively, it is clear that children tended to score higher in receptive testing than expressive testing, as would be expected in language learning. Note that it is not possible to read Figure 4.3 for the effect of gesture across time point and mode conditions, as each child acted as their own control, and there was wide individual variation in how hard the task was for the participants. Figure 4.3 also illustrates how children's scores tend to be higher for words they have learned with gesture, in the Post-test 2 conditions but not in the Post-test 1 conditions.



**Figure 4.3 Mean accuracy scores by timepoint x mode conditions, with and without gesture**

Next, we present detailed results for the effectiveness of gesture by mode and time point. For each mode  $\times$  time point, the results are presented with paired  $t$ -test statistics, a plot of individual results and a box plot. The box-plot graph is a summary of a data set based on quartiles of the data (splits data into four groups) with each quartile containing 25% of the measurements. The whiskers represent the ranges for the bottom 25% and the top 25% of the data values. The median (middle quartile) marks the middle score in the data and is shown by the line that divides the box into two parts. Half the scores are greater than or equal to this value and half are less. The middle “box” represents the middle 50% of scores for the group.

#### ***4.4.1. Receptive Post-Test 1***

In the receptive Post-test 1 condition, assumptions of normality were met; the difference scores (i.e., score without gesture—score with gesture) for receptive Post-test 1 appeared to be normally distributed since the Shapiro–Wilk statistic was not statistically

significant ( $W = 0.932, p = 0.111$ ). Children's scores for words learned with gesture ( $M = 2.6, SD = 1.8$ ) were not higher than for words learned without gesture ( $M = 3.0, SD = 1.5$ ),  $t(23) = -1.415, p = 0.915$ . The mean of the differences (With Gesture vs. Without) was  $-0.46$ .

Figure 4.4 shows that the median score was 3 (with middle 50% range 2–4) for words learned without gesture and 3 (with middle 50% range 1–4) for words learned with gesture.

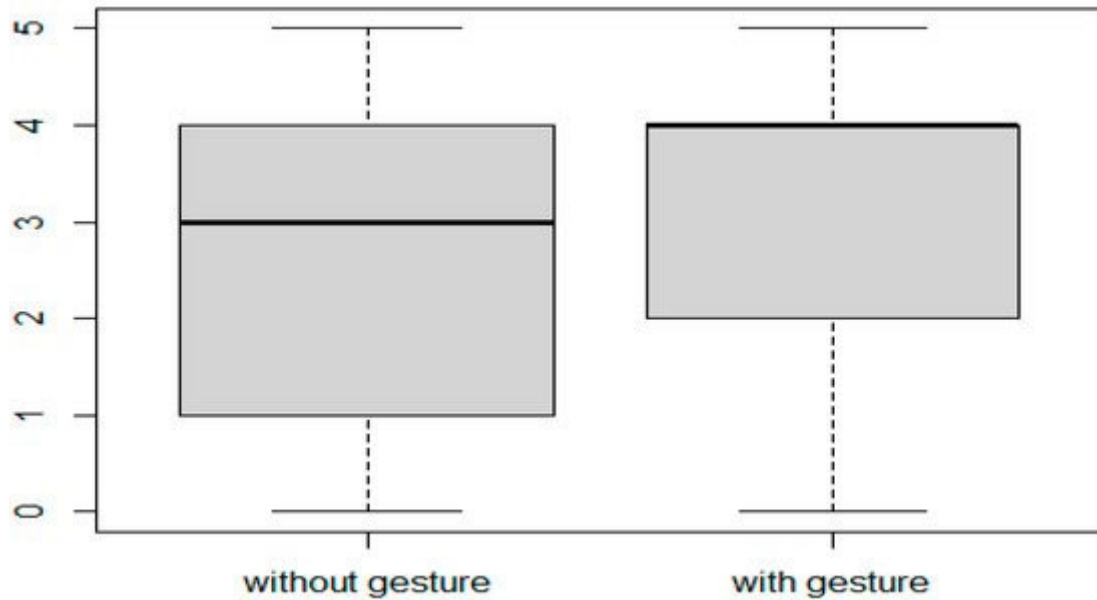


**Figure 4.4** Box plot for testing results in Receptive Post-Test 1 condition

#### **4.4.2. Receptive Post-Test 2**

In the receptive Post-test 2 condition, assumptions of normality were met; the difference scores (i.e., score with gesture—score without gesture) for Receptive Post-test 2 were considered to be normally distributed since the Shapiro–Wilk statistic was not significant ( $W = 0.946, p = 0.286$ ). Children's scores for words learned with gesture ( $M = 3.1, SD = 1.6$ ) were higher than for words learned without gesture ( $M = 2.76, SD = 1.7$ ),  $t(20) = -1.925, p = 0.034$ . The mean of the differences (With Gesture vs. Without) was  $-0.76$ . The effect size (Cohen's  $d$ ) is 0.42, i.e., a medium effect size.

Figure 4.5 shows that the median score was 3 (with middle 50% range 1–4) for words learned without gesture and 4 (with middle 50% range 2–4) for words learned with gesture.

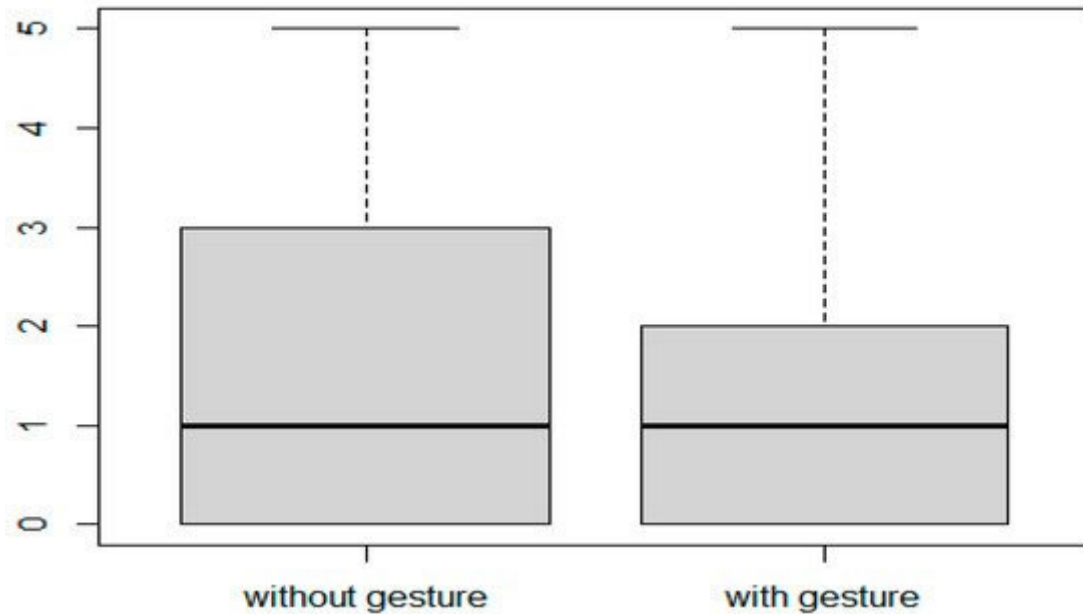


**Figure 4.5** Box plot for testing results in the Receptive Post-Test 2 condition

#### ***4.4.3. Expressive Post-Test 1***

In the expressive Post-test 1 condition, assumptions of normality were met; the difference scores (i.e., score with gesture—score without gesture) for expressive Post-test 1 were considered to be normally distributed since the Shapiro–Wilk statistic was not significant ( $W = 0.937, p = 0.142$ ). Children’s scores for words learned with gesture ( $M = 1.4, SD = 1.5$ ) were not higher than for words learned without gesture ( $M = 1.7, SD = 1.5$ ),  $t(23) = -1.053, p = 0.848$ . The mean of the differences (With Gesture vs. Without) was  $-0.33$ .

Figure 4.6 shows that the median score was 1 (with middle 50% range 0–3) for words learned without gesture and 1 (with middle 50% range 0–2) for words learned with gesture.

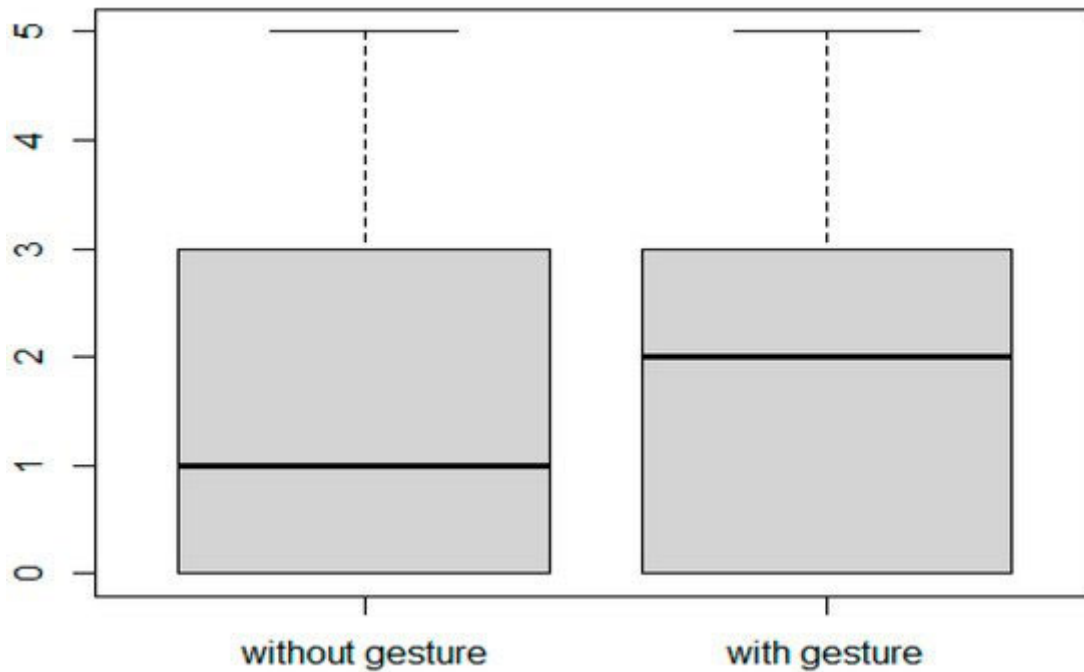


**Figure 4.6** Box plot for testing results in the Expressive Post-Test 1 condition

#### ***4.4.4. Expressive Post-Test 2***

In the expressive Post-test 2 condition, assumptions of normality were met; the difference scores (i.e., score with gesture—score without gesture) for expressive Post-test 2 were considered to be normally distributed as the Shapiro–Wilk statistic was not significant ( $W = 0.944, p = 0.264$ ). Children’s scores for words learned with gesture ( $M = 1.9, SD = 1.7$ ) were not higher than for words learned without gesture ( $M = 1.6, SD = 1.6$ ),  $t(20) = -1.446, p = 0.082$ , although the fact that the  $p$ -value approaches 0.05 indicates that there was possibly a tendency towards a benefit from gesture. The mean of the differences (With Gesture vs. Without) was 0.62.

Figure 4.7 shows that the median score was 1 (with middle 50% range 0–3) for words learned without gesture and was 2 (with middle 50% range 0–3) for words learned with gesture.



**Figure 4.7** Box plot for testing results in the Expressive Post-Test 2 conditions

#### 4.5. Discussion

This study used a classroom-based experiment to test the usefulness of iconic gesture alongside spoken instruction and pictorial image to support pre-schoolers learning Gathang. The experimental results supported the hypothesis that the use of gesture benefits the learning of nouns in Gathang, at least for the Post-test 2 condition (i.e., seven days after the last learning session). At Post-test 2, the benefit for gesture reached significance in receptive knowledge testing and approached significance in expressive knowledge testing. For the Post-test 1 (i.e., two days after the last learning session), there was no effect of gesture on receptive or expressive knowledge of the Gathang nouns.

Overall, the findings provide empirical evidence for the use of gesture to teach the Gathang language, and the results can be interpreted within several theoretical models. The findings are consistent with dual coding theories and align with previous empirical research with that framework (e.g., Korbach et al., 2020). The visual focus of gesture may help the learners attend, and the incorporation and encouragement of body movement in the lessons

provide additional sensorimotor encoding. In practical terms, teachers and parents of preschoolers recognise that young preliterate learners are often physically highly energetic and have relatively short attention spans. According to dual coding theories, memories are stronger when encoded in more than one sensory mode. At this age, when (most) children are not literate and so cannot encode visually via spelling, using gesture harnesses a visual and gross motor encoding alongside the auditory and oral-motor encoding of spoken language.

The findings are also supportive of other theoretical models. Perspectives from evolutionary educational psychology suggest that the use of biological primary knowledge (gesture) can offset some cognitive demands in secondary knowledge acquisition (here, second language learning). The results are consistent with this viewpoint. From an educational psychology perspective, it was also expected that learning would take time and require consolidation, which was why we tested at both acquisition 'Post-test 1' (2-day) and retention 'Post-test 2' (7-day) time lags. The finding that the beneficial effect of gesture was detectable at retention but not acquisition was somewhat surprising; however, it may point to the complexity of language learning and its need for consolidation. The finding also suggests that future research in language learning might usefully employ more delayed testing to pick up more subtle traces of learning progress, alongside the immediate testing that seems more common in the literature (Norris & Ortega, 2000).

#### **4.6. Coda**

The lead researcher as an Aboriginal language activist/teacher researcher brings other specific perspectives to the evaluation of this study, and the prospects of future research. She has an insider role being a Gathang language teacher and community Elder supporting decolonisation through the revival of the Gathang language and an outsider role as an observer to test the hypothesis and manage the research study. Her experience doing this

study using a Western scientific approach is that it is an important first step, but it raises further questions. The reduction in variables required for a controlled experimental approach in a preschool classroom environment reduced the scope to embed Aboriginal pedagogies, for example, ‘Aboriginal ways that include connection to land, community and stories’ (Yunkaporta, 2009), which gives broader terms of reference to engage with language learners. It is clear, however, that having demonstrated benefit from gesture use in the controlled context of this study, there is every reason to imagine that these results can be translated to richer educational approaches (i.e., that gesture will help learners in those richer contexts). Therefore, the study will also contribute to the efforts made toward the revitalisation of the Gathang language.

#### **4.7. Summary**

In this chapter, I introduced the article '*Matjarr Djuyal: How using gesture in teaching Gathang helps preschoolers learn nouns*'. This published article gives detailed literature on the method applied in conducting the study and findings supporting the usefulness of gesture to teach Gathang language at least in terms of receptive language evident in the delay testing. The results were interpreted through several theoretical models. In the next chapter, Chapter 5, I discuss Experiment 2, '*How using gesture in teaching Gathang helps preschoolers learn suffixes*'.



## Chapter 5 : Experiment 2: Preschoolers’ learning of suffixes, with and without gesture

### 5.1. Introduction

#### *Personal Reflection*

The teaching of noun+suffix combinations in a research context provided me with insights into complexities of teaching grammatical structures of language within a classroom environment, under experimental conditions. I prefer to teach/learn Language ‘with Country’<sup>33</sup> surrounded by the natural elements. Teaching the learners in a way they will understand Language connects us to Country.

This chapter presents an experimental investigation into Research Question 2: Do preschool learners acquire Gathang suffixed nouns more accurately and more quickly when they are taught verbally with gestures, than without gestures? The discussion draws on the data collection and analysis to present the results of Experiment 2.

In Experiment 1 (Chapter 4), a classroom-based study was used to test whether iconic gesture (alongside spoken instruction and pictorial images) would support pre-schoolers’ learning of Gathang nouns. The results from delayed testing showed a statistically significant benefit for the use of gesture in receptive learning and approached significance in expressive knowledge testing. That is, children could recognise more words that they had learned with gesture than without. The nouns used in Experiment 1 (*guri* ‘man’, *galbaan* ‘woman’, *burray*

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<sup>33</sup> ‘With Country’ is a term Arlene Mehan describes as the reciprocal relationships that existence between Language speaker and Country. The sounds of Language come from Country. Therefore, speaking Language brings life to Country, you are in conversation with Country (personal communication, 2021).

'boy', *mitjigan* 'girl', *bakan* 'rock', *guying* 'bird', *gunggang* 'frog', *bikan* 'platypus', *mirri* 'dog' and *butjin* 'bag') represent concrete objects familiar to the children. Explicit teaching and learning of such basic vocabulary items are common features of language pedagogy, particularly for beginner learners. But learners also need grammatical and syntactic knowledge of a language to create utterances using vocabulary items for communication purposes. Like many other Aboriginal languages of Australia, Gathang employs a range of suffixes to express different grammatical functions and relations. These suffixes attach to a noun or verb in the Gathang Language (Lissarrague, 2010).

Experiment 2 investigated the effectiveness of gesture to teach Gathang suffixes. Experiment 2 targeted suffixes used with nouns (nominal suffixes). As suffixes are not used in isolation, suffixes in combination with nouns familiar to learners from Experiment 1 were used as the target language items in Experiment 2.

This study used a classroom-based experiment to test the usefulness of iconic gesture alongside verbal, pictorial instruction and the movement of tangible objects to support preschoolers' learning of the Gathang language. The testing phase included testing of both receptive knowledge (via a two-level approach using stamping and toy movement), and expressive knowledge. This testing approach recognises that both receptive and expressive skills matter in language learning, and receptive tends to precede expressive skill. The approach catered to the possibility of ceiling or floor effects (if the task was too easy or too hard, respectively). Learners were tested for 'acquisition' at Post-test 1 (two days after teaching) and 'retention' at Post-test 2 (five days later). The results did not support the hypothesis that the use of gesture benefits the learning of suffixes in Gathang, at either Post-test 1 or Post-test 2, and in either receptive or expressive testing. The possible reasons for the null result are discussed in this chapter. However, gesture with combination of other pedagogical tools can likely still be a useful strategy in reinforcing language / concepts such

as nominal suffixes. Undertaking the study fostered a greater understanding of the complexity of teaching and learning nominal suffixes.

**5.2. Method**

**5.2.1. Participants**

The Community Preschool Centre continued to offer their service to provide access to a pre-school cohort and a teaching facility. Parents gave consent for their children to participate in Gathang lessons for this research. The lessons for Experiment 2 flowed on from Experiment 1. Thirty-five children from the previous study, Experiment 1, participated in Experiment 2 within the same two class groupings, classroom Wati (A) and classroom Buna (B). As shown in Table 5.1, participants (N=35) had an age range of 4.0-5.2 years. The class groups were broadly similar in demographic. In both class groups there were more boys than girls. The children were predominantly from non-Aboriginal families in both class groups. For inclusivity and balance of student mix across groups for the study, the Centre management distributed children with special needs and/or non-English speaking backgrounds across the two groups prior to the research. Although there were 35 children in the teaching phase, only 34 participated in the testing phase.

**Table 5.1 Characteristics of child participants**

<b>Class grouping</b>	<b>n</b>	<b>Number of girls</b>	<b>Number of boys</b>	<b>Age (in years)</b>	<b>Aboriginal Children</b>	<b>Children with special needs</b>	<b>Children from non-English speaking backgrounds</b>		
				<b>M</b>	<b>S.D.</b>	<b>Range</b>			
Buna	14	6	8	46	0.39	4.1-5.2	4	2	2

**5.2.2. Materials**

Gathang nominal suffixes express a range of grammatical functions which vary in nature. It is common in descriptions of Aboriginal languages to use the term ‘nominal’, which includes the word classes of ‘noun’ and ‘adjective’, as in many languages these two word types functionally behave the same (e.g., take the same suffixes).

Six suffixes were chosen for the experiment. These suffixes broadly fall into two groups. The first group comprises of three spatial suffixes: a locative suffix denoting a static position (‘in’, ‘on’, ‘at’, ‘near’), an ablative suffix denoting movement away from a starting point, and an allative suffix denoting movement towards an end point. The second group is made up of three relational suffixes expressing less tangible non-spatial relationships: a comitative suffix corresponding to meanings expressed by the English ‘with’, a possessive corresponding to the English ‘belongs to’, and a semblative suffix corresponding to the English ‘looks like’. Table 5.2 provides a summary of these six suffixes. Note that the form of some spatial suffixes changes when added to the end of a nouns with certain final sounds (Lissarrague, 2010: 30, 40, 44).

**Table 5.2 Nominal suffixes**

Spatial suffixes				
Locative		Allative		Ablative
Expresses a location (in, on, at, be with)		Indicates the goal/target of motion (to, towards)		States the source/starting point of motion (away from)
Word ends in	Suffix form	Suffix (unchanging)		Word stem ends in
				Suffix form

<i>a, y, u, ng, i</i>	<b>-ga</b>	<b>-gu</b>	<i>a, y, u, ng, i</i>	<b>-gabirang</b>
<i>rr</i>	<b>-a</b>		<i>rr</i>	<b>-abirang</b>
<i>n, l,</i>	<b>-da</b>		<i>yn</i>	<b>-dabirang</b>
<i>yn</i>	<b>-dja</b>		<i>yn</i>	<b>-djabirang</b>
<b>Relational suffixes</b>				
Possessive		Semblative		Comitative
Shows ownership of an item (‘belongs to’)		Resembles, is like another thing		With or having an item
<b>-guba</b>		<b>-damay</b>		<b>-garay</b>

As these suffixes never occur in isolation in speech, in Experiment 2 learners were presented with nominal suffixes attached to nominals representing objects familiar to the children from Experiment 1 (see Table 5.3). The children were asked to interpret the meanings represented by the suffixes in relation to these objects.

**Table 5.3 Nouns and suffix combinations**

<b>Set 1 noun + spatial suffix</b>		
Locative	Allative	Ablative
<i>mirri-ga</i> ‘at the dog’	<i>mirri-gu</i> ‘to the dog’	<i>mirri-gabirang</i> ‘from the dog’
<i>bakan-ga</i> ‘at the rock’	<i>bakan-gu</i> ‘to the rock’	<i>bakan-dabirang</i> ‘from the rock’
<i>guying-ga</i>	<i>guying-gu</i>	<i>guying-gabirang</i>

‘at the bird’	‘to the bird’	‘from the bird’
<i>bila-ga</i>	<i>bila-gu</i>	<i>bila-gabirang</i>
‘at the river’	‘to the river’	‘from the river’
Set 2 noun + relational suffix		
Possessive	Semblative	Comitative
<i>Burray-guba gunggang</i>	<i>Burray gunggang-damay</i>	<i>Burray gunggang-garay</i>
‘The boy’s frog.’	‘The boy is like a frog.’	‘The boy is with the frog.’
<i>Guri-guba bakan</i>	<i>Guri mirri-damay</i>	<i>Bikan gunggang-garay</i>
‘The man’s rock.’	‘The man is like a dog.’	‘The platypus is with the frog.’
<i>Burray-guba bakan</i>	<i>Burray bikan-damay</i>	<i>Guri mirri-garay</i>
The boy’s rock	‘This boy is like a platypus’	‘The man is with the dog.’
<i>Burray-guba guying</i>	<i>Burray guying-damay</i>	<i>The guying mirri-garay</i>
‘The Boy’s bird	‘The boy is like a bird’	‘The dog is with the bird.’

### 5.2.3. Development of gesture for suffixes

A speaker’s knowledge and understanding of words in their first language depends on the experience of that word over time, involving multimodal and multisensory input (Macedonia & Von Kriegstein, 2012). Learning a word in a second language (L2) will involve some transfer of meaning from the learner’s first language (L1), although there will not necessarily be a one-to-one mapping between of meaning between the L2 word and its L1 equivalent. In Experiment 1, nouns chosen for the study represented concrete objects with a

high likelihood of correspondence between the Gathang word and children's first language concept (e.g., 'platypus', 'rock', 'boy'). The iconic gestures developed for Experiment 1 focused on aspects of meaning that are likely to be salient for the children through their lived experience with them.


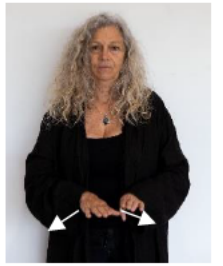

The six relationships – three spatial and three relational – represented by the suffixes selected for Experiment 2 were also all familiar to the children conceptually via their L1. However, their formal representation in Gathang language via nominal suffixes (endings on nouns) is very different from English, which mostly uses independent words (prepositions) placed before the noun (with the exception of possession) rather than suffixes to express these relations (See Table 5.3).

The abstract nature of the relations expressed by these suffixes presented a greater challenge to the development of iconic gestures in contrast to the nouns representing concrete familiar objects in Experiment 1. Therefore, the gesture had to be taught in a recognisable and distinctive way. In consultation with linguist Julie Long at Muurrbay Aboriginal Language and Culture Co-operative, the gestures for both sets of suffixes were developed. The gestures used for the experiment was either borrowed from existing gesture systems, such as Auslan, or Australian Aboriginal hand talk, if the gesture was judged to be iconic. If not, an iconic gesture was developed specifically for this research.




As the three Set 1 spatial suffixes can be conceptualised in a sequence (towards → *at* → *away from*) their meanings can be represented visually with respect to each other. This provides a basis for the development of gestures to represent the relations depicted by these suffixes (see Table 5.3). The spatial suffixes lend themselves to a hand motion indicating movement to or away from a person, object, position or location (see Figure 5.1). The researcher/teacher demonstrated the movement within the classroom space to illuminate the meanings of the suffixes tagged to the nouns (e.g., *bakan-gu* 'to the rock'). Nouns from

Experiment 1 selected for use in Experiment 2 with the suffixes were chosen to represent a semantically possible or likely context. The same gestures used for the nominal in Experiment 1 applied for Experiment 2.

By contrast, the Set 2 relational suffixes do not form a set – their meanings are standalone and do not contrast neatly with each other. The iconic gestures developed for relational suffixes again made use of hand/s movements but in this case to represent the relationship between two nouns e.g. *Guri-guba mirri* ‘the man’s dog’. The direction of the relation indicates which of the two nouns the suffix is attached to. In the case of possessives, the nominal with the suffix is always the possessor and the one without is the thing possessed. In the case of both the semblative and comitative suffixes, the suffix is attached to the nominal which is more peripheral - the object in relation to which something is compared (semblative) or is placed (comitative). The researcher/teacher demonstrated the movement objects and/or gesture to illuminate the meanings of the suffixes tagged to the nouns. For example, in *Baan bikan-garay* ‘Aunty is with the platypus’, the placement of the platypus is beside Aunty (see Figure 5.1).

Spatial Suffix Gestures		
		
Suffix <i>gu</i> ‘towards’	Suffix <i>ga</i> ‘at’	Suffix <i>gabirang</i> ‘from’



<p>A movement towards an object, for example <i>burray mirrigu</i> ‘boy/s move to the dog’. The gesture is the hand movement away from the body towards an object.</p>	<p>The gesture is the hands together and a movement with the hands towards the ground while spreading the hands referring to this as a position.</p>	<p>A movement away from an object, for example <i>burray mirrigabirang</i> boy/s move from the dog. The gesture is the hand movement towards the body from an object.</p>
<p>Relational Suffix Gestures</p>		
		
<p>Suffix <i>guba</i> ‘possessive’  The gesture is a closed hand with</p>	<p>Suffix <i>garay</i> ‘with’  The gesture is a</p>	<p>Suffix <i>damay</i> ‘like or similar to an object’.  The gesture is two index</p>

a movement towards the chest.	cross-over of hands positioned at the chest and object.	fingers moving toward each other, positioned at the chest.
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**Figure 5.1 Iconic gestures for suffixes in Experiment 2**

#### **5.2.4. Procedures**

**Learning phase.** The experiment involved a learning phase. The researcher taught all lessons with classroom management support from the children’s regular educators (see the Chapter 6 educator interviews for further discussion of their views). The educators also participated as learners in the lessons when requested by the researcher to encourage learners to participate in the lesson. Each class group was taught one of the suffix sets with gesture and one suffix set without gesture in two 35-40 minute lessons for each condition. As there were two sets of suffixes, the counterbalancing across class groups allowed the researchers to assess the effect of gesture use independent of the actual set learnt. The teaching program was designed in consultation with the Community Preschool staff. Table 5.4 provides details of the schedule.

