School of Psychology and Speech Pathology

Explorations in the Dialect of Australian Aboriginal Preschool Children

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Declaration

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

Human Ethics (For projects involving human participants/tissue, etc) The research presented and reported in this thesis was conducted in accordance with the National Health and Medical Research Council National Statement on Ethical Conduct in Human Research (2007) – updated March 2014. The proposed research study received human research ethics approval from the Curtin University Human Research Ethics Committee (EC00262), Approval Number # HR100/2012

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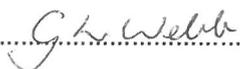
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Acknowledgements

Table of Contents

List of Figures and Tables

List of Abbreviations and Acronyms

AE   =   Aboriginal English

SAE   =   Standard Australian English

ECE   =   Early Childhood Educator

ECEC   =   Early Childhood Education and Care

DD   =   Dialect Density

C   =   Child

P   =   Parent / carer

T   =   Teacher

OM   =   Otitis Media

SP   =   Speech Pathologist

AEDC   =   Australian Early Development Census

SES   =   Socio-Economic Status

NDW   =   Number of different words

ATSI   =   Aboriginal and Torres Strait Islander

Glossary

Term	Definition
Culture	The sum of attitudes, customs, and beliefs that distinguishes one group of people form another. Culture is transmitted through language, material objects, ritual, institutions and art, from one generation to the next. (http://www.dictionary.com/browse/culture)
Discourse	Communication of thought by words; talk; conversation (http://www.dictionary.com/browse/discourse?s=t)
Language	A body of words and the systems for their use common to a people who are of the same community or nation, the same geographical area, or the same cultural tradition (http://www.dictionary.com/browse/language?s=t)
Identity	The sense of self; the set of behavioural or personal characteristics by which an individual is recognizable as a member of a group (http://www.dictionary.com/browse/identity?s=t)
Otitis Media	Inflammation of the middle ear occurring commonly in children as a result of infection and often causing pain and temporary hearing loss. (The American Heritage Stedman's Medical Dictionary, 2002, Houghton Mifflin Company)
Society	The body of human beings generally, associated or viewed as members of a community (http://www.dictionary.com/browse/society?s=t)

Abstract

This research explored the use of Aboriginal English (AE) dialect by Australian Aboriginal preschool children. Specifically, the research studied the dialectal features of AE used by children in a regional/urban area of New South Wales. The study involved two phases. In the first phase, 21 Aboriginal and 21 non-Aboriginal preschool children interacted in small groups with their early childhood educators. These interactions were video-recorded and the transcribed samples were statistically analysed to explore differences in dialect between the Aboriginal and non-Aboriginal children. Also studied in this phase of the research was the impact of the cultural context on the children's communication. In the second phase of the research the Aboriginal children were followed into a school environment one year later. The children's communication was again video-recorded in interactions with educators. The longitudinal design of this research allowed for study of changes in the children's dialect density over time. The change in the children's dialect was calculated by comparing their dialect density at phase one and phase two. Interviews with educators and parents/carers were conducted at both phases of the research to gather their perspectives on factors affecting Aboriginal children's communication and development. Qualitative methods were employed for the analysis of the interview data.

Findings from phase one revealed differences in dialect used by the Aboriginal and non-Aboriginal pre-schoolers. A relationship was identified between the cultural match of the educator and child and measures of the children's lexical diversity during the interactions. Longitudinal findings indicated that although many of the Aboriginal children reduced their dialect density with the commencement of formal schooling, these results were not statistically significant. Themes that

emerged from the qualitative analysis indicated a variety of factors that may impact on Aboriginal children's academic progress and development. These findings hold implications for professionals working with Aboriginal children and their families, including the need to acknowledge AE as a dialect used by Aboriginal preschool children, that is different to the Standard Australian English. The relationship between the culture of the educator and the child's lexical diversity is an important area that has implications for children's language and literacy development. This area requires further investigation. The findings also indicated other areas that require further research, particularly the change in Aboriginal children's dialect use over time.

1. Introduction to the Thesis

1.1 The Experiential Impetus for the Study

The motivation for this research began from a clinical perspective, when I was working in the role of a consultant speech pathologist to the local Aboriginal[1] early childhood services. As such, my immediate contacts were the Aboriginal early childhood educators (ECEs), Aboriginal children and their families in the urban regional area of Newcastle. Minimal linguistic information about Aboriginal English (AE) provided at an undergraduate level had hardly prepared me for clinical practice in an Aboriginal context. Awareness of the AE dialect and the value of this as a means of communication was not shared by non-Aboriginal colleagues in education, who frequently commented on the poor speech of the Aboriginal children and families in their service, and also on the need to correct the children's speech. Even colleagues in health, and some in speech pathology specifically, seemed to view the issue from this perspective. This attitude suggests an entrenched colonial perspective that the speech of the dominant (Western) society is 'correct'.

When I first entered a local Aboriginal early childhood education and care (ECEC) environment, having worked extensively as a speech pathologist in other ECEC settings, I had many opportunities to observe the Aboriginal children communicating with their peers and Aboriginal ECEs. I was struck by the difference in communication that I noted in this environment. Although there appeared to be lots of communication taking place, there did not appear to be as much verbal communication as I had encountered in other (mainstream) ECEC settings.

Linguistic scholars repeatedly remind society of the equality of languages; languages universally evolve to meet the needs of communicators adequately in context (Eades, 1995; Harkins, 1994; Malcolm, 1994a). Conversely, however, it is recognised that mainstream society at a global level

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[1] The term Aboriginal is used in this thesis to describe the Indigenous people of Australia. This term was adopted following consultation with the local Aboriginal community, who prefer this term. Occasionally the term Indigenous is used; this is to acknowledge and include the Torres Strait Islander people who also live in Australia, especially in the Northern regions.

tends to stigmatise certain non-standard dialects (Butcher, 2008; Sterzuk, 2008), particularly those whose users are associated with lower socio-economic status. These dialects are frequently regarded as less worthy than the mainstream dialect. AE is an example of a non-standard dialect of English, recognised linguistically as different but not substandard to the mainstream Standard Australian English (SAE) (Butcher, 2008).

Research in the area of AE has progressed in the last few decades, and the impact of first languages on English is increasingly recognised. Linguistic features of AE have been identified (Butcher, 2008; Eades, 1993; Malcolm, 2002) and the origin of many of these features can be traced to linguistic features of the Indigenous languages. Much of the early research in this area was carried out in remote communities where Indigenous languages were still the first language of the population. Although more recent studies have begun to investigate AE in an urban context (Miller, Webster, Knight, & Comino, 2014; Pearce, Williams, & Steed, 2015), there still exists a dearth of information about features of AE that might be expected in an urban context, as well as those features that might be consistent across contexts.

Harking back to the stimulus for this current study, Aboriginal educators from early childhood education and care settings were aware that Aboriginal children typically lag behind peers in measures of literacy and numeracy. The ECEs recognised the importance of early childhood education in preparing children for success academically and were motivated to support the children as much as possible. ECEs frequently asked me, the soon-to-be researcher, (a) why our kids have so many problems with speech, and (b) what constitutes typical speech and language development for an Aboriginal child? These questions prompted the current study.

1.2 Outline of this Thesis

This previous section has described the specific workplace experiences that triggered a research exploration of Aboriginal English dialect in preschool-aged children. In chapter two, the broader context of the research is described, with reference to literature about language and culture.

Philosophical underpinnings about discourse, society and cultures are presented, and the relationship between language and literacy is also expounded. These issues are described for their relevance to the language and literacy learning of Aboriginal children in present day Australia.

The literature is explored in more detail in chapter three, the first section of which presents the historical socio-political factors affecting Aboriginal children's language development and literacy progress. (Section 3.1). Specifics of Aboriginal English dialect are described in more detail in this chapter (Section 3.2). Concepts of bi-dialectal communication, dialect density and cultural match in early childhood are considered for their relevance in the diverse linguistic context of Aboriginal Australia. The chapter closes with a summary of the aims of the current research and the specific questions that were addressed.

Research involving Aboriginal Australians necessitates careful and stringent ethical controls to avoid further exploitation of an already at-risk population. Chapter four describes the methodological and ethical considerations that underpin this research. This includes the consideration of culturally sensitive approaches towards sampling, data collection and analysis. Culturally appropriate methods for the processes of dissemination and translation of the research are also highlighted in this chapter.

Following this, in chapter five the methodological processes are described including the specifics of ethical approval, the processes involved in obtaining consent, participant sampling, qualitative and quantitative data collection and analysis. This research was conducted in two phases and includes mixed methodology. The results of each phase of this research are presented in chapters six and seven, respectively.

Chapter six presents the results of phase one of the research: features of the AE dialect that were present in the sample of the Aboriginal children are presented and compared to the communication of the non-Aboriginal children. Findings relating to the dialect density of the Aboriginal children at phase one are also presented in this chapter. Chapter seven presents the results of the analysis of

the data that was collected longitudinally. This includes the change in dialect density in the communication of the Aboriginal children over time. This chapter also presents the findings from the interview data; the perceptions of educators and carers about Aboriginal children's communicative competence and factors affecting this.

In chapter eight, the results of the research are discussed with reference to the research questions that were raised in chapter three. Specifically, the findings concerning the dialect of the sample children, their change in dialect over time and in response to cultural context are synthesised and discussed. Educators' and carers' perceptions about Aboriginal children's communication and factors affecting the children's development and progress are also discussed. Implications of the research findings for speech pathologists and educators are presented at the end of the chapter.

The final chapter, chapter nine, closes the thesis with a summary of the conclusions that can be drawn from these research findings. This chapter includes an acknowledgement of the limitations of this study and recommendations for future research in this area.

2. The Context of Aboriginal Children's Communication Development

Communication and literacy development are intrinsically linked. So, in order to understand Aboriginal children's literacy development and the factors affecting this, it is necessary to consider language, literacy and culture from a broader theoretical perspective. This chapter will present theoretical information about the inter-related constructs of culture, language and literacy, followed by a description of the fundamental relationship between language and literacy. A discussion of the implications of these influences on Aboriginal children's literacy learning concludes this chapter.

2.1 Cultural Considerations

Many cultural issues need to be taken into consideration with regards to Aboriginal children's language and literacy development. Culture underpins and interacts with aspects of language, discourse and dialect, impacting on children's learning environments and the way their communication develops.

2.1.1 The relationship between language and culture.

Language and culture are related in a deep and complex manner (Vance, 2015). As a child learns the cultural practices of their context, they learn the language associated with the culture. It is through language that the values, beliefs, attitudes and social processes of a culture are expressed and maintained (Saville-Troike, 2003). Because each culture carries so many assumed values and norms, communication between cultures is never as easy as communicating with others who belong to the same cultural group (Ritzer, 2016).

Language also has an important role in establishing cultural and personal identity. Individuals may define themselves according to how they align with a particular group or community, as well as through their own personal characteristics (Howard, 2000; Tajfel & Turner, 1986). Identity is a concept that is very prominent in the modern world, as shifting social contexts and foci continue to evolve at a rapid pace. Language is used as the medium to communicate within communities and

hence is integral to establishing an individual's identity. The use of a common language or dialect bonds an individual to a cultural group (Malcolm, 2013b). Use of a non-mainstream or non-standard[2] dialect such as Aboriginal English allows for the individual to maintain their identity and connection with the community; it can also be used to exclude others who are not of that culture.

Similarly, an individual can be recognised by listeners as belonging to a particular sub-group or culture by virtue of the language or dialect that they use. Non-standard dialects may be regarded with stigma by listeners who hold the belief that the standard dialect is 'good' or 'right' and other dialects are 'wrong' or inferior (Peltier, 2011; Sterzuk, 2008; Gould, 2008a, 2008b). This perspective may affect not only the listener's perception of the child's speech but also the perception of the child's worth or intelligence, based on predetermined judgements about the child's culture and community.

2.1.2 Discourse and culture

Culture and community shape not only the child's verbal dialectal features but also shape the ways language is used in social interactions and in interactions around literacy. A child's everyday life experiences and the corresponding social practices within the home culture prepare the child for their later learning experiences. Brice-Heath (1982) identified three distinctively different cultural groups within a geographical area and explored the social processes that enculturated children in these contexts, with a particular focus on preparation for literacy learning at school. She discussed the significant impact that the discourse of the home community can have on the child's transition in the early years to school-based learning and longer term progress through the education system.

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[2] Throughout this thesis, the term 'standard' will be used to describe the dialect that is spoken in mainstream contexts, such as schools. The term 'non-standard' will be used to describe dialects that differ from the standard, such as Aboriginal English. In the case where specific authors have used an alternative term, such as 'non-mainstream' dialect, this will be respected when referring to those references. In this thesis, the terms 'mainstream' and 'non-mainstream' will be used when referring to aspects of society and cultures.

Brice-Heath (1982) described the different 'ways of taking' meaning from texts, consistent with different cultures in the US. She studied children from different cultural communities and their caregivers as they engaged in 'literacy events', namely interactions where literate text was a feature of the interaction, for example, reading bedtime stories, reading cereal boxes or interpreting instructions for games and toys. Caregivers from different cultural communities taught the children through modelling and conversation how to take meaning from the literate texts. Children and caregivers from different communities adopted different foci when engaging in literacy events. Brice-Heath also noted the sociolinguistic practices of the caregivers' interactions with young children in each community and described these as interdependent with the way cultural communities engaged in literacy events. These cultural processes involved in learning language and literacy in the early childhood years developed a perspective that continued to influence the child's interpretation of texts and classroom expectations as they progressed through school.

The discourse of the education system in mainstream Western cultures may differ from the discourse of the child's home culture; this is especially pronounced for children from minority or non-mainstream cultures (Cazden, 2001; Brice-Heath, 1982; Delpit, 2006; Dunn, 2001). The literacy culture (practices engaged around literacy) in the home or community may be very different across different cultural groups (Brice-Heath, 1982; Huntsinger & Jose, 2009; McBride-Chang 2014; McLeod, Verdon & Bennetts Kneebone, 2014). Consequently, children from different cultures may commence school with varying degrees of familiarity with the discourse processes associated with mainstream Western literacy culture. Individuals in society regard their own cultural practices as 'natural' and are therefore unprepared for different practices (Brice-Heath, 1982). This has implications for children from minority cultures with different discourse practices to the mainstream culture who may be commencing school unaware of different discourses. It also has implications for the teachers who receive these children into their class and are perhaps unaware of the discourse of the child's home environment and how different this may be to both the mainstream and the teachers' own expectations.

Cazden (2001) studied communication and discourse in North American primary schools, with a specific focus on the language of the classroom. Cazden particularly studied 'middle class' language, which was the mainstream language typically used in the education system, for the implications this had on the learning and participation of children from minority cultures. She found that, prior to school entry, children from middle class backgrounds had often been exposed to discourse styles and literacy learning experiences that were consistent with classroom discourse patterns. For example, the sequence of teacher Initiation (of topic), student Response and teacher Evaluation (IRE) (Cazden, 2001) is a common classroom discourse pattern to which these children may have been exposed. Children from minority backgrounds, on the other hand, may have had fewer opportunities to experience classroom discourse patterns prior to formal schooling due perhaps to differing discourse patterns in the home and/or limited exposure to formal early childhood education and care contexts (Cazden, 2001; Malcolm, 1994b).

As a consequence of increased exposure to classroom discourse, children from middle class backgrounds are frequently 'primed' for classroom style interaction and learning. These children generally make a smoother transition to school than do children from minority backgrounds, who may take some time to learn the 'hidden curriculum' of classroom discourse (Cazden, 2001). While children from minority backgrounds focus on learning the subtleties of the hidden curriculum of classroom discourse, they may be less able to cope with the academic instruction that is occurring simultaneously. These early transition to school processes are considered to be relevant and influential in fostering children's engagement and achievement at school (Australian Institute of Family Studies, 2014). The child's readiness for the transition to school is a topic that will be returned to later (see section 3.1.4). Before this, the child's 'home language' or dialect will be discussed in more detail.

2.1.3 Dialect and culture

It is currently estimated that approximately 80% of Aboriginal people speak Aboriginal English, a non-standard dialect of English (Butcher, 2008). Some speak one or more Indigenous languages in addition to AE. Indigenous languages are more common in the rural and remote areas than in urban or regional areas of Australia. The dialect known as Aboriginal English encompasses various linguistic and non-linguistic features including phonological, morpho-syntactic, semantic and pragmatic features (Butcher, 2008; Eades, 1993; Kaldor & Malcolm, 1991; Malcolm, 1994a). Dialect, like language, plays an important role in establishing an individual's identity and sense of belonging to their cultural group or community (Malcolm, 2013b). Specific information about Aboriginal English dialect will be discussed in the next chapter (section 3.2).

As well as the documented features of a dialect, cultures also differ in world views and learning practices. These learning practices, and ways of perceiving and interacting with the world, are specific to cultures and affect the communication or dialect of the speaker (Antone, 2003; Huntsinger & Jose, 2009; Peltier, 2011; Malcolm, 1994b). Huntsinger and Jose (2009) studied different cultures in America (Chinese American and European American) and identified different practices and approaches towards learning associated with different cultures. Peltier (2011) described some different world views and social expectations around the role of children within a Canadian Aboriginal community, and related these to features of First Nations English Dialect (FNED). Learning practices and world views within the communities and culture of Australian Aboriginal people have also been identified as different to the mainstream Western society (Malcolm, 1994b; Marika-Mununggiritj & Christie, 1995; Ryan, 1992).

In an ECEC context, the effect of culture (which encompasses world views and learning practices) on communication must be considered with respect to the child's holistic needs in this setting. A child's sense of belonging in a learning context is integral to their ability to learn from experience in this setting (Australian Children's Education and Care Quality Authority (ACECQA), 2009). Inclusion and

acceptance of cultural knowledge, experience and language in an ECEC context for children of minority cultures allows for increased and improved opportunities for learning (Harvey & Myint, 2014; Mason-White, 2012). The power that the home language has to engage children from a minority culture in ECEC contexts in New Zealand has been acknowledged by the inclusion of bilingual educators (Harvey & Myint, 2014), with the aim to cultivate in the children a sense of identity and belonging. Engagement with mainstream services has been identified as challenging for Australian Aboriginal children and families (see section 3.1.2); prioritising cultural acceptance and inclusion are key features of services that are delivering quality ECEC to Aboriginal families in Australia (Ellis, Brooks & Edwards, 2010; Mason-White, 2014; Secretariat for National Aboriginal and Islander Child Care (SNAICC), 2015).

2.1.4 Society and culture

Within society, there are many different cultures and subcultures. Subcultures are groups that have much in common with mainstream culture, and share many values, but differ on one or more significant characteristics (Ritzer, 2016). Within the mainstream society, individuals who are not able to participate fully can experience social processes such as social exclusion or marginalisation (Willis & Elmer, 2007). Non-mainstream cultural groups, and their individual members, are more likely to experience these processes. The process of exclusion occurs when individuals from a particular culture are excluded from many opportunities that are available to others in the mainstream society; for example, they may experience such difficulties as unemployment, poor health or poor housing. Willis and Elmer (2007) note that many of the causes of social exclusion also double as consequences. For example, an individual who is unemployed has less access to social networks, causing him or her to be less involved and engaged in mainstream culture and society. A consequence of this limited engagement in social networks is that the individual also has reduced employment opportunities.

The related issue of marginalisation refers to individuals from a particular cultural group being regarded by others in mainstream society as socially inferior because of social and cultural perceptions of difference. Historical policies and practices may have affected the current position that the non-mainstream culture holds in society (Dunn, 2001).

Lower than average literacy levels are associated with people from marginalised cultural groups in Western society (Cummins, 2011). Several factors are important when considering the literacy learning of children from non-mainstream or minority cultures. Cummins (1986) presented a framework to account for academic difficulties that students from minority groups, who were second language learners, encountered. His discussion revolved around power relationships within the dominant society. He suggested that the minority students' academic difficulties were due to many contributing factors, including relationship factors. His theoretical framework acknowledges the importance of relationships at three levels, namely "(1) the classroom interactions between teachers and students, (2) relationships between schools and minority communities, and (3) the intergroup power relations within society as a whole" (Cummins, 1986: p19).

The degree to which the mainstream culture acknowledges and accepts non-mainstream cultures has an impact on how individuals from these cultures engage with learning in the mainstream system (Bernstein, 1973). Other factors however are also important: exposure to texts and engagement in literacy are key factors that support literacy learning in children from non-mainstream cultures (Cummins, 2011).

2.2 Language and Literacy

2.2.1 Language

The term 'language' has many meanings and interpretations. Bloom and Lahey (1978) describe language as "a code whereby ideas about the world are represented through a conventional system of arbitrary signals for communication" (Bloom & Lahey, 1978, p4). Further to this, three distinct components of language can be identified. "Language consists of some *content* or meaning that is

coded or represented by linguistic *form* for some purpose or *use* in linguistic context." (Bloom & Lahey, 1978, p11, emphasis in original). These components of content, form and use allow the researcher to study various aspects of language, namely the semantics, the syntax, morphology and phonology, and the pragmatics.

Learning language is a complex and lengthy process involving the integration of cognitive and linguistic skills. Oral language typically develops during interactions with others (Owens, 2008). For the young child, this involves interactions with older, more experienced and proficient language users. The child's cognitive and linguistic skills are challenged and extended in everyday social situations. The experienced language users provide supports and scaffolds, which are ideally just above the level of the child's communication capabilities, and allow the child to attempt and explore language within their 'zone of proximal development' (Vygotsky, 1962). Conversations and interactions with peers and others also impact on children's language development. Oral language skills in the child continue to be developed and refined as they progress through the school-age years.

2.2.2 Literacy

The development of literacy is similarly a complex process, integrating many skills, including oral language skills. Literacy is a much-used term with multiple definitions. It, like language, can be regarded as a social construct. Lo Bianco & Freebody (1997), who wrote from an education background, defined literacy as follows:

> *Definitions of literacy are notoriously difficult to compose. Literacy is a social*
> *construct, a complex idea that means different things to different cultural groups*
> *at different times. Therefore literacy is a relative term and dynamic. While literacy*
> *is popularly understood to denote the ability to read and write prose and other*
> *print texts, it is an integrated complex of language and thinking processes and*

skills, incorporating a range of habits, attitudes, interests and knowledge, serving

a range of purposes in different contexts. (Lo Bianco & Freebody, 1997, p28)

Literacy abilities correlate highly with socio-economic and academic success (Australian Bureau of Statistics (ABS), 2017), affecting an individual's life opportunities (Fallon & Katz, 2011; Lo Bianco & Freebody, 1997). As such, literacy is an important skill for children to acquire.

The acquisition of literacy is affected by a variety of environmental and skill-based factors (Brice-Heath, 1982; Catts, Compton, Tomblin & Bridges, 2012; Englund, Luckner, Whaley & Egeland, 2004; Foy & Mann, 2003; Stackhouse & Wells, 2000). Some of the skills required for literacy acquisition include speech and language skills, auditory discrimination and memory/sequencing skills, phonological and morphological awareness, alphabetic and orthographic knowledge (Stackhouse & Wells, 2000).

Many of the skills integral to the acquisition of literacy have at their foundation a strong oral language base. Thus, oral language is considered a precursor to literacy acquisition, and the skills of language and literacy develop in a symbiotic relationship as the child progresses through the learning experience; oral language skill enhances literacy skill development and through the processes and practices of literacy, oral language is also further developed (Christie, 1990).

2.2.3 Oral language and literacy development

The early childhood years (prior to formal school education) are recognised as pivotal in developing children's oral language and emergent literacy skills (ACECQA, 2009; England et al., 2004; Prior, Bavin & Ong, 2010). In the Western education system, children are expected to begin school with some readiness to learn literacy. That is, they are expected to have developed some of the aforementioned oral language and emergent literacy skills prior to school entry (Department of Education, 2017b). Children's vocabulary development is an important aspect of their language development and is predictive of later success in literacy development (Paul & Norbury, 2012). Children who have well-developed receptive and expressive language skills and emergent literacy

skills of phonological awareness and alphabetic knowledge are primed to start school (Prior et al., 2010). These children are more likely to experience early success in school (Catts et al., 2012; Prior et al., 2010). Early success at school is a strong indicator of ongoing and future success (Snow, 2006; Conti-Ramsden, 2014; Goldfeld et al., 2016).

The environment of a child's early language and literacy development therefore typically includes the home and may also include the child's ECEC context. Home language is an important factor affecting children's literacy learning (Lo Bianco & Freebody, 1997; Hammer et al., 2014). Children from minority backgrounds frequently speak a home language that differs from the mainstream, the language which is valued in educational settings. In the first years of formal schooling, if the child has had little exposure to the mainstream language through ECEC, they may have to adjust to the different content (vocabulary) and forms of language used at school. They may also have to adjust to the different language expectations of teachers and school programs (Collins, 2014).

Dickinson and Tabors (2001) studied the early childhood language experiences both in and outside the home of 74 children from low income families in the United States of America (US) from a variety of cultural backgrounds. The children came from diverse family structures and circumstances. The researchers analysed the types of language and literacy environments these children were exposed to at home and in their ECEC contexts. The children's language and emergent literacy skills were then formally assessed when they commenced formal schooling and their progress was monitored at intervals throughout their later school years. The findings of this research revealed that extended discourse in the home environment was positively related to children's later literacy development. This finding illustrates the importance of adult-child verbal communicative interactions in the development of children's language and literacy skills. The researchers also noted a great diversity of activities in the ECEC context, resulting in different types of conversations. Children who had been exposed to extended one-on-one conversations with early childhood educators in their preschool years performed better on formal language and pre-literacy assessment tasks at the time of school entry. These findings indicate that the quality of the interactions

between adults and children has implications for language learning; children's exposure to extended discourse in interactions during their early childhood years both at home and in ECEC contexts is positively related to their later literacy development (Dickinson & Tabors, 2001).

The importance of two-way conversations with children to facilitate early language development is further supported by Zimmerman et al. (2009), who studied 275 families with young children aged between two and 48 months in the US. Their findings identified quality adult-child conversations as an essential component of child language development (Zimmerman et al., 2009). Children who have opportunities to participate in sustained verbal interactions with adults are more likely to succeed in literacy learning. These findings prompted the authors to recommend that 'Parents should be encouraged … to engage their children in two-sided conversations' (Zimmerman et al., 2009: p342).

Two-way conversations such as those described by Zimmerman et al. (2009) may occur across different contexts, both inside and outside the home, with family and/ or community members. The communication opportunities to which children are exposed will differ depending on the social context. These contexts may involve differences in culture, language or discourse, as discussed in section 2.1.

Fundamental to the interactions that children engage in with their educators are the relationships that support these interactions. Lino (2016), discussing key competencies in early childhood teacher education, stressed the relationships between teacher and child, teacher and family. For the young child commencing school from a non-mainstream or marginalized culture, the relationship and rapport that is developed between educator and child has implications for how the child will value the learning experience and engage with the process of literacy learning (Bernstein, 1973).

Oral language skills, essential for learning literacy, and developed through interaction and two-way communication in the early childhood years, are developed across different contexts, both at home and in ECEC settings. Supporting families to promote children's learning is recognized as crucial for

success (Australian Institute of Family Studies, 2014; Brinkman, Hart, & Blakemore, 2004; Goldfeld et al., 2010; Sayers et al., 2007). Establishing trusting relationships and positive partnerships between ECEC and family/community are important factors influencing children's engagement and participation in education (ACECQA, 2009; Brebner, Hammond, Schaumloffel, & Lind, 2015; Lino, 2016). Skill development and support across key domains (Commonwealth of Australia, 2015a) ensure that children are better prepared for future success at school.

2.3 Issues relating to Aboriginal Children's Literacy Learning

Australian Aboriginal people are a minority culture within a complex society which embraces primarily Western European values. As a result, many of the language, literacy and societal issues discussed above are relevant for some Aboriginal children. Linguistic aspects of dialect are a main focus of this thesis and will be addressed in detail in the next chapter. The recognized differences in world views and discourses of Australian Aboriginal people and mainstream Australian society (Dunn, 2001; Malin, 1990) also have implications for Aboriginal children's achievement in early education.

Malin (1990) studied Aboriginal children's communication and interactions in the classroom as well as in their home and community. Her findings revealed that characteristics of autonomy, self-regulation, self-reliance, social equity and affiliation are typically valued and developed in Aboriginal children more than in the mainstream population (Malin, 1990). These characteristics, when displayed in an educational context, may be misconstrued by an educator with Western values as disobedience or non-compliance.