**Table 5.4 Teaching program**

<b>Suffix Set 1</b>	<b>Buna Group - Without Gesture</b>	<b>Wati Group - With Gesture</b>
Lesson 1 (40 mins)	3 June 2019 Monday	3 June 2019 Monday
Lesson 2 (30 mins)	5 June 2019 Wednesday	5 June 2019 Wednesday
Post-test 1 (individual)	7 June 2019 Friday	7 June 2019 Friday
Post-test 2 (individual)	12 June 2019 Wednesday	12 June 2019 Wednesday

<b>Suffix Set 2</b>	<b>Buna Group - With Gesture</b>	<b>Wati Group - Without Gesture</b>
Lesson 1 (40 mins)	17 June 2019 Monday	17 June 2019 Monday
Lesson 2 (30 mins)	19 June 2019 Wednesday	19 June 2019 Wednesday
Post-test 1 (individual)	21 June 2019 Friday	21 June 2019 Friday
Post-test 2 (individual)	26 June 2019 Wednesday	26 June 2019 Wednesday

The lessons for each of the suffix sets were held two days apart. The first lesson was designed to present and practise new content and the second lesson aimed to revise and consolidate language content from the first lesson. Each group received the same learning program and activities but the iconic gestures were only used in the gesture condition.

At the beginning of each lesson, the children revised the nouns in isolation that they were already familiar with from Experiment 1. The children were then presented with the nouns together with the suffixes and these were subsequently practised through a number of interactive activities. These activities incorporated instructions, movement, repetition, modelling and questioning. Tangible objects (e.g., fluffy toys, rock, and material) were used to demonstrate spatial and relational suffixes (see Appendices 9 - 12: Lesson Programs). The researcher/teacher consistently used gesture throughout the lessons when saying the suffixed nominal in the gesture condition, and avoided using these gestures as far as possible in the non-gesture condition.

**Testing phase.** Each child was tested for acquisition at Post-test 1 (two days after the final learning session) and then five days later for retention (Post-test 2) for of each set 1 and set 2 – that is suffixes learnt with and without gesture. The researcher, with whom they had become familiar over the course of the teaching sessions, tested the children individually. Testing took place in a small separate room, where children had no distractions and were less

likely to be worried about being judged by their peers Both Post-test 1 and Post-test 2 comprised of two receptive tasks and an expressive task. Post-test 1 and Post-test 2 used the same testing materials (see Appendices 13 & 14: Testing Sheet Information). Testing was done for receptive, as well as expressive skills. The first receptive task tested the child's knowledge and understanding of a spoken noun+suffix combination by asking them to match it to an image representing the combination. The child had to stamp the correct image out of three choices on a printed worksheet page (see Appendix 17: Activity Testing Sheet). The children were familiar with this kind of activity from the learning sessions. It was decided to use three images (i.e. with chance performance at 33%) (see Appendix 18: Testing Sheet). rather than four images as in Experiment 1, to avoid overwhelming the learners given the greater amount of information to be processed in the noun+suffix combinations in Experiment 2, as opposed to individual nouns in Experiment 1. The images used in the testing were different from those used in the learning sessions to ensure that learning of each of the two components of each nominal phrase had taken place, not just association of the Gathang nominal phrase as a whole with a particular image. In Post-test 1 and Post-test 2 each child received a worksheet to stamp. For example, the researcher said 'Can you look carefully at the pictures and stamp the picture that shows me *Guri mirri -ga* 'the man is at the dog'? 'Can you look carefully at the pictures and stamp the picture that shows me *Guri mirri -garay* 'the man is with the dog'? The researcher spoke only the Gathang phrase.

The second receptive task further tested the child's receptive knowledge of the suffixes, to ensure that the correct selection of a picture in the first task was not just chance, given the small number (3) of images. In this task, the child used toy props (soft fluffy dog and bird) to act out a phrase said by the researcher, to demonstrate his/her understanding of the spoken Gathang phrases. Again, the children were familiar with this kind of activity from the learning sessions.

As discussed earlier, the suffixes in Set 1 and 2 are of a different nature, requiring slightly different instructions to elicit an appropriate response. For Set 1 suffixes, the researcher gave the child the following instructions that required the child to move the toys to demonstrate the meaning of suffix phrase:

1. 'I am going to ask you to do something in Language. 'Can you show me *Guying mirri-gu* 'bird going to the dog?'' (The correct response is to move the bird towards the dog.)
2. 'I am going to ask you to do something in Language. Can you show me *Guying mirri-ga* 'the bird is at the dog?'' (The correct response is to place the bird at the dog.)
3. 'I am going to ask you to do something in language. Can you show me *Guying mirri-gabirang* 'the bird is going away from the dog?'' (The correct response is to move the bird away from the dog.)

For Set 2 suffixes, the researcher gave the child a similar instruction to elicit comprehension of the suffix phrases. The following instructions required the child to move toys (*guying mirri-garay* 'the bird is with the dog' and *Guula-guba* *guying* 'Guula's bird') and do an action like something (*guying-damay*) to demonstrate the meaning of suffix phrase:

1. I am going to ask you to do something using Language. 'Can you show me (using the child's name) *Guula-guba* *guying* 'Guula's bird?'' (The correct response is to bring the bird to the chest suggesting ownership.)
2. I am going to ask you to do something using Language. 'Can you show me *mirri-damay* 'like a dog?'' (The correct response is to act like a dog.)

3. I am going to ask you to do something using Language. ‘Can you show me *guying mirri-garay* ‘the bird is with the dog’?’ (The correct response is to place the bird and dog together.)

As well as receptive testing, I also employed testing of expressive skills. In each of the suffix Sets 1 and 2, the child was given an expressive task to test their ability to verbally produce the Gathang noun + suffix combination. All three suffixes in each set were tested, resulting in a score out of three for each set. One point was awarded for each suffix that the researcher judged had been pronounced correctly. In this test the child was not tested on their production of the Gathang nouns.

In the suffix Set 1 testing session, the researcher laid a length of blue material on the floor to represent a river (as demonstrated previously in the learning sessions) and asked the following questions to test whether the child could say the correct suffix to match the movement:

1. ‘Can you watch me carefully to see what I am doing [walking to the river]?’ ‘Can you tell me in Language what I am doing?’ (The correct response is for the child to say *bila-gu*. If the child was unable to give a Language response, the researcher prompted the child by saying the Language noun *bila* ...)
2. ‘Can you tell me in Language where I am?’ (The correct response is for the child to say *bila-ga*. If the child was unable to give a Language response, the researcher prompted the child by saying the Language noun *bila* ...)
3. ‘Can you watch me carefully to see what I am doing [walking away from the river]?’ ‘Can you tell me in Language what I am doing?’ (The correct response is for the child to say *bila-gabirang*. If the child was unable to give a Language response, the researcher prompted the child by saying the Language noun *bila* ...)

In suffix Set 2, the researcher used fluffy toys, a dog and bird. (These tangible objects had been used previously in the learning sessions). The researcher moved the toy bird and dog to convey the meaning of the suffixes *-garay* ‘with’, *- guba* ‘belongs to’, and mimicked the behaviour of a dog to convey the meaning of the suffix *- damay* ‘like’ (previously demonstrated with different animals in the learning sessions). The researcher asked the following questions to test whether the child could say the suffix:

1. ‘Can you watch me carefully to see what I am doing?’ [the researcher mimics a dog] ‘Can you tell me using Language what I am doing?’ (The correct response is *mirri-damay*.)
2. ‘Can you watch me carefully to see what I am doing?’ [dog is placed next to the bird] ‘Can you tell me in Language what is happening?’ (The correct response is *mirri-guying-garay*.)
3. ‘Can you watch me carefully to see what I am doing?’ ‘Can you tell me using Language what is happening?’ (The correct response is for the child say *Aunty Rhonda-guba guying*.)

The children received positive feedback for their efforts but were given no feedback on the accuracy of their responses. This would rule out any concerns of practice effects in Post-test 2, as the children did not know whether they had answered correctly. The same testing sequence was used for Post-test 1 and Post-test 2. Wati and Buna groups were tested for both acquisition at Post-test 1 and retention at Post-test 2 at the end of Set 1 and Set 2 - that is, suffixes learnt with and without gesture.

### **5.2.5. Data Analysis**

The design overall is 2 (Time point: Acquisition/Retention) x 2 (Mode: Receptive/Expressive) x 2 (Gesture: With Gesture / Without Gesture), where Time point, Mode, and Gesture are all within participant variables. The data analysis focused on

inferential analysis of the test scores, which were recorded for each child at two time points: Post-test 1 (two days after learning: termed ‘Acquisition’) and Post-test 2 (five days after learning: termed ‘Retention’). The researcher wrote the individual scores on paper and then entered the data onto a spreadsheet. In the testing results each child received twelve scores. These were three scores for Post-test 1 (receptive (stamping and toy) and expressive) with gesture; three scores for Post-test 1 (receptive (stamping and toy) and expressive) without gesture; three scores for Post-test 2 (receptive (stamping and toy) and expressive) with gesture and three scores for Post-test 2 (receptive (stamping and toy) and expressive) without gesture. If a child did not attend a testing session, there was no score recorded. The non-attendance of some children meant there were some missing data points in the final dataset.

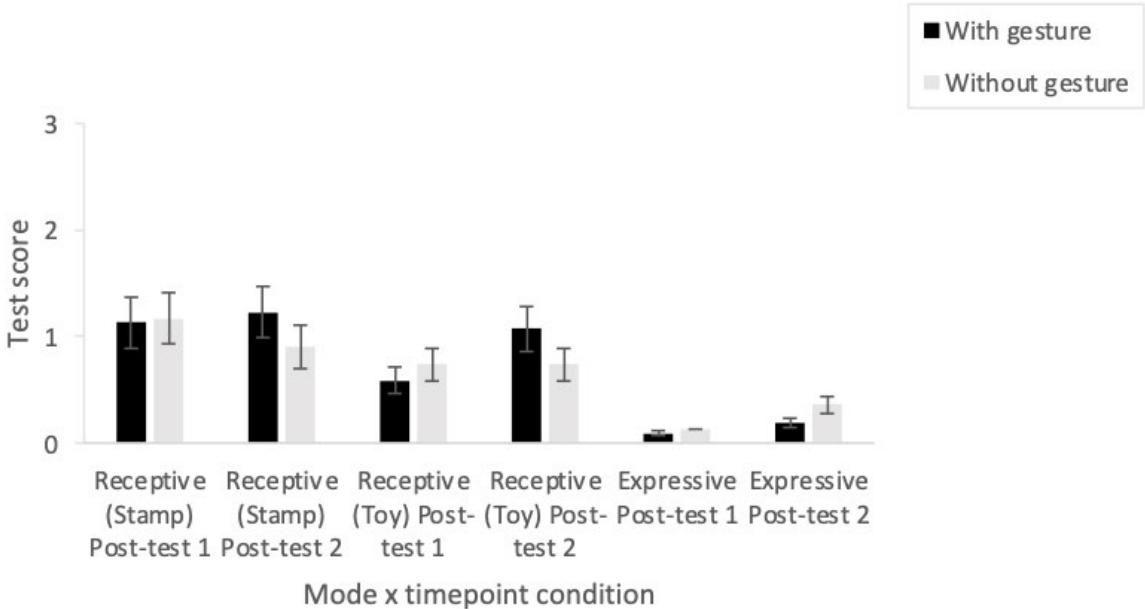
To test the hypothesis that the use of gesture alongside verbal, pictorial instruction and the movement of tangible objects for Gathang suffixes would result in higher accuracy scores for suffixes for children in subsequent testing (receptive (stamping and toy) and expressive testing), six paired-samples t-tests were conducted. There were two paired-samples t-tests for each of receptive (stamping and toy) at Post-test 1, receptive (stamping and toy) at Post-test 2 and one paired t-test for expressive at Post-test 1 and expressive at Post-test 2. The paired-samples t-tests were one-way t-tests given the directional hypothesis that gesture would benefit children’s learning of the Gathang suffixes.

### **5.3. Results**

Across the time point x mode conditions, children’s scores for words learned with vs without gesture shown in Figure 5.2. (Error bars represent the standard error of the mean.) The maximum score in all cases was three. Descriptively it is clear that children tended to score higher in receptive testing than expressive testing, as would be expected in language learning. In expressive testing, the child needed to produce the suffix sounds from memory. In



the stamp receptive task testing, the child chose one image out of three images to stamp in response to spoken Gathang nominal suffix phrase. In the toy receptive task testing, the child had to respond to the Gathang nominal suffix phrase by moving one or two toys, or to do an action. This required the child to have a higher level of knowledge of the Gathang suffix meanings to respond correctly to the instruction. Note that it is not possible to read Figure 5.2 for the effect of gesture across time point and mode conditions, as each child acted as their own control and there was wide individual variation in how hard the task was for the learners.



**Figure 5.2 Mean accuracy scores by timepoint x mode conditions, with and without gesture**

The next sections present detailed results for the effectiveness of gesture by mode and time point. For each mode x time point, the results are presented with paired t-test statistics, a plot of individual results and a box plot. The boxplot graph is a summary of a data set based on quartiles of the data (splits data into four groups) with each quartile containing 25% of the measurements. The whiskers represent the ranges for the bottom 25% and the top 25% of the

data values. The median (middle quartile) marks the middle score in the data and is shown by the line that divides the box into two parts. Half the scores are greater than or equal to this value and half are less. The middle “box” represents the middle 50% of scores for the group.

**5.3.1. Receptive Post-test 1 (stamp testing)**

In the receptive Post-test 1 (stamping) condition, assumptions of normality were not met: the difference scores (i.e., score with gesture – score without gesture) for receptive post-test 1 may not be normally distributed since the Shapiro-Wilk statistic was statistically significant  $W = 0.825, p = 0.004$ . Children’s scores for words learned with gesture ( $M = 1.1, SD = 0.8$ ) were not statistically significantly higher than for words learned without gesture ( $M = 1.2, SD = 1.1$ ),  $t(17) = 0.195, p = 0.424$ . The mean of the differences (With Gesture vs. Without) was 0.06.

Figure 5.3 shows that the median score was 1 (with middle 50% range 0-2) for words learned without gesture and 1 (with middle 50% range 1-2) for words learned with gesture. This score is consistent with an overall chance level of responding (i.e., 1 out of 3, or 33%).

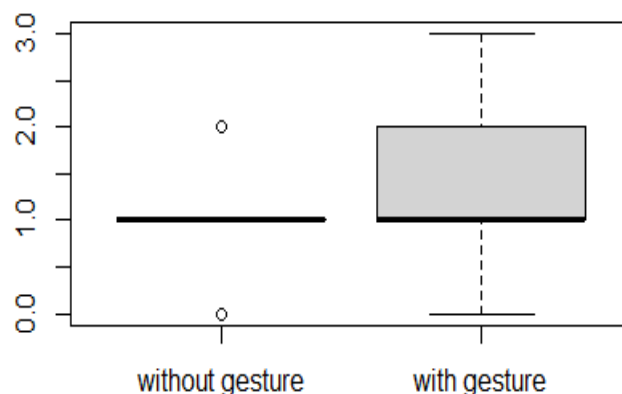


**Figure 5.3 Box plot for testing results in receptive Post-test 1 (stamping) condition**

### 5.3.2. Receptive Post-test 2 (with stamp testing)

In the receptive Post-test 2 (stamp) condition, assumptions of normality were met; the difference scores (i.e., score with gesture – score without gesture) for receptive post-test 2 were considered to be normally distributed since the Shapiro-Wilk statistic was not significant ( $W = 0.888, p = 0.051$ ). Children's scores for words learned with gesture ( $M = 1.2, SD = 0.7$ ) were not statistically significantly higher than for words learned without gesture ( $M = 0.9, SD = 0.5$ ),  $t(15) = 1.232, p = 0.12$ . The mean of the differences (With Gesture vs. Without) was 0.31.

Figure 5.4 shows that the median score was 1 (with middle 50% range 1) for words learned without gesture and 1 (with middle 50% range 1-2) for words learned with gesture. Again, this suggests a chance level of responding.



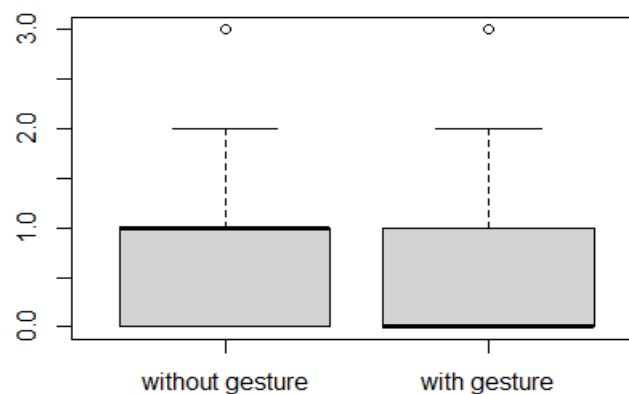
**Figure 5.4** Box plot for testing results in receptive Post-test 2 (stamping) condition

### 5.3.3. Receptive Post-test 1 (with toy testing)

In the receptive Post-test 1 (with toy testing) condition, assumptions of normality were met; the difference scores (i.e. score with gesture – score without gesture) for receptive post-test 1 were considered to be normally distributed since the Shapiro-Wilk statistic was not significant ( $W = 0.961, p = 0.629$ ). Children's scores for words learned with gesture ( $M = 0.6,$

SD = 1.0) were not statistically significantly higher than for words learned without gesture (M = 0.7, SD = 0.9),  $t(17) = 0$ ,  $p = 0.5$ . The mean of the differences (With Gesture vs. Without) was 0.

Figure 5.5 shows that the median score was 1 (with middle 50% range 0-1) for words learned without gesture and 0 (with middle 50% range 0-1) for words learned with gesture. Again, the learners overall appear to be at chance.

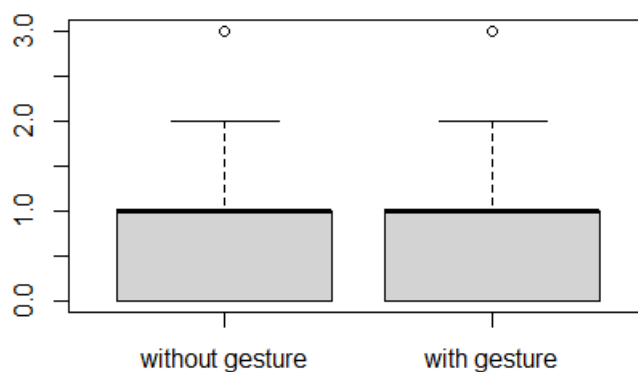


**Figure 5.5** Box plot for testing results in receptive Post-test 1 (toy) condition

#### **5.3.4. Receptive Post-test 2 (with toy testing)**

In the receptive Post-test 2 (with toy testing) condition, assumptions of normality were met; the difference scores (i.e. score with gesture – score without gesture) for receptive Post-test 2 were considered to be normally distributed since the Shapiro-Wilk statistic was not significant ( $W = 0.931$ ,  $p = 0.225$ ). Children's scores for words learned with gesture (M = 1.1, SD = 0.9) were not statistically significantly higher than for words learned without gesture (M = 0.7, SD = 0.9),  $t(16) = 1$ ,  $p = 0.166$ . The mean of the differences (With Gesture vs. Without) was 0.35.

Figure 5.6 shows that the median score was 1 (with middle 50% range 0-1) for words learned without gesture and 1 (with middle 50% range 0-1) for words learned with gesture. The learners overall appear to be at chance levels of responding.

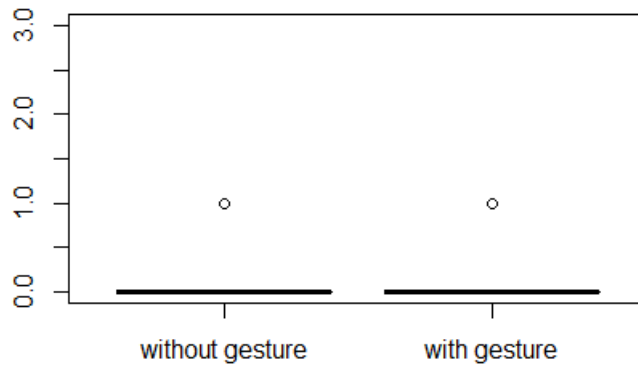


**Figure 5.6 Box plot for testing results in receptive Post-test 2 (toy) condition**

### 5.3.5. Expressive Post-test 1

In the expressive Post-test 1 condition, assumptions of normality were met; the difference scores (i.e. score with gesture – score without gesture) for expressive Post-test 1 were considered to be normally distributed since the Shapiro-Wilk statistic was significant ( $W = 0.477$ ,  $p = 0.0000005$ ). Children's scores for words learned with gesture ( $M = 0.1$ ,  $SD = 0.3$ ) were statistically significantly not higher than for words learned without gesture ( $M = 0.1$ ,  $SD = 0.3$ ),  $t(17) = 0$ ,  $p = 0.5$ . The mean of the differences (With Gesture vs. Without) was 0.

Figure 5.7 shows that the median score was 0 (with middle 50% range 0) for words learned without gesture, and 0 (with middle 50% range 0) for words learned with gesture.

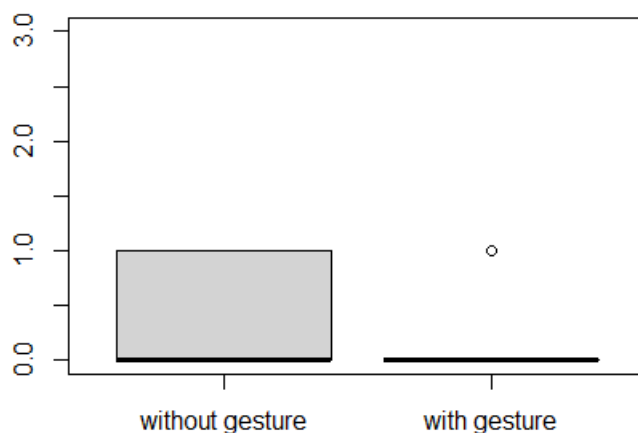


**Figure 5.7** Box plot for testing results in the expressive Post-test 1 condition

### 5.3.6. Expressive Post-test 2

In the expressive Post-test 2 condition, assumptions of normality were met; the difference scores (i.e. score with gesture – score without gesture) for expressive post-test 2 may not be normally distributed as the Shapiro-Wilk statistic was significant ( $W = 0.750$ ,  $p = 0.0004$ ). Children’s scores for words learned with gesture ( $M = 0.2$ ,  $SD = 0.4$ ) were not statistically significantly higher than for words learned without gesture ( $M = 0.4$ ,  $SD = 0.5$ ),  $t(16) = -2.068$ ,  $p = 0.97$ . The mean of the differences (With Gesture vs Without) was  $-0.29$ .

Figure 5.8 shows that the median score was 0 (with middle 50% range 0-1) for words learned without gesture and 0 (with middle 50% range 0) for words learned with gesture.



**Figure 5.8** Box plot for testing results in the expressive Post-test 2 conditions

## 5.4. Discussion

This study used a classroom-based experiment to test the usefulness of iconic gesture alongside verbal, pictorial instruction and the movement of tangible objects to support pre-schoolers' learning of the Gathang Language. The testing phase included testing of both receptive and expressive knowledge, so as to test both these important skills and in case of ceiling or floor effects (if the task was too easy or too hard, respectively). Learners were tested for 'acquisition' at Post-test 1 (two days after teaching) and 'retention' at Post-test 2 (five days later). The children demonstrated their receptive knowledge by either stamping the correct image or moving the toy the correct way. Expressive knowledge was measured by the children's accurate use of the correct suffix. The children were not penalised for not using the correct word for the nouns. Retention testing, that is delayed testing was included as the literature suggests that learning effects may be more likely to be evident after delayed testing (Roediger & Nestojko, 2015) meaning that experimentally it might be only possible to measure learning – and so assess the effectiveness of gesture use after a period of time had elapsed (i.e., in the Post-test 2 testing session).

The experimental results did not support the hypothesis that the use of gesture benefits the learning of suffixes in Gathang, at either Post-test 1 or Post-test 2, and in either receptive or expressive testing. Although in the testing results for the receptive Post-test 1 (with toy testing) and receptive Post-test 2 (with toy testing) there was a slight numerical increase in scores for suffixes learned with gesture from Post-test 1 to Post-test 2, none of the scores reached statistical significance. It is worth noting that even in the receptive condition learners in both gesture and non-gesture conditions had relatively low scores.

In analysing the dataset, the inconsistent attendance by individual children (due to the flu season and other factors), resulted in many children having one data point instead of two

in the datasets. Out of the 34 children who participated in the study, Table 5.5 shows the number of children with two data points for each test. The need for both data points per child is essential to apply the technique of paired-samples t-tests; the missing data resulted in lower power than had been planned. This lower power was probably insufficient to detect statistically significant differences between the gesture and non-gesture conditions.

**Table 5.5 Number of children with two data points per paired samples t-test**

Test	Number of children with two data points
Expressive Acquisition	18
Expressive Retention	16
Receptive Acquisition - Stamp	16
Receptive Retention- Stamp	16
Receptive Acquisition-Toy	16
Receptive Retention-Toy	16

An additional factor behind the lack of statistical significance in the results may be conceptual complexity. The gestures developed to represent the suffixes targeted iconic aspects of the meaning and, as the children were already familiar with spatial and relational concepts from their first language, it is likely that they would have had little difficulty



associating the gestures with the target meaning. However, the concepts represented by suffixes are more abstract than the concrete familiar objects represented by the nouns of Experiment 1. The abstract nature of the concepts, which add to their complexity, may have negated any benefits that could be accrued through gesture. Hoetjes & van Masstricht (2020), found that the complexity of information impacts the extent to which gestures benefit learners, with gestures contributing to learning gains with simple information, though not with complex information.

Furthermore, for monolingual English-speaking pre-schoolers used to prepositions ('to', 'at', 'from', 'with' etc) to express these concepts, the use of suffixes in this context is very unfamiliar. As a noun by itself is a simpler item, semantically (mono-morphemic, one unit of meaning), a noun + suffix is a more complex form (multi-morphemic – two units of meaning: a lexical and grammatical morpheme). In addition, there was a greater quantity of information to be processed in Experiment 2 than in Experiment 1 as the children had to recall the nouns (from Experiment 1) before learning the sounds of the nominal suffix sets.

There were also aspects of the experimental design that may have caused misunderstandings. Semantically the locative suffix *-ga* 'at' and the comitative suffix *-garay* 'with' are quite similar. The children in the learning phase were taught distinctive gestures for each of the suffixes. However, the testing procedure required similar responses for both suffixes which may have confused the children. For example, in the receptive testing of the locative suffix the researcher says 'Can you show me, *Guying mirri-ga*?' (The correct response is to place the bird and the dog together.) In the receptive testing of the comitative suffix the researcher says 'I am going to ask you to do something using language. Can you show me, *guying mirri-garay*?' (The correct response is to place the bird and the dog together.) Consideration could have been given in the testing procedure to more clearly distinguish the movement of the toys in response to each of the suffixes. The gestures for the

semblative suffix *damay* ‘like’ and comitative suffix *garay* ‘with’ were also quite similar due to their semantic overlap (bringing two hands together in front of the body (see Figure 5.1)). This may also have caused confusion in the learning and testing phases. Challenges for the researcher included relatively short learning timeframes reducing the ability to meet the children’s learning needs, and to revise and consolidate previous learnings. This may be even more pronounced in the case of the semblative and comitative suffixes discussed above, as the similarity of the movements conveying two distinctively different meanings might require time to embed in the children’s learning.

An important consideration in the discussion of the results of this experiment is the limitation of a controlled experimental approach to embed Aboriginal pedagogies. (See also the Coda to Chapter 4 for further discussion of these issues). The nominal phrase (noun and suffix) for example *bila-ga* ‘at the river’, *guri mirri-garay* ‘The man is with the dog.’ tells a story in language, one of the elements of the Aboriginal ways of learning (Yunkaporta, 2009). Furthermore, the nature of the in-classroom delivery of the learning and testing phases of the spatial and locational suffix set raises questions about the validity of learning an Aboriginal language off Country. Learning on Country (moving through landforms, waterways and interacting with plants and animals) provides a deeper cultural immersion experience creating a backdrop for Gathang to be spoken alongside of visual and movement representations. Although Yunkaporta (2010) refers to land links as metaphors for concepts in the Aboriginal language classroom, walking on Country to connect to story to learn and teach language must be included in Language programs.

## **5.5. Summary**

In this chapter, Experiment 2 investigated the effectiveness of gesture as teaching tool to assist preschoolers to learn Gathang suffixes. While the experimental results did not

support the hypothesis that the use of gesture benefits the learning of suffixes in Gathang, there are several reasons why this may be, including low statistical power. Gesture is an important Aboriginal way of learning and provides a visual focus for children during instruction (Korbach et al., 2020). Future research with a larger participant group and more statistical power, is needed to be more definitive about the extent to which the use of gesture can contribute to the learning of suffixes.

To explore the role of gestures beyond the results of Experiments 1 and 2, the preschool educators were invited to participate in individual interviews. The classroom educators played a significant role in the study by observing and participating in the learning of the noun (Experiment 1) and noun+suffix (Experiment 2) sets taught with gesture. Therefore, the educators' feedback and comments are very valuable for their insights into the use of gestures to teach Gathang Language. These interviews with the preschool educators are the subject of the next chapter, Chapter 6.

## Chapter 6 : Educators' views on the use of gesture to learn

### Gathang language

#### 6.1. Introduction

##### *Personal Reflection*

Ngarrangga ‘deep listening’, as described previously, is an Aboriginal cultural practice that enhances our ability as researchers to listen to more than spoken or recorded words, instead urging us to seek understanding more fully. Applying this practice throughout this study enables a deeper understanding of the educators’ experiences and what support is required to move forward in respectful relationships with the preschool community to embed Gathang Language within the curriculum. The study captures the interconnectedness that is within each of the educators’ stories and how through the research the educators have identified ways to enact a continuous sustainable Gathang Language practice within the Centre.

This chapter presents the study which investigated Research Questions 3 and 4:

**RQ3:** What are the views of local preschool educators about using gesture to help teach Gathang? To what extent do they think it is useful or appropriate, and why or why not?

**RQ4:** How has learning the Gathang language influenced the community preschool environment? The study involves a thematic analysis of transcripts of interviews with the preschool educators.

Educators play a crucial role in the day-to-day care of preschool children, providing educational programs and catering for the individual needs of each child. Preschool is also a common context for language revitalisation efforts in Australia (Eisenclas & Schalley,

2020). For these initiatives to succeed and impact the wider community, the involvement of preschool educators - Aboriginal and non-Aboriginal -- is arguably critical, (Purdie et al., 2008).

The educators at the community preschool site were actively involved in several aspects of the research project. They were present during the delivery of the Gathang Language lessons and testing phases for Experiments 1 and 2. The educators were also in the play areas interacting with the children. Importantly, the educators were able to observe their students in the days and weeks following the experiments. Hence, the educators' experiences offer a unique lens and a wider perspective on the use of gesture to help teach Gathang Language and how Gathang Language learning has influenced the community preschool environment.

Although gesture is recognised in academic literature (e.g., Power, 2013) and government documents (Queensland Government, 2016) as a teaching modality to enhance Aboriginal Language learning, little is directly known about preschool educators' views of gesture as a teaching tool to assist students learning a language. It appears that gesture use in teaching a revitalised language is expanding (Borgia, 2014; Gardner & Ciotti, 2018) and there is strong advocacy for the establishment of partnerships between educational agencies and Aboriginal language communities to develop and implement innovative approaches, such as gesture, to learn a revitalised language (Ash et al., 2010; Dixon & Deak, 2010; Lowe & Howard, 2010, p. 215; Simpson, 2020). It would be remiss not to hear from the educators about their observations of the experiments that were conducted for this research.

Educators play an important role in the establishment of teams within educational sectors to build robust framework to sustain language revitalisation. Collaboration between Aboriginal community members and organisations, Aboriginal Language groups, linguists, schools and educators is vital to establish communicative pathways to work together as a team

towards community language goal. The teamwork can build respectful relationships and can ensure the introduction of culturally responsive language programs in education sectors (Purdie et al., 2008). In education sectors such as early childhood there is a need to ensure that the 'inner' revitalisation team within early childhood centres are resourced, supported and there are ways to empower community members, Aboriginal and non-Aboriginal, including educators to help on a day-to-day basis.

There appears to be no literature documenting educators' experiences during an experimental study on the usefulness of gesture in a preschool language revitalisation setting. To address this gap in the research literature, I conducted individual interviews with the eight educators at the research site to help answer two research questions:

RQ3: What are the views of local preschool educators about using gesture to help teach Gathang? To what extent do they think it is useful or appropriate, and why or why not?

RQ4: How has learning the Gathang language influenced the community preschool environment?

## **6.2. Method**

### ***6.2.1. Participants***

Eight female educators volunteered to participate in the interviews. The participants ranged between 32 and 58 years of age and were employed on a part-time or full-time basis at the community preschool centre. The educators are responsible for the educational and pastoral needs of the children as well as classroom behaviour management. There were three educators positioned in the Wati classroom and five educators positioned in the Buna classrooms (see Table 6.1). One educator in the Wati classroom was a Gathang Language learner and a member of the local Birpai community.

With the assistance of the Centre’s Director, all educators received a participant information sheet and a consent form (see Appendices 2 & 3: Information Sheet and Consent Form) inviting them to join interviews. The educators in attendance at the Gathang language learning lessons provided classroom management and/or participated as learners (when asked by the researcher). Educators' names have been removed and they have been given a randomly selected number in order to preserve their anonymity.

An analysis of the educator's attendance identified two groupings of educators:  
 Group 1 (G1) - educators who were present during the delivery of lessons with gesture.  
 Group 2 (G2) - educators who were not present during the delivery of lessons with gesture.  
 G2 educators were unable to respond to questions 1-4 *Learners’ response to gesture teaching*.  
 (More detail on the interview schedule is presented below in 6.3.1.) Table 6.1 gives an overview of the educators’ room placement, lessons with gesture attendance and other information. Although the G2 educators did not participate in the sessions in which Language was presented with gesture, their overall views contribute to the understanding of the educators’ experiences in the study.

**Table 6.1 Educators' attendance**

Educator	Room	Lesson sessions		With Gesture		Comment
		Mon	Wed	Nouns	Suffixes	
1 (G2)	Buna					Attended Fridays only
2 (G1)	Wati	√	√	√	√	
3 (G1)	Buna	√	√	√	√	
4 (G1)	Wati	√	√	√		Unable to respond to Q2 & 3
5 (G1)	Buna	√	√	√	√	
6 (G1)	Wati	√	√	√	√	Aboriginal Educator
7 (G2)	Buna					Part-time

8 (G2)	Buna					Attended Set 1 noun (without gesture) session only
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### **6.2.2. Interview method**

The interviews included a broad range of questions designed to capture educators' thoughts about the role gesture played in the Gathang language lessons and the influence of Gathang language learning on the community preschool environment. In consultation with the community preschool Director, Megan Jones, a set of open-ended questions were adopted.

The ten interview questions (see Figure 6.1) covered three main areas:

1. *Learners' response to gesture teaching (Questions 1-4)* aimed to capture the educators' perspectives on the type of gestures used in the teaching of the Gathang language. I was interested to hear what the educators' views were on the children's language learning given the way the teacher/researcher delivered the lessons (RQ3).
2. *Learners' gesture behaviours (Questions 5-7)* focused on educators' observations of how the children used gesture in and outside the language learning sessions, in their interactions with each other, with the teacher/researcher and with other educators in the Centre (RQ3).
3. *Changes in the preschool community environment (Questions 8-10)* gave the educators the chance to talk about any changes that occurred in the Community Preschool Centre during the course of the research. The last question invited any thoughts or comments, providing a space for their reflection (RQ4).

### **6.2.3. Interview questions**



Each participant received the interview questions (Figure 6.1) at the commencement of the interview session. The researcher commenced the interview session with a short greeting and a brief overview of the session, stating the following:

'I really appreciate your time and your agreement to participate in the interview. The



interview time is approximately 30 minutes. The interview will be audio recorded for future reference for me to refer to in putting together information about the study. The recording will enable me to listen and write less. You are the expert, and I am interested to hear of your thoughts and experience. Please feel free to share any feedback with me; your honest opinions will benefit the research. I am here to listen. It is ok at any time to stop to have a break. Before we start just want to check in with you, is the temperature, seating, lighting ok for you? Are you comfortable? Please don't hesitate to ask me to repeat or clarify any of the questions.'

Once the audio recording started, I gave an informal greeting to help the educators feel comfortable and ready to participate. The audio recording was later transcribed for data analysis (see Appendices 19-33).

<b>Educators' Interview Questions</b>	
1	<p>How do you think the learners responded to the gesture, the way I was doing it in teaching the nouns?</p> <p style="text-align: center;">  </p> <p>Wati group set 1 (with gesture)</p> <p style="text-align: center;">  </p> <p>Buna group set 2 (with gesture)</p>
2	<p>How do you think the learners responded to the gesture, the way I was doing it in teaching the suffixes “something you can add to the end of words?” In English, we have suffixes like, help, help-<b>ed</b> (-ed tells you it is in the past). I used suffixes to tag the nouns that told the learners something.</p> <p>E.g., mirri guying-<b>gu</b> dog to the bird</p>

	Wati group set 1 (with gesture) gu, ga, gabirang Buna group set 2 (with gesture) damay, garay, guba
3	Do you think the gestures helped learners understand the meaning of the Gathang suffixes? Any particular suffixes? What makes you think that?
4	What do you think of the types of gestures used to teach the language? Are they helpful if so, why?
5	Has there been any mimicking behaviours between the learners during the language activities and/or outside the activities? e.g., in the classroom or in the outside play areas
6	Did you notice any differences between the learners in how they respond to gesture? Is there anything else you noticed?
7	Is there anything that happens with the learners' language learning between visits? What happens when I am not here, do you hear or see the learners using language or gesture?
8	Since I have been at the community preschool what have, you noticed? E.g., engagement in language, enjoyment of language etc.
9	Can you see any changes around the centre since we have been doing language?
10	Do you have any final thoughts or comments?

**Figure 6.1 Interview questions**

#### **6.2.4. Data Analysis**

This study used a qualitative thematic analysis (Braun & Clarke, 2006) to identify the themes stemming from the conversational interviews with the educators. The emerging themes -- Usefulness of Gesture, Nouns vs Suffix learning, Building Blocks, Ripple Effect and Experiment vs classroom teaching -- provide insights into the educators' experiences.

The audio interviews were transcribed by a professional transcription service and then the researcher reviewed the transcribed audio recordings filling in missing words noted

<inaudible> e.g. (see Appendices 19-33: Educators' Interviews), as well as Gathang Language words or other words if audible. The level of educators' attendance appeared to correlate with the quality and quantity of information given at the interview, with educators who attended Gathang Language lessons (with gesture) providing additional insights.

The thematic analysis involved iterative analysis of the transcripts by the researcher and three members of the supervisory panel consistent with Braun and Clarke's (2006) approach. Each of the reviewers independently read the interview transcripts, conceptualising the data, highlighting key phrases and words and making comments in margins. The researcher and other reviewers held several online Zoom discussions to broadly identify the emerging themes and identifying patterns and relationships among the themes. The researcher synthesised these discussions into five themes: Usefulness of Gesture, Nouns vs Suffix learning, Building Blocks, Ripple Effect and Experiment vs Classroom Learning.

### **6.3. Results**

The interview data were analysed to provide insights into the two research questions guiding the study:

Research Question 3: What are the views of the community preschool educators about the use of gesture to teach Gathang language?'

Research Question 4: 'How did learning the Gathang language influence the community preschool environment?'

The educators' quotes that are illustrative of the following themes, Usefulness of Gesture and Nouns vs Suffix learning, are presented below (sections 6.3.1 and 6.3.2). These themes address the positives and the challenges of learning the Gathang language with gesture (RQ 3). The following two themes, Building Blocks and Ripple Effect, captured a broad perspective of the educators' experiences in how learning the Gathang language has

influenced the community preschool environment (RQ 4). These themes are discussed in Sections 6.3.3 and 6.3.4.

A final theme is quite different in character. This theme incorporates comments from the educators about aspects of the teaching that were constrained by experimental paradigm and did not reflect ideal pedagogical strategies. Although the Experiment vs Classroom Learning theme comments did not directly relate to the research questions, it was important to include the educators' comments as these comments give further insights into the educators' experience in the study. This theme is detailed in Section 6.3.5 below.

**6.3.1. Usefulness of Gesture**



It was evident from the number and content of the responses from the educators that there was overall support for the use of gesture to learn the Gathang language (see Table 6.2). Educators' comments included: "gestures are a great teaching tool", "gestures worked well" and [children] "respond better with the gestures". The chart gives an overview of the interview questions in which positive comments were received for the use of gesture to learn the Gathang language.

**Table 6.2 An overview of the questions containing positive comments for the use of gesture**

Educator	Positive comments				Appendices
1 (G2)	Q1				19 & 20
2 (G1)	Q3	Q4			21 & 22

3 (G1)	Q1	Q3	Q4		23 & 24
4 (G1)	Q1				25 & 26
5 (G1)	Q1	Q3	Q4	Q5	27 & 28
6 (G1)	Q1	Q4			29 & 30
7 (G2)	Q1				31
8 (G2)	Q10				32 & 33

Within the theme, ‘Usefulness of Gesture’, seven sub-themes were identified:

**Gesture is a helpful engagement aid.** The literature review (Chapter 2) highlighted that gesturing can be a tool to draw visual attention to instructional material, engaging the learners. The educators’ comments add weight to the notion that gesture can be an effective tool to focus and engage the children. Three educators suggested that gesture was effective in capturing the children’s attention and keeping them focused:

“I just think getting their attention more, they're more focused if you're using gestures, they do tend to focus more on what you're doing.” **G1 Educator 3. Q3.**

“The gestures get their attention very quickly, they're engaging...” **(G2 Educator 1. Q1)**

“as a group, extremely focused and responsive to what you were doing” **G1 Educator 4. Q1.**

One Educator made reference to the iconic nature of the gestures:

".....they almost help to describe the word that you're using.” **G2 Educator 1. Q1.**

**Language retention.** Gesture may enhance the acquisition and retention of words and phrases and can be effective in reducing the cognitive load which supports learning and the retention of information (Chapter 2). These educators' comments reinforce the benefits of gesture to recall language:

"They were able to recall when you asked them, they remembered the words and that is with the gestures." **G1 Educator 4. Q1.**

One educator described the children using the gesture for 'bird' while they were around the chickens, out in the playground. Although the children at this stage may not be using the Gathang word, the gesture is linking the meaning to a thing.

"Yeah, the *guying*, the hands, chirping, I've noticed children doing that to the chickens" **G1 Educator 6. Q5.**

**Impact on Memory.** Gesture is a mechanism that can enhance memory retention (Madan & Singhal, 2012). Two educators referred to the influence of gesture on memory in ways that suggest the involvement of the memory of the children:

"Yeah. I think that the gesture was picked up more – not necessarily more than the language but before the language" "You're showing the gesture triggered off the memory of that word." **G1 Educator 3. Q4.**

"I feel the children responded better with the use of the gestures. I found it was easier for them to remember, that sometimes they would remember the gesture rather than the language first." **G1 Educator 5. Q1.**

**Transfer of Language Knowledge.** The transfer of gestures from Language learning to other contexts demonstrates the children's comfort levels with the use of gesture. Two educators gave recounts of the children applying gesture and language words in other contexts:

“We were reading a story about carrying a backpack and one child was going ‘carr’, doing a hand gesture, where they couldn't quite get the language word but was lifting the hand up and down, the gesture for the bag. So I think it definitely sinks in more using gestures.” **G1**

**Educator 6. Q1.**

“I was doing Old McDonald, the children were able to say, they were able to tell me, “Oh, that is –” and telling me the other ones. The crossover was really nice and they were able to tell me that they knew those words. I thought having those gestures was really good.” **G1**

**Educator 2. Q4.**

**Iconic Gesture.** Research has shown the benefit of iconic gesture and speech on the working memory (see Chapter 4). Educators commented on the benefits of the type of gestures used. One Educator observed the children responding in a positive way to instructions given with gesture with the spatial suffix set:

“When you are using your hand to call them back over, that really helped the children with the *-gu* when ‘you are going to’ or ‘here’, it worked well. I liked it when we are doing the *-ga* for ‘here’ with your hands spread it down, that is like your ground and you're here. So, I think they took that one in well.” **G1 Educator 6. Q2.**

One educator emphasised gesture as a teaching tool to visually engage learners and referred to the gesture iconicity:

“I think that the gestures are great teaching tools for children ‘cause children are very visual.....they almost help to describe the word that you're using.” **G2 Educator 1. Q1.**

**Supporting the Use of Gesture.** One educator advocated her support to learn language with gesture based on the educator’s prior belief in the effectiveness of gesture. Although she had not attended any of the language lessons, she was convinced of the benefits of movement for the children’s expression and learning.

“This is the time to start in preschool with gestures, that's a really great idea because children learn through their play and they use their whole self to express themselves. Gesture and the language go together and that'll be the way to go in the future.” **G2 Educator 7. Q10.**

**Gesture for non-verbal children.** Gesture can be utilised as a tool to support non-verbal children and a precursor for spoken language (as discussed in Chapter 3). One educator observed a non-verbal Aboriginal child participating in the language lesson and positively responding to the use of gesture, as demonstrated by her attentiveness and participation.

“I think gestures worked well with younger children, especially non-verbal children.” **G2 Educator 7. Q1.**



### 6.3.2. *Noun and Noun+Suffix Learning*

As noted in the Discussion section in Chapter 5, there was an expectation by the researcher that the children would find it easier to learn the noun sets compared to the noun+suffix sets and the educators' comments reinforce this notion. Two educators observed that the suffixes were more difficult for the children:

"I've discovered that there's a few that respond really well to the singular words but when you add this in the other language, I think that's caused a bit of confusion," **G1 Educator 3. Q1.**

"Again, I feel like the gestures were really helpful, but I think the suffixes at that point were just too hard to teach." **G1 Educator 5. Q3.**

Although as discussed above, the iconic nature of the gestures chosen by the researcher was observed to be helpful for suffixes such as *-gu* involving movement **G1 Educator 6. Q2.**

One educator endorsed the number and types of nouns selected in the noun set:

"So there were five, okay. It was great because you didn't overload them with too many different words. Five was a good number. Particularly the boy and the girl and the platypus, the animal and the bag, those were gestures and words that would have been easy for them to remember and to pick up without overloading them." **G1 Educator 4. Q2.**

One educator referred to the children recalling in the learning phase a suffix with a longer syllable although this did not relate to the learners' outcomes. This could be seen as counter-intuitive as it might be expected that longer suffixes would be harder to learn from a working memory point of view:

“With the suffixes, I think the longer one, *gibirang* sank in a lot better because it was a longer suffix. I feel like the *gibirang* was the one that they remembered the most”. **G1 Educator 6. Q2.**

### **6.3.3. Building blocks**



The second theme is 'Building blocks'. In this theme, building blocks are the elements that build learning language capacity, ensure sustainability of language learning, and support Gathang language revitalisation. These include increasing the number of language speakers and resources, embedding Gathang language into the educators' program, forming partnerships and developing positive relationships with the wider Gathang language community. The educators' comments demonstrated their willingness to support language revitalisation by embedding language learning into their programs. These building block elements refer to ways in which Gathang language learning has influenced the community preschool environment (RQ 4).

Three educators realized the need for the on-going use of the language to be embedded into their programs:

“It should be more ongoing. That's what I would like to see happening. And then it gets embedded in the program, it becomes just like second nature.” **G1 Educator 4. Q9.**

"We really want to embed it, use it every day, not just for when you are here but continue to use it in years to come because it's just fairly important for that language to come back into our community." **G2 Educator 7. Q10.**

Two of the educators identified that having more Gathang language resources such as visual aids to support verbal instruction will ensure embedding of language into their programs:

"So again, hearing more of the language each day and seeing it more in our rooms with the resources and the pictures so it's more embedded in our program, that's for sure." **G2 Educator 1. Q7.**

"The words obviously are up and the pictures are up with the words, so there's visual acknowledgement of the language" **G2 Educator 8. Q10.**

The development of positive relationships between the study participants and the teacher/researcher is an important building block to ensure the safety and comfort levels of the participants while learning the Gathang Language and participating in the study. One educator talks about the children's initial reluctance to participate and then the change of attitude as the researcher created a non-threatening environment in which the children felt comfortable:

"Most children were very excited to have these visits with you. There were a couple of children that were unsure. We didn't want to push. We wanted them to have a choice and to

feel comfortable. There were ones that initially didn't want go and then they really loved your visits. It's just making them feel comfortable” **G1 Educator 5. Q9.**

#### ***6.3.4. Ripple Effect***



The ripple effect theme is the notion that there is continuous spreading of something as a result of the impact of something else, for example the rock dropped into a pond creating ripples of water that ripple out from the rock’s center. In this case, learning Gathang language represents the rock (something that has caused the impact), the community preschool, community, children, staff and parents represent the pond, a conduit for Gathang language revitalisation and the actions initiated from learning Gathang language represent the ripple. Educators tell of incidents and changes that have occurred as a result of the research study at the community preschool centre.

One educator mentioned the use of Gathang Language in the Preschool Centre and shared her excitement about the movement towards using more Language in the future:

“Definitely more Language signage up. I mean our shirts now have Language on them and the children are wanting the shirts and the parents are wanting the shirts with the Language sheets. I actually had a parent say to me yesterday, ‘is this the way you're moving forward? Because, if it is, how amazing!’ So I'm seeing it's spreading out, children, parents, educators, we're all really open and excited to have more Language, incorporate more Language. It’s really positive and it's really wonderful to be a part of, it really is.” **G2 Educator 1. Q9.**

The ripple effect of Gathang Language learning is also evident in one educator's story of the child that wanted to take Gathang words home to share with his family. The child sharing the language with his family takes the Gathang Language outside the classroom into the community. Through educating others on the existence of Gathang Language and sharing Language words this supports language revitalisation:

“There was one particular child who was very interested in the Gathang language itself to the point where he actually wanted to learn to take not particularly those words but other words home that were displayed in the room to recall to his family.” **G2 Educator 3. Q5.**

Establishing a relationship with the children to ensure their engagement and comfort levels was a crucial building block element, creating ripples of interest from the children to learn language from the researcher. The children's openness to connect and participate in the study is shown here in one educator's remarks of how the children reacted to the researcher's visits:

“Yeah, definitely. They get excited when they're coming into preschool. If they overhear anybody say your name, they mentioned quickly, "Oh, is Baan Rhonda here today? Is she coming?" So they seem excited. They're like going off and doing they're little one-on-one sessions but I think they really like that group ones, definitely. They're getting excited about it. They do seem to really enjoy it.” **G1 Educator 6. Q10.**

The researcher's visits generated interest in learning the Gathang language and highlighted the importance of learning the local Aboriginal language as expressed by this educator:

“It's been really great to have you come in because it's important for this community to learn the local traditional language, the Gathang language.” **G2 Educator 7. Q10.**

There has been an increase in the use of the Gathang language in the centre as indicated by the educator comment above (G2 Educator 1, Q7). One educator (non-Aboriginal) refers to the language as ‘our language’ showing there is an ownership or connection to the Gathang language and is pleased with the use of language in the centre:

“Our language is being used more often within our days, both with the children and educators. Definitely a lot more language is being used, so that's good.” **G1 Educator 5. Q9.**

One educator in her final comment mentions the centre's willingness to adopt Language and culture. The language is part of the culture therefore the centre embracing the culture and language, as a whole, will bring forward more understandings of Aboriginal cultural practices:

‘I think the centre, is actually embracing the culture and language as a whole. **G2 Educator 8.Q10.**

### ***6.3.5. Experiment vs classroom teaching***

The theme Experiment vs classroom teaching captures a number of recommendations from educators on classroom teaching. While this theme did not directly relate to the research

questions, the theme provided insights into the educators' views, challenges and needs. The educators' comments provided insights into how to teach the children, their own role within the study and their comfort levels in Language learning. Although these suggestions may not be applicable in the context an experimental study (a prescribed lesson) situation such as this one, nonetheless the recommendations could be helpful for language teachers in preschool settings.

Three educators gave helpful suggestions to focus the children, to meet a child's learning needs, the benefits of repetition, small group work and timeframe of the lessons. All these comments from the educators give practical advice on how to work with preschool children:

“So maybe look at a way to capture their attention a little bit more. It depends on the child. They may need the puppets that you use for example. They may be visual learners. A lot more repetition would be really good because I find that repetitive words tend to stick more”

**G1 Educator 3.Q1.**

"Maybe smaller groups, sitting down with smaller groups in a quiet setting and using the gestures. We find sometimes in that situation, the children will respond and that you've got their attention in a smaller group whereas some there're a lot of distractions if it's the whole class." **G1 Educator 3. Q10**

"Maybe the lesson may have been a little bit long for their age and with our flow, how we're doing, it was more structured than what they used to it, so I think it was a little bit different to what they were used to doing." **G1 Educator 5. Q1**

One educator shared her confusion about her role in the classroom. The educators were invited to participate in the lessons; this may have caused confusion about their classroom role:

"We weren't sure what we were supposed to do, whether we were supposed to be doing their behaviour guidance as well' **G1 Educator 2. Q2**

The educators' willingness to learn and speak Gathang language seems likely to build confidence to use the language in everyday speaking, ensuring language is embedded in communication within the centre:

"I certainly have learnt some words. It also did make me feel a little nervous 'cause I thought I had a word down and I thought I knew what it was, and then you'd say something else, I'd be like, 'Oh, no, I'm wrong.'" **G1 Educator 5.Q10**

Educators at times needed to attend to other matters during the lessons that affected their availability to be present. One educator refers to the disruptions in a way that suggests they valued the language learning opportunity:

"Because I'd be thinking, 'What was this again?' Because I felt that I was so busy, 'Come back here,' because what it was with people wanting to come in, and someone coming over and asking us things. I felt I didn't get to be able to sit down and absorb the language but it was for the children, not for us." **G1 Educator 2. Q7.**



## **6.4. Discussion**

This study captured the educators' comments to seek answers to the research questions. The extracts from the interviews with educators covered a range of experiences, feelings and perspectives, as well as providing ideas on useful teaching approaches, and sharing future aspirations that value and support Gathang Language inclusion in the preschool community.

### ***6.4.1. Usefulness of Gesture***

The educators identified gesture as useful to teach non-verbal children and as memory and engagement teaching aids. The children's ability to transfer language learning and use it comfortably in other contexts demonstrates that the children have retained and can conceptualise the language learnt. Several comments specifically refer to the nature of the gesture, as in:

'I liked it when we are doing the *-ga* for 'here' with your hands spread it down, that is like your ground and you're here.'; 'they almost help to describe the word that you're using.' **G1**

#### **Educator 6. Q2.**

This is consistent with the evidence reviewed previously that iconic gesture alongside speech (speech–gesture matches) reduces the load on the working memory more than speech–gesture mismatches (Goldin-Meadow 1993; see this thesis, Chapter 3).