Different cultures build and maintain their knowledgebase using different processes, which are associated with different patterns of thought and communication styles (Ritzer, 2016). Some differences between traditional Aboriginal and Western philosophies may influence the language and learning experiences of Aboriginal children. These differences can include oral and literate

culture, and a collectivist or an individualist approach, which may be associated with low versus high context communication. The collaborative/collectivist culture of Aboriginal Australia also needs to be considered, because the concept of individual achievement is not compatible with traditional Aboriginal cultural values (Eckermann et al., 2010) yet this very concept underpins Western educational philosophies. It is to be expected that educators will respond to situations in the classroom based on their own philosophical approach, which may be very different to that of the Aboriginal child and their culture. Teachers may reprimand Aboriginal children for acting in a way which is culturally appropriate in their community, such as supporting a peer or sharing knowledge in a test situation. Cross-cultural differences such as these have implications for how Aboriginal children learn and participate in the learning experience (Harkins, 1994; Malcolm, 1994b, 1994b; Malin, 1990). These differences can also affect the relationship between the teacher and student, which is so important in cultivating the learning context and student engagement.

Power relationships in mainstream society can also affect Aboriginal children's literacy learning. Aboriginal people historically have been excluded from schools by policy and practice. This, combined with many other social disadvantages, has resulted in fewer Aboriginal adults with adequate levels of literacy, compared to the wider community. In modern society literacy is related to power; for those who have limited literacy, there are limited opportunities to progress within the social hierarchy. For many Aboriginal people a history of illiteracy in the family and community exists, creating a cycle of disempowerment (Dunn, 2001).

A deeper understanding of the relationships between language, literacy and culture, as outlined in this chapter, allows for a more holistic approach towards the consideration and evaluation of Aboriginal children's literacy skills. Internationally, standardised assessments of language and literacy skills are recognised as inappropriate for many Aboriginal children (Gould, 2008b; Pearce & Williams, 2013; Peltier, 2011; Sterzuk, 2008) as they are based on Western philosophies, discourses and social practices. Implementing standardised tests may result in misdiagnosis of Aboriginal

children by speech pathologists (Cahir, 2011; Gould, 2008a; Toohill, McLeod & McCormack, 2012). Similarly, it has been noted internationally that implementing Western based intervention approaches for Aboriginal children's language and literacy difficulties may not result in the desired progress (Peltier, 2011) as the communication goals, or the processes recommended for working towards these goals, may not be compatible with Aboriginal people's culture and discourse practices (Ball, 2009; Ball & Bernhardt, 2008; Peltier 2010, 2011). During the assessment and intervention process, collaboration with the Aboriginal community is recommended to ensure that cultural practices are incorporated into the process of intervention, rather than presenting suggestions which may not be followed (Ball & Lewis, 2011, 2014).

 There are additional factors that also may affect the literacy learning of Aboriginal children, such as the presence or absence of shared cultural knowledge, beliefs and world views between educator and child. The specifics of some of the factors are discussed in the following chapter.

3. Aboriginal Children's Language and Literacy Development

The previous chapter placed the current research in context by discussing features of dialect and culture, language and literacy, and how these apply to Aboriginal children in Australia. This chapter will further discuss factors affecting Aboriginal children's language and literacy development, as identified in the literature. Firstly, health, education and socio-political factors will be discussed from an historical perspective. This will be followed by a detailed discussion of dialect, culture and the relationship between these and literacy development. The chapter will close with a summary of the aims of the research and the factors that were investigated.

3.1 The Current Situation

Aboriginal people have inhabited Australia for over 40 000 years, with recent European colonisation occurring just over 200 years ago (Horton, 1994). The Aboriginal people in Australia prior to colonisation lived a hunter-gatherer lifestyle characterised by strong spiritual links to the land (Moriarty, 2001). Since Europeans arrived in Australia, Aboriginal Australians have suffered social and political persecution; this has led to social and economic disadvantage for many Aboriginal Australians. This history has directly affected Aboriginal people today, so in order "To understand the present we must understand the past" (Sarra, 2015, p2). The social and economic disadvantage of Aboriginal people compared to their non-Aboriginal counterparts, is reflected across many indices, including employment, housing, safety, law and enforcement (ABS, 2016). These indices are related to health outcomes in disadvantaged populations (Germov, 2013). Many of these social and economic disadvantages have their roots in   historical and political foundations.

Socio-political factors impacting on Aboriginal children today include the relationships between schools and communities, families and educators. Unequal power relationships still exist as a legacy of the historical situation which arose when Australia was colonised by the British (Eckermann et al., 2010). In the years post-colonisation Aboriginal people in Australia were subjected to inhumanities, including massacres and removal of children by force from their families and communities.

Aboriginal people were forcibly removed from their traditional lands, which were cleared and razed for farming, and the people were placed in reserves or missions. They were expected to adopt European cultural values and practices while their own culture was suppressed and denigrated. They were politically targeted via policies that were based in ethnocentrism and xenophobia, such as the Protection Policy, which was in effect from the 1890s until the 1950s. This policy legalised processes such as segregation, the provision of rations, and control of Aboriginal children by the government, which further established unequal power relationships between Australian Aboriginal people and Australians of European origin (Eckermann et al., 2010).

In terms of socio-economic and academic outcomes, Aboriginal people generally are now disadvantaged compared to the non-Aboriginal population in Australian society (ABS, 2014, 2016). Aboriginal people have been controlled and ostracized through government policies; they have been under-educated and many are now trapped in a cycle of poverty (Eckermann et al., 2010). Measures of health, education and social-economic outcomes for Aboriginal people in Australia are lower than those for non-Aboriginal Australians (ABS, 2016; Commonwealth of Australia, 2015b). Since 2008 the Australian government has been instigating projects and strategies to 'close the gap' in health and education outcomes for Aboriginal people; however, reports indicate that significant disadvantage is ongoing. Progress towards meeting targets for this population is behind expected levels in crucial areas, such as life expectancy, employment outcomes, literacy and numeracy skills, and also access to early childhood education for children in remote areas (Commonwealth of Australia, 2015b).

The Longitudinal Study of Australian Children (LSAC) studies the social, cultural and economic environments of children in Australia over time and links these with child wellbeing (Australian Institute of Family Studies, 2014; Department of Families, Housing, Community Services and Indigenous Affairs, 2009; Department of Social Services, 2014). The related Longitudinal Study of Indigenous children (LSIC), also called the *Footprints in Time* study, studies the environments and

factors affecting the health and wellbeing of Aboriginal children in Australia (Department of Social Services, 2015, 2016). Findings from these studies describe the negative effects of social and economic disadvantage on children's health and wellbeing (Department of Social Services, 2016; Kikkawa, 2016). Kikkawa (2016) documented the major life events that Aboriginal children in the LSIC were recorded as experiencing, compared to the general population of children in the LSAC. Major life events may not be negative or unexpected; however, they are generally recognised as having an impact on an individual's wellbeing and coping. Examples of major life events might be the birth or death of a close family member, prolonged illness or accident, being affected by robbery, crime or assault, moving place of abode, and other similar events. The effect of persistent occurrence of major life events can be disadvantageous to an individual's mental health and wellbeing (Sameroff, 2010). Kikkawa (2016) found that, when compared with the LSAC children, the *Footprints in Time* children were experiencing higher levels of disadvantage, more frequent major life events and more persistent occurrence of these events. The *Footprints in Time* children were also found to have on average a higher rate of social and emotional difficulties than the LSAC children, based on the results of a comparable set of indicators. The *Footprints in Time* study used a different measure to the LSAC however many of the questions were comparable, allowing conclusions to be drawn about the experiences of these two groups of children. The accumulation of traumatic events in childhood combined with social and economic disadvantage, both of which measured higher in Aboriginal than in non-Aboriginal children, were found to be related to poorer child mental health and wellbeing. The mental health of the child's carer in both the LSAC and the LSIC also influenced the child's social and emotional outcomes. In both studies, regardless of disadvantage, if the child's carer had better mental health, as judged by comparable questionnaires, the child had better social and emotional outcomes. These findings indicate the relevance of historical, social and economic disadvantage in the consideration of Aboriginal children's development.

3.1.1 Factors affecting the development and academic progress of Aboriginal children

Currently Aboriginal children's literacy and numeracy skills in general fall below those of their non-Aboriginal peers (Australian Curriculum Assessment and Reporting Authority (ACARA), 2015). There are many factors, mostly inter-related, which contribute towards the lower-than-average literacy skills of Aboriginal children (Docket, Mason & Perry, 2006; Biddle & Cameron, 2012). These factors include the poorer health and higher rates of disability in Aboriginal children. Aboriginal children are also less likely to participate in preschool than their non-Aboriginal peers. Biddle and Cameron (2012) found that factors evident in early childhood compounded as Aboriginal children progressed through the education system, resulting in a lasting impact on children's ongoing academic achievement and participation rates. The consideration of Aboriginal children's academic achievement and particularly literacy skills are relevant to the current research because of the close relationship that exists between literacy and language (see section 2.2.3). Dialect, as an aspect of language, is a focus of this current research and is therefore considered as one factor that may affect children's literacy development.

The disparity between Aboriginal and non-Aboriginal children's literacy outcomes is significantly wider in rural and remote areas, a fact which may be attributed to a range of contributing factors. In more remote areas, children may need to travel long distances over difficult terrain to attend the local school. In order to access secondary education students many need to go to a regional centre which may be even more geographically distant; transport is an issue in these situations. Lifestyles are very different in remote areas; many cultural practices of Aboriginal people in these areas are still strongly traditional thus encompassing unique values and philosophies about child-rearing and education. Indigenous languages are also spoken in these areas, often as a first language, so the transition to Standard Australian English (SAE) as the main language of instruction in the education system poses many challenges (Simpson & Wigglesworth, 2008). These are some of the issues that can contribute to the lower than average literacy outcomes for Aboriginal children in rural and

remote contexts. The gap in literacy skills still exists, however, even in regional and urban areas of Australia, such as Newcastle.

The many contributing factors affecting the literacy development and academic progress of Aboriginal children in Australia may be better understood when grouped under categories, so that the relationships between these areas can be considered. Figure 1 illustrates the broad theoretical areas of influence that affect the language and literacy development of Aboriginal children. Socio-political factors; the health and welfare of the child, family and community; the culture and dialect of the family and community (which may be very different to that of mainstream society); and education in early childhood all shape the child's preparation for later academic learning. The arrows in Figure 1 indicate the direction of the influence. For example, socio-political factors affect health, education and family life. The bi-directional relationships between factors are indicated by double headed arrows.

Socio-political (historical) factors

Health, including hearing and ear health

Education, including early childhood education

Culture and family life, including dialect

Language and literacy development
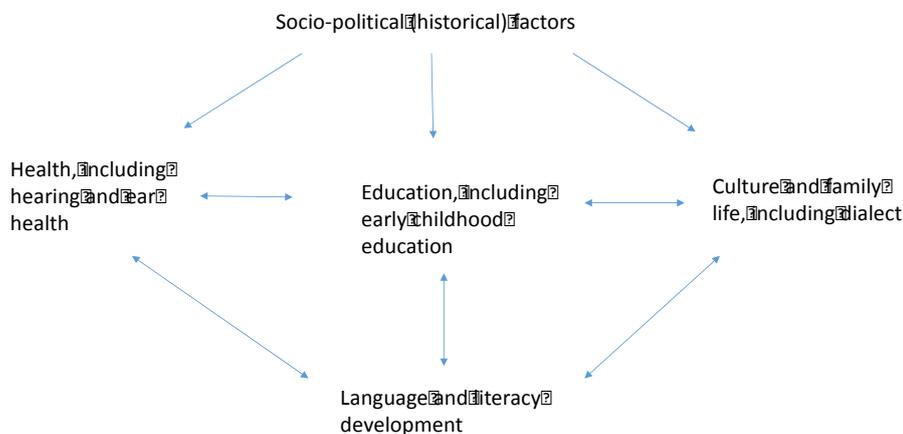
Figure 1. Factors affecting Australian Aboriginal children's language and literacy development.

3.1.2 Socio-political factors affecting Aboriginal children's literacy development and academic progress

As shown in in figure 1, socio-political factors have an overarching effect in that they impact other factors such as education, health, culture and lifestyle. The long-term disadvantages described in section 3.1 affected education levels of Aboriginal people who suffered many deprivations and persecutions including being banned from attending schools and other public places (Australian Law Reform Commission, 2014). As a result, many Aboriginal people had low levels of literacy, as well as negative impressions of schools and government services generally. This rendered the family and community of the Aboriginal child less able to support the child's education and less willing to engage with government services. The differences in results for Aboriginal and non-Aboriginal children on national literacy tests are particularly affected by the child's social circumstances. Aboriginal children from welfare-dependent communities who attend mainstream schools scored failure rates of 20% on national literacy and numeracy assessments compared to 10% for non-Aboriginal children (Hughes & Hughes, 2010).

Although Aboriginal children currently, like the rest of the Australian population, are now required to attend school, their families and carers may not have had positive experiences with the education system. Adults in the home and community of the Aboriginal child may not have the experience, support or understanding to best facilitate the child's school-based learning and literacy development. Despite availability of mainstream services such as health or education in urban areas, Australian Aboriginal people may be reticent to engage with these services (Nelson & Allison, 2004). This tendency extends to the early childhood setting where successful engagement of Aboriginal children and their families requires a culturally safe environment, and an early childhood education and care service that delivers culturally appropriate education and care (Biddle & Cameron, 2012; Jackiewicz, Saggers & Frances, 2011).

3.1.3 Health

The general health status of Aboriginal Australians falls well below that of the non-Aboriginal population (ABS, 2016; Australian Institute of Health and Welfare (AIHW) 2011, 2016); Aboriginal people have poorer general health, shorter life expectancy and higher rates of disability than average Australians (AIHW, 2016). Some conditions, particularly chronic health conditions such as diseases of the circulatory system, cancer, respiratory disease and endocrine or metabolic disorders such as diabetes, evidence more dramatic differences between the Aboriginal and non-Aboriginal populations (AIHW, 2016). Progress in improving the health of Aboriginal Australians is slow (Ou, Chen & Hillman, 2012) and although intervention and prevention services are being implemented, these struggle to meet the needs of Aboriginal Australians in a culturally responsive manner. Language differences, cultural practices and understandings that are out of context with Western medical philosophies complicate the intervention process (Cass et al., 2002; Lowell, 2013). As illustrated in Figure 1, socio-political factors such as those described in section 3.1.2 have affected the health of Aboriginal people, and this in turn affects Aboriginal children's education, language and literacy development.

Social determinants of health, such as low socio-economic status (SES), poor housing, unemployment and parental literacy levels (Gemov, 2013) are all relevant factors to be considered for their contribution towards Aboriginal children's development and progress (Australian Human Rights Commission, 2008). The generally poorer than average health and associated social circumstances of Aboriginal people in Australia negatively affect the academic achievements and life opportunities for these people (AIHW, 2016; Eckermann et al., 2010). Individual children's health will affect their attendance and participation at school. However, ill-health in the community also has implications for the child's academic progress, because the child is dependent on the parents /carers to provide support and guidance.   If adults in the child's home or community are unwell or caring for relatives who are unwell, they may be less able to engage with and support the child with their education and learning experiences.

The prevalence of ear disease and associated hearing impairment in Australian Aboriginal children are also relevant to the learning experiences of these children. Middle ear infection, or Otitis Media (OM), is highly prevalent among Australian Aboriginal children, who suffer longer and more frequent bouts of OM than their non-Aboriginal peers (Couzos, Metcalf & Murray, 2001; Williams, Coates, Pascoe, Axford, & Nannup, 2009). The rate of OM amongst this population is one of the highest in the world (World Health Organisation (WHO), 2000); Aboriginal children are more likely to contract the disease earlier in life than their non-Aboriginal peers and it also tends to persist into adulthood more than is common in the general population. The high rates of OM in Aboriginal children have implications for their language and literacy outcomes because of the relationship that exists between hearing, language and literacy development (Galloway, 2008; Williams & Jacobs, 2009; Zumach, Chenault, Arteunis, & Gerrits, 2011).

3.1.4 Education

The relationship between health factors and the education of Aboriginal children has been mentioned in section 3.1.3. As depicted in Figure 1, socio-political factors and cultural factors also affect Aboriginal children's education, at both an early childhood level and throughout their schooling. The many aspects of education that can affect a child's language and literacy development will be discussed in detail in this section.

Historical socio-political factors have placed many Aboriginal children at a socio-economic disadvantage. Consistent with other marginalised groups, the parents of Australian Aboriginal children often have lower levels of literacy than other Australian parents (ABS, 2016); Aboriginal adults are likely to have left school earlier on average than non-Aboriginal adults. This affects their children's literacy development because home literacy practices may differ (Brice-Heath, 1982; Dunn, 2001).

Family life and cultural differences also may affect Aboriginal children's learning from a broader perspective. Learning in Aboriginal cultures has traditionally been of an informal and holistic nature,

which differs from the more formal and structured progression of learning that is common in the mainstream Australian education system (Dunn, 2001). Different learning styles have been discussed in the literature as associated with children of different cultures, specifically Aboriginal culture (Ryan, 1992; Stewart, 2002), and educators have been encouraged to incorporate a diversity of learning styles into their teaching practices in order to accommodate different learners. Traditionally, the Australian Aboriginal culture is an oral culture, whereas Western European cultures are more literate in nature; this affects the values placed on the oral versus the written word and consequently the mediums of communication and learning that are prioritised in everyday interactions (Dunn, 2001). Aboriginal children may commence formal schooling, or ECEC, with a different pattern of skill development than non-Aboriginal children (Biddle & Cameron, 2012; Malin, 1990). As discussed in the previous chapter (see section 2.3), different skills are valued in different cultures, for example autonomy, self-reliance and social equity are characteristics that have been traditionally valued in Aboriginal culture (Malin, 1990). These characteristics may not be regarded positively in an educational context that adheres to primarily Western perspectives about the roles in education. Characteristics of autonomy, self-reliance and social equity do not align well with the Western perspective of role of the child as a compliant and submissive learner. Some skills that are valued in Aboriginal culture may actually present a barrier to the development of a relationship between the child and their educator in a school context (Malin, 1990).

Specific skills that support academic learning can be assessed at an early age. The Australian Early Development Census (AEDC) is a government-run initiative that assesses and documents the early childhood experiences of Australian children (Commonwealth of Australia, 2015a). Analysis of the findings provides information for educators and communities to allow for better support to benefit children. The AEDC assesses children across key domains of physical health and wellbeing, social competence, emotional maturity, language and cognitive skills, communication skills and general knowledge. If a child's skills are assessed as below the 10th percentile in a domain they are classified as developmentally vulnerable in that domain, suggesting their academic learning may be negatively

affected as a result. In 2015, six out of ten Aboriginal children were classified as developmentally vulnerable in one or more domains. Aboriginal children were found to be substantially more vulnerable than their non-Aboriginal peers, especially in the areas of literacy and numeracy development (Biddle & Cameron, 2012). This reflects lower levels of school readiness in Aboriginal children beginning school and these children and their families therefore require extra support with the transition to school process (Dockett et al., 2006; Dockett, Perry & Kearny, 2010; Docket et al., 2008; McRae et al., 2000).

One educational factor which affects Aboriginal children's progress at school is their experience with ECEC prior to school. Children who have had experience in ECEC contexts are more likely to transition well to school and progress academically (Biddle & Cameron, 2012; Brinkman et al., 2013). However the impact of ECEC depends on the child's attendance. Justice, Mashburn, Pence, & Wiggins (2008) found that the gains in expressive language development of disadvantaged children enrolled in quality preschool education programs in the US were affected by their attendance at preschool. Children demonstrated progression in their language development if they attended the programs regularly.

External factors (such as chronic health conditions, the loss of a family member or frequent moving place of abode) may also affect the preschool attendance of Aboriginal children and consequently their school readiness or vulnerability (Commonwealth of Australia, 2015a; AIHW, 2016). Overall, in the year prior to school, the attendance at ECEC of Aboriginal and Torres Strait Islander children is lower than that of non-Aboriginal children (ABS, 2017a). Access to ECEC is not, however, the only issue affecting Aboriginal children's attendance: if the carers of Aboriginal children had suffered discrimination the likelihood of the children attending ECEC was decreased (Biddle & Cameron, 2012). If an Indigenous adult is present in the ECEC environment, Aboriginal children are more likely to attend the service (Biddle, 2007). These findings reflect the previously discussed issues around engagement with services.

The presence of a culturally safe environment and the inclusion of culturally appropriate practices in an ECEC service are recognised in the literature to be important in developing an atmosphere of acceptance, belonging and community engagement (Jackiewicz et al., 2011). Included in the literature are examples of ways to acknowledge and include Aboriginal culture that are more than merely tokenistic, in order to provide quality ECEC with a focus on equity (Fasoli et al., 2004; SNAICC, 2015).

Australian Aboriginal children living in urban areas are frequently in an ECEC context where they are in the minority, and the educators are of a different (mainstream) culture (SNAICC, 2015). There is little research regarding the impact that cultural match between educator and child may have on Australian Aboriginal children's early language and pre-literacy skill development. In allied health contexts, the presence of a family or community member from the same culture is recognised as helpful in facilitating interactions with Aboriginal people. Gould (2001) and Kinton (2000) have described the difference that the presence of an Aboriginal adult can make to language assessments with Australian Aboriginal children. The presence of an Aboriginal parent or community member from the same culture facilitates interactions with the Aboriginal children, resulting in more verbal communication (Gould, 2001) and hence more valid assessment results (Cahir, 2011; Kinton, 2000). Cahir (2011) emphasised the importance of contextual knowledge in the evaluation of Aboriginal children's communication skills.

In the school education system, the low percentage of Aboriginal children in many urban contexts (ABS, 2017a) also frequently results in an environment where these children are in the minority, and hence their dialect may be less familiar to the teachers. Dixon (2013) described the deficit model that is frequently adopted in the assessment of the communication of Aboriginal children in the classroom. She described the linguistic differences and illustrated different ways of analyzing these differences. Typically, in the education system, a mistake-oriented approach to assessment fails to acknowledge the differences in dialect between AE and SAE, instead regarding the Aboriginal

children's dialect as erroneous. Alternatively, when these errors are regarded through a different lens Dixon (2013) demonstrated that many so-called errors actually demonstrate the development of children's skills in using AE and SAE dialect.

3.1.5 Family life, culture and dialect

There are many ways in which the family and community of the Aboriginal child impacts on their learning. Cultural practices and the values that families and communities place on different skills affect children's approaches to learning (see section 2.3). Dialect is an important aspect of family life and culture which also affects the child's learning (Malcolm, 1994b; Dunn, 2001). Aboriginal English dialect is encompassed in the culture and family life of Aboriginal Australians.

Many Australian Aboriginal people, especially in urban areas are fiercely proud and supportive of their culture, which includes lifestyle practices as well as their language or dialect. The concept of cultural vitality (Eckermann et al., 2010) is an important consideration in Australian Aboriginal society today. Eckermann et al. (2010) described aspects of cultural life that define Aboriginal culture and contribute to maintaining the cultural vitality of Aboriginal people. These include how families are organised, patterns of reciprocity and patterns of decision-making that are part of the Aboriginal culture.

 Language and communication are embedded in cultural life. As Peltier (2011) suggests, "Language shapes the way people see the world as well as how people describe it" (p129). From very early in a child's life communication and language are incorporated in cultural practices and serve to teach cultural values. Use of dialect is a cultural feature that can be regarded as identity-forming (Harrison, 2004; Malcolm, 2013b), and as such, needs to be considered for its importance in maintaining cultural vitality within Australian Aboriginal communities. Kickett-Tucker (2009) found that language or dialect was one aspect described by Aboriginal children and youth as central to their identity.

3.2 Aboriginal English Dialect

Prior to colonisation, there were at least 200 Indigenous languages in use around Australia (Butcher, 2008). Directly or indirectly, as a result of government initiatives and policies, which included separating children from their families, many of the Indigenous languages in Australia have since been eradicated. Many Aboriginal people in Australia now speak a form of AE. The close relationship between language and culture was discussed in the previous chapter (see section 2.1.1 and 2.1.3); this section will describe AE in more detail, and further discuss the cultural importance of dialect.

Many of the linguistic features which distinguish AE from SAE are derived from traditional Aboriginal languages, even though currently in many areas of Australia, Aboriginal languages are no longer spoken. The traditional Aboriginal languages that were originally spoken by the Aboriginal peoples in Australia prior to colonisation provided a basis on which further communication was laid (Harkins, 1994). Historically, when Aboriginal people were learning English, the features of the first language affected their communication and pronunciation in the second language (English). This phenomenon accounts for many features of the AE dialect. This process also continues to occur when Aboriginal people learn English as a second language. For example, the phonology of many Aboriginal languages does not have a voicing distinction, nor a distinction between stops and fricatives. These first-language features directly affect AE dialect, which often features the production of fricatives as stops, and voiceless plosives as their voiced counterparts. For example /f/ might be produced as /b/ in the word 'fan'. Many traditional Aboriginal languages do not mark verb forms such as the copula; the term 'zero marking' is used to describe these linguistic rules in a dialect or language. Alternative grammatical forms may also be used in some non-standard dialects (Pearce, Williams & Steed, 2015). Some non-linguistic features, such as head and eye movements, are also used differently in Aboriginal English compared to SAE (Eades, 1996).

The widespread use of AE dialect across Australia serves several purposes. As the home and community language for many Aboriginal people AE dialect is the best form of communication to

support and express cultural practices and philosophies. Dialect may be the most effective and efficient way for two people from the Aboriginal community to communicate (Harkins, 1994). An individual's use of dialect may also align him or her with the cultural community; use of dialect identifies the individual as belonging to a specific cultural group (Renn & Terry, 2009; Kickett-Tucker, 2009; Peltier, 2011).

3.3 Bi-dialectal Communication

Although many Aboriginal children speak AE or traditional languages in their home and community, SAE is the main language of instruction in Australian mainstream education. Some Aboriginal children have been exposed to mainly traditional Aboriginal language(s) prior to school entry so for these children the process of learning SAE is occurring simultaneously with their school enrolment. There are many considerations that need to be taken into account for these second language learners (Simpson & Wigglesworth, 2008) as they confront new language, culture and content in the classroom. Some of the previously mentioned linguistic, cultural and educational considerations that are relevant for Aboriginal second language learners are also relevant for Aboriginal children who speak AE and are learning SAE as a second dialect.

Children need to be able to speak their language or dialect for reasons of cultural identity as well as for effective communication in the home and community. They also, however, need to be able to learn to use SAE in order to progress academically. Children and adults who speak two dialects, such as AE and SAE, are termed bi-dialectal. The shifting between one dialect and another or one language and another is termed code-switching or code-shifting (Harkins, 1994; McLeod & McCormack, 2015). In order to meet the demands of the mainstream education system, children who come to school speaking a non-standard dialect are faced with the task of developing competence in the standard variety. The ability to code-shift between dialects according to context (Renn & Terry, 2009) is a skill typically acquired by bi-dialectal speakers. This ability to code-shift involves higher level metacognitive and metalinguistic skills because the individual needs to be able

to interpret the context correctly and adjust their communication to suit the context (Connor & Craig, 2006; Wolfram & Schillings-Estes, 2006). The acquisition of code-shifting abilities in a child may also be affected by the teaching approach of the educator and the support that is provided to the child and family in the transition to school process.

Children's language and literacy development is shaped by their experiences in ECEC, home and community contexts (ACECQA, 2011; Centre for Community Child Health, 2017; Dickinson & Tabors, 2001). Supporting the child to learn to use dialect appropriate to context therefore requires support across these different contexts. The roles that schools, communities, families and services play in preparing Aboriginal children for school cannot be over emphasized (McTurk, Robinson, Lea, Nutton, & Carapatis, 2011). Involving and valuing family and community language and culture is essential for developing relationships and establishing interactions which are crucial for learning and language development (Dockett et al., 2006; Dockett et al, 2008; Dockett et al., 2010; Dunn, 2001; Mason-White, 2014; Peltier, 2010, 2011). Culture and discourse factors need to be acknowledged and considered for Aboriginal children as they transition into the formal education system, so that their learning can be most effectively supported (Ellis et al., 2010; Mason-White, 2014).