### ***6.4.2. Nouns vs Suffix learning***

As discussed in Chapter 5, the researchers thought it was likely the children would find it easier to learn the noun sets compared to the noun+suffix sets. The educators observed that children found the noun+suffix sets more difficult. This aligns with the results from

Experiment 2. Although this was the case, the educators thought gesture was a helpful strategy to teach the suffixes.

### **6.4.3. Building Blocks**

The educators recognized the benefits of gesture as a teaching tool alongside other teaching methods for future Gathang language learning programs. The educators' comments demonstrated a commitment to build the capacity of the preschool community to introduce and expand Gathang language learning.

The building block elements identified from the educators' comments map a way forward to embed Gathang language within the Community Preschool Centre's learning programs starting with a bottom-up approach. (see Figure 6.2):

*Building block 1:* Partnerships and positive relationships between Aboriginal language community and the community preschool.

Partnerships and positive relationships between Aboriginal language community and the community preschool are the building block element that forms a solid foundation to ensure the comfort levels and willingness of the preschool community to support Gathang language being continuous and sustainable within the preschool. This element is developed over time through a communitive process of *ngarrangga*, sharing and identifying what needs to happen to move forward - *wakulda* 'as one'. This means a co-design approach in the development of resources and actions.

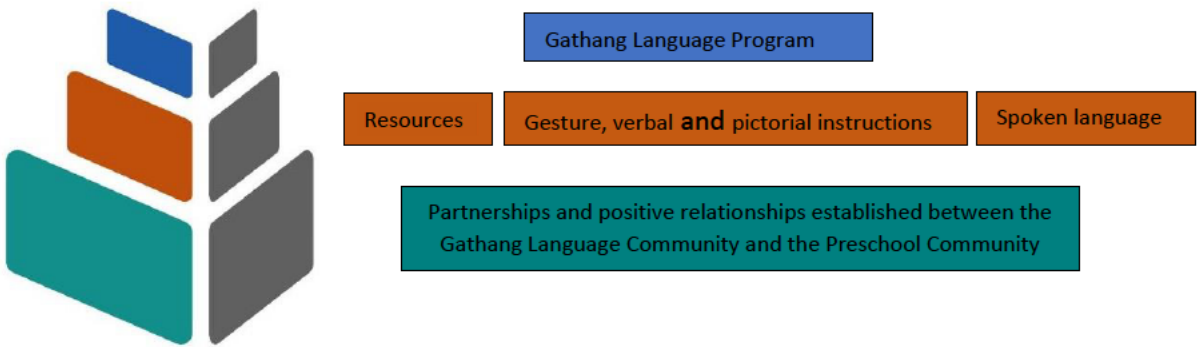
*Building block 2:* Resources: Gesture, verbal and pictorial instructions: Spoken language

The three elements positioned side by side in the middle of Figure 6.2 provide tools for the continuation of Gathang language learning. The resources can include human, material and processes as means to support Gathang language being taught and learnt in the preschool community. Gesture, verbal and pictorial instructions are useful tools in Gathang language

learning identified by the educators. It is important for Gathang language to be spoken in the centre to show to the preschool community that the language is being used.

*Building block 3: Gathang Language Program*

The educators mentioned numerous times the need to embed a Gathang language program within the Centre. This building block element is place on the top as it is achievable through the development and implementation of the other elements. The establishment of partnerships and positive relationships between the Aboriginal language community and the preschool community will support the development and implementation of culturally appropriate resources will lead to a sustainable robust Gathang language program.



**Figure 6.2 Building blocks**

**6.4.4. Ripple Effect**

The undertaking of the research at the community preschool has influenced change that has extended beyond the classrooms into the children’s homes and community spaces. These ripples are generated from thoughts, what is seen, and from actions, as a consequence of learning the Gathang Language as expressed by educators (see 6.3.4) summarised here in Figure 6.3. The educators’ comments demonstrate how learning the Gathang Language has had a positive influence on the preschool community, all actions support the revitalisation of the Gathang Language.



**Figure 6.3 Ripple Effect flow chart**

#### ***6.4.5. Experiment vs Classroom Learning***

Although the theme Experiment vs Classroom teaching did not directly relate to the research questions, the educators' responses provided valuable insights into their challenges and needs. Additionally, the educators offered helpful lesson delivery hints that included, repetition, small group work, and shorter lessons to engage preschool aged children. These are worthy of consideration in further research of this nature, as well as in a teaching practice.

The important point to make here though is that this theme is about the educators' views towards the research process. The experimental approach requires strategies that do not necessarily align with pedagogical practices chosen by experienced educators.

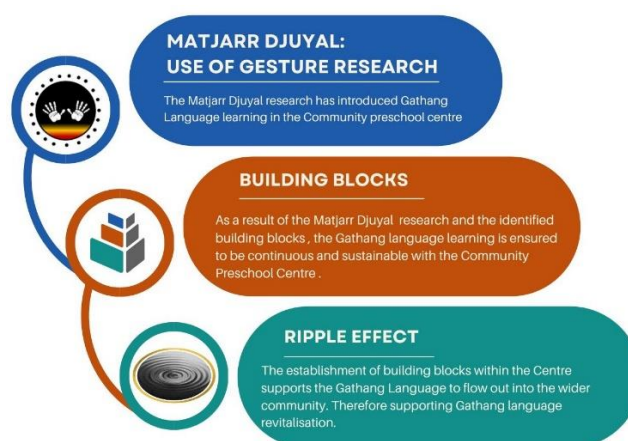
#### ***6.4.6. Connecting Themes***

Conceptually, we can consider that Matjarr Djuyal, Building blocks and Ripple Effect themes link together in a sequential format to inform ways of understanding how language

revitalisation is possible. Figure 6.4 below is a visual representation of the connections between each of the themes. The introduction of the research Matjarr Djuyal: Use of gesture into the community preschool centre was the catalyst for the identification of ‘building blocks’ elements:

- Partnerships and positive relationships established between the Aboriginal language community and the preschool community
- Resources; gesture, verbal and pictorial instructions; and spoken language
- Gathang language program

Embedding a Gathang language program into the community preschool curriculum will create a movement of Gathang language flowing out into the wider community. Through the sharing of Gathang language by the children, parents and staff, more people will have exposure to Gathang language. Therefore, community members will have an understanding of the fact there was/is another language other than English spoken on Birrbay land and be inclined to support Gathang Language revitalisation.



**Figure 6.4 Flow chart Linking themes**

The building block elements increase understandings of what is required to support language revitalisation. The team approach is not new in language work (Lowe and Howard, 2010), however the concept of the community preschool centre working in partnerships or in a team with the local Aboriginal language community and other collaborators to advance plans for resource development and the implementation of cultural appropriate and sustainable language programs is somewhat new. The educators enforce the notion in the literature that a team approach (Purdie et al. 2008) and language resources include learning material, engaging activities and Aboriginal teachings is needed to aid language revitalisation work (Simpson, 2016; Ash et al. 2010). The educators propose gesture as a useful tool to teach the Gathang language validating the value of gesture as a method to teach the Gathang language.

## **6.5. Coda: Reflections on the study, its context and legacy**

Overall, the study found that the educators had positive views of the usefulness of gesture to teach the Gathang language and indicated a desire to continue Gathang language learning within the Community Preschool Centre. Within the research context of participatory involvement, however, additional considerations could apply to the engagement of the educators in the classroom studies. Furthermore, information gained from educators' interviews can benefit future studies in this field.

### ***6.5.1. Continuation of Gathang language learning***

At this point, post-research, there are indicators throughout the Community Preschool Centre that the community preschool staff, educators, parents and children have embraced Gathang language and Birrbay culture. For example, there is an Acknowledgement of Country plaque at the entrance; *wiyabu* 'hi' and *gapu* 'goodbye' are often heard entering and exiting the centre; there is Aboriginal art hanging on the walls; there is a community preschool t-shirt with an Aboriginal design incorporating language *ngarragi gindal* 'learn to play'; and

there is also the engagement of a Gathang Language educator to implement theme based Gathang language programs to teach the children language.

### ***6.5.2. Educators' considerations***

Although the children were the focus for the language lessons, the educators also chose to participate in the language learning experiences. At times during the lessons, I witnessed the educators working very hard to produce the language sounds, recall the language words, and follow the lesson structure, as well as manage the children's behaviours. The educators' comments alluded to the fact that there was some uncertainty about their role in the classroom, for example 'we weren't sure what we were supposed to do'. Further consultation with the educators before the classroom study would have been beneficial to clarify their role and discuss the challenges and constraints that may exist within the study. At the same time, it might have been helpful to obtain more practical advice from them to work with preschool children within this research context.

In the classroom delivery of language lessons, the researcher observed that some of the children needed further instructions to help them understand and participate more fully in the activities to develop their receptive and expression skills in Gathang. Unfortunately, the restrictions within these experimental studies (nouns set and noun+suffix sets) did not allow the flexibility within the lessons to meet every child's learning needs. The experiments put the educators in the unusual position of participants rather their usual role in which the educators would have been more responsive to individuals to ensure they acquired the language. There would have been benefits in conducting an information session with the educators prior to conducting the experiments, in which the aims of the research, the researcher/teacher role, the structure of the lessons and the Gathang language sounds and words could have been discussed. This would have enabled the educators to more actively contribute to the students' learning. However, it would also have brought methodological risks for the study, making it

more difficult to assess the actual effectiveness of gestures for the children's learning, using a classical experimental approach.

### ***6.5.3. Benefits for future studies***

The insights provided by the educators could benefit future studies in this field. The educators' interview extracts provided information identifying the usefulness of gesture to teach non-verbal children and as memory and engagement teaching aids. Gesture was observed to contribute to memory retention. Several educators commented on iconic gesture being effective in speech-gesture teaching. Educators considered that gesture was a beneficial strategy to teach both bare nouns and suffixed nouns.

## **6.6. Summary**

In this chapter, the results of interview analyses were presented, which gave insights into educators' perceptions of the role of gesture in Gathang Language learning in their preschool and the benefit of a team approach and resourcing to support Language revitalisation. This has been the final empirical chapter of this thesis. In Chapter 7, I will discuss the research findings across the experimental (quantitative) and interview-based (qualitative) studies, and consider the implications they present for research and practice in language revitalisation for Gathang and similar contexts.



## **Chapter 7 : Discussion**

### **7.1. Overview of the research**

The focus of this thesis is to explore the use of gesture as a strategy to teach the revitalised Gathang language to young preschool learners. As an Aboriginal researcher, I bring my own lived experience to the research and it is essential for me to weave this story and Aboriginal ways into the research discourse. This relates to what was positioned by Bishop (2022) as one way of instilling my cultural standpoint in the research space and writings and valuing stories shared by others in collaborative processes. It is hoped that this will be of particular benefit to Aboriginal people who are currently or will in future undertake research into the place of hand talk in Aboriginal language revitalisation.

The research involved two quantitative experimental studies targeting two important aspects of language learning. The first study targeted vocabulary (nouns) and the second study targeted grammar (noun suffixes). A third study involved a qualitative analysis of educators' observations and reflections on gesture use during the Gathang sessions as well as outside these sessions. The vocabulary chosen for Study 1 comprised Gathang nouns for some everyday people or things likely to be conceptually familiar to preschool-aged children (e.g., girl, bird). An iconic gesture was identified or created to represent each noun. The gestures were incorporated in a structured, consistent way within the Gathang teaching sessions at the preschool. This involved a counter-balanced experimental study across two same-aged (classroom) cohorts of preschool learners with the use/absence of gesture in the teaching and learning as the independent variable. The dependent variable were the children's scores at individual testing of receptive and expressive knowledge of the nouns, at Post-test 1 (two

days after teaching) and at Post-test 2 (five days after teaching). It was hypothesised that children would learn the Gathang nouns they had been taught with gesture more accurately and quickly than those they had been taught without gesture. Study 2 involved a similar methodological design but targeted a set of six grammatical suffixes that when added to nouns from Study 1 express relationships between the noun and another object. It was hypothesised that children would learn the Gathang suffixes that they had been taught with gesture more accurately and quickly than those they had been taught without gesture. Of the six Gathang suffixes taught, three represent spatial relationships ('towards', 'at' and 'away from') and three represent more abstract relations ('belongs to', 'with' and 'like'). It was generally straightforward to select iconic gestures for the three of these spatial relations, but more difficult for the more abstract set. It was posited from the outset of the research that iconic gesture was likely to be effective in reinforcing the meaning of familiar concrete nouns but the suffixes were likely to present a greater challenge for learners of this age, particularly the more abstract relational suffixes. This appeared to be reflected in the empirical results from the two experiments.

The final empirical chapter was a qualitative study of educators' views about the use of gesture in teaching Gathang nouns and suffixes to the preschool learners. The educators assisted during the Gathang teaching sessions in classroom management and to support the children's needs. The educators had also been invited to participate actively in the sessions as a way of supporting the children and modelling the importance of the Gathang lessons. They were also the children's regular educators, with knowledge of the children's individual needs, and were able to report on what happened in the preschool between and after the Gathang sessions. Semi-structured interviews were conducted with eight educators to gain rich insights into the use of gesture within and outside the language lessons gesture that could not be obtained through experimental methods.

In the following sections of this chapter I will first present a summary of the findings for each of the three studies: Study 1: How using gesture in teaching Gathang helps preschoolers learn nouns; Study 2: How using gesture in teaching Gathang helps preschoolers learn nouns+suffixes; Study 3: Educators' Interviews. I will then discuss what these results can tell us about the role and place of gesture to support language learning within Indigenous language classes, the preschool as a whole and the home and wider community contexts. I will relate these results to the existing research literature (reviewed previously in Chapter 2). I will then discuss implications and recommendations for pedagogy, practice and policy to support and strengthen revitalisation programs in early childhood and other educational settings. Finally, I will discuss strengths and limitations of this thesis, and offer future directions for research in this area.

## **7.2. Studies 1-3: Key findings in relation to prior research literature**

Study 1 used a classroom-based experimental design to investigate the usefulness of iconic gesture to support pre-schoolers learning Gathang language nouns (Chapter 4). The selection of nouns was based on each set containing semantically similar items: language names for people, creatures and tangible objects whose semantics are relatively well known to the learners. The study was designed to answer Research Question 1: Do preschool learners acquire Gathang vocabulary more accurately and more quickly when the words are taught verbally with gestures, than without? The study found that at Post-test 1, two days after the learning phase, there were no statistically significant differences in learning of words taught with a specific iconic gesture with words were taught without the aid of the associated gestures. However, the results of Post-test 2, conducted seven days after the learning phase, showed a statistically significant effect for receptive knowledge (listening skills). Children had higher scores for nouns taught using gesture than without. Testing of expressive

knowledge (speaking skills) in Post-test 2 revealed mean performance differences that, although not statistically significant, suggested a benefit of gesture for learning as assessed through expressive knowledge.

There are two key findings from Experiment 1. First, there was empirical evidence, obtained under experimental conditions, to show that gesture can be an effective teaching tool to improve acquisition of nouns for a revitalised language. The finding that gesture had strong impacts on receptive knowledge may be a reflection of the fact that receptive skills typically precede expressive skills in language learning. The second major finding was that time appears to be a relevant factor contributing to acquisition as statistically significant positive outcomes were only recorded in the Post-test 2 i.e. seven days after learning. This finding is in line with the literature on memory research which suggests memories consolidate slowly over time and knowledge language can improve without revisiting the language learnt (Stafford & Haasnoot, 2017). By definition, learning is a longitudinal phenomenon (Leppink, 2020), meaning that acquiring knowledge (i.e., learning) occurs over time. Literature on schema theory (Bruning et al., 2011) and automation of schemas (i.e., automation of knowledge in long term memory) suggests that learners may be able to acquire knowledge, such as vocabulary, but not be able to clearly demonstrate their learning until some automation of that knowledge has occurred. In other words, the preschoolers learnt nouns at the immediate time that received the gesture, however, the positive effects of the gesture on helping the preschoolers encode and retain that knowledge were only demonstrated after sufficient time had passed in order for that knowledge to be automated to some degree. The inclusion of a delayed testing (i.e., at Post-test 2, seven days after the learning phase) was a critical design feature of the experiments used in the study. Indeed, given the nature of learning described above, there are grounds to suggest that delayed testing should be more widely incorporated into studies of language teaching and language acquisition. From a

practical perspective, language teachers who decide to employ gesture as a teaching tool, may need to be mindful that the benefits of gesture on language may not be immediately evident and may be more discernible only after a period of time has elapsed.

It is important to note that empirical studies on the use of gesture as language teaching tool for preschool age learners are extremely rare. I have found that the research have largely targeted older cohorts of learners in the use of gesture in second language learning. It appears that this is the only study to date that has conducted research on the impact of gesture on learning a revitalised Aboriginal language in Australia. Indeed, it is likely to be one of few studies that has explored the impact of gesture on the learning of any Indigenous languages worldwide, for any preschool age learners.

Study 2 used a classroom-based experiment to investigate the usefulness of iconic gesture to support preschoolers' acquisition of suffixes carrying grammatical information (Chapter 5). Six suffixes were used in the study, three spatial suffixes (locative, ablative and allative) and three relational suffixes (comitative, possessive and semblative). Suffixes in Gathang are not used in isolation, they always attach to a noun or verb. Nouns from Study 1 already familiar to the children were used in Study 2 to create noun+suffix combinations with the six suffixes. As the children already knew the Gathang word for the nouns, the new learning related to the suffixes. The study was designed to answer Research Question 2: Do preschool learners acquire Gathang nouns+suffixes more accurately and more quickly when they are taught verbally with gestures, than without gestures?

The results of this study did not obtain statistically significant evidence that the use of gesture benefitted the receptive or expressive knowledge of suffixes in the Gathang language, at either Post-test 1 (receptive acquisition) or Post-test 2 (retention). However, the results for Study 2 showed a slight numerical increase in scores for suffixes learned with gesture from

Post-test 1 to Post-test 2. This may suggest that, as in Study 1, the first place that gesture will show a benefit is in consolidation of learning over time.

The possible reasons why there was no statistically significant effect of gestures in learning suffixes are worth discussion. It is worth noting that even in the receptive condition learners had relatively low scores in Study 2. It was expected that learning suffixes would be intrinsically more difficult for learners than just learning nouns. Firstly, the grammatical relations expressed by the suffixes are more complex than those between a noun and its referent. Secondly, even though the learners were already familiar with the nouns, the noun+suffix combinations require more elements to be held in working memory and processed. For this reason, learners were given revision on the nouns before being introduced to the noun+suffix combinations. The fact that despite this revision, learners achieved relatively low scores in testing in Experiment 2 suggests that it was not the loss of knowledge about the nouns but the conceptual complexity of the suffixes and cognitive load of the noun+suffix combinations that was at play. It may have been necessary to go about the teaching in a different way, for example allocating more time and practice, in order to see if the use of gesture may yield a discernible learning benefit in this context.

It is also important to point out that due to circumstances beyond my control in Study 2, more of the 35 children recruited to the study (the same children as for Study 1) were absent from classes than usual due to flu and other extenuating circumstances, lowering the statistical power of the study. The class absences would have impacted the children's learning, and it also meant that the number of preschoolers for whom there were finally both pre- and post-test results was only 16, resulting in lower power to detect statistically significant differences between the gesture and non-gesture conditions. Despite the lack of statistical significance in Study 2, gesture remains an important Aboriginal way of learning and provides a visual focus for children during instruction and can enhance the learner's experience and enjoyment.

Gesture remains, as Gullberg (2014) highlighted, an important, interconnected system in second language learning. It is therefore likely that gesture can play a role in supporting the learning of morphology (suffixes), and this is an area for future research given the importance of suffixes to being able to express a range of meanings in an Aboriginal (Pama-Nyungan) language like Gathang.

Study 3 reported a thematic analysis of educators' individual views about the gesture use they had observed in class and out of class, as well as their perspective on the impact of gestures in their preschool as a whole. From the analysis of interviews, five themes were identified: Usefulness of Gesture, Nouns vs Suffix learning, Building Blocks, Ripple Effect, and Experiment vs Classroom Learning. Within these themes the educators presented an array of experiences, feelings and perspectives, providing ideas on useful teaching strategies, and sharing future aspirations that value and support Gathang language inclusion in the preschool community. The responses provided answers to Research Question 3: What are the views of local preschool educators about using gesture to help teach Gathang? To what extent do they think it is useful or appropriate, and why or why not? and Research Question 4: How has learning the Gathang language influenced the Community Preschool environment?

The study found that the educators generally had positive views of the use of gesture to teach the Gathang language. Some educators identified iconic gesture as a useful strategy to teach non-verbal children and as memory and engagement teaching aids. The educators' observations correlated with the results of Study 2 that children found the noun+suffix sets were more difficult than noun set to learn. The data contributed to a clearer understanding of the suitability of gesture as a strategy to learn a second language (Sinha, 2021), particularly in the early years.

In addition, the data provide insights into how learning the Gathang language has influenced the Community Preschool environment. The educators noticed the enthusiastic

adoption of the gestures by the children and how their use drew some children 'out of their shell' and gave them confidence. The educators responded positively to these educational and socioemotional benefits, particularly as they knew about the strengths and needs of individual children. The educators also reported that the children used the gestures outside class, for example, in the playground with each other and when 'talking' to the chickens in the preschool garden. The educators told of the ripple effects that have occurred in the Community Preschool community during and since the study: Gathang language words were taken home from the preschool centre by a child to recall to his family; the increase of Gathang language use within the preschool centre, for example T-shirts with Aboriginal artwork and language words *ngarragi gindal* 'learn to play'; there is an Acknowledgement of Country plaque in the Gathang language at the entrance; verbal Gathang language *wiyabu* 'hi' and *gapu* 'goodbye' are often heard entering and exiting the centre; the preschool's willingness to adopt Aboriginal language and culture practices and implement Aboriginal language pedagogy into the centre's curriculum. These views, insights and observations reveal the value of incorporating a qualitative study that could capture richer data and perspectives beyond the experimental data.

A qualitative angle is rarely taken in combination with experimental work and this is a strength of this study. The study found that the children learning the Gathang language within the preschool influenced the wider community preschool environment in a number of ways. The gestures gave the educators who had participated in the Gathang sessions a tool with which to connect with the children around Gathang and to continue the children's engagement with and consolidation of language learning outside the Gathang sessions. Without knowing much Gathang the teachers were confident to use the gestures, and probably felt that they could not 'get this wrong'. This matters because I have often observed that non-Indigenous



teachers sometimes hold back from joining in with Language out of fear of doing or saying something that is linguistically incorrect or culturally inappropriate.

Gesture research elicited 'buy-in' from the educators, and I argue that this is very important to language revitalisation. It relates to the literature in language revitalisation that has pointed out how important teams are. As argued by Lowe and Howard (2010), effective partnerships emerge through respectful interactions, meaningful relationships, the building of trust and working together towards a common goal (p. 215). This teamwork can be seen as collaboration, which Hobson et al. (2010) highlighted leads to effective and sustainable school-based language teaching and learning programs that contribute to language revitalisation. Usually, teams are discussed in terms of specific disciplinary roles or perspective, such as those of teacher, linguist, teacher-linguist, technology specialist, and speaker and/or speaker-learner (noting that sometimes one individual can have multiple roles of course, e.g., as a speaker and a linguist). Study 3 suggests is that gestures offer a way to build an even broader team beyond the 'inner team'. The broader team can usefully include the mainstream educators, the school leadership, the parents and citizens group, the parents, and so on, in an approach we could dub 'it-takes-a-community'. The Port Macquarie Community Preschool Centre has benefitted from the *Matjarr Djuyal* research project in the way of establishing links between the Centre and the local Aboriginal language community. This is the first step in building a robust sustainable team with team members working towards a common goal, language revitalisation.

In Study 3 educators advocated for the use of gesture in teaching the Gathang language. While teaching an Aboriginal language with gesture is a relatedly new phenomenon at the community preschool centre. Aboriginal communities have continually used hand talk as a communicative tool to teach with and without the spoken word. This relates to the literature calling out for effective teaching pedagogy for Aboriginal languages as resources

are an essential requirement to support Aboriginal language revitalisation (Couzens et al., 2020). The literature also identifies that hand talk can link the learners not to the English translation but more directly to the Aboriginal culture of the language (Yunkaporta, 2010).

Overall, the study found that the educators had positive views of the usefulness of gesture to teach the Gathang language and indicated a desire to continue Gathang language learning within the Community Preschool Centre. The educators identified teamwork and development of resources, like the visual resource that were posted up around the preschool and gesture learning as support mechanisms for the continuation of Gathang language learning within the centre. The educators acknowledged these efforts would contribute to Gathang language revitalisation. Furthermore, information gained from the educators' interviews can benefit future studies in this field.

### **7.3. Implications**

There are several implications for theory and practice that flow from the findings of the research presented in this thesis. I present research findings that expand on theoretical viewpoints and existing practice within the second language teaching and learning domains.

#### ***7.3.1. Implications for theory***

The research findings add to the growing body of theory (e.g., embodied cognition) of the importance of taking account the interplay between mind and body (i.e., embodied cognition) when examining pedagogical practices that benefit student learning. This is important as many traditional theories of instruction and child development tend to be mentalistic, in which the body is overlooked or the mind and body are treated separately (see Macedonia, 2019). In addition, the research findings align with theories that consider gesture as a biologically primary knowledge source that supports learning a secondary knowledge discipline (i.e. a new or 'second' language learned in a formal context). These findings should

encourage language practitioners to incorporate gesture in teaching practices to aid language learning. This research demonstrated empirically that gesture can be effective in helping pre-school aged learners acquire important language building blocks (i.e., nouns). In terms of theories of language learning and teaching, especially second language learning, the potential benefits of incorporating body elements have long been advocated (Asher, 1969). However, it is only after several decades since Asher (1969) that efforts were made to empirically verify these claims (Macedonia, 2019).

Most importantly, the research makes a significant contribution to the theory and literature on language revitalisation. The findings from this thesis show that traditional, long-standing communication practices in Aboriginal culture, specifically hand talk, can be utilized as effective teaching tools in revitalisation efforts. The findings from the research should encourage scholars and practitioners interested in language revitalisation to continue to invest effort in identifying and theorising about traditional practices that could readily be incorporated into current teaching practices to facilitate acquisition of revitalised languages. This has implications for scholarly work brought to light by Indigenous research and Indigenous researchers in their growing impact within academic or academic spaces (Radley et. al., 2020). The nature of research overall has changed in the last 40 years due to Indigenous knowledges coming through.

### ***7.3.2. Implications for practice***

Over the years there have been changes in education curriculum. Students are now learning more of Australia's history of the nation's First Peoples and there is an ongoing educational realisation that Aboriginal ways can assist in learning. Recent changes include the NSW State Government announcing the New Aboriginal Languages K-10 syllabus (2022) to be taught from 2024, the implementation of the First Steps Aboriginal Children's Early

Childhood Strategy, and Aboriginal pedagogies implemented within classroom environments from early childhood through to yarning circles in university domains.

The research highlights the need for a collaborative approach to develop language policies and language implementation in partnership with Aboriginal communities.

Importantly Aboriginal language communities advocate for self-determination, ways to control and lead language revitalisation effort locally. Ultimately, the local Aboriginal language community drives language revitalisation and non-Indigenous agencies, such as schools, support their efforts. Opportunities have been taken up for government and non-government agencies to collaborate with local Aboriginal Language Communities on projects to build the capacity of Aboriginal language educators, to design and develop language-learning resources and to fund language projects. There are examples of this: the annual Women's Festival, Nyiirun Djiyagan Wakulda 'We All Sister Together as One' that brings the Gathang language alive through song, dance and language workshops facilitated by Aboriginal language educators, the event is a collaboration of multiple government and non-government agencies working with the Djiyagan Dhanbaan group, an Aboriginal women's group promoting the revival of cultural through language and practices; The NSW Aboriginal Languages Trust (ALT) recently funded the Ngarrgan Mirriyn Barayagan project, three nursery rhyme songs with gesture resources produced in partnership with the Port Macquarie Community Preschool Centre and Aboriginal and non-Aboriginal educators.