3.3.1 Educators' knowledge and perceptions of AE

The expectations and attitudes of educators also impact on children's learning. Knowledge and attitudes of teachers towards students' culture and use of dialectal communication affect their perceptions of the child as a whole (Barbour, Edwards, Munstermann, & Weltens, 1991). Specifically, educators' knowledge and awareness of AE affects their perceptions and classroom teaching practices with Aboriginal children (Haig & Oliver, 2003a, 2003b; Oliver, Rochecouste, Vanderford & Grote, 2011). There is great diversity in schoolteachers' awareness of AE dialect and culture, and as a result Aboriginal children may encounter a variety of different learning experiences when they attend school. Oliver et al. (2011) explored the impact of professional development about AE (Malcolm et al., 1999) on the knowledge and attitudes of schoolteachers. Their findings demonstrated that educators' experience and knowledge about Aboriginal language and culture

impacted on how they perceived Aboriginal children and their communication in the classroom. Educators who had experience with, and professional development about, AE had both a more positive attitude towards AE and also a deeper understanding of AE. Sharing cross-cultural philosophies and understandings between Aboriginal and non-Aboriginal people, as well as improving knowledge and awareness of AE, are important for developing educators' overall awareness, skills and abilities for working with Aboriginal children and their families (Malcolm, 2011).

By valuing a child's language and discourse, educators acknowledge and demonstrate respect for the child's culture, indicating that the child and his/her previous experiences are valuable (Harvey & Myint, 2014). Educators who are able to acknowledge, value and/or use the discourse of minority children's culture have the opportunity to form strong relationships with these children and their families, and engage in more lengthy, complex and meaningful interactions in the early childhood education context. In the process of transition to school, with the challenges of different languages and discourse practices, the relationship with the teacher can be of paramount importance for children from disadvantaged backgrounds (Bernstein, 1973; Cummins, 1986, 1994; Dunn, 2001; Harvey & Myint, 2014). A strong relationship between educator and child supports the child's transition to school and their ongoing learning.

3.4 Dialect Density

There are many similarities between the dialects of AE and SAE (Eagleson, Kaldor & Malcolm, 1982). This is typical of the overlap of features that occurs between standard and non-standard dialects. The amount of similarities between AE and SAE provide an indication of the strength of the dialect. AE is regarded as a continuum whereby a heavier or 'basilectal' dialect reflects more dialectal features of Indigenous first languages than a light or 'acrolectal' dialect, which includes more features from SAE and relatively fewer Indigenous language features (Butcher, 2008). One method of measuring whether an individual is speaking in dialect, and the 'heaviness' of their dialect is to

measure dialect density. Dialect density is a measure of how many dialectal features are present in a sample of the individual's communication. Several researchers have studied standard and non-standard dialects and explored different ways of calculating dialect density (Oetting & McDonald, 2002; Renn & Terry, 2009; Terry & Connor, 2010).

The calculation of an individual's dialect density in different contexts is one way of determining whether the individual is code-shifting according to the context. International studies have demonstrated change in dialect density coinciding with the commencement of formal schooling. Craig and Washington (2004) studied the dialect density and academic performance of 400 typically developing African American children from preschool through to fifth grade. The results of this research demonstrated that children in grade school were using significantly, and progressively, fewer non-mainstream dialectal features than the preschool and kindergarten children, indicating a shift in dialect use with the commencement of formal schooling. There was some variation in the extent of dialect-shift, so the children were considered in groups according to how much dialect change was evident. Those who showed more shift (that is, adopted more standard features at school) were found to perform better on national and state standardised assessments of reading ability and also on vocabulary testing (Craig & Washington, 2004).

A complex relationship exists between the school-aged child's dialect density, their ability to code-shift from non-standard to standard dialect, and their literacy development, as demonstrated in further studies from the US (Terry & Connor, 2010; Terry & Connor, 2012; Terry, Connor, Petscher & Conlin, 2012; Terry, Connor, Thomas-Tate & Love, 2010). Terry & Connor (2012) discussed the complexity of the relationship between children's non-standard dialect use and their reading achievement, in terms of both their dialect density and their ability to shift dialect. Children's spoken non-mainstream dialect generally decreased in the year they commenced school (Grade one). The children's spoken non-mainstream dialect use in the year prior to school predicted their reading achievement in Grade one. The researchers also noted that children's ability to code shift was

associated with metalinguistic skills, such as phonological awareness. Further research indicated

that stronger underlying oral language skills prior to school entry were predictive of more change in

dialect density with the commencement of formal schooling and also greater reading progress (Terry

et al., 2012). These findings may be relevant in the consideration of Australian Aboriginal children

who speak AE.

3.5 Cultural Match

Interactions in early childhood shape children's language development which consequently impacts

on their literacy (see section 2.2.3). Whether or not educators and children in their care belong to

the same culture may affect communicative interactions in early childhood contexts: educators of

different cultures use different discourses (Bryce-Heath, 1982; Harvey & Myint, 2014) that may

impact on the interaction and relationship between educator and child. The Western worldviews

and culture which form the basis for the education system in Australia differ in some very significant

ways to world views of the Aboriginal culture. Malcolm and Sharifian (2002) discuss the different

cultural 'schemas' that may affect the communication between Aboriginal children and their non-

Aboriginal educators. The cultural knowledge and understanding that an individual has about a topic

or event affects how they understand and interpret information about that topic. Consequently, the

communicative interactions between educator and child are influenced by each individual's cultural

world knowledge and experience.

The role of each individual in the communication exchange is crucial to effective communication.

Malcolm and Koscielecki (1997) discussed the 'hearer-oriented' perspective that can be associated

with Aboriginal English. Communication exchanges with a hearer-oriented perspective rely on the

hearer or listener in the exchange to assume some responsibility for decoding the signal or

comprehending the speaker's utterances. This can be contrasted with the speaker-oriented

perspective of Western cultures, where the responsibility rests primarily with the speaker to ensure

that their utterance is comprehensible to the listener. In a hearer-oriented perspective, the hearer is

required to decipher the speaker's meaning using inference and contextual knowledge as well as verbal communication. Ellis et al. (2010) acknowledged that this hearer-oriented perspective relies on a more equal balance of power between communication partners than a speaker-oriented perspective, which places the expectation on speakers to express themselves clearly. Differences in this perspective may contribute to some confusion between non-Aboriginal educators and Aboriginal children in terms of language use.

The broader power relationships between educators, children and families of different cultures can also affect the interpersonal relationships formed between these parties, and consequently the successful learning of children from minority cultures in the early childhood setting. The mainstream cultures hold the balance of power in society: in an education context, educators need to be mindful of this so as to counteract the possibility that children may feelg less worthy, and because of this, less be less interactive (Siraj-Blatchford, 1996; Siraj-Blatchford et al., 2013).

3.5.1 Linking dialect, interactions and relationships in early childhood

It is well recognised that early childhood and the pre-school years are critical in terms of children's language development and the implications this holds for their acquisition of literacy (Dickinson & Tabors, 2001; Conti-Ramsden, 2014; Conti-Ramsden, Botting, Simkin, & Knox, 2001; Leitao & Fletcher, 2004). Also well-documented is the gap that currently exists between the average literacy skills of Aboriginal and non-Aboriginal children (ABS, 2017b; ACARA, 2015; AIHW, 2016; Zubrick et al., 2006). The current research sought to investigate some of the factors present in early childhood that may influence Aboriginal children's acquisition of literacy.

Relationships between the educator and child at the early childhood level are critical in developing in the child a sense of belonging and trust, which lays the foundations for successful learning experiences. The frequent and natural interactions between educator and child function to develop and strengthen these relationships. It is also through these same interactions that children are provided with opportunities to develop and extend their language and communication skills. The

relationship that is developed with the educator is considered to be especially important as an academic starting point for children from minority cultures (Cummins, 1986, 1994).

The culture of the child and their community, compared to the mainstream, is a factor that impacts on children's learning opportunities and outcomes (Cummins, 2011). One important component of culture that may influence the relationships between educators and children in the ECEC context is the dialect that the child uses. Dialect is a very powerful indicator of difference between minority students and their mainstream educators (Kickett-Tucker, 2009; Oliver et al., 2011), which may impact on the educator's perceptions and consequently affect the relationship between the student and their educator (Malin, 1990). Aboriginal dialect and culture are acknowledged in the literature as significant influences on communicative interactions with non-Aboriginal communication partners (Gould, 2001; Malcolm 1994a). Although AE is recognised as a dialect spoken by the majority of Australian Aboriginal people, there has been relatively little research into the use of AE dialect amongst preschool children and the implications this may have on their learning, with the exception of a study in 2010 by Ellis, Brooks and Edwards, who researched the use of Aboriginal English in preschools in the Australian Capital Territory.

Ellis et al. (2010) studied the impact of AE on learning outcomes for Indigenous children through a series of preschool visits, discussions with key informants, focus groups, and video-recordings of home language use. They found that AE was used minimally in preschools and preschool programs and that Aboriginal ways of being, knowing and doing were rarely acknowledged in the observed ECEC contexts. The researchers identified the support and guidance that was provided by Aboriginal liaison officers and educators, however noted that this could have been utilised more effectively if the hierarchical roles in the ECEC environments had been levelled out so that Aboriginal input was more valued. The researchers also noted the gaps between the Early Years Learning Framework (EYLF) and the school age curriculum, and suggested that these needed to be addressed in order to optimise learning opportunities for all children, including those from diverse backgrounds.

3.5.2 What is needed to support Aboriginal children's learning?

In order to better support Aboriginal children's learning and development, Ellis et al., (2010)

proposed a set of recommendations for implementation in an ECEC environment. These were based

in literature, confirmed by their research, and consistent with suggestions from other sources

(Dockett et al., 2006; Dockett et al., 2010; Dockett et al, 2008; Mason-White, 2012; Mason-White,

2014; Robinson, Tyler, Jones, Silburn & Zubrick, 2012). Recommendations included training of

qualified Aboriginal educators so that these staff members have more power in the decisions and

practices in an ECEC environment, as well as professional development for non-Aboriginal staff that

includes both cultural learning and specific learning about AE dialect. An approach to learning that

encompasses socio-cultural, child-centred and play-based pedagogies was recommended in order to

optimise the learning opportunities that children engage in. Basing this pedagogy in home language

and culturally accepted ways of learning is important so that the communication that children bring

to the ECEC context is acknowledged and developed. In order to become familiar with home

language, culture and context, strong, non-judgemental and open relationships need to be

developed between the educators and services, families and communities. Similar fundamentals are

relevant across the disciplines of education and health practice as well as research when engaging

with Aboriginal people.

Flexibility is also required from professionals when working with Aboriginal people because of the

possibility of issues with engagement, stemming from previous or historical negative experiences in

the family or cultural community. It is important that non-Aboriginal health and education

professionals are open and receptive to learning about culturally different ways of intervening with

Aboriginal people for the benefit of all (Armstrong et al., 2015; Winton, 2015; Young et al., 2016).

Indigenous Allied Health Australia (IAHA, 2015) has produced a framework to support Australians

working with Aboriginal and Torres Strait Islander people, their families and communities. This

framework outlines the essential capabilities of 'knowing, being and doing' for successful

partnerships and action with Aboriginal people. The Cultural Responsiveness Capability Framework

(IAHA, 2015) describes the six key capabilities of Respect for centrality of culture, Self-awareness, Pro-activity, Inclusive engagement, Leadership, Responsibility and accountability. This framework underpins the roles adopted by professionals and others working with Aboriginal children. It helps to frame all interactions with Aboriginal people from a cultural perspective, and provides guidance about navigating interactions with individuals and communities. It is relevant for this research, which explores the communication of Aboriginal children and others who are engaging with them.

3.6 The Research Plan

3.6.1 Features of AE

The features of AE vary across contexts and communities (Butcher, 2008; Eades, 1993); however, there is relatively little published information about AE in urban contexts (Miller, Webster, Knight, & Comino, 2014; Pearce, Williams & Steed, 2015). Dialectal differences in the communication of Aboriginal children have been found to affect speech pathology diagnoses and clinical decision-making about children's speech and language impairments (Toohill, McLeod, & McCormack, 2012; Laffey, Pearce, & Steed, 2014). In the Newcastle area, although documentation exists detailing the Indigenous language, Kattang, which was spoken in the local area (Holmer, 1966), there are no publications about the local dialect of AE that is currently spoken in this area. This current research aimed to explore features of AE dialect used by Aboriginal preschool children in the Newcastle area. This information will inform local speech pathologists and support their clinical decision-making for assessment and intervention with Aboriginal children. The findings from this research will also be relevant for educators who are often the first professionals to engage with, identify and refer Aboriginal children for assessment and intervention of language and literacy concerns.

3.6.2 Cultural Context and communication in ECEC

Early childhood educators are well-placed to facilitate language development during their interactions with children in the ECEC context (Girolametto & Weitzman, 2002; Justice et al., 2008; Piasta et al., 2012); however, the application of this in a culturally appropriate manner needs further

investigation. The interactions and communication that children participate in with their ECEs will help to prepare them for the transition to school and literacy learning. Aboriginal children and families engage better with ECEC settings when an Aboriginal educator is present (Biddle & Cameron, 2012), and Aboriginal children's communication is more representative when an Aboriginal adult is present (Gould, 2001). Further investigation is necessary of Aboriginal children's language development in an early childhood context, and effective language facilitation techniques for use with Aboriginal children. This research sought to explore some preliminary bases as a starting point for future research in this area. One area explored in this research was Aboriginal children's communication in ECEC settings, and in particular whether this varied according to cultural context (that is, whether the children's communication varied when they were interacting with ECEs who are from their cultural community and when they were interacting with ECEs from a different culture). The findings of this research are important for the information they will provide about cultural context in ECEC and the implications this has for Aboriginal children's language and communication development.

3.6.3 Dialect Density change over time

One measureable aspect of Aboriginal children's communication is their dialect density. Measures of dialect density in the communication of children provide information about the children's non-mainstream dialect use. International research has revealed a complex relationship between children's non-mainstream dialect use in the preschool and early school years and later success with the learning of literacy (Terry & Connor, 2012; Terry et al., 2010). There is, however, a paucity of literature exploring the dialect density of Australian Aboriginal children (Pearce, Williams & Steed, 2015). This current study is the first research to investigate dialect change in Australian Aboriginal children over time. The current research is significant for the Australian perspective it will bring to this area of research, and for the specific implications it holds about Aboriginal children's dialect use and their subsequent language and literacy development.

3.6.4 Factors affecting Aboriginal children's language and literacy development

Historical socio-political effects have resulted in educational disadvantage for many Aboriginal children. The current research considers some of the factors affecting Aboriginal children's language and communication skills. Language and communication skills are key domains on the AEDC (Commonwealth of Australia, 2015a), and are recognised as precursors to literacy skill development and later educational progress and academic achievement. Aboriginal children are more likely than non-Aboriginal children to be identified as vulnerable on these domains so the investigation of contributing factors is very important.