These team approaches to language revitalisation efforts constitutes best practices and might be a model for other language communities.

This study has practical implications overall as more Aboriginal ways of knowing, being and doing are being incorporated into classrooms and education more generally. Aboriginal ways of knowing, being and doing are changing curriculum, teaching practices and how research is undertaken in Aboriginal communities in Australia. Aboriginal

knowledges are something that was not seen in classrooms or any other education setting just a generation ago. It represents a change from historical experiences of being denied language and education our way, and to some degree denied our existence in the classroom environment. In the past generation – my mother’s time - what was learnt in schools was different, it was Captain Cook and 'discovery', and now schools talk about acknowledgement, recognition, the Stolen Generation, diversity and inclusion. It is an overall paradigm shift. Connectedness can exist between Western methodological approaches and Aboriginal knowledge grounded in purpose and practice. The literature refers to the cultural interface and centres *Ngarrangga* “must listen’ as an agency to cultivate respect for Aboriginal ways inside of Western methodology frameworks (Nakata, 2017). *Ngarrangga* can teach us to see what needs to change to move forward as one and progress language revitalisation efforts that place Aboriginal voices at the forefront of language practices, and the development and implementation of Aboriginal pedagogies that include hand talk.

The findings from the research should encourage teachers to more readily utilise pedagogical strategies that integrate mind-body interactions in their teaching. The bulk of teaching in the Western world has traditionally focused on reading and listening (Macedonia, 2019). Teachers should be more cognisant of the fact that children’s natural inclinations to gesture can be nurtured in ways that facilitate language learning, and likely learning of content from other subject disciplines. Furthermore, gesture has been shown, in Study 3, to be an effective tool to focus and engage the children. This aligns with previous research highlighting gesture as a tool to draw visual attention to instructional material (Korbach et al., 2020).

Human and material resources are needed to advance language revitalisation efforts to meet the current and future demand for learning and teaching of Aboriginal Language programs within schools and in the community (Simpson, 2016; Ash et al. 2010). To meet the

need for human resources, increasing the number of language educators is required, this can happen through appropriate language training courses that gives the necessary language knowledge and skills to individuals to confidently deliver language programs. Alongside language educators, practical resources are needed such as dictionaries, apps, learner's guides, lesson materials and language and cultural immersion programs.to support language learning inside and outside the classroom; On-going resource development is a essential to meet learning needs of language learner from early childhood to adulthood and to take advantage of innovations in new technologies.

Study 3 identified visual aids and gesture learning as effective resource to learn the Language. To engage teachers/educators to use gesture in language teaching, a training course for educators outlining the benefits of gesture and practices of gesture use in language acquisition would be a way forward to embed gesture into language learning and teaching practices. There are specific protocols in some Aboriginal language communities that state Aboriginal language is only taught by Aboriginal educators. Within the Language revitalisation movement, however, there are opportunities for non-Aboriginal teachers to support Aboriginal language teaching or to become a language team member to assist in the development and implementation of effective pedagogical strategies to aid Aboriginal language revitalisation efforts.

The findings from this study are based on data from 2019, and so the question can be asked to what extent the findings apply to children who have been born since, during the Covid-19 pandemic (2020-22). There is international research suggesting that the social restrictions that accompanied lockdowns around the world have negatively affected young children's development including their social and language development (Byrne et. al., 2022: Davies, 2021: Deoni, 2022). In light of this, it is actually possible that for the cohort of

children whose development has been affected by Covid-19, gesture may be an even more valuable adjunct to verbal instruction, than for children pre-Covid.

#### **7.4. Strengths of the study**

The research has found empirical evidence for the use of gesture to teach the Gathang language and has identified ways to contribute to language revitalisation efforts. A qualitative study is rarely done in combination with experimental work and this is a strength of this study. The study found that the children learning the Gathang language within the context of the research influenced the community preschool environment in a number of ways. This is the first time an Aboriginal researcher has undertaken research in this field of study to provide empirical evidence to find out how using gestures in teaching the revitalised Gathang language helps preschoolers learn an Aboriginal language. The findings also suggest that future research in language learning might usefully employ more delayed testing to pick up more subtle traces of learning progress, alongside the immediate testing that seems more common in the literature.

#### **7.5. Limitations of the study**

The study was limited in time devoted to teaching and learning. The learning program consisted of two lessons of 35-40 minutes, with the first lesson on a Monday (language introduction), and second lesson on a Wednesday (language consolidation). Given the longitudinal nature of learning and language acquisition, future research could employ interventions in which teachers teach using gesture over longer periods of time (e.g., several weeks, or a school term) and data is collected at several time intervals to map and assess changes in learning.

The researcher was also the teacher during the Gathang classes and she also assessed the children, and interviewed the educators. The potential for this to affect the results (through unconscious bias) was minimised, however, by the lessons being carefully scripted and the interviews being emphasised as respectful opportunities for the researcher to listen and learn (see Appendices 19-33). It would not have been practical to do it any other way in the local preschool context. The involvement of the researcher in the teaching, assessment and the interviews also allowed for insights which would not have been possible if the researcher had been not involved.

The null effect in Experiment 2 with the suffixes would ordinarily have been followed up with another experiment. The follow-up experiment might have adjusted the amount of teaching and learning involved, or the approach in teaching, to give the learners more time. The follow-up experiment might have been held in the warmer months to avoid the flu season perhaps. In the end, no follow-up study could be done after Experiment 2 (which ran in 2019) because of the onset of the COVID-19 pandemic. In Australia this quickly led to our national and state borders being shut, and lockdowns being imposed such that it was not possible to attend work or childcare in many cases, or venture beyond a 5km radius from one's home. These restrictions meant that data collection for the thesis had to be cut short, and time instead devoted to analysis, writing and publication of the existing data as at the end of 2019. As a result, there are two experimental chapters and one qualitative interviews chapter forming the empirical core of this thesis.

## **7.6. Future directions**

### ***7.6.1. Learning with Country***

Through the lens of an Aboriginal language activist/teacher, Elder and researcher I bring my perspectives to the evaluation of this study, and the prospects of future research.



Positioning myself as an insider, being a Gathang language teacher and community Elder supporting decolonisation through the revival of the Gathang language and an outsider role as an observer to test the hypothesis and manage the research study. The strict controls used in the experiment allowed the research to test for clear evidence ‘cause and effect’ of the usefulness of gesture. However, because of the need to implement strict controls in the experiments, to obtain empirical results, limited the scope to extend on the Aboriginal pedagogy, the use of hand talk to include learning with Country (‘learning with’ implies a reciprocal relationship exists between Language and Country), moving through landforms, waterways, interacting with plants and animals and connecting to story. Walking on Country provides a deeper cultural immersion experience that creates a backdrop for Gathang to be spoken alongside of visual and movement representations. This context provides a richer educational approach to language learning and a means to integrate Aboriginal practices into research. Therefore, future research into the use of hand talk in teaching Aboriginal languages could employ learning with Country as a cultural inclusion in the study. There are benefits of researching the use of gesture outside of the classroom context. As our culture embodies relatedness and connectivity to the land (Randall, 2006, 374) it is an integral part of learning and cultural understanding to learn with country and be outside with the elements. It creates a richer environment for children overall to learn outside of the realm of the classroom, and more classes are being undertaken with Aboriginal ways of being embedded throughout the school domain.

### ***7.6.2. Filling Research Gaps***

Future studies could investigate other aspects of language acquisition, for example, the acquisition of written symbols in the Gathang Language. Research has shown bodily movements, specifically, finger tracing can lead to benefits for learning written textual information (Hu, Ginns, & Bobis, 2015). Additionally, language learning research might

usefully employ more delayed testing to pick up more subtle traces of learning progress, alongside the immediate testing.

This research paves the way for other Aboriginal researcher to undertake empirical studies on the usefulness of hand talk in Aboriginal language acquisition and retention or other areas of language research. It is imperative that Aboriginal researchers are undertaking language research within Aboriginal communities and in partnership with Aboriginal people. The relatedness to the culture studied gives insights beyond the Western approach paradigm that could benefit the research and individual researcher. Aboriginal people (such as myself) undertaking research grows a community of practice of Aboriginal researchers that encourages other Aboriginal people to work in the field of research or to undertake Aboriginal language research. Courses such as the Professional Certificate in Indigenous Research and Graduate Certificate in Indigenous Research and Leadership, offered by the University of Melbourne contribute to the building of small cohorts of language researchers. Within the realm of research there is a diverse range of topical language fields of research to explore.

Further research into the use of hand talk to teach an Aboriginal language may include a catalogue of Aboriginal hand talk, a generic resource for Aboriginal language groups to use as a teaching resource to teach other Aboriginal language speakers another Aboriginal language. For example, the hand talk for 'river' is a movement of the hand in a flowing motion across the front of the body. This hand talk is used as referent for a Gathang speaker to teach a Dhangati speaker the word in language for river and vice versa without having to revert back to English.

## **7.7. Recommendations**

- To develop a hand talk teaching resource for Aboriginal languages.

There has been a need for effective pedagogy for language learning and a call out for resources to support language revitalisation efforts. Hand Talk is a useful communicative tool to teach Aboriginal languages. A hand talk teaching resource focusing on iconic gesture for a targeted Aboriginal language can also be a blueprint for other Aboriginal languages. The development of the hand talk resource must be in consultation with the Aboriginal language community and other stakeholders. The hand talk resource package might include a hand talk manual, pictorial aids, props and learner's guide.

- To train Aboriginal and non-Aboriginal educators in use of iconic gesture to teach Aboriginal languages or support Aboriginal languages.

The use of iconic gesture has been reported has a useful tool to assist in the learning of a second language such as a revitalised Aboriginal language. It is important to have trained educators in the field of gesture use in the teaching of a revitalised Aboriginal language. This will broaden the understanding of the benefits of the use of gesture as a teaching modality and give educators practical skills in the application of gesture alongside speech to teach a revitalised Aboriginal language. Gesture/hand talk is a resource practice that is readily available, adaptable, culturally appropriate and free. However a hand talk teaching resource package would make available hands-on resources and guide the hand talk practice. Trained educators in the use of gesture can confidently adopt gesture use in any Aboriginal learning setting, for example when introducing new language words, songs, in storytelling.

- To include and embed hand talk as an Aboriginal language pedagogy into language revitalisation policy and practice.

Hand talk needs to be embedded in policy and practice to have traction as an Aboriginal language pedagogy. To support the implementation of such policy and practice there needs to be an invested interest to allocate funding to develop a hand talk resource

package and to provide training for educators in the use of hand talk instruction alongside Aboriginal language learning.

- To work in teams to advance language revitalisation efforts.

The value of teams in the language revitalisation work should not be underestimated. The team approach to development language resource, language educators' training and the implementation of language pedagogies and practices brings language stakeholders to the circle to formulate strategies to move forward in cohesive manner. Stakeholders can include Aboriginal language community, school representatives, linguists, funding bodies, Aboriginal organisations holding a language portfolio and interested community members. The composition of the team will be determined by the purpose and function of why the group of people are gathering. A team approach is not new in language work (Lowe & Howard, 2010), but can vary by community context. Therefore a local language team is crucial in establishing local language governance which includes language protocols and strategic planning with an emphasis on respectful and open communication pathways. What is inflexible is that the language team is led by local Aboriginal people invested in language revitalisation work. A local team model can be shared across the language revitalisation footprint to establish regional, state and national communication links and build strong, sustainable practices that enable Aboriginal languages to survival and thrive.

### **7.8. Coming 'full circle'**

#### ***Personal Reflections***

##### *Butjin Djuyal* 'Story Basket'

Reflecting on what the master weaver Trish McInherny teaches us, 'no weave can't be mended and there is always the ability to extend and reshape the *butjin*' (see Chapter 3, Ganggali Garral Djuyalgu 'Weaving Story'). Storytelling has continued throughout this

dissertation. Therefore, enhancing, expanding and strengthen the *butjin djuyal* 'the story basket'. Stories have woven the chapters together with the Aboriginal researcher's lived experience and cultural knowledge.

Continuing storytelling into *butjin*, I present personal reflections from the research journey and then I finish with a poem.

I did not realise at the time I accepted a scholarship at Western Sydney University to undertake this research that I would embark on a life changing journey. I want to share with you some of the practices, achievements and challenges I have experienced along the way. I am hoping Aboriginal emerging researchers will find them helpful:

- Above all, I placed my faith in my ancestors to guide me. I sat in 'ngarrangga' a state of deep listening, observance and respect at times when I questioned my position within the academy and lost my focus on what needed to be seen to move forward. I sat opened to the ancestors' guidance and the ancestors did not disappoint. **It definitely helps to have guidance from a source (for example Ancestors, prayer, mantra, God, Creator, Angel etc) so you can see the bigger picture and ground your knowing in the present.**
- My community obligations, family responsibilities and research requirements meant my time had to be shared between array of events, family gathering, grandchildren dates, care of mother, husband needs and meeting research timeframes as well as day to day upkeep of the household and looking after self. I approach these things with a day-by-day attitude and a well-documented diary with dates and times on things I had to do. I also *ngarrala* 'listened' to my inner self to know when things were out of balance and when I needed to instigate change. **Always change what doesn't serve you.**
- I was offered the opportunity to write an article for an Indigenous Journal as a lead author with two deadly<sup>34</sup> *djiyagan* 'sisters' Tess Ryan and Kylie Dowse (Chapter 3). This would

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<sup>34</sup> The term 'deadly' is used amongst Aboriginal people to mean 'awesome, great, really good'.

be my first published article. At the time I felt ill equipped to undertake such a task, after many conversations with the sisters I agreed the article would be an opening to tell a story about the complexity of my position as an Aboriginal Elder, language activist and emerging researcher undertaking research in my local community and the importance of Indigenise the academy. The experience working with like-minded sisters that held a space for deep conversation, *ngarrayn* ‘listening’ and growth made me realise the importance of a team, outside of family, to call on for support when needed. **Surround yourself with a supportive team of people to call on.**

- The second article I published as the lead author was in an international language journal (Chapter 4) with three of my supervisory team members. The double peer review process made me think I was under interrogation there was some push back against positioning myself in the study. Although this was daunting experience I found I had gained insights into what journals require to constitute a publishable article. Again I stepped out of my comfort zone to put myself out there to *ngarra* ‘listen’ and learn something new. I did not think in my wildest dreams I would be a published academic author before the completion of my thesis. **I encourage emerging researchers to think big.**

The stories I have shared here draws on cyclic cultural practices of sharing learning in order to teach. Although sharing stories to foster learning is important, listening is just as important. *Nyiirun Ngarrangga*, We must all listen (Chapter 3: Ngarrangga) *Ngarrangga* has taught me to listen beyond the ears, observe deeply and consider how I put in practice what I have learnt. *Ngarrangga* has shaped the way I have interacted respectfully with my research supervisory panel, the Community Preschool Centre staff, the educators, parents and preschoolers, and others that have contributed to the research. Respect within this research context implies an action of good intentions and the ability to *ngarrangga* ‘listen deeply’ to move forward together, *wakulda* ‘as one’. *Ngarrangga* has been invaluable cultural practice

in my research approaches, methods and journey. *Ngarra* is a powerful expression in the Gathang language, it can mean one of these English words ‘listen’ ‘think’ ‘learn’ ‘know’ ‘remember’. **Ngarra! Ngarra! Ngarra! Make it a daily practice.**

To finish the *butjin djuyal* and to come full circle I gift you a poem. A poem that speaks for itself.

In a state of *ngarrangga*, I sat back in my seat. When I heard this poem I felt the words within my heart and my stomach, grief bubbled up from the depth of my soul. I cried for my ancestors’ stories, their language and songs. The ancestral wounds opened up with each tear and in that moment I knew **I will speak now.**

Below is a poem shared by Rob Waters, presenter at the Aboriginal Languages Trust Languages Gathering, Terrigal, 2022. Rob is a poet, storyteller, cultural educator and a spoken word artist. His works have been described as powerful, moving and unsettling and are deeply rooted in culture, education and activism (Aboriginal Languages Trust Languages Gathering, Terrigal, 2022, Conference Program).

### **I Will Speak Now**

Dhubaanma-li Walaaybaa Yilaalu

I will speak now, I will speak now, and you, well you will listen.

I will speak my stories, older than time itself in the voices of my grandmothers and  
grandfathers

Yet I will speak in your words

And I will speak in your language

Are you listening?

You see the blood of my Mother and all those mothers before her still runs strong inside of  
me

And the tears that fell from my fathers' eyes and all those fathers before him still fall from my  
eyes

For I am a poem, and I am a story

I am my grandmothers, raising their children in a country that didn't even see them as human

I am my grandfathers' calloused hands and bent backs, working for men that couldn't even  
see them as human.

I am my uncles voices raised

I am my aunties fists raised

I am the story that seeps up through the soul of my feet, bursting out through the tongue and  
they swim on the rays of the sun I am raised.

I am story still yet to be told

From the tongues of my children and all those to follow, from the first sunrise to the first  
sunrise again I am raised.

For you see I am Gomeri,

I am Bundjalung

I am Gumbaynggirr

And I am Anaiwan

I am 600 nations strong and from this time on I will define me and I will tell my story.

Just as you have told yours; over and over I have heard it.

I have heard it from school teachers and university lecturers, from policemen and television  
sets

I have heard it from newspapers and history books or His Story books

But I will speak now, I will speak now; and you, well you will listen.



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## Glossary

The following are Gathang Language words and phrases used throughout the thesis.

<i>Baan</i>	Aunty
<i>bila yii maraliyn</i>	the tiver is flowing
<i>barray</i>	land, property, Country
<i>barrayga ginyaangga</i>	on happy land
<i>bubaliyn</i>	sleeping (sleep-CONT-Pres)
<i>butjin</i>	basket, bag or carry vessel
<i>butjin djuyal</i>	story basket
<i>djinangga yuungga</i>	Insider-Outsider
<i>djiyagan</i>	sister/s
<i>djiyagan dyuyaliyn djuyal</i>	sisters telling stories
<i>djuyaliyn</i>	talking
<i>ganggali garral djuyalgu</i>	weaving stories
<i>matjarr djuyal</i>	hand talk
<i>marrungbu</i>	thank you
<i>marrungbu djukal</i>	big thank you
<i>minya yii</i>	what is this
<i>mitji djiyagan</i>	little sister



<i>djinangga yuungga</i>	Insider-Outsider
<i>yukulduwa ganggali garral</i>	weaving through the heart
<i>ngaluwi</i>	wave (tidal)
<i>ngarralbaa</i>	learning place
<i>ngarrangga</i>	must listen
<i>ngarrayn</i>	learning
<i>nyirun ngarrangga</i>	we all must listen
<i>wakulda</i>	as one
<i>wakulda yabang mayan.gu</i>	a way forward as one
<i>wati</i>	tree, stick
<i>wati bunggil</i>	clapping sticks
<i>wiyagi Gathang</i>	a call to Language
<i>wubal matjarru djinanggabirang</i>	weaving from the inside
<i>wubul matjurru yuunggabirang</i>	weaving from the outside
<i>wuruma</i>	the wind

## Appendix 1

### Participant Information Sheet – Parent/Carer

**Project Title:** Matjarr Djuyal: Learning Gathang with gestures

**Project Summary:** Your child is invited to participate in a research study being conducted by a team from Western Sydney University Anjilkurri Rhonda Radley, Caroline Jones and Jose Hanham. The research is to explore the usefulness of gesture as teaching tool to learn the Gathang Language.

**How is the study being paid for?** From Australian Research Council funds (ARC Centre of Excellence for the Dynamics of Language).

**What will my child be asked to do?** Your child will participate in fun language learning activities and in a whole class group and short individual activities (assessments in the form of a game). No emphasis will be placed on success or failure. All sessions will be video recorded so we can later check on how we did the teaching and how the class was responding. If you do not want your child to participate, or if they decide not to join in on the day, they will have the opportunity to participate in another structured educational activity offered by the centre. to assist in the gathering of information for the study.

**How much of my child's time will he/she need to give?** The study will be conducted during his/her normal time at the centre. The activities will take approximately 3 hours spread over several days.

**What benefits will my child, and/or the broader community, receive for participating?** The study findings will increase understanding of how gesture can help children learn a second language, and will inform the design and development of teaching methods and resources for the revitalized Gathang language. The benefits will include the building of language capacity in the community. We expect that your child will benefit from cognitive stimulation and from the fun of learning new things.

**Will the study involve any risk or discomfort for my child? If so, what will be done to fix it?** The study will be conducted at the Community Pre-school premises, with normal procedures and materials. We do not expect any physical risk and the activities are designed to be fun and successful for all; if your child does appear distressed a teacher will support them and contact you.

**How do you intend to publish or disseminate the results?** The results will be published and/or presented in a variety of forums (e.g. conferences, books) but information will be provided in such a way that participants cannot be identified, except with your permission. (The video recording for data collection will only be sighted by the research team and focus group).

**Will the data and information that my child provides be disposed of?** Only the researchers, Community Pre-school staff and family members will have access to the raw data. However, their data may be used in other related projects for an extended period of time, e.g. other language and education projects, in anonymous form i.e. with location and children's names kept private.

**Can I withdraw my child from the study?** Your child's participation in the study is entirely voluntary and they are not obliged to be involved. Your child can withdraw at any time, or you can withdraw them, without giving a reason. If your child does withdraw, any information that has been supplied will be deleted. Withdrawing will not affect your relationship with the centre or with Western Sydney University.

**What if I need further information?** Please contact Rhonda Radley 0431324309 or Caroline on 0402 499 899 or (02) 9772 6303 if you wish to discuss the research more before deciding whether or not to participate.

**What if I have a complaint?** If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through Research Engagement, Development and Innovation (REDI) on Tel +61 2 4736 0229 or email [humanethics@westernsydney.edu.au](mailto:humanethics@westernsydney.edu.au). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the

outcome. If you agree for your child to participate in this study, you may be asked to sign the Consent Form. The information sheet is for you to keep and the consent form is retained by the researcher/s.

This study has been approved by the Western Sydney University Human Research Ethics Committee. The Approval number is **H13060**

## Appendix 2

### Participant Information Sheet – Focus Group

**Project Title:** Matjarr Djuyal: Learning: Gathang with gestures

**Project Summary:** You are invited to participate in a research study as a focus group member being conducted by a team from Western Sydney University Anjilkurri Rhonda Radley, Caroline Jones and Jose Hanham. The research is to explore the usefulness of gesture as teaching tool to learn the Gathang Language.

**How is the study being paid for?** From Australian Research Council funds (ARC Centre of Excellence for the Dynamics of Language).

**What will you be asked to do?** To participate as a member of the project focus group you will fill out a questionnaire and give feedback on visual and audio recordings of the children's language learning activities, in a whole class group and short individual activities (assessments in the form of a game).

**How much time will I need to give?** The study will be conducted during his/her normal time at the centre. The focus group meeting will take approximately 4 hours spread over several days.

**What benefits will the centre, and/or the broader community, receive for participating?** The study findings will increase understanding of how gesture can help children learn a second language, and will inform the design and development of teaching methods and resources for the revitalized Gathang language. The benefits will include the building of language capacity in the community. We expect that the children will benefit from cognitive stimulation and from the fun of learning new things.

**Will the study involve any risk or discomfort? If so, what will be done to fix it?** No risk or discomfort perceived by being involved with the study.

**How do you intend to publish or disseminate the results?** The results will be published and/or presented in a variety of forums (e.g. conferences, books) but information will be provided in such a way that participants cannot be identified, except with your permission. We will ask you your privacy preferences, e.g. use your quotes, or name you.

**How will the data and information that I provide be disposed of?** Only the researchers, Community Pre-school staff and family members will have access to the raw data. However, their data may be used in other related projects for an extended period of time, e.g. other language and education projects, in anonymous form i.e. with location and children's names kept private.

**Can I withdraw from the study?** Your participation in the study is entirely voluntary and you are not obliged to be involved. You can withdraw at any time, without giving a reason. Withdrawing will not affect your relationship with the centre or with Western Sydney University. Please note it isn't possible to withdraw focus group participant data.

**What if I need further information?** Please contact Rhonda Radley 0431324309 or Caroline on 0402 499 899 or (02) 9772 6303 if you wish to discuss the research more before deciding whether or not to participate.

**What if I have a complaint?** If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through Research Engagement, Development and Innovation (REDI) on Tel +61 2 4736 0229 or email [humanethics@westernsydney.edu.au](mailto:humanethics@westernsydney.edu.au). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome. If you agree to participate in this study, you may be asked to sign the Consent Form. The information sheet is for you to keep and the consent form is retained by the researcher/s.

This study has been approved by the Western Sydney University Human Research Ethics Committee. The Approval number is **H13060**

## Appendix 3

### Consent Form – Focus Group Member

**Project Title:** Matjarr Djuyal: Learning Gathang with Gesture

I,..... *(please print name)*, hereby consent to participate in the above named research project.

**Position:** .....

**I acknowledge that:**

- I have read the participant information sheet (or where appropriate, have had it read to me) and have been given the opportunity to discuss the project with the researcher/s
- The procedures required for the project and the time involved have been explained to me, and any questions I have about the project have been answered to my satisfaction.

**I understand that I can withdraw from the study at any time without affecting their relationship with the researcher/s, and any organisations involved, now or in the future.**

**Signed:**

**Name:**

**Date:**

**Return address:**

**This study has been approved by the Human Research Ethics Committee at Western Sydney University. The ethics reference number is: H13060**

**What if I have a complaint?** If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through Research Engagement, Development and Innovation (REDI) on Tel +61 2 4736 0229 or email [humanethics@westernsydney.edu.au](mailto:humanethics@westernsydney.edu.au).

Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

## Appendix 4

### Consent Form – Parent/Carer

**Project Title:** Matjarr Djuyal: Learning Gathang with Gesture

I,..... *(please print name)*, hereby consent for my child .....to participate in the above named research project.

**My child's date of birth:** .....

**I acknowledge that:**

- I have read the participant information sheet (or where appropriate, have had it read to me) and have been given the opportunity to discuss the information and my child's involvement in the project with the researcher/s.
- The procedures required for the project and the time involved have been explained to me, and any questions I have about the project have been answered to my satisfaction.

**I consent for my child to:**

- Participate in audio/visual recordings.*
- Participate in centre Gathang Language learning activities*
- Be assessed for Gathang language learning*

**I consent for my child's data and information provided to be used in this project and, as long as the data is non-identified, in other related projects for an extended period of time.**

**I understand that my child's involvement is confidential and that the information gained during the study may be published and stored for other research use but no information about them will be used in any way that reveals their identity, unless you specifically want their name used.**

**I understand that I can withdraw my child, or my child can withdraw, from the study at any time without affecting their relationship with the researcher/s, and any organisations involved, now or in the future.**

**Signed:**

**Name:**

**Date:**

**Return address:**

**This study has been approved by the Human Research Ethics Committee at Western Sydney University. The ethics reference number is:H13060**

**What if I have a complaint?** If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through Research Engagement, Development and Innovation (REDI) on Tel +61 2 4736 0229 or email [humanethics@westernsydney.edu.au](mailto:humanethics@westernsydney.edu.au).

Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

## Appendix 5

### Noun Set 1 Session 1 With Gesture Lesson Plan

#### Introduction

##### Gathang Language program

I have come to teach some Gathang language words to you. This will be fun, we will be all learning some new words together.

The Gathang Language is an Aboriginal language that was spoken on this land for 1000s of years. The Gathang Language is the Language of this Land. Birpai Land, Port Macquarie.

Asking the learners if they know some Gathang words eg they may know wati, buna (names of preschool rooms) wiyabu (greeting) gapu (goodbye)

#### Cameras and audio recordings

There will be cameras and audio recordings in the room. The camera will be looking at me so my teacher can see what I am doing. I have a teacher the same as you. Can you help me by listening and following instructions.

#### Listening activity

Asks the learners to shut their eyes, firstly focusing on their breath and then focusing on sounds near and far, coming back to breath and opening their eyes.

*With gesture group-gesture is used with verbal instruction.*

*Without gesture group-no gesture is used with verbal instructions*

#### Show and Tell

This is a picture of Mitjigan (girl), Burray (boy), guying (bird), bikan (platypus), butjin (bag) while holding up each individual picture also referring to tangible objects. Include hand talk/gesture with the spoken words.

Ask the learners to also use hand talk/gestures with the words.

Before introducing burray asks the learners if they can give a hand talk/gesture for boy.

#### Call and Response

Burray, Guying, Butjin, Mitjigan, Bikan

Learners listens to the teacher saying the word and then repeats the word.

Learners will say the word loud to soft (turn up and down volume) using different voices: deep, squeaky, growly

### **Rhythm and Beat**

Asking the learners to clap to sounds of the words (breaking the words into syllables) eg Mi tji gan

### **ASLA**

Burray, Guying, Butjin, Mitjigan, Bikan

Question words: Minya Yii (what is this)

Eg Holding the picture up of a boy and asking the learners minya yii, answer yii burray x 3

Ask the learners to answer with you.

### **Activity**

The learners will draw a picture of a burray and a mitjigan and colour in the pictures of the bikan and guying to be placed in their butjin.

The learners will be seated at tables in groups.

At each of the tables individual learners will be asked to repeat the words.

Learner may not complete the activity within the timeframe but will be given the opportunity to finish the activity at another time.

### **Memory Game**

Hand out small picture cards asking the learners to find and show a picture of a guying, burray, mitjigan, bikan, butjin

Model the memory game with a learner

The learners in pairs play.

Asks the learners who got a pair cards of burray, mitjigan, guying ...

### **ASLA**

Burray, Guying, Butjin, Mitjigan, Bikan

Question words: Minya Yii (what is this)



Model answer Yii .....

Asking the learners to put their hand up if they know the answers.

## Appendix 6

Noun Set 1 Session 2 With & Without Gesture Lesson Plan
<p><b>Introduction</b></p> <ul style="list-style-type: none"> <li>• Gathang Language program</li> <li>• Cameras and audio recordings</li> </ul> <p>Listening activity</p>
<p>Gathang language sound a, aa - u, uu - i, ii using rhyme/beat</p> <p>- rr - tj - uy - ay</p>
<p>Revising 5 nouns (words for people/things &amp; creatures)</p> <p>Burray, Guying, Butjin, Mitjigan, Bikan</p> <ul style="list-style-type: none"> <li>• Call and response (repeating language words)</li> <li>• Talk to each of the pictures eg how many mitjigan in the room, how many burray in the room, let me introduce two fluffy toys: guying and bikan, when and why would I use a butjin</li> <li>• Turn up and down volume saying language words loud to soft and using different voices, deep, squeaky, growly</li> <li>• Bring in emotions and animal ways of expressing the words (say: burray like a tiger, guying like you are singing, bikan like a man, mitjigan using a deep voice, butjin in a slow low voice)</li> </ul> <p>Questioning what is this (Minya Yii) using tangible objects</p> <p><i>With gesture group-gesture is used with verbal instruction.</i></p> <p><i>Without gesture group-no gesture is used with verbal instructions</i></p>
<p>Bingo- living bingo</p>
<p><b>ASLA</b></p> <p>Burray, Guying, Butjin, Mitjigan, Bikan</p> <p>Question words: Minya Yii (what is this)</p> <p>Model answer Yii .....</p> <p>Asking the learners to put their hand up if they know the answers.</p> <p><i>Now we are going to do a memory activity. Can you all please sit and get ready to listen to the instructions.</i></p> <p>The learners will be given turns to stamp a picture that matches the language spoken eg Burray, Guying, Butjin, Mitjigan, Bikan</p>

## Appendix 7

Noun Set 2. Session 1. With & Without Gesture Lesson Plan
<p><b>Introduction</b></p> <p>Gathang Language program</p> <p>I have come to teach some Gathang language words to you. This will be fun, we will be all learning some new words together.</p> <p>Asking the learners if they know some Gathang words eg they may know set 1 wati, buna (names of preschool rooms) wiyabu (greeting) gapu (goodbye)</p> <p><b>Cameras and audio recordings</b></p> <p>There will be cameras and audio recordings in the room. The camera will be looking at me so my teacher can see what I am doing. I have a teacher the same as you. Can you help me by listening and following instructions.</p> <p><b>Listening activity</b></p> <p>Asks the learners to shut their eyes, firstly focusing on their breath and then focusing on sounds near and far, coming back to breath and opening their eyes.</p> <p><i>With gesture group-gesture is used with verbal instruction.</i></p> <p><i>Without gesture group-no gesture is used with verbal instructions</i></p>
<p><b>Show and Tell</b></p> <p>Galbaan (woman), Guri (man), mirri (dog), gunggang (frog), bakan (rock)</p> <p>Eg. This is a picture of a Galbaan model the gesture. Refer to a tangible object eg Female educator</p> <p><b>Call and Response</b></p> <p>Galbaan, Guri, Mirri Gunggang, Bakan</p> <p>Referring to each of the pictures. Say the word, model the gesture and ask the learners to do the gesture when saying the word.</p> <p><b>Changing voices</b></p> <p>Learners will say each word loud to soft (turn up and down volume) 6x using different voices: deep, squeaky, growly saying each words 3x</p>

Encourage the learners to do the gesture for each of the words

**ASLA**

Galbaan, Guri, Mirri Gunggang, Bakan

Using Gesture for each of the pictures

Question words: Minya Yii (what is this)

Eg Holding the picture up of a man and asking the learners minya yii, answer yii guri x 3

Ask the learners to answer with you 3x (Minya Yii- Yii Guri 3x

**Memory Game**

Hand out small picture cards asking the learners to find and show a picture of a Galbaan, Guri, Mirri Gunggang, Bakan

Respond saying the word and doing the gesture.

Model the memory game with a learner

Break larger group into two groups to play the game.

**ASLA**

Galbaan, Guri, Mirri Gunggang, Bakan Question words: Minya Yii (what is this)

Model answer Yii .....

Asking the learners to put their hand up if they know the answers.

## Appendix 8

### Noun Set 2 Session 2 With & Without Gesture Lesson Plan

#### Introduction

Gathang Language program

I have come to teach some Gathang language words to you. This will be fun, we will be all learning some new words together.

Asking the learners if they know some Gathang words eg they may know set 1 or set 2 words, wati, buna, bila (names of preschool rooms) wiyabu (greeting) gapu (goodbye).

#### Cameras and audio recordings

There will be cameras and audio recordings in the room. The camera will be looking at me so my teacher can see what I am doing. I have a teacher the same as you. Can you help me by listening and following my instructions.

#### Listening activity

Asks the learners to shut their eyes, firstly focusing on their breath and then focusing on sounds near and far, coming back to breath and opening their eyes.

*With gesture group-gesture is used with verbal instruction.*

*Without gesture group-no gesture is used with verbal instructions*

#### Show and Tell

Galbaan (woman), Guri (man), mirri (dog), gunggang (frog), bakan (rock)

Eg. This is a picture of a Galbaan model the gesture. Refer to a tangible object eg Female educator

#### Call and Response

Galbaan, Guri, Mirri Gunggang, Bakan

Referring to each of the pictures. Say the word, model the gesture and ask the learners to do the gesture when saying the word.

**Changing voices**

Learners will say each word loud to soft (turn up and down volume) 6x using different voices: deep, squeaky, growly saying each words 3x

Encourage the learns to do the gesture for each of the words

**ASLA**

Galbaan, Guri, Mirri, Gunggang, Bakan

Using Gesture for each of the pictures

Question words: Minya Yii (what is this)

Eg Holding the picture up of a man and asking the learners minya yii, answer yii guri x 3

Ask the learners to answer with you 3x (Minya Yii- Yii Guri 3x

**Living bingo –**

Divide the class into groups of 3 or 4. Each group will have their own set of cards. Each person in a group selects a picture from their set. The Gathang word is called out. The person with the that picture card gets to sit down. The first team with all its members sitting is the winner.

**Receptive Activity**

Leaner to put a stamp on the picture of a guri (3 pictures in view). Picture set for all Gathang words eg. Galbaan, Guri, Mirri, Gunggang, Bakan

**ASLA**

Galbaan, Guri, Mirri Gunggang, Bakan Question words: Minya Yii (what is this)

Model answer Yii .....

Asking the learners to put their hand up if they know the answers.

## Appendix 9

### Six Set 1 (spatial) Session 1 With & Without Gesture Lesson Plan

#### **Introduction**

##### **Gathang Language program**

*I have come to teach some language words and sounds to you. This will be fun, we will be all learning together.*

*“Can anyone tell me the Aboriginal Language of this Land. Birpai Land, Port Macquarie.”*

*Asking the learners if they know some Gathang words*

*Who knows some Gathang language words? they may know wati, buna, bila (names of preschool rooms) wiyabu (greeting) gapu (goodbye) Galbaan, Guri, Gunggang, Mirri, Bakan, Mitjigan, Burray, Bikan, Guying, Butjin (nouns)*

#### **Listening activity**

*We are going to do a listening activity. Let us all try hard to listen to all the sounds around us, sounds near and far. I am going to ask you about the sounds, so please listen carefully. Gently shut your eyes and do not open them until I say ‘open your eyes’. We all going to breathe in and out together, breathing in, breathing out x5 now we are going to listen carefully to all the sounds around us. Try and be still and listen. Very good I can hear that you have been listening. Now I want us to breathe in and out together, breathing in, breathing out x5. Now open your eyes slowly.*

*Put your hand up if you can tell me a faraway sound.*

*Put your hand up if you can tell me a close sound.*

#### **Cameras and audio recordings**

*There will be cameras in the room. The cameras will be looking at me so my teacher can see what I am doing. I have a teacher the same as you. Can you help me by listening and following my instructions.*

*With gesture group-gesture is used with verbal instruction.*

*Without gesture group-no gesture is used with verbal instructions*

#### **Revision 10 nouns**

**Galbaan, Guri, Gunggang, Mirri, Bakan, Mitjigan, Burray, Bikan, Guying, Butjin**

Showing the tangible objects and going to each of the big pictures displayed in the room. Revising each noun one by one say to the learners.

Minya Yii, Yii Galbaan Asking learners to repeat each word x3 eg Galbaan, Galbaan, Galbaan

Minya Yii, Yii Guri, Guri x3

Minya Yii, Yii Gunggang, Gunggang x3

Minya Yii, Yii Mirri, Mirr x3

Minya Yii, Yii Bakan, Bakan x3

Minya Yii, Yii Mitjigan, Mitjigan x3

Minya Yii, Yii Burray, Burray x3

Minya Yii, Yii Bikan, Bikan x3

Minya Yii, Yii Guying, Guying x3

Minya Yii, Yii Butjin, Butjin x3

### **Introducing Suffixes**

*I am going to teach you some language sounds that will go with the language words, these sounds will tell you about something that is happening. You will have to listen carefully to hear, know and remember these sounds.*

Introducing Suffixes **gu** allative

Place the dog, rock and bird in three difference positions in the room.

*I need someone to help me. I am going to pick someone that has been listening carefully. .... can you stand with me and be my helper.*

Standing with the learner, ask the learner to come with you.

*.....can you come with me?*

*Are you all listening carefully? I am going to teach you a language sound, this sound will tell you about something that is happening. You will have to listen carefully to hear, know and remember this sound.*

Holding the learner's hand walk towards the mirri and say maraliyn 'mirri-gu' (x3) ask all the learners to repeat the language 'mirri-gu' (x3) while walking toward the dog;

walking to towards the bakan say maraliyn 'bakan-gu' (x3) ask all the learners to repeat the language 'bakan-gu' (x3) while walking toward the rock;



walking to towards the guying say maraliyn 'guying-gu' (x3) ask all the learners to repeat the language 'guying-gu' (x3) while walking toward the bird;

Asks the learners 'What did we do?' (you walked to the mirri, to the bakan, to the guying) Yes we walked to the mirri, we walked to the bakan, we walked to the guying.

Now we are going to stand up and get in groups of burray, mitjigan and galbaan. Be specific where you would like the groups to be located.

Ask the **burray group** 'if I said mara 'mirri-gu' what would you do? Yes, you would go to the mirri. Ask the learners to say the language word 'mirri-gu' (x3) while going towards the dog.

Ask the **mitjigan group** 'if I said mara 'bakan-gu' what would you do? Yes, you would go to the rock. Ask the learners to say the language word 'bakan-gu' (x3) while going towards the rock.

Ask the **galbaan group** 'if I said mara 'guying-gu' what would you do? Yes, you would go to the guying. Ask the learners to say the language word 'guying-gu' (x3) while going towards the bird.

Introducing Suffixes ga **locative** (in, at, on, near)

Are you all listening carefully? I am going to teach you another language sound, this sound will tell you about something that is happening. You will have to listen carefully to hear, know and remember this sound.

Say to the learners. Can you tell me where you are standing? eg near or at mirri, bakan, guying. Yes burray group, you are standing near the mirri, yes mitjigan group, you are standing at the bakan, yes galbaan group, you are standing near the guying. After their answer say to each of the groups mirri-ga (x3), bakan-da (x3), guying-ga (x3), ask all the learners to repeat the language (x3),

Introducing Suffixes **gabirang** ablative (movement from)

Are you all listening carefully? I am going to teach you another language sound, this sound will tell you about something that is happening. You will have to listen carefully to hear, know and remember this sound.

Standing with the Burray group at the mirri say *'mirri-ga' (x3)*, going from the mirri say mara *'mirri-gabirang' (x3)* Ask all the learners to repeat the language *'mirri-gabirang' (x3)* while going from the mirri;

Standing with the Mitjigan group at the bakan, say *'bakan-da' (x3)* going from the bakan say mara *'bakan-dabirang' (x3)* ask all the learners to repeat the language *'bakan-dabirang' (x3)* while going from the bakan;

Standing with the Galbaan group at the guying say *'guying-ga' (x3)* walking from the guying say mara *'guying-gabirang' (x3)*; ask the learners to repeat the language *'guying-gabirang' (x3)*

Ask the learners 'What did you do?' (you walked from the mirri, from the bakan, from the guying)

Awesome listening!

Please sit down, we are going to play a game, **Simon says** *Baan says*

Divide learners into groups of three?

**Group 1**

*'Mara mirrigu''Mara bakangu''Mara guyinggu'*

*'Mara guyinggabriang'*

**Group 2**

*'Mara mirrigu''Mara bakangu''Mara guyinggu'*

*'Mara guyinggabriang'*

**Group 3**

*'Mara mirrigu''Mara bakangu''Mara guyinggu'*

*'Mara guyinggabriang'*

Great work everyone.

## Appendix 10

### Suffix Set 1 (spatial) Session 2 With & Without Gesture Lesson Plan

#### **Introduction**

*Wiyabu It is great to back here. We will be learning Gathang Language together, this is going to be fun.*

#### **Listening activity**

*We are going to do a listening activity. Let us all try hard to listen to all the sounds around us, sounds near and far. I am going to ask you about the sounds, so please listen carefully. Gently shut your eyes and do not open them until I say 'open your eyes'. We all going to breathe in and out together, breathing in, breathing out x5 now we are going to listen carefully to all the sounds around us. Try and be still and listen. Very good I can hear that you have been listening. Now I want us to breathe in and out together, breathing in, breathing out x5. Now open your eyes slowly.*

*Put your hand up if you can tell me a faraway sound.*

*Put your hand up if you can tell me a close sound.*

#### **Cameras and audio recordings**

*There will be cameras in the room. The cameras will be looking at me so my teacher can see what I am doing. I have a teacher the same as you. Can you help me by listening and following my instructions.*

*With gesture group-gesture is used with verbal instruction.*

*Without gesture group-no gesture is used with verbal instructions*

#### **Revision 10 nouns with gesture**

Galbaan, Guri, Gunggang, Mirri, Bakan, Mitjigan, Burray, Bikan, Guying, Butjin

Showing the tangible objects and going to each of the big pictures displayed in the room. Revising each noun one by one say to the learners.

Minya Yii, Yii Galbaan Asking learners to repeat each word x3 eg Galbaan, Galbaan, Galbaan

Minya Yii, Yii Guri, Guri x3

Minya Yii, Yii Gunggang, Gunggang x3

Minya Yii, Yii Mirri, Mirri x3

Minya Yii, Yii Bakan, Bakan x3

Minya Yii, Yii Mitjigan, Mitjigan x3

Minya Yii, Yii Burray, Burray x3

Minya Yii, Yii Bikan, Bikan x3

Minya Yii, Yii Guying, Guying x3

Minya Yii, Yii Butjin, Butjin x3

### **Revision Suffixes with gesture**

*Put your thinking hats on. Can you tell me a language word and special sound we learnt on Monday.*

*You will have to listen carefully to hear, know and remember these words and special sounds.*

*These sounds tell us about something that is happening*

*gu= to something eg mirri-gu*

*ga=is where eg mirri-ga*

*gabirang=from something eg mirri-gabirang*

Place the dog, rock and bird in three different positions in the room.

*I need someone to help me. I am going to pick someone that has been listening carefully. .... can you stand with me and be my helper.*

Standing with the learner, ask the learner to come with you.

*.....can you come with me?*

*Are you all listening carefully? I am going to teach you a language sound, this sound will tell you about something that is happening. You will have to listen carefully to hear, know and remember this sound.*

Holding the learner's hand walk towards the mirri and say 'mirri-gu' (x3) ask all the learners to repeat the language 'mirri-gu' (x3) while walking toward the dog;

Standing near the mirri. Ask the question. *Can you tell me where we are standing? Yes, we are standing near the mirri, say mirri-ga (x3) asking the learners to repeat (x3):*

*Walking from the mirri say 'mirri-gabirang'(x3) Ask all the learners to repeat the language 'mirri-gabirang' (x3) while you are walking from the mirri;*

*Thank you ..... for being such a fantastic helper you can go back and sit down with your friends.*

*I need someone to help me. I am going to pick someone that has been listening carefully. .... can you stand with me and be my helper.*

Standing with the learner, ask the learner to come with you.

*.....can you come with me?*

*Are you all listening carefully? I am going to teach you a language sound, this sound will tell you about something that is happening. You will have to listen carefully to hear, know and remember this sound.*

Holding the learner's hand walk towards the bakan and say 'bakan-gu' (x3) ask all the learners to repeat the language 'bakan-gu' (x3) while walking toward the rock;

Standing near the bakan. Ask the question. *Can you tell me where we are standing? Yes, we are standing near the bakan, say bakan-da (x3) asking the learners to repeat (x3):*

*Walking from the bakan say 'bakan-dabirang'(x3) Ask all the learners to repeat the language 'bakan-dabirang' (x3) while you are walking from the rock;*

*Thank you ..... for being such a fantastic helper you can go back and sit down with your friends.*

*I need someone to help me. I am going to pick someone that has been listening carefully. .... can you stand with me and be my helper.*

Standing with the learner, ask the learner to come with you.

*.....can you come with me?*

*Are you all listening carefully? I am going to teach you a language sound, this sound will tell you about something that is happening. You will have to listen carefully to hear, know and remember this sound.*

Holding the learner's hand walk towards the guying and say 'guying-gu' (x3) ask all the learners to repeat the language 'guying-gu' (x3) while walking toward the rock;

Standing near the guying. Ask the question. *Can you tell me where we are standing? Yes, we are standing near the guying, say guying-ga (x3) asking the learners to repeat (x3):*

*Walking from the mirri say 'guying-gabirang'(x3) Ask all the learners to repeat the language 'guying-gabirang' (x3) while you are walking from the rock;*

*Thank you ..... for being such a fantastic helper you can go back and sit down with your friends.*

A length of blue material representing the river is laid on the floor. Ask the learners to repeat the word for Bila x 3. Demonstrating walking toward the river saying bila-gu (asking the learners to say bila-gu x 3 while walking to the river), stopping at the river say bila-ga (asking the learners to say

bila-ga x 3 while standing at the river), moving from the river say bila-gabirang (asking the learners to say bila-gabirang x 3 while walking from the river)

*Now we are going to do a memory activity. Can you all please sit and get ready to listen to the instructions.*

The learners will be given turns to stamp a picture that matches the language spoken eg mirri-gu, mirri-ga, mirri-gabirang.

## Appendix 11

### Suffix Set 2 (Relative) Session 1 With Gesture Lesson Plan

#### **Introduction**

*I have come to teach some more Gathang language words and sounds to you. This will be fun, we will be all learning together.*

*Who knows some Gathang language words? they may know wati, buna, bila (names of preschool rooms) wiyabu (greeting) gapu (goodbye) Galbaan, Guri, Gunggang, Mirri, Bakan, Mitjigan, Burray, Bikan, Guying, Butjin (nouns)*

#### **Cameras and audio recordings**

*There will be cameras in the room. The cameras will be looking at me so my teacher can see what I am doing. I have a teacher the same as you. Can you help me by listening and following my instructions.*

#### **Listening activity**

*We are going to do a listening activity. Let us all try hard to listen to all the sounds around us, sounds near and far. I am going to ask you about the sounds, so please listen carefully. Gently shut your eyes and do not open them until I say 'open your eyes'. We all going to breath in and out together, breathing in, breathing out x3 now we are going to listen carefully to all the sounds around us. Try and be still and listen. Very good I can hear that you have been listening. Now I want us to breath in and out together, breathing in, breathing out x3. Now open your eyes slowly.*

*Put your hand up if you can tell me a faraway sound.*

*Put your hand up if you can tell me a close sound.*

*With gesture group-gesture is used with verbal instruction.*

*Without gesture group-no gesture is used with verbal instructions*

#### **Revision 10 nouns**

*Galbaan, Guri, Gunggang, Mirri, Bakan, Mitjigan, Burray, Bikan, Guying, Butjin*

*Showing the tangible objects and going to each of the big pictures displayed in the room. Revising each noun one by one say to the learners. Asking learners to repeat each word x3*

*Minya Yii, Yii Galbaan, Galbaan x3*

*Minya Yii, Yii Guri, Guri x3*

Minya Yii, Yii Gunggang, Gunggang x3

Minya Yii, Yii Mirri, Mirr x3

Minya Yii, Yii Bakan, Bakan x3

Minya Yii, Yii Mitjigan, Mitjigan x3

Minya Yii, Yii Burray, Burray x3

Minya Yii, Yii Bikan, Bikan x3

Minya Yii, Yii Guying, Guying x3

Minya Yii, Yii Butjin, Butjin x3

### **Introducing Suffixes**

*I am going to teach you some language sounds that will go with the language words, these sounds will tell you about something that is happening. You will have to listen carefully to hear, know and remember these sounds.*

Introducing Suffix **damay** semblative

Can you guess what creature am I like (model frog actions)

Yes I am like a frog

Gunggang-damay ask the learners to say x3

Can you guess what thing am I like (model bakan actions)

Yes I am like a rock

bakan-damay ask the learners to say x3

Can you guess what creature am I like (model platypus actions)

Yes I am like a platypus

Bikan-damay ask the learners to say x3

Asking the learners to stand in a circle and take turns to model actions of a gunggang, bakan and bikan, after each actions say Gunggang-damay x3 or bakan-damay x3 or bikan-damay x3

**Play Baan says** eg



Gunggang-damay, bakan-damay, bikan-damay, wati-damay

**Introducing suffix garay comitative**

*I am going to teach you some language sounds that will go with the language words, these sounds will tell you about something that is happening. You will have to listen carefully to hear, know and remember these sounds.*

Model Baan Bikan-garay

Place the platypus beside a learner say the platypus is with Ari, Ari bikan-garay. Ask the learners to repeat the language x3

Place the frog beside a learner say the frog is with Cruze, Cruze gunggang-garay. Ask the learners to repeat the language x3

Place the frog beside a learner say the rock is with Ivie, Ivie bakan-garay. Ask the learners to repeat the language x3

Place the rock besides a learner and ask the learners. Can you tell me using language words. Who is with the bakan? ..... bikan-garay

Place the platypus besides a learner and ask the learners. Can you tell me using language words. Who is with the bikan? ..... bikan-garay

Place the frog besides a learner and ask the learners. Can you tell me using language words. Who is with the gunggang?

.....gunggang-garay

**Introducing suffix guba possessive**

*I am going to teach you some language sounds that will go with the language words, these sounds will tell you about something that is happening. You will have to listen carefully to hear, know and remember these sounds.*

Give the platypus to a learner, say Ari's platypus, Ariguba bikan. Ask the learners to repeat the language x3

Give the rock to a learner say, Ari's rock, Ariguba bakan. Ask the learners to repeat the language x3

Give the frog to a learner say Ivie's rock, Ivie guba bakan. Ask the learners to repeat the language x3

Give the frog to a learner and ask the learners. Can you tell me using language words. Who owns the gunggang?

.....guba gunggang

## Appendix 12

### Suffix Set 2 (Relative) Session 2 With Gesture Lesson Plan

#### **Introduction**

*Wiyabu It is great to back here. We will be learning Gathang Language together, this is going to be fun.*

#### **Cameras and audio recordings**

*There will be cameras in the room. The cameras will be looking at me so my teacher can see what I am doing. I have a teacher the same as you. Can you help me by listening and following my instructions.*

#### **Listening activity**

*We are going to do a listening activity. Let us all try hard to listen to all the sounds around us, sounds near and far. I am going to ask you about the sounds, so please listen carefully. Gently shut your eyes and do not open them until I say 'open your eyes'. We all going to breathe in and out together, breathing in, breathing out x3 now we are going to listen carefully to all the sounds around us. Try and be still and listen. Very good I can hear that you have been listening. Now I want us to breathe in and out together, breathing in, breathing out x3. Now open your eyes slowly.*

*Put your hand up if you can tell me a faraway sound.*

*Put your hand up if you can tell me a close sound.*

*With gesture group-gesture is used with verbal instruction.*

*Without gesture group-no gesture is used with verbal instructions*

#### **Revision 10 nouns with gesture**

*Galbaan, Guri, Gunggang, Mirri, Bakan, Mitjigan, Burray, Bikan, Guying, Butjin*

#### **Revision Suffixes**

*Put your thinking hats on. Can you tell me a language word and special sound we learnt on Monday.*

*The language sounds will tell you about something that is happening.*

*-damay when something is like something else eg Mitjigan guyingdamay*

**-garay** is when something is with something else eg Gurigaray bikan

**-guba** is when something is owned by someone or thing eg. Burrayguba bakan

Revision Suffix **damay** semblative

You will have to listen carefully to hear, know and remember these language words and sounds.

Can you guess what creature am I like (model frog actions)

Yes I am like a frog

Gunggang-damay ask the learners to say x3

Can you guess what thing am I like (model bakan actions)

Yes I am like a rock

bakan-damay ask the learners to say x3

Can you guess what creature am I like (model platypus actions)

Yes I am like a platypus

Bikan-damay ask the learners to say x3

Asking the learners to stand in a circle and take turns to model actions of a gunggang, bakan and bikan, after each actions say Gunggang-damay x3 or bakan-damay x3 or bikan-damay x3

**Play Baan says eg**

Gunggang-damay, bakan-damay, bikan-damay, wati-damay

Revision suffix **garay** comitative

You will have to listen carefully to hear, know and remember these language words and sounds.