Educators' perceptions play a significant role in the engagement and participation of children from minority cultures in the formal education system (Malin, 1990; Dunn, 2001). The perspectives of carers as well as professionals need to be explored in order to provide the perspective from the home culture (Ball & Lewis, 2011, 2014). There have been very few Australian studies in this area (Haig & Oliver, 2003a, 2003b; Oliver & Haig, 2005). This current research proposes to explore educators' and carers' perspectives of Aboriginal children's communication skills and factors affecting this. Exploration of Australian educators' and carers' perceptions about Aboriginal children's communication is valuable for the information this will contribute to our understanding of factors affecting Aboriginal children's development and progress in early childhood education.

3.6.5 Aims

The aims of this current research were to investigate features of AE present in the communication of preschoolers in a regional area of New South Wales (NSW), and explore the effect of cultural communicative context on the communicative interactions between preschool children and their educators. Further aims were to investigate the extent of dialect shift in Aboriginal children during their first year of formal schooling, and also to explore the perceptions of educators and carers about individual children's communicative competence and factors that affect this.

Specifically, the research questions are:

1). What features of AE are evident in the language used by Australian Aboriginal preschool children in the greater Newcastle area, and how does the communication of Aboriginal children differ from that of non-Aboriginal children?

2). Does cultural context affect communicative interactions between educator and child at a preschool level?

3). Do Australian Aboriginal preschool children in an urban/regional area evidence dialect shift in their first year of formal schooling?

4). What are the perspectives of educators and carers about Australian Aboriginal children's communicative competence and factors affecting this?

4. Methodological and Ethical Considerations

In this chapter the methodological and ethical considerations for this research are discussed.

4.1 Methodological Considerations

A mixed methods approach, incorporating quantitative and qualitative research approaches, was adopted for this research in order to address the different research questions that underpin this study. The different research questions were best studied using different types of analyses. This approach of using a variety of methodological processes is appropriate when considering a broad topic such as this research because it considers the issues from different perspectives, rather than limiting the analysis to either a purely statistical or qualitative framework (Minichiello, Sullivan, Greenwood, & Axford, 1999). Incorporating both qualitative and quantitative methodologies in the research design can allow for a more thorough and accurate representation of the data. This can result in research findings that are broader and more generalizable or relevant (Field, 2009).

The use of mixed methodology in a research project such as this one provides greater rigour than a single methodological approach. By studying a topic from a variety of different perspectives, the likelihood of the design dictating the outcome is reduced. As Brannan (2015) states, "using multiple methods allows for a union between different types of information, and through that integration, the accurate information can be found" (Brannan, 2015, p258).

Brannan (2015) discussed some advantages of mixed methodologies. One of these is the reduction of researcher bias. Findings obtained from different methods serve to inform and position the results in a less isolated context, allowing the findings to be viewed through different lenses and resulting in less bias. Another benefit of incorporating mixed methodology rather than a single study design is that the incorporation of narratives or conversations from qualitative research can help with the interpretation of the quantitative findings. One potentially problematic issue in research is

that the researcher may tend to employ his or her own preferred method of analysis, thus limiting the questions to be studied and also the findings. Including multiple methodologies allows the researcher to ask a variety of relevant research questions which can be addressed using different methodologies, thus expanding knowledge. Including a qualitative perspective can be especially helpful when working with populations for which there is little published evidence-based research. There are however challenges associated with mixed methods approaches, as outlined by Brannan (2015). These include the need for researchers to be proficient in each method and understand how to integrate the information gathered, the additional time and resources that are required for incorporating mixed methods in the research process, and lack of consensus in the literature about how the methods are to be integrated.

There are several different types of mixed methodologies and the appropriate methodology needs to be adopted for the research questions being studied. For example, data can be gathered concurrently or sequentially. In order to gather the most comprehensive and rich information from participants, researchers need to consider whether they should employ a sequential design, wherein qualitative methods are followed by quantitative methods (or vice versa), or a concurrent design where qualitative and quantitative data are gathered at the same time (Creswell, 2003).

Statistical approaches to research are a valuable way of considering data that are measurable, or quantifiable. Independent variables are manipulated or controlled, and studied for their effect on dependent variables. Once the variables have been measured (quantified) the relationship between independent and dependent variables can be studied, often with the aim to establish an understanding of cause and effect (Field, 2009; Minichiello et al., 1999). Statistical analysis relies on underlying assumptions that are applied as 'rules'; the researcher's compliance with these rules allows for a relatively objective approach to analysis. The objectivity of this approach allows for causal relationships to be interpreted through the analysis of the data. Generally speaking, the larger the sample size, the more relevant and generalizable are the findings. The sample also needs

to be normally distributed because the test of the null hypothesis assumes normal distribution. Statistical tests, such as the Shapiro-Wilks can be applied to test the normality of the distribution of the sample. To meet test assumptions the researcher, as already mentioned, must adhere to specific rules in the design and implementation of the research. Independent variables need to be strictly controlled in order for the researcher to interpret their effect on the dependent variable (Field, 2009).

In quasi-experimental studies, such as this one, the fact that many variables cannot be controlled is acknowledged in the design of the study (Minichiello et al., 1999). Quasi-experimental designs include non-equivalent control group designs and correlational designs. Although these designs are not as strictly rule-governed as a purely statistical / experimental approach, they do allow for some control of variables and hence statistical analysis of the data.

Qualitative research approaches seek to reveal meaning through studying human experiences in context rather than establishing a causal relationship between variables. Data collection and analysis in qualitative research differ from quantitative methods in that there is often more personal involvement of the researcher in the process. For example, qualitative methods of data collection and analysis, rather than relying on a large sample of numerically coded data, may include a smaller number of in-depth interviews which are then coded thematically by the researcher. In qualitative research the importance of context is emphasised; the researcher must take into consideration the participants' history, their cultural, political and social circumstances, all of which shape their perceptions and behaviour. Throughout the process researchers need to be aware of the filter they bring to the analysis process, that is, their perspective on the issues being researched (Minichiello et al., 1999).

Features that support the rigor of a qualitative research study include rapport-building, participant endorsement, and triangulation of data. The development of the participant – researcher relationship, or their rapport, is important for the authenticity of the data; responses from

participants who know and trust the researcher are likely to be more truthful and detailed. Similarly, if the research is endorsed or supported by participants it has more credibility. Both these processes involve a commitment of time, energy and personal disclosure on the part of the researcher, to ensure a respectful and reciprocal relationship.

Triangulation of data involves studying the information in a number of different ways to reveal a common finding. This supports the strength of the findings. Triangulation can take many forms, for example, the data can be studied both qualitatively and quantitatively, or responses from different groups of participants can be studied, or issues can be studied using different qualitative techniques.

4.2 Ethical Considerations

As this research involved human participants, strict ethical guidelines were adhered to (National Health and Medical Research Council (NHMRC), 2015). Australia's Indigenous people are a vulnerable and at-risk group, necessitating careful considerations of ethical issues in any research project (Smith, 1999). Smith describes the unethical and ethnocentric method of Western research to date and advocates for an Indigenous research agenda and the development of Indigenous research methodologies.

Recognition of cultural differences is critical to engaging in research with Aboriginal communities, so that cultural values are respected. Trust needs to be established and maintained throughout the research process, through development of relationships at many levels. The process needs to be honest and transparent and evidenced by ethically sound actions of personal engagement. Consideration of values and ethics was instrumental in the planning of this research project (NHMRC, 2003, 2016).

The NHMRC (2003) values and guidelines for research with Aboriginal people define six key values to be considered in research with this population. These values are spirit and integrity, reciprocity, respect, equality, survival and protection, and responsibility. They are all relevant in the past, present and future, and all are underpinned by the value of spirit and integrity.

The value of <u>reciprocity</u> implies inclusion and the recognition of the contributions from all participants and partners. Researchers and Aboriginal people need to share knowledge and information for the benefit of all concerned. Aboriginal people have the right to decide the terms of reciprocity in keeping with their cultural values. Researchers are reminded to consider how their research might contribute to, and benefit or adversely affect, Aboriginal communities.

The value of <u>respect</u> is essential in moral and ethical research and fundamental to sustainable research. Respectful relationships with Aboriginal people and communities acknowledge differences in cultural knowledge, values and philosophies. Aboriginal communities must be involved in planning and developing the research and throughout the decision making process. This can occur in different ways depending on the cultural decision-making and guidance practices in different Aboriginal communities. Open and trusting relationships facilitate respectful research practices. In respectful research, all parties are informed from the outset of the plans and possible outcomes of the research, including publications. The roles and contributions of all involved are collaboratively decided before the commencement of the process.

The value of respect also needs to be employed in the process of gaining informed consent from participants to be involved in the research. Participants must be fully informed about the research processes, their role and any implications, and the non-obligatory nature of the process, whereby they can choose not to participate, or to withdraw at any time.

Respect for differences underlies the value of <u>equality</u>, as does the acknowledgement of historical malpractices that have resulted in current disadvantage for Aboriginal people. Applying the value of equality in research includes respecting the knowledge and wisdom of Aboriginal people, and treating them as equal partners in the research process. The distribution of benefit is a key indicator of equality; all partners in the research process must benefit equally.

The value of <u>responsibility</u> is important for researchers to consider when working with Aboriginal peoples. A "key responsibility… is to do no harm" (NHMRC, 2003, p16). The responsibilities of all

those involved must be considered and the Aboriginal perspective on this needs to be valued. The role of research needs to be balanced against the many roles of the Aboriginal people: trusting relationships and transparency of communication will help to ensure that these responsibilities are respected and managed throughout the research process.

The development of trusting relationships also supports the values of <u>spirit and integrity</u>. Trust that the participants are <u>safe and protected</u> within the research process is extremely important; strict controls ensuring confidentiality and protection of participants and participant data must be applied, as well as controls for access and disposal of data.

4.2.1 Community endorsement

The process of community endorsement is recognised as crucial in research with Aboriginal and Torres Strait Islander communities (NHMRC, 2003). Insights from a history of often disrespectful research practices have led to an awareness that Australian Aboriginal people are entitled to be involved in decisions about the appropriateness and helpfulness of particular research to their local community as well as the wider Aboriginal population. They are also entitled to make decisions about culturally appropriate research practices. In keeping with the community and cultural philosophies about knowledge-sharing and decision-making, endorsement from groups and individuals selected as representatives is a respectful way of demonstrating community endorsement for the research project.

4.2.2 Translational research

Translation of research into practice is very important when working with Aboriginal communities to ensure dissemination of the findings to the relevant audiences/populations. There are various different terms with subtle differences which describe and conceptualise translational research (Davidson, 2011; Hiscott, Goldfeld, & Davies, 2013). Broadly, translational research involves the ongoing collaboration between researchers and practitioners in a two-way process of sharing information in order to inform both parties. These processes aim to ensure that quality interventions

are based in research evidence. Davidson (2011) discussed translational research as a pathway, along which information can be shared at many stages. Various terms such as dissemination and transfer of knowledge and are used to further describe the processes (Davidson, 2011). The responsibility rests with both the researchers and the practitioners to inform each other; for example the researcher informs the practitioner of particular findings and the practitioner informs the researcher about contextual issues which may have implications for how the findings are applied. Likewise, the participants are active in the translational research process, providing information and feedback about the relevance of the findings (Coulter & Ellins, 2007).

5. Methodology

This section describes the methodological processes that were employed to investigate dialect in Aboriginal preschool children. The mixed methodology of this research included longitudinal data collection for some measures.

5.1 Ethical Approvals

The research was approved by the Curtin University Human Research Ethics Committee (Approval number: HR100/2012) and Department of Education and Communities, NSW, (Approval number: SERAP 2014140) (See Appendix A).

These organisations both required confirmation that the potential impact of the research on the participants was considered and *NHMRC Guidelines for Ethical Conduct in Aboriginal and Torres Strait Islander Health Research* (Values and Ethics) (2003) were respected and adhered to.

This research process was guided by the principles laid out in the NHMRC (2007, updated in 2015) *National Statement on Ethical Conduct in Human Research*. The researcher constantly strove to uphold values of spirit and integrity, by prioritising respectful, open and trusting relationships with advisory group panel members and participants. The researcher was open to guidance and correction about the cultural beliefs, customs and practices of the individuals involved in the research in keeping with Section 1 of the *NHMRC Guidelines* (NHMRC, 2003). Integral to the research process was the intent that the knowledge gained from the research would be directly helpful not only to the immediate local community but also more broadly to the wider Aboriginal population. Community representatives from the advisory panel (see section 5.2 in this chapter) and participants recognised that this research had the potential to enhance the capacity of Aboriginal communities at many levels; local, national and international.

5.2 Advisory Panel

This research involved an advisory panel of Aboriginal and non-Aboriginal practitioners, all of whom were experienced in working with Aboriginal people in early childhood contexts. These panel members were integral to the research development process, demonstrating the value of reciprocity (NHMRC, 2003). The value of respect was also demonstrated by the processes involved in planning, reviewing the plans, altering and progressing with the plans for the research, which were adjusted in accordance with feedback from the advisory panel. For example, in the planning stages of the project a questionnaire was proposed as a means of gathering information from parents, carers and educators, however this suggestion was rejected by the panel. Panel members recommended face-to-face interviewing instead of a written questionnaire and provided advice as to how the topics might be raised and specific words or terms that should be avoided or included in the interviews.

The community endorsement that the panel of experts freely gave to this research project supports the quality of the relationships and hence the strength of the qualitative research (Minichiello et al., 1999). Supplementing their role providing community endorsement, the panel members also acted as key informants (Patton, 2002), providing the researcher with information about the culture and practices of the local Aboriginal community as well as helping interpret some of the data that was collected. Ensuring that the research allowed for balance in the many roles that the participants and panel members had in the community acknowledged the value of responsibility (NHMRC, 2003). This research was further endorsed by the Aboriginal Education and Consultancy Group of the Hunter Region.

5.2.1 Members of the panel and their roles

The panel members consisted of six early childhood and health professionals who were working with Aboriginal children and their families in the local area. These representatives were sourced from the local Aboriginal community through relationships that the researcher had built over time working in the early childhood sector. Three of the six panel members were Aboriginal. The group consisted of

two directors of ECEC services (both non-Aboriginal), an Aboriginal ECE, an Aboriginal audiometrist, an Aboriginal early childhood specialist representative from the local Aboriginal cooperative, and a non-Aboriginal early intervention teacher. Several of the panel members were also parents of Aboriginal children so they carried extra roles in the discussions.

5.2.2 Processes and functions of the panel

The advisory panel was instrumental in many stages of the research. Initially, members of the advisory panel were involved in identifying the need for investigation of Aboriginal children's use of Aboriginal English. Directors of ECEC services and the ECEs themselves triggered the research by questioning the Western knowledge base about Aboriginal children's communication development. The specific research questions for this project then evolved out of discussions with these people in the Aboriginal community. The advisory panel met with the researcher twice a year throughout the research process to provide advice and suggestions to the researcher.

 As the research process progressed, panel members assisted in the planning and revision of the methodology, providing valuable feedback and guidance about culturally appropriate approaches. The value of equality is demonstrated by the collaboration between the advisory panel and the researcher in planning and monitoring the research. The panel participants were involved in decisions about benefits and burdens for the participants, and actively problem-solved some issues in this area, fulfilling the requirements for Allied National Statements 1.5 and 1.6 (NHMRC, 2003). National Statement (NS) 1.5 requires the researchers ensure that "that there is a fair distribution of the benefits and burdens of the research" (NHMRC, 2003, p15) and NS 1.6 requires that "the risks of participation must be balanced by the possibility of intended benefits for the participants. In other research involving humans that is undertaken solely to contribute to knowledge, the absence of intended benefits to a participant should justly be balanced by the absence of all but minimal risk" (NHMRC, 2003, p16). For example, panel members provided advice as to how data collection could be made least intrusive, by including it as part of the participants' daily routines. Fundamental to the

research was the understanding that the risks of harm or discomfort to the participants in the research process would be minimised, demonstrating adherence to the ethical principle of beneficence, NS 1.3 (NHMRC, 2003).

At each meeting of the advisory panel, research findings were shared and discussed. Findings were often immediately relevant, because the ECEs and others on the panel gained knowledge to inform and develop their practice (National Statement (NS) 1.13). The possible publication or presentation of any findings was also discussed very openly, in keeping with NS 1.18. Standard procedures for storage, confidentiality, access and protection of research data were adhered to (NS 1.19); participants were thoroughly informed of the processes involved (NHMRC, 2003).

The members of the advisory panel were integral to the translational research process. They provided insights that helped illuminate the findings and helped with interpretation of the results. The dissemination of the findings Involved a written summary of the research that was provided to participating ECEC services and schools. These services were also offered a verbal presentation, which doubled as an information or professional development session for the educators who accepted this offer.

5.3 Phases of data collection

Data collection took place in two phases (see Table 1 below).

The participants in phase one were Aboriginal and non-Aboriginal preschool children, early childhood educators (ECEs), and parents/carers of the Aboriginal children. Data in the form of adult-child interactions was collected from the ECE and child participants. Interview data was collected from the ECEs and the parents/carers of the Aboriginal children.

The Aboriginal children from the sample were followed into the school context approximately one year later, and these comprised the child participants for phase two. Adults from the school contexts

were also participants in phase two. At phase two, interactional data was collected from the adult and child participants. Interview data was also collected from the adult participants.

Table 1

Phases of Data Collection

Processes	Phase one (August – December, 2013)	Phase two (August – December, 2014)
Participants	ECEs	Teachers
	Children (Aboriginal and non-Aboriginal)	Aboriginal children
	Parents/carers of Aboriginal children	
Data collection	Child-ECE interaction data	Teacher-child interaction data
	Interviews with ECEs and parents/carers	Interviews with teachers

The different research questions in this study were addressed using different analytical techniques, to ensure the validity of research findings.

Statistical analysis approaches were used when analysing the data quantitatively in response to research questions which addressed:

1. Features of AE in the communication of Aboriginal children in Newcastle, NSW

2. The effect of cultural-match[3] on communicative interactions between educator and child at a preschool level

3. The occurrence of dialect shift in Aboriginal children from an urban area at the commencement of formal schooling

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[3] The term cultural-match is used throughout this thesis to describe a situation where the child and educator are from the same culture, and the term non-match is used when the educator and child are from different cultures. For the purposes of this research the cultures were either Aboriginal or non-Aboriginal.

These questions were addressed from a statistical perspective because the data collected could be coded and categorised numerically, allowing for systematic consideration of dependent and independent variables. This approach allows for comparison and generalisation of the findings, so was considered an appropriate method of evaluating the specific data that were collected on dialectal features and cultural match in this study.   Some of the sample sizes for analysis were small, however, and assumptions of normality were in some cases violated, so non-parametric equivalents of statistical analyses were performed in these cases.

Qualitative techniques were used to analyse data in order to answer research question 4; 'What are the perspectives of educators and carers about Australian Aboriginal children's communicative competence and factors affecting this?' This research question sought to explore how the adult participants' culture, environment and experience affected their understanding or experiences of the issues being researched so thematic analysis of interview responses was employed to provide an in-depth picture. Thematic analyses were adopted in the quest to illuminate factors that may be affecting Aboriginal children's success academically. The researcher was mindful of the personal filter which could be applied to the coding, and of which she may only be partly aware. Involvement of others in the qualitative research coding process was sought, primarily to authenticate the decisions the researcher had made, with a knowledge that different researchers may view the data differently (Minichiello et al., 1999).

5.4 Phase one: Educator child interactions

5.4.1 Recruitment of participants

This research took place in the geographical area of greater Newcastle, which includes suburbs and towns along the coast, north and south of Newcastle, encompassing an approximate range of 75 kilometres. At the time of data collection, the researcher was working within the Aboriginal

community-based ECEC contexts, managed by the local Aboriginal cooperative; this facilitated the recruitment process.

Prior to commencing data collection for phase one, directors from ECEC services in the local area were approached and the services were invited to participate in the research (see Appendix B). Once consent was received from the directors of the services, the educators, parents/carers and children were approached and the research was explained. Informed consent was obtained from the educators (see Appendix C) and parents/carers (see Appendix D). The children assented; children were provided with a modified version of the explanation and consent form (see Appendix E). In most cases the director or the educators at the service helped with this explanation. Consent from the children's parents/guardians was also granted to access the preschool files. The processes of gaining consent throughout this research project were carried out in a respectful manner, maintaining the requirements of *Guidelines for Ethical Conduct in Aboriginal and Torres Strait Islander Health Research*, specifically NS 1.2, 1.7, 1.8, 1.9, 1.10, and 1.12 (NHMRC, 2003). The participants for this research were purposively selected because they met the characteristics of the population under study.

5.4.2 Child Participants

The child participants for this study were 21 Aboriginal children and a comparison group of 21 non-Aboriginal children, totalling 42 child participants. There were 11 boys and 10 girls in each group. All children were aged between four and six years old with a mean age of 61.4 months at phase one data collection. An independent-samples t-test was used to compare the age of Aboriginal and non-Aboriginal children in the sample. There was a significant difference in age between the Aboriginal (M=59.5, SD= 4.1) and non-Aboriginal children (M=63.4, SD=4.9), $t(40)$ = -2.811, p = 0.008, CI(95) -6.7, -1.1 (see Appendix L1). On average the Aboriginal children in this study were younger than the non-Aboriginal children.

All children were attending ECEC settings within the greater Newcastle area and were in their final year before commencing formal schooling. Children with diagnosed developmental difficulties such as Autism Spectrum Disorder, or developmental delays were excluded from the study.

In one ECEC context, which included both staff and children who were Aboriginal, the children (*n*=10) were recorded twice, once with an Aboriginal educator and once with a non-Aboriginal educator (see Table 2).

Table 2.

Description of Children who were Recorded Twice

Child details	Number of Females	Number of Males	Number of children	Mean ages (in months)
Aboriginal	1	3	4	58.3
Non-Aboriginal	3	3	6	61
Total	4	6	10	59.9

5.4.2.1 Demographic information

Demographic and background information about the participant children and their families was obtained through parent/caregiver interview, and from children's files at the ECEC settings. The researcher typically gathered this information directly from the families when they were dropping the children off or collecting them from ECEC. As some children travelled to the ECEC centre by bus, it was not possible to have this conversation with this set of parents. In these cases, some information was gathered from the children's preschool files.

Information about the child's date of birth, date of videotaping, gender, the ECEC centre attended and the ECE with whom they were interacting was collected for all child participants. In order to

address the research question considering factors affecting Aboriginal children's communicative competence, additional information was collected for the Aboriginal child participants. This included their number of siblings, birth order, whether their attendance at preschool was regular or irregular, whether they were in the care of their parents or whether they were being cared for by others in the community. The demographic information was gathered on the Aboriginal child participants because these children were being followed into school as part of the longitudinal study. This information was also considered important for the analysis of research question 4; 'What are the perspectives of educators and carers about Australian Aboriginal children's communicative competence and factors affecting this?'. The demographic information gathered on the Aboriginal children is presented below.

Most of the Aboriginal children (19 of 21, or 90%) had two or more siblings, and some had up to six siblings. Although many participants (eight of 21, or 38%) were first-born children, there were a variety of positions of birth order represented in the sample.

Of the 21 Aboriginal children, 12 (57%) lived in families with two parents in the home environment. Four children (19%) lived with a single parent at home and five children (24%) had been placed in out of home care (OOHC). The children in OOHC were living with grandparents, aunts or other relatives.

Most parents/carers (22 of 29 on whom data was recorded) were aged in their twenties and early thirties. Another set of carers (seven of 29) were aged between 40 and 50 years. This second age bracket reflects the circumstances of the children who were in OOHC, cared for by grandparents or older relatives.

Most parents/carers (eight of 20 on whom data was recorded) had received 8-9 years of formal schooling, that is they had left school in year 8 or 9. A further seven had received 10 -11 years of formal schooling. Five parents/carers had tertiary qualifications; two of these held university

degrees. Both these parents were in the same family, that is, one Aboriginal child in this study lived with two parents who were university educated.

Twenty of the Aboriginal children had a female carer, and 15 also had a male carer. One child had only a male carer. Of the 20 female carers, 16 were Aboriginal. Of the 16 male carers, 15 were Aboriginal. Of the 21 child participants, five had only one parent who was Aboriginal; in the remaining 16 cases, both parents were Aboriginal.

Children were also assigned a category for whether or not they attended preschool regularly. The director of the ECEC service allocated the children into these categories, based on their knowledge of the children's circumstances and attendance. Of the 21 Aboriginal children, fourteen were classed as regular attendees and seven were classed as irregular. Children's attendance may have been irregular for a number of different reasons, for example if they travelled to visit family or they were sick a lot.

5.4.3 Adult participants.

The adult participants in interactions were educators working in ECEC contexts who had personal knowledge about and a relationship with the children.

A total of seven ECEC centres in the Newcastle area participated in the research. Of these, three were ECEC centres run by the local Aboriginal cooperative, including one which was a mobile playgroup service. Four mainstream ECEC services (either privately owned or non-government organisations) were also involved.

A total of ten staff from the ECEC services participated in the research. Participants were six Aboriginal and four non-Aboriginal staff, one or two from each service, with a range of qualifications (see Table 3). A maximum of two educators from each service were involved as participants, in order to cause minimum disruption to the everyday routine of the service. Demographic information

collected about the educators included their gender, age, teaching experience in years, length of time in the current position and their qualifications.

Table 3.

Culture, Age and Experience of ECE Participants

Participants' characteristics	Frequency (n=10)		
	Aboriginal	Non-Aboriginal	Totals
Male	1	0	1
Female	5	4	9
Qualifications			
Degree	1	1	2
Diploma	2	2	4
Certificate	3	1	4
Teaching experience			
1-2 years	2	1	3
3-5 years	1	0	1
6-10 years	1	3	4
Over 10 years	2	0	2
Length of time in current position			
1-2 years	2	1	3
3-5 years	2	2	4
6-10 years	1	1	2
Over 10 years	1	0	1
Age			
21-30 years	*3*	*1*	*4*
31-40 years	*2*	*2*	*4*
41-50 years	*1*	*0*	*1*
51-60 years	*0*	*1*	*1*

5.4.4 The sampling process

As the focus of this study was to investigate the dialect of Aboriginal preschool children in the Newcastle area, the process of sampling involved seeking participants from this category. The researcher needed to purposively select the sample, by accessing ECEC centres where there were a relatively high number of Aboriginal children. This process was necessary in order to collect a sizable sample because the population of Aboriginal people in NSW is not large, at 2.9% of the total population (Australian Indigenous Health*InfoNet*, 2015).

In keeping with the *National Statement on Ethical Conduct in Human Research* (NHMRC, 2015) children must be fully informed of the research and their part in it. Explanations must be clearly communicated at the child's level of comprehension. The guidelines for involving children in research are presented in Chapter 4.2 of the National Statement (NHMRC, 2015). In the planning and implementation of this study, the ethical values of beneficence, respect, justice, merit and integrity were applied throughout the process, and particularly in the gaining of consent. The child participants were judged to have the capacity to understand some relevant information about the research but their relative immaturity meant that they remained vulnerable (Chapter 4.2(c), NHMRC, 2015) so their assent alone was not sufficient. For this reason informed consent for the child to participate was sought from the parent/carer as well as the child.

5.4.5 Data Collection

Qualitative and quantitative data were collected for analysis in order to provide a deep and detailed picture of Aboriginal children's learning contexts and their use of dialect in the early childhood setting. The collection of data in different forms also allowed the research questions to be explored from different perspectives. One form of data collected was interactions between educators and children, which were transcribed and analysed quantitatively. This allowed the researcher to count and measure different linguistic and non-linguistic features of the children's dialect.

This research employed an approach similar to concurrent transformative methodology (Creswell, 2003). In this methodology, theoretical perspective guides the methodological choices. For the purposes of this study the methodological choices were guided by both theoretical and ethical consideration. Several different types of analysis were used to explore Aboriginal children's use of dialect. The processes of data collection and analyses are described in the following sections.

Interactions between educators and children were video-recorded using an iPad in the context of the early childhood centre, at the playdough table. This context for data collection was selected following consultation with the advisory panel, whose members suggested that the playdough table was an environment where verbal interactions might be most easily elicited. Further, this is a very natural setting that is commonplace in most ECECs, thus is familiar to the participants. It was deemed to require little effort to set up, and to cause minimal disruption to the everyday routine of the centre. Child-centred research methodologies include visual and creative methods for gathering data from children (Mauthner, 1997; Morrow, 2001).