Model Baan-garay Bikan

Place the platypus beside a learner say the platypus is with Ari, Ari -garay bikan. Ask the learners to repeat the language x3

Place the frog beside a learner say the frog is with ....., .....-garay gunggang. Ask the learners to repeat the language x3

Place the frog beside a learner say the rock is with ....., ..... -garay bakan. Ask the learners to repeat the language x3

Place the rock besides a learner and ask the learners. Can you tell me using language words. Who is with the bakan? .....-garay bikan

Place the platypus besides a learner and ask the learners. Can you tell me using language words. Who is with the bikan? ..... -garay bikan

Place the frog besides a learner and ask the learners. Can you tell me using language words. Who is with the gunggang?

.....- garay gunggang

Introducing suffix **guba** possessive

You will have to listen carefully to hear, know and remember these language words and sounds.

Give the platypus to a learner say .....’s platypus, .....-guba bikan. Ask the learners to repeat the language x3

Give the rock to a learner say .....’s rock, .....-guba bakan. Ask the learners to repeat the language x3

Give the frog to a learner say .....’s frog, .....-guba gunggang. Ask the learners to repeat the language x3

Give the frog to a learner and ask the learners. Can you tell me using language words. Who owns the gunggang?

.....-guba gunggang

*Revisit the language sounds they have learnt.*

*-**damay** when something is like something else eg Mitjigan guyingdamay*

*-**garay** is when something is with something else eg Gurigaray bikan*

*-**guba** is when something is owned by someone or thing eg. Burrayguba bakan*

*Now we are going to do a memory activity. Can you all please sit and get ready to listen to the instructions.*

The learners will be given turns to stamp a picture that matches the language spoken eg Burray-damay bakan, Burray-garay bakan, Burray-guba bakan.

Awesome listening!

Great work everyone.

## Appendix 13

### Suffixes Set 2 Testing Acquisition and Retention

#### Receptive

Can you look carefully at the three pictures and stamp the picture that shows you Guri **mirri-garay**  
Can you look carefully at the three pictures and stamp the picture that shows you Guri **mirri-damay**  
Can you look carefully at the three pictures and stamp the picture that shows you Guri-**guba mirri**

#### **-guba**

I am going to ask you to do something using language words. Can you show me (Learner's name) eg  
**Guula-guba guying**

#### **-garay**

I am going to ask you to do something using language words. Can you show me Guying **mirri-garay**

#### **-damay**

I am going to ask you to do something using language words. Can you show me **Guying-damay**

#### Expression

Using a fluffy toy dog and bird

Can you watch me, tell me using language words what I am doing (acting like a dog) **mirri-damay**

Can you watch what is happening, tell me in language what is happening (dog positioned next to the bird) **mirri Guying-damay**

Can you tell me using language words what is happening (holding a guying to my chest) **Aunty Rhonda-guba guying**

## Appendix 14

### Suffixes Set 1 Testing Acquisition and Retention

#### Receptive

Can you look carefully at the pictures and stamp the picture that shows you Guri **mirri -ga**  
Can you look carefully at the pictures and stamp the picture that shows you Guri **going bakan -gu**  
Can you look carefully at the pictures and stamp the picture that shows you Guri **going guying - gabriang**

I will show you the platypus going **to the frog**  
I will show you the platypus **near the frog**  
I will show you the platypus going **from the frog**

#### **-gu**

I am going to ask you to do something in language. Can you show me Guying **mirri-gu**

Can you show me the platypus going **to the frog**

#### **-ga**

I am going to ask you to do something in language. Can you show me Guying **mirri-ga**

Can you show me the platypus **near the frog**

#### **-gabriang**

I am going to ask you to do something in language. Can you show me Guying **mirri-gabriang**

Can you show me the platypus going **from the frog**

#### Expressive

Spread a length of blue material on the floor to represent a river (as demonstrated in the learning sessions)

Can you watch me carefully to see what I am doing, (model going to the river)

Can you tell me in language words what I am doing (**Bila-gu**)

If the learner is unable to give a language response, **prompt** by giving the language word **Bila** ...

Still no language repeat say Can you watch me carefully to see what I am doing, (going to the river)

Can you tell me in English what I am doing (going to the river)

Can you watch me carefully to see where I am (model on, in, at, near the river)

Can you tell me in language words where I am (**Bila-ga**)

If the learner is unable to give a language response, **prompt** by giving the language word **Bila** ...

Still no language, repeat can you watch me carefully to see where I am (on, in, at, near the river)

Can you tell me in English where I am (on, in, at, near the river)

Can you watch me carefully to see what I am doing, (model going from the river)

Can you tell me in language words what I am doing (**Bila-gabriang**)

If the learner is unable to give a language response, **prompt** by giving the language word **Bila** ...



Still no language, repeat can you watch me carefully to see what I am doing, (going from the river)  
Can you tell me in English what I am doing (going from the river)

## Appendix 15

Noun Set 2 Session Activity testing sheet Guri (pictures)



## Appendix 16

Noun Set 2 Session testing (acquisition and retention) Guri (pictures)



## Appendix 17

Suffix set 1 Session testing sheet (pictures)















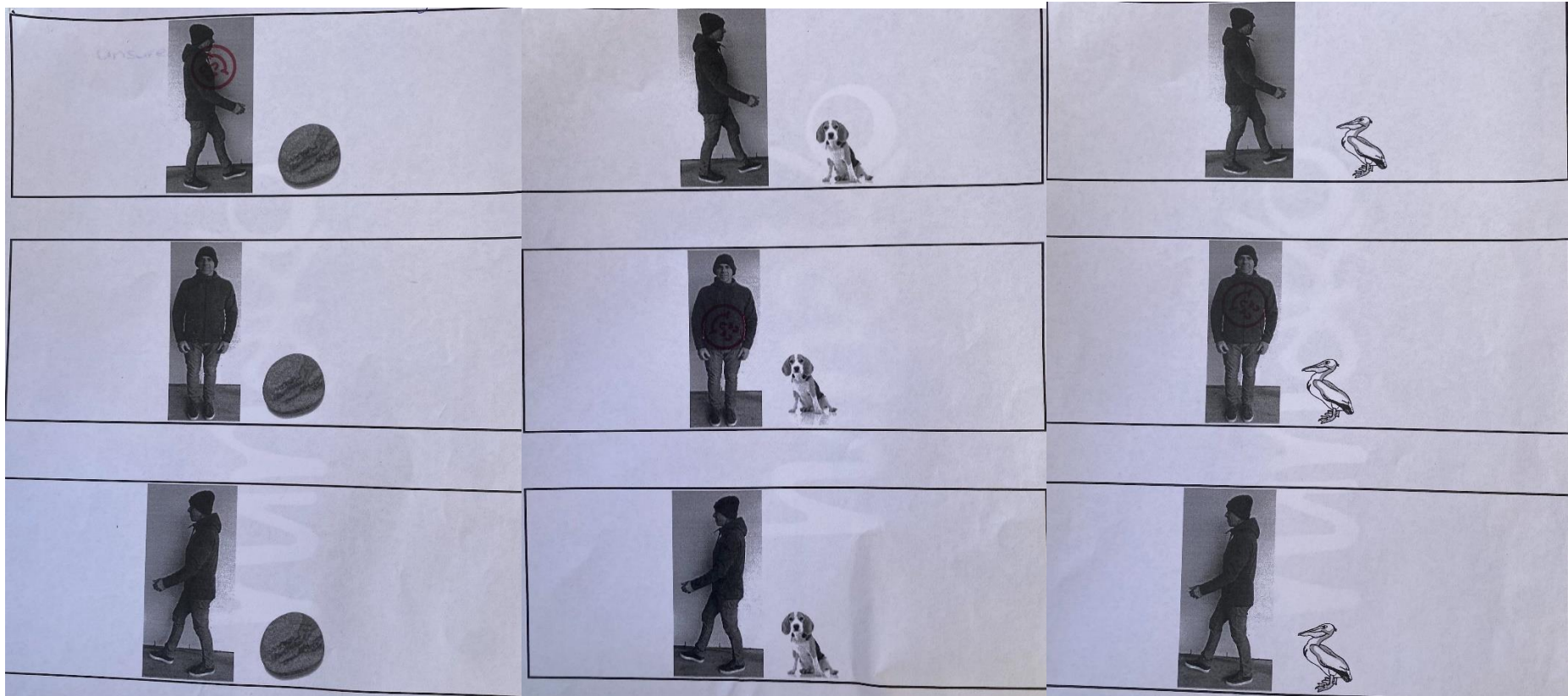
# Appendix 18

## Testing Sheet - Suffix set 1

-gu 'towards'

-ga 'at'

-gabirang 'from'



## Appendix 19

### Educator 1 interview transcript 1

**Interviewer:** Hi .....(for reasons of confidentiality the name is withheld)! Thanks very much for coming in. So I've just read some information regarding to the interview and we've just talked about some of the questions to maybe not be able to respond to. So we'll go to some of the questions that we've already gone through that. We might have some input in regards to some information around those questions. So we're gonna go to question four. So what do you think of the types of gesture used to teach the language, are they helpful? If so, why?

**Interviewee:** I think that the gestures are great teaching tool for children 'cause children are very visual. The gestures get their attention very quickly, they're engaging, they almost help to describe the word that you're using. So with the frog and big dog, the gestures go hand in hand with the word which I think helps the children to remember and recall down the track.

**Interviewer:** **Question number five: have there been any mimicking behaviours, so the kids going and taught other kids or show than gesture in classroom or outside when they're referring to some of the language words?**

**Interviewee:** I haven't personally seen the children mimic any of the behaviours. This makes me wanna visit with the children and see where they can mimic the behaviours but I haven't personally seen it on my Fridays here at work.

**Interviewer:** **Number six: did you notice any difference between the learners in how they responded to gesture? Maybe that's not relevant because you weren't in those sessions, so we go to seven. Is there anything that happens with the learners, the language learning between visits? What happens when I'm not here? Do you hear or see the learners using language or gesture?**

**Interviewee:** So on my Fridays, I quite often see the children saying goodbye language. I have not heard them use language in any other time during the day but often they will be saying, "Gapu", I can't pronounce –" when teachers and children are leaving. So the languages coming into the classroom, I think, the more exposure. The more they're going use it and use it proudly.

**Interviewer:** **So I've got maybe nine refers to that but if you could elaborate, that would be great. Since I have been at the community preschool, what have you noticed, more engagement in language, enjoyment of language, and that could be from the educators as well?**

**Interviewee:** I have seen a huge difference, actually. I think before you were here, I didn't see much language displayed at all or used at all. It's a learning curve for me as well. So now I can see educators using language in their group times. I can see language on the walls. We're using language to greet and say goodbye to each other, where the children seemed to be really excited to be able to use language and play the games with language, and the heads, shoulders knees, and toes. I think that it's just getting bigger and better. Yeah, it's great.

**Interviewer:** **And maybe that refers some of those comments referred to number nine. Can you see any changes around the centre since we have been doing language?**

Interviewee: Definitely more language signage up in the classroom, so common words that children can use. I mean our shirts now, they've had language on them and the children are wanting the shirts and the parents are wanting the shirts with the language sheets and I actually had a parent says to me yesterday, "Is this the way you're moving forward? Because, if it is, how amazing!" So I'm seeing it's spreading out, children, parents, educators, we're all really open and excited to have more language, incorporate more language. I'm seeing lots of changes in the centre and really positive. It's really positive and it's really wonderful to be a part of it, really is.

**Interviewer: So the last one is are there any general comments or thoughts or –?**

Interviewee: I think especially for somebody like me who is here permanent on a Friday, who probably misses the Monday and the Wednesday sessions, I would love to be just involved so I know what you're teaching, so we can cement it with the children through the other days, so that we can just keep it rolling on, if you know what I mean, just working real partnership. If you've taught the child a new gesture, well I would love to use that gesture.

END OF TRANSCRIPT (audio recording 1)

Interviewee: If that's something you would like us to do, to make it more common in the classroom because I know that the children are all for it. They love it. They think it's just wonderful, new, exciting way to speak to each other, so I would really like to know how I can help you in that way. What else? Any final thoughts or comments? I love seeing the children say goodbye to each other and educators. I walked out of the door, "Gapu, Amy!" at the whole room. I'm sorry if I didn't pronounce that correctly 'cause I'm still a learning language.

**Interviewer: That's beautiful language. Thank you.**

Interviewee: Let's just do more of it. Keep people like me in the loop.

**Interviewer: Thank you very much, Amy, for your participation.**

Interviewee: No worries.

END OF TRANSCRIPT (audio recording 2)

## Appendix 20

### Educator 1 interview transcript 2

Interviewee: If that's something you would like us to do, to make it more common in the classroom because I know that the children are all for it. They love it. They think it's just wonderful, new, exciting way to speak to each other, so I would really like to know how I can help you in that way. What else? Any final thoughts or comments? I love seeing the children say goodbye to each other and educators. I walked out of the door, "Gapu, Amy!" at the whole room. I'm sorry if I didn't pronounce that correctly 'cause I'm still a learning language.

**Interviewer: That's beautiful language. Thank you.**

Interviewee: Let's just do more of it. Keep people like me in the loop.

**Interviewer: Thank you very much, .....(for reasons of confidentiality the name is withheld), for your participation.**

Interviewee: No worries.

END OF TRANSCRIPT

## Appendix 21

### Educator 2 interview transcript 1

**Interviewer:** So thank you, .....(for reasons of confidentiality the name is withheld), for coming in and giving us some of your time. We've just gone through some of the information regarding the interview questions. So we'll just start with question one and you were in the <inaudible>\*0:00:22?

**Interviewee:** Yeah, that's right.

**Interviewer:** So question one refers to the set of nouns and I know we did the first set with gesture. So that was the boy.

**Interviewee:** Yep.

**Interviewer:** Did she come, going, become, and <inaudible>\*0:00:46. So how do you think the learners responded to the gesture? What - the way it was doing it in teaching them nouns?

**Interviewee:** The ones that were interested I think you had them. It's a tricky group. I think you could see that. We've got quite a tricky group in there. We've got a few additional needs diagnosed and undiagnosed. So the ones that were interested, I think, they were good. I'm not sure what the testing showed but I thought it went well.

**Interviewer:** So the number two question refers to the suffixes. So they were a little bit more complex. So the <inaudible> \*0:01:35 had set one with gesture. So that was the <inaudible> \*0:01:43. So again how do you think the learners respond to the gesture the way I was doing it and teaching them suffixes which is something that you had on to now?

**Interviewee:** I did think they looked a little bit confused in that. I wasn't sure whether it was the teaching way or whether it was just that they're such chatterboxes because we weren't sure what we were supposed to do, whether we were supposed to be doing their behaviour guidance as well, I wasn't sure why they weren't getting it. But as I said in the last one, I'm not sure what came back with your testing. With that, I'm curious to know how they went with the testing.

**Interviewer:** So number three, do you think the gestures helped learners understand the meaning of the Gathang suffixes?

**Interviewee:** I do. Can I ask do you think it did?

**Interviewer:** Any particular suffix? What makes you think that? I would say one of the suffixes that you felt that stood out because when we're doing to, at, and then from.

**Interviewee:** I don't know. I guess even for me, I felt hand gestures helped overall. I just felt – I don't know, maybe because I'm a hand-talker, I just feel that overall hand gestures really help.

**Interviewer:** So page number four, what do you think of the types of gesture you use to teach the language? Are they helpful, if so, why?

**Interviewee:** So the gestures for both, the nouns and the suffixes?

**Interviewer:** Yeah.

**Interviewee:** I thought the gestures were really good. This one, Guri is man in sign language as well 'cause I did some signing songs later on, with Old McDonald, so if a man, like old man and <inaudible> \*0:04:09 dog, when we do like horse and dog. So a lot of them when I was doing signing, when I was doing Old McDonald, the children were able to say, they were able to tell me, "Oh, that is –" and telling me the other ones. So the crossover was really nice and they were able to tell me that they knew those words, so that was really nice. So I thought having those gestures was really good. They're able to then shown me their applied knowledge in that, so I thought using those gestures was really good.

**Interviewer:** So number five: has there been any movement mimicking between the learners during the activities in or outside the classroom or in the outside play areas? So if they're talking language or even talking English, are they gesturing in any way and they're showing other learners or the other learners seeing that gesture and then copying their gesture?

**Interviewee:** I can't say that I've seen that except in that example that I just gave you, where they've been able to apply the knowledge and say that they knew the words. I can't say that I've seen any other mimicking, as I've said, except to share their knowledge and use it in that way.

**Interviewer:** Did you notice any difference between learners in how they respond to gesture? Is there anything else you noticed? So just with the learners as individuals, did you notice anything stand out in the way they were responding to the gesture?

**Interviewee:** I'm not sure I really understand that question?

**Interviewer:** There might be when you're looking at the difference between each of the learners and maybe how they learn, did you notice any difference when I was delivering the sessions between one learner and another?

**Interviewee:** The ones that knew it really knew it. Some of them picked it up really fast and the others looked to –

END OF TRANSCRIPT

## Appendix 22

Educator 2 interview transcript 2

Interviewee: To each other to copy but there was a little sub grouping in there that really picked it up and they knew it. I'm not sure that I've got anything else to say about that one.

**Interviewer: Is there anything that happens with the learner's language learning between visits? What happens when I'm not here? Did you hear or say the learners are using language or gesture, just when I'm not here between the sessions.**

Interviewee: Just little incidental bits I guess. As I said, we've had that little bit of signing happen. They're big on saying 'Kapoor' when people leave. They love doing that. We've got the pictures up on our window. They like identifying those in language.

**Interviewer: So they're actually saying any language when they see it?**

Interviewee: Yeah.

**Interviewer: Are they using any of the gestures?**

Interviewee: No, probably not but I guess if we were to be doing it and sitting down doing it, I'm confident that they would. I'm probably more likely to do this and want them to help me with the words and they would give me the word.

**Interviewer: So you're doing the gesture for the –**

Interviewee: Because I'd be thinking, "What was this again? What was this?" because I felt that I was so busy, "Come back here," because what it was with people wanting to come in, and someone coming over and asking us things. I felt I didn't get to be able to sit down and absorb the language but it was for the children, not for us. I can do the gesture but probably not the words but I know that the children can still give it to me if I do the gestures. So I'm pretty confident that they could teach me. I should probably test them on that, shouldn't I?

**Interviewer: Interesting. So number eight, since you have been at the community preschool, what have you noticed, being more engagement in language, enjoyment of language?**

Interviewee: Yeah, I think so. As a preschool, I think we're certainly on a better path as far as having language in preschool and our awareness of culture in preschool which is a good thing, isn't it?

**Interviewer: Can you see any changes around the centre since we have been doing language? It doesn't necessarily have to be language, any changes?**

Interviewee: I guess as I've said, we've kept our pictures up so that we're keeping the language happening there, keeping them as visual prompts for the children to keep that happening. We're lucky that we've got Lori Ann as our source all the time, to keep it current with us. I'm not sure what else there with that. To give it a bit of thought, I wish I have had these questions, so I could've –

**Interviewer:** You can take away the piece of paper and write down and hand it out later. So just finishing, do you have any final thoughts or comments? Anything about the sessions that I delivered, in the way of recommendations or delivery, or did you benefit teaching that way, did it benefit the educators and you're able to absorb the language?

**Interviewee:** Yeah, I think it's always a benefit. I'm still curious how the children went with their testing though. Are you allowed to let us know how that went?

**Interviewer:** Yeah. What we're going to organise is an offsite meeting so actually deliver all the results and just go through some of the videos to recap. And then if people, they wanna make comment and then would do the presentation of results.

**Interviewee:** So do you feel it was a worthwhile thing with them?

**Interviewer:** Definitely. There were a few surprises amongst it all but very challenging for me as a teacher coming in as a researcher. So I'll leave that with you and then if you could just hand it in

–

**Interviewee:** So you'd like me to write? Is that what the others have done?

**Interviewer:** Yeah. So thank you.

**Interviewee:** Thanks, Rhonda.

END OF TRANSCRIPT



## Appendix 23

### Educator 3 interview transcript 1

**Interviewer** So thanks, .....(for reasons of confidentiality the name is withheld), for coming in and giving your time. You've got a set of questions there as well. The first question is about when I came in and you did the first set of nouns. So you're in the <inaudible>\*0:00:21 room? We had gesture for the second set. So if you look at the second line, that's when we use gesture with the learners. So how do you think the learners responded to the gesture, they way I was doing it and teaching them nouns?

**Interviewee:** I think that they respond better with the gestures but I felt that maybe the process was a little bit too complicated for this age group. It'd be really, really good, just as an afterthought too, if the kids had name tags to make your life a bit easier, that way you can use their names, and that just would make things easier. But I think it was just a little bit over the top of their heads. I've discovered that there's a few that respond really well to the singular words but when you add this in the other language, I think that's caused a bit of confusion, so I think maybe more simplified, a simplified version.

**Interviewer:** So this is with the nouns, just with the single words. How do you think they went?

**Interviewee:** With the single words, as I said, we've had a few children actually using those words, which is really great. I wasn't there for the first couple of sessions and I think it can be beneficial to have the same person at least in as many groups as possible. The single words, some of the kids picked up on and others, it just went straight over the top of their heads, so maybe look at a way to capture their attention a little bit more. It depends on the child. They may need the puppets that you use for example. They may be visual learners. A lot more repetition would be really good because I find that repetition words tend to stick more.

**Interviewer:** So number two, now that we're referring to the suffixes, so they're the ones that we use with the nouns and when we did the tag, we added on. So <inaudible> \*0:02:52, we've gesture was set <inaudible> \*0:02:57, which is like, with, and possessive.

**Interviewee:** Yeah. I think the same thing again there, the more repetition, the better and if it's possible, at the beginning of the group to maybe explain those a little bit more. As I've said, it stuck with some children and then not with others.

**Interviewer:** So do you think the gesture helped learners to understand the suffixes?

**Interviewee:** Again, some of the children are visual learners and nice gestures do help them to process what they're learning so, yes, it's beneficial I think gestures.

**Interviewer:** What makes you think that? What makes you think that gesture is beneficial?

**Interviewee:** I just think getting their attention more, they're more focused if you're using gestures, sitting here using gestures but I think with the gestures, they do tend to focus more on what you're doing.

**Interviewer:** What do you think of the types of gestures used to teach the language? Are they helpful, if so, why? So the type of gesture that I was using was the iconic, so it's the ones that actually represent the thing.

**Interviewee:** I'm just going back to what – because we did a little bit of a brainstorming in regards to what we thought and we were thinking along the same way. Gestures were great and we have noticed a few of the children using those gestures. And as I said, I think that peaks their interest a little bit more.

**Interviewer:** Interesting. Have there been any mimicking behaviours between the learners during the language activities and/or outside the activities?

**Interviewee:** There has been a little bit of mimicking. Children have used the words occasionally and we praise them when they used the words. We're, as I said, not being in every single group, struggled a bit so it'd be really handy maybe to have a meeting with you beforehand and we go over the words or even a recording, in some ways, so that we can hear how you pronounce things, so that we can of utilise that at group time if that's an acceptable thing to do, so that we can reinforce as well 'cause I find the more that you repeat things, the better they stick.

**Interviewer:** Definitely. Did you notice a difference between the learners in how they responded to the gesture? Is there anything else you noticed? So just in regards to the individuals, did you find that some individuals – I know you make your opinion, it might have picked it up more so than others, just your interest in that?

**Interviewee:** Yeah. I think that the gesture was picked up more – not necessarily more than the language but before the language, so displaying the –

END OF TRANSCRIPT

## Appendix 24

Educator 3 interview transcript 2

Interviewee: You're showing the gesture triggered off the memory of that word. If that makes sense.

**Interviewer: Is there anything that happened with the learner's language learning between visits? So when I come in between that, when I came again, what I'm interested in is what happens when I'm not here?**

Interviewee: When you're not here?

**Interviewer: Do you hear or see them doing the language and gesture?**

Interviewee: A little bit in regard to the language and gesture. We can be sitting down doing a great time with the children and all of a sudden they'll use the Gathang word for certain things or occasionally during group time, you'd say, "What's the word for –?" and we've actually added the pictures that you brought in, the laminated pictures to the wall near our group time math, so that if we're physically sitting down, we've got the ability to – "Which one is this and which one is that?" and –

**Interviewer: So since I have been in the community preschool, what have you noticed? Has there been more engagement with language, enjoyment with language?**

Interviewee: I think there needs to be more repetition to get a larger amount of children on board because we've got a few that will really absorb things and utilise or use those words, that others, it will just go over the top of their heads.

**Interviewer: Can you see any changes around the same task since you've been doing language?**

Interviewee: In regard to pictures and –?

**Interviewer: Or speak or anything since I've been in the space.**

Interviewee: A little bit, yeah. Again, I think beneficially more repetition.

**Interviewer: More time here.**

Interviewee: More time here.

**Interviewer: And just broad – not in the question really but just anything, your thoughts or your comments.**

Interviewee: Once again for this age group, extending beyond the initial words went over the top of quite a few children's heads, maybe smaller groups, sitting down with smaller groups in a quiet setting and using the gestures. We find sometimes in that situation, the children will respond and that you've got their attention in a smaller group whereas some there're a lot of distractions if it's the whole class. The small group probably the better or possibly the better because they've not been distracted by others who are love doing certain things and they're not being distracted by staff

members who might be walking through the classroom or walking past the classroom. Smaller group I think would just capture their attention more.

**Interviewer: That's great feedback. Thank you very much, .....(for reasons of confidentiality the name is withheld).**

Interviewee: You're welcome.

END OF TRANSCRIPT

## Appendix 25

### Educator 4 interview transcript 1

**Interviewer:** So thank you, .....(for reasons of confidentiality the name is withheld), for coming in, taking the time to drop in and we'll just work through some of these questions. Some will relate to your experience and others may not. So we just have a yarn about what questions I would ask you. So I'm going to ask you the first question which can relate to your experience, what you've seen. So that question how do you think the learners has responded to gesture the way it was doing in teaching them nouns? So that will show the first set, which was the –

**Interviewee:** Yes, I remember that.

**Interviewer:** <Inaudible> \*0:00:39, going, become, and <inaudible>\*0:00:46.

**Interviewee:** Just recalling and it was a while ago, I was particularly observing the reactions of the children in the way that you were explaining and giving those directions to the children. Now, in gesture, in that's with a lot of things that the children learned, they learn more quickly by actions and gesture, and on that particular day, because you were doing the gestures with the words and you were repeating it very clearly and very slowly as well, they were, as a group, extremely focused and responsive to what you were doing and I noticed particularly some children that were picking it up as you repeated it back to them and then you did it again, and then they had little cards and that was a while ago. So I remember their reactions and their response to that, they picked that up quite quickly, that was that and particularly a couple of the children that I noticed. One, particularly who was from a different culture, picked that up extremely fast and then they were able to recall that when you asked them and they remembered the words and that's what with the gestures and that's the one and only time as observing that particular day with gestures that that was quite productive.

**Interviewer:** So just when you observe that day. What do you think of the type of gestures used to teach the language? Are they helpful? If so, why? Because those gestures were iconic. Do you think that was helpful?

**Interviewee:** Can you just go through those gestures again?

**Interviewer:** <Inaudible> \*0:02:44.

**Interviewee:** Which is –?

**Interviewer:** Boy.

**Interviewer:** <Inaudible> \*0:02:49

**Interviewee:** Which is girl.

**Interviewer:** Guying, bird.

**Interviewee:** Right.

**Interviewer:** <Inaudible> \*0:02:55 which is bad and <inaudible> \*0:03:01 which is the platypus.

Interviewee: So there were five, okay. So it was great because you didn't overload them with too many different words. Five was a good number. Particularly the boy and the girl and the platypus, the animal and the bug, those were gestures and words that would have been easy for them to remember and to pick up without overloading them. And that was good because you kept in mind that the age appropriateness of that did – and you chose those particular words yourself, didn't you? Yeah. So that particularly was quite appropriate for the age of the children, so I found that was perfectly fine.

**Interviewer: Did you see with kids outside that session mimicking or anything that you see nicely turned into learners?**

Interviewee: No. There's one particular child, in the days following, in the week, 'cause as you know I'm only there from week to week, so there was one particular child who was very interested in the Gathang language itself to the point where he actually wanted to learn to take not particular those words but other words home that were displayed in the room and he was recalling it to his family. That's the only child that I know of because his mother mentioned it to me. Right, so that was quite that was great. But as far as the daily routine or the daily events, it didn't come out without prompting. Lori-ann is great. When she has little groups and that she will recall things and she'll use the word, and clues, and things like that. But as far as them just doing it spontaneously, it wasn't audible to me and I didn't observe it.

**Interviewer: Is there anything that happens with the language learners' language learning between visits. Is there anything happen when I'm not here? Do you see any kids talking or gesturing to each other?**

Interviewee: No, and that's a good question because it's a bit difficult for me because I'm not there on a regular basis, but on the Fridays, I haven't witness that. That doesn't come out during their play. It would if there were resources and that if they were prompted by the teachers who were comfortable using the language, spontaneously using it, I'm confident. And that's what I would like to do myself, that because the more that it's heard, the more they will embrace it.

END OF TRANSCRIPT

## Appendix 26

### Educator 4 interview transcript 2

**Interviewer:** So since I've been at the community preschool, what have you noticed? Has there been more engagement with language? Has there been enjoyment? You used to refer to that one with the learners that you want to take it home.

**Interviewee:** Yeah. Again, I think that it comes back to – the word responsibility for teachers is not the best word but it comes back to the teachers immersing or incorporating that language quite productively or proactively in the program, that I feel that that would make a difference to be honest.

**Interviewer:** So you think if there's more of a program around language learning –

**Interviewee:** Without a doubt.

**Interviewer:** Can you see any changes around the same time since I've been doing language? Have there been changes in the way of visuals or introduction.

**Interviewee:** It has not in the outdoor environment but in the <inaudible> \*0:01:20, particularly with Lori-ann. She followed that through very, very well. She actually did a gathering time with the children's drawing, an outline, a silhouette of a body and she brought the children over and she was writing the words around like the ears – which is another thing because they were interested in the body and all the different parts of the body at the moment and that would be with anything, the language, whether it'd be space, plants, sea, body, hands, feet, all the words that they would be able to embrace. Just the way Lori-ann was doing that, particularly in that particular context – they responded, that the children came down on the floor and they just loved what she was doing and I took some pictures of what she was doing, and that was a gathering time. So those things within our own room that was particularly obvious as to – but it should be ongoing. It should be more ongoing. That's what I would like to see happening. And then it gets embedded in the program, it becomes just like second nature.

**Interviewer:** So just the final question, do you have any final thoughts or comments?

**Interviewee:** That was pretty much what I wanted to share with you because I've been thinking about it. We've just done a workshop on koori curriculum and our presenter said – talking about how we can embed, and it should be just the most natural thing to embed all the aboriginal focus into the program, into the curriculum, naturally, and without it being a form of tokenism because tokenism is something that you do it, but you don't know why you're doing it, and that really had an impact on me, so that when you do the language, you wanna know why you're doing that, you wanna know why you're incorporating that, embedded in the curriculum, whatever it may be, whatever topic you can add that in. That's what I'd like to see. But as a teacher, I'm not confident. I don't know all the words for particular things that I'd love to know and also know how to pronounce them, so that I can impart that knowledge to the children, because you don't wanna do something that doesn't make sense. That's not right. So we wanna continue – and I'm sure we all are on the same page, that we wanna continue to learn, to be educated ourselves so that we can in part to the children for.

**Interviewer:** Thank you.

Interviewee: It had quite an effect on me.

**Interviewer:** Thank you.

Interviewee: That's all right.

END OF TRANSCRIPT



## Appendix 27

### Educator 5 interview transcript 1

**Interviewer:** So thank you, .....(for reasons of confidentiality the name is withheld), for coming in and giving me some time to be interviewed for the research. I'm so excited 'cause I know you've been in the space a couple of times. So we just start with question one, how do you think the learners responded to gesture, the way I was doing it at teaching them nouns? So that was the first two sets and you're in <inaudible>\*0:00:33 room. So <inaudible>\*0:00:34 didn't get gesture with the first set but did with the second. So what do you think?

**Interviewee:** I feel the children responded better with the use of the gestures. I found it was easier for them to remember, that sometimes they would remember the gesture rather than the language first. Maybe the lesson may have been a little bit long for their age and with our flow, how we're doing, it was more structured than what they used to it, so I think it was a little bit different to what they were used to doing.

**Interviewer:** That's a valuable comment. Thank you. So the second one refers to the suffixes which was quite a big set delivered sessions. So with the <inaudible>\*0:01:53, they received the gesture with the set that referred to <inaudible>\*0:02:01 which is like, and <inaudible>\*0:02:06 which is with and <inaudible>\*0:02:09 which is a possessive suffix.

**Interviewee:** I feel it was a lot for the children to try and comprehend, especially with some of the children still unsure of the initial words that they were learning, possibly too soon to implement the new words. That's just my thoughts. I personally found it hard for myself too. I was like, "I couldn't keep up," I felt. I was doing the wrong thing too, sometimes. So when you try and think of it from their perspective, it was hard for me.

**Interviewer:** So do you think that gesture helped the learners understand the meaning of the Gathang suffixes? Is there any particular suffix do you think that they really connected with in the way of gesture?

**Interviewee:** Again, I feel like the gestures were really helpful but I think the suffixes at that point were just too hard to teach because I didn't hear any of the children using those words at all, whereas I would hear some of them using <inaudible> \*0:03:59 in play and things like that, but not really the suffixes.

**Interviewer:** So over on question four, what do you think of the types of gestures used to teach the language? Are they helpful, if so, why?

**Interviewee:** So yes, again, gesture is very helpful, especially for things like <inaudible> \*0:04:25, the dog. I've noticed, as I said, I'd be using this type of gesture a lot in their play. That was the main one. They like the gesture of the frog as well.

**Interviewer:** Very iconic from the throat coming out. So has there been any mimicking behaviour between the learners during the language activities and/or outside the activities? So have they been mean if they referred to any of those language words, are they using the gesture with each other?

Interviewee: Yes, they are, they are using the gestures. We've also placed the pictures and the words around the classroom. For example, we've got a picture of the dog and <inaudible> \*0:05:33 written underneath it, so it not only helps the children but it helps us as educators. And we've placed the play dog kennel in our room with the dogs, so they associate with that and we see them a lot, <inaudible> \*0:05:49.

**Interviewer: Using that gesture?**

Interviewee: Yes, using the gesture. And also with <inaudible>\*0:05:59, the rocks, we put them. We had some balancing rocks set up and that was there and the children would look at that at the same time as they building their tower of rocks and be saying the language as well.

**Interviewer: Did you see gesture around that or just source it more, just the –?**

END OF TRANSCRIPT

## Appendix 28

Educator 5 interview transcript 2

Interviewee: That was more just the language with that one, more so of the animals I'm finding they're using the gestures and using that more.

**Interviewer: So did you notice a difference between the learners in how they respond to gesture? Is there anything else you noticed? So between the learners, were some of the learners that really connected with the gesture more so than others or just that?**

Interviewee: It's interesting to hear that. I do believe that a lot of the children were able to remember the gesture easier than remembering the language.

**Interviewer: It might something might come up later. This is number seven, is there anything that happens with the learners' language learning between visits? What happens when I'm here? Do you hear or see the learners using when I'm not here? Do you hear or see the learners using language or gesture which we just talked about around the dog?**

Interviewee: They're set up with the room and things like that. So they are having the words and the pictures around the room helps, as I said, not only the children, but also as educators to learn, too, and it promotes us to be using that more within our day as well.

**Interviewer: So since I've been at the community preschool, what have you noticed? Is it being more engagement with language, enjoyment with language?**

Interviewee: I do believe so. Our language is being used more often within our days, both with the children and educators. Most children were very excited to have these visits with you. There were a couple of children that were unsure and we didn't wanna push that, and to have their choice and want them to feel comfortable. And then were ones that initially didn't wanna go and thought, "Oh, hang on," and then really loved your visits. It's just making them feel comfortable, but definitely a lot more language is being used, so that's good.

**Interviewer: So can you see any changes around the centre since we have been to language?**

Interviewee: So again, hearing more of the language each day and seeing it more in our rooms with the resources and the pictures and things as well, so it's more embedded in our program, that's for sure.

**Interviewer: So you do you have any final thoughts or comments? I'm interested also do you think it was helping you learn language, your gestures because I've noticed that you were doing some of the gestures.**

Interviewee: For this age group, I would look at working in smaller groups. I know that there was one day we had a small group because a lot of kids were off sick and that seemed to work a lot better, they were concentrating a lot better and listening, and for a shorter time too, and repeating the teaching of the naming words for the children to become more familiar before introducing things like the suffixes. I think that was a few things that I thought of.

**Interviewer:** So did it help you learn?

**Interviewee:** I certainly have learnt some words. It also did make me feel a little nervous 'cause I thought I had a word down and I thought I knew what it was, and then you'd say something else, I'd be like, "Oh, no, I'm wrong." So it was hard to learn it properly when I'm trying to make sure the children are doing all the right things as well but I certainly did learn words and gestures as well. So it was really it was enjoyable. So thank you for coming and doing it, and I hope you learn something out of it too.

**Interviewer:** Yes. It's been a very big learning curve.

END OF TRANSCRIPT

## Appendix 29

### Educator 6 interview transcript 1

**Interviewer:** Thanks, .....(for reasons of confidentiality the name is withheld), for coming in and doing the interview with me today. You're in the <inaudible>\*0:00:09 room and that's Monday, Wednesday, Friday.

**Interviewee:** Yep, that's good. It's good to be here, thank you.

**Interviewer:** So just on the introduction, again if you feel comfortable if you wanna change or is there any certain question at this point in time.

**Interviewee:** No, not at this moment.

**Interviewer:** So start with the first question and, please, just stop and just ask me repeat it or clarify any of the questions at any time. How do you think the learners responded to the gesture, the way I was doing it in teaching them nouns? So in your <inaudible> \*0:00:57, group, I was teaching with gesture, set one, nouns.

**Interviewee:** Yeah, it really helps with movement and you're just telling the children a language word, they're definitely gonna respond better with gesture and the movement that you're making, otherwise, it doesn't really sink in as much. We were reading a story about carrying a backpack and one child was going <inaudible> \*0:01:35, doing a hand gesture, where it couldn't quite get the language word but was lifting the hand up and down like you were using the gesture, in the bag. So I think it definitely sinks in more using gestures.

**Interviewer:** So the number two question relates to the suffix learning. So how did you think the learners responded to gesture, the way I was doing it, teaching them suffixes, something you can add to the end of the word? In English, we have suffixes like helped, <inaudible> \*0:02:18 past. I use suffixes to take the nouns that told the learner something. So <inaudible> \*0:02:22. So you being in the <inaudible> \*0:02:29 group, that was set one with the gestures, so it was <inaudible> \*0:02:35, so it was that to, at, and, from.

**Interviewee:** With the suffixes I think the longer one which is <inaudible> \*0:02:44 sunk in a lot better because it was a longer suffix. So the shorter ones, I don't think they're quite getting them as easy 'cause it's only such a small thing. But with the <inaudible> \*0:02:57, I feel like that being a bit longer, they were remembering that more, with putting the <inaudible> \*0:03:06 on it. I think from watching the children, I feel like the <inaudible> \*0:03:11 was the one that they remembered the most but I think they squandered pretty good.

**Interviewer:** Is there anything that you can tell me in regards to the question, this aspect of the question, the way that I was doing it in teaching them suffixes, do you think that worked?

**Interviewee:** Yeah, definitely. If you're putting into games and you're asking them questions and adding the suffixes on the end, definitely, I think that's more helpful.

**Interviewer:** Do you think the gestures help learners understanding the meaning of the Gathang suffixes and was there any particular suffix which makes you think that because we just talked about the <inaudible> \*0:04:05.

Interviewee: Yeah. When you are using your hand to call them back over, that really helped the children with the – when you're going to or here, it worked well. I liked it when we're doing the <inaudible>\*0:04:18 for here with your hands spread it down, that's like your ground and you're here. So I think they took that one in well. I think the least one was the <inaudible> \*0:04:35. I think that going to was – some of the children that were got it really easy, the <inaudible> \*0:04:40 came easy as well but the <inaudible> \*0:04:43 one was harder for some of the children. That took a bit longer for them to sink in. So that's just from what I've seen.

**Interviewer:** What do you think of the talks suggests you to teach the language? Are they helpful? You've just mentioned that a little bit in regards to the aspect of bringing the hands down for <inaudible> \*0:05:16?

Interviewee: I think those ones, keeping it simple and consistent of being the same ones is not too difficult to do. I think that helps the gestures being easy.

**Interviewer:** Anything in regards to the nouns there?

Interviewee: I'm not sure.

**Interviewer:** So number five, has there been any mimicking behaviours between the learners during the language activities and/or outside the activities, in other times in the classroom or outside in the play areas?

Interviewee: Yeah, the <inaudible> \*0:06:16, the hands, chirping, I've noticed children doing –

END OF TRANSCRIPT

## Appendix 30

### Educator 6 interview transcript 2

Interviewee: That to the chickens that we have in our service which was quite funny because the children that were doing it, I thought they might have been the ones that weren't taking as much in. But being a quite easy one – well, I don't know if it's for everybody but I thought that was quite funny that they used the chickens. But other than, I can't think of any at the moment but the <inaudible> \*0:00:33 one definitely which growing out chickens, that's the one I remember.

**Interviewer: So seven, is there anything that happens with the learner's language learning between visits? What happens when I'm not here? Do you hear or see the learners using language or gesture? So you just talked about that one with the chickens.**

Interviewee: Other than that, I can't really think of any at the moment. ....(for reasons of confidentiality the name is withheld) was telling – she mentioned that some of the actions that you use were the same as the sign language ones and that the – I think it was the boy was the same action that they had used. And ....(for reasons of confidentiality the name is withheld), before she mentioned the language, she asks if they'd recognise that from anywhere and they said, "Yeah, <inaudible> \*0:01:52." She does that. So that was really good that they recognised it, straight out without mentioning it. So that's all I can think of at the moment.

**Interviewer: So .....(for reasons of confidentiality the name is withheld), is she an educator –**

Interviewee: Yeah.

**Interviewer: Since we have been at the community pre-school, what have you noticed? Is there any engagement in language, enjoyment of language, just any different behaviour within the children and how they're relating into the language?**

Interviewee: Yeah, definitely. They get excited when they're coming in to preschool. If they overhear if I ever anybody say your name, they mentioned quickly, "Oh, is Rhonda here today? Is she coming?" and we'd let them know if you're here or not or, you're coming to visit. So they seem excited. They're like going off and doing they're little one-on-one sessions but I think they really like that group ones, definitely. They're getting excited about it. They do seem to really enjoy it.

**Interviewer: Can you see any changes around the centre, since we have been doing language?**

Interviewee: Yeah, I've definitely noticed some of the children in the Buna room doing some <inaudible> \*0:03:44 art in the sand. Michelle <inaudible> 0:03:46 who is in the yellow room, which is Buna room, she has set up some things in her room with the names around the room, things like that. I think it gives some of the educators a bit more confidence. The more you're here, it's not as hard or daunting to incorporate the language into every day, so it's not just my room, which is the <inaudible> \*0:04:17 room that they're doing it. That's my opinion that they've seemed that they're creating more of the spaces that surrounds the classrooms to do those things.

**Interviewer: Do you have any final thoughts or advice?**

Interviewee: No, I can't think of anything at the moment. Let me write it down if I think of something. Not at this point, sorry.

**Interviewer: Thanks so much for participating and coming in and sharing with me. I really appreciate it.**

Interviewee: That's okay.

END OF TRANSCRIPT



## Appendix 31

### Educator 7 interview transcript

**Interviewer:** So thank you, .....(for reasons of confidentiality the name is withheld), for coming in to do this interview with me. I really appreciate it. So we've just gone through the first part of the interview questions which is just an introduction. So you let me know anytime if you're uncomfortable and I can change things to support that. Are you feeling comfortable and safe?

**Interviewee:** I am feeling comfortable and safe.

**Interviewer:** Great. So number one question and this is the nouns and nominals, the first part of – when I was introducing language to the learners. So you're in Buna, so we did the set two with gesture which is the second line, so how do you think the learners responded to the gesture, the way I was doing it in teaching them nouns.

**Interviewee:** Well I wasn't in the group because I don't work on Sundays but I think gestures worked well with younger children, especially non-verbal children.

**Interviewer:** Number two, this refers to the suffixes, so I came in and teach them suffixes. So Buna got with gesture for the second sets, <inaudible>\*0:01:25. Were you here on that day?

**Interviewee:** No, sorry.

**Interviewer:** That's okay. So we go to number three, which is refers to the suffixes. If you can answer any of that, if you can't, that's okay. Do you think the gestures helped learners to understand the meaning of the Gathang suffixes and a particular suffix? What makes you think that? So we're here. So number four over the page, what do you think of the types of gestures used to teach the language? Are they helpful, if so, why? So just thinking about to the set that I do with nouns with gesture which is the iconic gesture, so it relates to the actual theme.

**Interviewee:** Well, I wasn't in that group but I'd like to learn further, what the gestures are because that would be great to assist with the language.

**Interviewer:** Are they in the classroom or outside the classroom? Have you seen any of the children like teaching other children for gesture, mimicking gesture just in informal way?

**Interviewee:** Well, I've seen them use gestures but I couldn't say it if they're from your class but maybe they were, yep.

**Interviewer:** Any examples of that?

**Interviewee:** Well, just like with animals and things like that, maybe, yeah, when they play.

**Interviewer:** Did you notice a difference between the learners in how they responded to gesture? So that probably more refers to their learning with us doing the nouns and suffixes. So maybe number seven, is there anything that happens with the learners' language learning between visits? So have you notice, when I come in, so it's not when I'm not here, do you hear or see the learners using language or gesture?

Interviewee: Well I've noticed that they retain the information because sometimes – like I'll look at the pictures and we've got the language there, so I'll direct it a little bit but then I'll ask them for their help and they'll correct my pronunciation or they'll have the language, and I'll say, "What's the word for this or that?" and they'd be able to teach me from what they've learned in your classes.

**Interviewer: So do they gesture when they give –?**

Interviewee: Yeah, they can.

**Interviewer: So you've seen them gesture –**

Interviewee: Yes.

**Interviewer: Since I've been at the pre-school, what have you noticed? Is there more of an engagement in language or enjoyment of language, that's just as an example?**

Interviewee: Yeah, they enjoy learning the language and they'd like to say that there're different types of language besides their first language and some of that children have two languages already, so this is their third language but I think they've picked it up really quickly and they have enjoyed it.

**Interviewer: Can you see any changes around the centre since we have been doing language?**

Interviewee: We've got a lot more like pictorials, pictures around, so it helps us with the language and more recognition that there is a local language and they're all embracing it and trying to embed it in our everyday language and so it'll become just like second nature.

**Interviewer: So last page, we have <inaudible> just any thought comments as to overall?**

Interviewee: It's been really great to have you come in because it's important for this community to learn the local traditional language the tongue language and we really want to embed it, like I said, and use it every, not just for when you are here but continue to use it in years to come because it's just fairly important for that language to come back into our community. This is a time to start in pre-school and I think with gestures, that's a really great idea because children learn through their play and they use their whole self to express themselves, so gestures and the language go play together and that'll be the way to go in the future.

**Interviewer: Alright. Thanks –**

END OF TRANSCRIPT

## Appendix 32

### Educator 8 interview transcript 1

**Interviewer:** Thank you very much, .....(for reasons of confidentiality the name is withheld), for taking the time out to be interviewed. Now I've got a set of questions and I did just the introduction. So if we have a look at the questions and question one is, just on your observation, because you're here on Monday, just the sessions that you've been involved with – I'll just read the question, how do you think the learners responded to the gesture, the way I was doing it in teaching them nouns? So you're in the Buna group?

**Interviewee:** Yep. I think there was no gesture to start with.

**Interviewer:** So the set one was without gesture and set two which was the <inaudible>\*0:00:53.

**Interviewee:** I don't think I was in that one. I only remember the set one

**Interviewer:** And that was without –

**Interviewee:** Gesture, that right.

**Interviewer:** So you probably wouldn't be able to respond to that question. So going to two, this is now with the suffixes, that was the Buna, it was with <inaudible>\*0:01:29. Can you remember any of those?

**Interviewee:** No, I don't remember those ones.

**Interviewer:** So <inaudible> \*0:01:38 was if you like, <inaudible>\*0:01:41 was with and <inaudible> \*0:01:46 was possessive.

**Interviewee:** No, sorry.

**Interviewer:** We might just go to the general questions. So number two just relates to the suffixes. Number three, it relates to the suffixes as well. So let's go to number five which is more of a general question. Has there been any mimicking behaviours between the learners during the language activities and/or outside the activities in the classroom or outside play areas –?

<Over talk>

**Interviewee:** So this is after your sessions, whether I've noticed them actually doing or saying what you've been doing and the things. Not really. But like I said, I was only really involved in the initial one. So I think the children that was where they were initially just – they themselves weren't really knowing what was happening with that yet and there was no gesture. I found that first one that it hadn't really sunk in a lot yet either, so I hadn't seen any things that was similar in or outside the classroom.

**Interviewer:** So this number six question, did you notice any difference between the learners in how they responded to gesture? Is there anything else you noticed? So that probably you're thinking if you –

Interviewee: Probably, I didn't actually see it, I guess, but I think that I might have heard the more with the gestures, like later saying some of the words after you've done the sessions with the gestures but probably not so much with each other, but more so just as I could maybe hear them say a word here in there.

**Interviewer: So go to number eight, well the general one is well, since we have been at the community preschool, what have you noticed? For example, engagement in language, enjoyment of language, anything changed within the preschool environment?**

Interviewee: I suppose maybe a lot more visual engagement if that makes sense more. So the words obviously are up and the pictures are up with the words, so there's a bit more I guess, visual acknowledgement of the language, if that makes sense. And then I think the centre, as a whole, is really embracing it anyway, like more of the culture. So you probably had a part of the influence in that. Is it actually embracing the culture and language as a whole if that makes any sense? There seems to be more of that influence since you've been coming.

**Interviewer: So number nine is probably a bit of duplication but maybe we can tease it out. Can you see any changes around the centre since we have been doing language? Would you identify the signage?**

Interviewee: Yeah, again I guess it's pretty similar to the last question I just answered whereas, yeah, there is obviously the signage in the pictures and the words to go with the pictures which also, as a visual, it reminds us to be able to have that data point out to children as well, "I remember this," and to have that there so they can keep going backwards and forwards. But I guess the service as a whole is trying to embrace the aboriginal culture more anyway and looking for different ways to do that, so that has really made it like a stepping stone to really get that going in, and I've noticed more staff members are getting on board and wanting to know more and doing more as well. So I guess there has been a bit of a more of a shift towards embracing and getting to know and know the culture as much as they can, I guess.

**Interviewer: Any final thoughts or comments?**

Interviewee: I think it'd be really good to keep teaching children the language. I feel like the way you were doing it to start with, I know it was so obviously for research but children, I think –

END OF TRANSCRIPT

## Appendix 33

Educator 8 interview transcript 2

Interviewee: Need those visual and your gestures and your language altogether. I think that makes more of an impact. And then to try and get that even hands-on, whether it's through a story or a song or things like that, can really embed that a little bit more with them and I'll probably pick it up a little bit faster, whether that's with all languages, I don't really know because I'm not really an expert in languages but I just feel like with that age group in particular, the more hands-on you can be and the more getting them involved in it, even if it's actually moving to the word to that picture, it gets that into their heads a little bit more.

**Interviewer: Fantastic. That's great for sharing that. So thank you very much, Michelle.**

Interviewee: That's okay. I'm sorry I couldn't help you more.

**Interviewer: It's all good.**

END OF TRANSCRIPT

## Appendix 34

### Data sheet Experiment 1

Participant	Recep_WithoutG	Recep_WithG	Recep_Retention_WithoutG	Recep_Retention_WithG	Expr_WithoutG	Expr_WithG	Expr_Retention_WithoutG	Expr_Retention_WithG
1	4	4	1	5	1	0	1	3
2			3				1	
3	3	5	4	5	2	3	2	5
4	1	2	1	4	0	0	0	3
5	2	2	2	5	0	3	4	3
6	3	5	3	5	2	5	2	3
7	3	4	3	3	0	1	1	1
8		2	0	4		0	0	3
9	3	4	2	4	0	1	1	2
10	5	5		5	5	5	0	5
11		3	1	2		1	0	0
12	2	0	2	1	0	1	0	0
13	2			2	0		0	0
14	3	0	1	0	1	0	1	0
15	3	1	3	4	1	0	2	3
16	3	5	4	3	4	2	4	4
17	1	0	0	0	0	0	0	0
18		1		1		0		0
19	1	0	2		0	0	1	
20	3	0		1	3	1		0
21								
22	5	5	5	5	4	4		4
23		4	5			2	4	
24	4	3	3	4	1	0	3	1
25	3	3			2	1	1	
26	3	4	5	4	2	1		2
27		3	5	5		3	2	4
28	5	5	5		5	2	4	
29	5	2	4	2	4	1	5	1
30	5	3	5	3	3	3	3	3
31	4	2		4	3	1	3	3
32	5			4	2			1
33			1					
34							0	
35		1		2		0		0
36				4				2
37				1				0
38			0	2				0
39	0				0		0	
40	1	0			0	0		

## Appendix 35

### Data sheet Experiment 2

Participant	Expr_WithoutG	Expr_WithG	Expr_Retention_WithoutG	Expr_Retention_WithG	Recep_Stamp_WithoutG	Recep_Stamp_WithG	Recep_Toy_WithoutG	Recep_Toy_WithG	Recep_Retention_Stamp_WithoutG	Recep_Retention_Stamp_WithG	Recep_Retention_Toy_WithoutG	Recep_Retention_Toy_WithG
1	0	0	0	0	1	0	1	0	1	1	1	2
2				0						0		1
3	0		0		1		1		1		2	
4	0	0		1	0	1	0	1		1		1
5	0	0		0	0	1	0	1		1		3
6	0			1	2		1			1		1
7	1	1	1	0	0	1	0	2	1	1	0	3
8		0	0	0		0		1	0	0	1	1
9	0	0	0	0	1	1	0	1	2	1	0	3
10	0	1	0	1	0	1	1	3	1	2	0	1
11		0		0		1		0		1		1
12	0	0	0		1	0	0	0	1		0	
13	0	0	0	0	3	2	1	1	1	1	0	1
14		0		0		1		0		1		1
15	0	0	0	0	0	2	0	3	2	0	0	2
16		0		0		2		0		2		0
17			0	0						1	0	0
18			0								0	
19				1						2		1
20	0								0		0	
21	0	0	1	0	1	1	1	0	1	2	1	2
22	0	0	1	0	3	2	0	0	1	1	1	0
23	0	0			1	0	1	0				
24	0		0		1		0		1		1	
25	1	0	1	0	2	1	3	0	1	1	3	1
26	0	0	0	0	3	2	1	0	0	2	1	0
27	0	0	1	0	2	1	2	0	1	1	1	1

28	1		1	1	3		3		1	2	3	1
29	0	0	1	0	0	3	1	0	1	3	0	0
30	0	0	0	0	1	1	0	0	1	1	0	0
31	0	0	0	0	1	1	0	0	0	1	1	1
32				0						2		0
33			1						1		1	
34	0				0		0					