In the first ECEC in which data collection occurred, the background noise was such that the participants could not be heard in the video-recording. The data was collected again in this setting, and the original data was destroyed. This experience heightened the researcher's awareness of the importance of a strong signal to noise ratio for recording purposes. At subsequent occasions of data collection, the position of the playdough table with reference to the rest of the children in the centre was discussed with the director or educators before data collection began. In some situations the staff at the ECEC organised for the children in the centre to be playing outside while the recording took place inside, or vice versa. This ensured that the remaining data was collected in a more suitable environment, with an adequate signal to noise ratio for recording purposes. Recording was checked at each centre, prior to data collection, to ensure that the recording device   was functioning and the recorded picture and sound were clear.

Children were typically seated in groups of two or more with the educator so that the sampling context was as naturalistic as possible. The educators and the sample children in each centre were known to one another. The groups of children for videotaping were not randomly selected; the educators selected the children or paired them up, according to friendship groups or how well they thought the children would relate to each other. Their aim was to elicit maximum communication and interaction within the groups. The educators were instructed to talk normally with the children, about topics that they thought would encourage communication. These interactions were recorded for five to ten minutes.

During the data collection process children's preferences were respected (NHMRC, 2015). This research sought to study the children's use of language in as naturalistic a manner as possible, in order to gain a true representation of their real-life communication. To this end the context and environment were considered very carefully so as to facilitate natural interactions between the educator and the child (Paul & Norbury, 2012). ECEC contexts are social settings where children typically interact with a range of adults and peers during the course of a regular day (ACECQA, 2009). The data collection process sought to replicate this in as natural a manner as possible.

The context of data collection for the Aboriginal children was given special consideration. It is well documented in the literature (Harkins, 1990, 1994; Nelson & Allison, 2004) that Aboriginal people, including children, may feel 'shame' if they are singled out from a group. This response has been linked to the communal nature of the Aboriginal culture so must be respected as a cultural response. A key feature of the shame response is "I want not to say anything…" (Harkins, 1990, p 302). In this current research, the data collection was carried out in small groups of two or three children per educator so that the Aboriginal children would feel more comfortable and the situation would be less likely to elicit a shame response.

5.4.6 Data transcription of educator-child interactions

The video-recordings of the educator-child interactions were transcribed and entered into the computer software program Systematic Analysis of Language Transcripts (SALT) (Miller & Chapman, 2010), which allows for customised coding of the transcriptions. Approximately five minutes of interaction time was transcribed for each child. Data transcription included coding of verbal and non-verbal communicative acts (Miller, Andriacchi, Nockerts, Westerveld & Gillon, 2011).

5.4.6.1 The coding process in SALT

Dialectal coding was based on theoretical information reported in the literature. Documented features of AE dialect (Butcher, 2008; Eades, 1993; Harkins, 1994; Malcolm, 2013a; Malcolm et al., 1999; Pearce, Williams & Steed 2015) provided the basis for this coding.

5.4.6.2 Coding for grammatical features

Morpho-syntactic features of AE were coded following the method used in Pearce et al. (2015). Zero marking is a form of encoding a linguistic rule of the dialect (Siegel, 2010). The linguistic term 'zero marking' has been used to code dialectal features internationally and specifically in Indigenous dialects (Pearce et al., 2015). Known features of Aboriginal English in the sample children's communication which omitted features of standard Australian English were coded as 'zero', which implies that the feature is not in the child's dialect, rather than as an 'omission' which implies an error. Features were also coded as 'alternative' if they were consistent with AE dialect (Pearce et al., 2015, Supplementary material). Table 4 describes codes used in the analysis process of this study for grammatical features that are consistent with AE, according to the literature. Due to the young age of the sample population, other grammatical errors were present in the data and these were coded as errors at utterance level (EU) or errors at word level (EW). These codes are consistent with SALT coding categories (see Table 5). The utterances coded as errors were consistent with language impairment features rather than AE features (Pearce et al., 2015).

Table 4.

Codes for Grammatical Features Consistent with AE

Code	Description of code	Example
ZeroCop	Zero copula	"this a cookie"
AltDet	Alternative determiner forms	"what are them cupcakes for?"
AltAdj	Alternative adjective sequence	"I got a card footy"
AltComp	Comparatives use "more" + "er"	"when I'm much more bigger"
ZeroAux	Omission of auxiliary	"what you doing aunty?"
Q-Int	Yes/no question forms use intonation (may include a tag)	"aunty, this is the right way up?"
		"some hair's yellow, 'eh?"
AltTns	Alternative past and present tense forms	"I done one"
ZeroTns	Zero regular past and present inflections	"I turn five"
AltPro	Alternative personal and possessive pronoun forms	"and him gave me a spoon and a bag" (he, c5)
		"cause he's out in the hospital?" (she, c7)
ZeroDet	Zero determiner	"that's sad face"
ZeroSub	Zero marking of subordinate clause	"these are the bits will go in my sausage"
ZeroAgr	Zero subject-verb agreement	"My mum and dad wants to watch (um) adult show."
ZeroPro	Zero pronoun	"Can't see me" (c27)
		"got a cherry"
ZeroPos	Zero possessive marker	"It's uncle('s) (c21)
ZeroPrep	Zero preposition	"You buy something eat" (C11)

Table 5.

Codes for Grammatical Errors, Consistent with SALT Coding Categories

Code	Description of code	Example
EU	Error at utterance level (other)	"Thank you and (please) please do what my thing"
EW	Error at word level (other)	"She's a arts (artist)"

Table 6.

Coding of Phonological and Non-Verbal (Pragmatic) Features

Code	Description of code	Example
CR	Cluster reduction	first [fɜːs]
		spoon [bʉn]
WSD	Weak syllable deletion	Australia [stræɪjə]
S	Stopping of fricatives and affricates	Saw [toː]
V	Voicing	Purple [bɜːbl]
H	/ h / omission	Hair [eː]
TH	Omission/substitution of ð / θ	that [dæt]
		thin [fɪn]
		them [əm]
VC	Vowel change	been [bɪn]
PP	Other phonological processes	Includes gliding, de-affrication, fronting, consonant deletion
NV:E	Non-verbal communication: eye gaze or eye contact	Child indicates direction by eye-gaze.
		Child acknowledges communication partner using eye contact.
NV:G	Non-verbal communication: gesture	Child uses their hands, or occasionally legs, to augment or replace verbal communication.

| NV:H | Non-verbal communication: head nod, shake or flick | Child indicates agreement/ disagreement with a head nod or shake |
| | | Child indicates direction using a head movement. |

5.4.6.3 Coding for phonological features

Phonological features were also coded (see Table 6). Phonological processes consistent with AE as described in the literature included cluster reduction (CR), weak syllable deletion (WSD), stopping (S), voicing (V), /h/omission (H), omission or substitution of ð / θ (TH), and vowel change typical of AE (VC). Other common phonological processes (PP), not associated with characteristics of AE, such as consonant deletion (CD), gliding (G), de-affrication (D), and fronting (F) were also coded for all children in the sample, as this was a pre-school aged sample and these errors were present in the speech of several of the children.

5.4.6.4 Coding for non-linguistic (pragmatic) features

There is also information in the literature on pragmatic features of AE. The children's use of non-verbal communicative acts was recorded during the transcription process (Table 6). The researcher transcribed occasions of eye-gaze, for example when the child acknowledged the communication partner by the use of eye contact or when the child indicated direction with an eye movement. These were coded as NV:E. Occasions when the child used gesture, such as a hand, leg or shoulder movement to augment or replace verbal communication were recorded, and coded as NV:G. Occasions when the child used a head movement to indicate agreement / disagreement, or direction were recorded and coded as NV:H.

Coding of transcripts was completed by the researcher. Coding of 10% of the transcripts was then checked by another researcher to determine inter-rater reliability. Agreement for coding of morpho-syntactic dialectal features of AE was 90%.

5.4.7 Analysis of educator child interactions

5.4.7.1 Analysis of dialectal features

Each of the codes for features of AE (phonological, morpho-syntactic and pragmatic/discourse codes) were counted and entered into a software package, the Statistical Package for the Social Sciences, Version 23 (SPSS) (IBM Corp, 2015) for analysis. This coding process allowed for a calculation of dialect density (see section 5.7.2.1).

There were thirty-seven categories coded using SPSS (George & Mallery, 2010). Twenty-seven of these were customised codes, based on the features present in the sample of children (n=42), as described in Tables 5 and 7. Also included in the SPSS counts were two standard codes commonly used in SALT transcription, namely EU and EW as described in Table 5. The SALT program also provides some calculations derived from the language samples. Of the many calculations provided by SALT, eight were chosen as relevant and informative for the purposes of this research because they reflected aspects of AE described in the literature (Butcher, 2008; Eades, 1993; Malcolm 1994a, 1994b). These were: percent of child's utterances that were verbal; percent of child's utterances that consisted of only one word; percent of child's utterances that were interrupted; percent of child's utterances that were overlapping; percent of child's utterances that were responses to questions; percent of child's utterances that were intelligible; total number of utterances produced by the child; and the child's age in months at the time of data collection. These calculations were also included as codes in the analysis (see Appendix I for a combined list of all codes). Intelligibility of the children's utterances was determined by both the adult communication partner and the transcriber who analysed the interactions. The transcriber listened to each utterance several times. If the transcriber could not understand part of the utterance, and the adult participant did not

demonstrate during the interaction that they could understand the child's utterance, or a part of the utterance, it was deemed unintelligible.

In order to address the question of which dialectal features of AE were present in the communication of Aboriginal pre-schoolers in the local area, both parametric and non-parametric tests were used. In each of these analyses the independent variable was the child's Aboriginality and the dependent variables were the coded features of AE.

Each of the features was tested for normality and in cases where normality was not severely violated a parametric test, the independent samples t-test, was used to analyse the data. This test was used in order to compare the means between the Aboriginal children's use of each dialectal feature, and the non-Aboriginal children's use of the same dialectal feature. This is an appropriate statistical test to use for a sample size of 42. For an independent groups t-test, sample sizes of over 30-40 are considered sufficient for conclusions to be drawn from the research findings (Field, 2009). The codes that were analysed using the independent samples t-test were *responses to questions, percent intelligible utterances, total number of utterances and the children's age in months*. The sample size (42) for this current study is fairly large; however, violations in normality can still be considerable. The Shapiro-Wilks test was used as a measure of normality because it provides better power than other statistical tests of normality, such as the Kolmogorov-Smirnov test (Ghasemi & Zahediasl, 2012). The codes analysed using the independent samples t-test showed significance on the Shapiro-Wilks test of above the level of p=.01 (see Appendix J), indicating only mild to moderate levels of violation (a measure of moderate violation is p <.05 and a severe violation is p <.001). Absolute skewness and kurtosis were calculated by dividing the skewness by the standard error of skewness and the kurtosis by the standard error of kurtosis. Applying the Shapiro-Wilks significance results, combined with absolute (z) skewness and kurtosis levels of < 3, revealed that the normality of the aforementioned four codes was not severely violated, so these codes were analysed using the

parametric test, which provides greater statistical power than its non-parametric equivalent. See

Appendix J for details of the tests for normality.

For the remaining features of AE the non-parametric equivalent of the independent samples t-test,

the Mann-Whitney U test, was used. This test was used to compare the median scores of the

Aboriginal children and the non-Aboriginal children for each coded feature. The purpose of this

analysis was to determine which of the counted features of AE were statistically different in the

Aboriginal compared to the non-Aboriginal sample of children. The counts of coded features at

phase one were also used to calculate the dialect density for the Aboriginal children in the sample.

The calculation of dialect density will be described in detail later in this chapter (section 5.4.7.3).

5.4.7.2 Analysis of the effect of cultural match

For a small sample of Aboriginal children dialect density was considered with relation to their

cultural context. Literature on dialect (Harrison, 2004; Renn & Terry, 2009) indicates that children

speaking non-mainstream dialects use style-shifting, or dialectal code-switching, for a number of

reasons including maintaining personal and group identity. This research sought to investigate the

Aboriginal children's use of code-shifting in an ECEC context, by measuring the children's dialect

density in two contexts; one where their culture matched that of their ECE and the other where the

ECE was of a different (mainstream) culture. This research aimed to investigate children's dialect-

shifting behaviour from an Australian perspective, as Craig and Washington (2004) found that the

cultural-match between the child and adult communication partners did not impact on the dialect

spoken by the children in their sample. This research will explore the effects of cultural match from

an Australian perspective.

Further analysis was performed on a subset of data from ten (10) children who were video-recorded

twice, once with an Aboriginal educator and once with a non-Aboriginal educator. These children

were recorded twice because they were in the unique ECEC situation in this research that included

both Aboriginal and non-Aboriginal ECEs and children. This ECEC centre was in a small town where

the Aboriginal children and the Aboriginal ECE were living in a close Aboriginal community, where there had once been an Aboriginal mission. Similarly, the non-Aboriginal ECE knew the non-Aboriginal children in the local community. Both educators were staff at the children's centre and were known to the children. Only in one ECEC service was there the opportunity to sample the children's communication with educators of both Aboriginal and non-Aboriginal culture, which accounts for the small sample size of this subset. It is acknowledged that the environment for both recordings was the preschool setting. Recording the interactions in the children's homes may have yielded different results.

Of the ten children who were videotaped twice, four were Aboriginal. The data from the interactions of these four Aboriginal children with their educators was studied as a smaller sub-set.

Transcriptions of the Aboriginal children's interactions were made for both video-recording occasions. The video-recorded interactions were categorised according to whether the child's culture matched that of their educator (that is, both child and educator were Aboriginal) or did not match that of their educator (for example, when the child was Aboriginal and the educator was non-Aboriginal). These categories will be referred to as cultural-match and non-match. One hypothesis, based on literature on code-switching, was that the Aboriginal children would adjust their communication according to the context. That is, they would use more dialectal features during the interaction with their culturally-matched educator than with their non-matched educator. A further hypothesis, based in the literature, was that children who had had more experience or exposure to SAE would be more capable of code-switching between dialects in response to cultural context.

Counts of the children's coded features of AE were recorded and entered into SPSS for culturally matched and non-matched contexts. Due to the very small sample size, descriptive statistics were used to describe patterns in the data for this sub-set.

5.4.7.3 Calculation of dialect density (DD)

The appreciation of AE as a non-standard dialect that can be regarded along a continuum results in the perceptual descriptions of a 'heavy' or 'light' dialect (see section 3.4). The strength of the child's dialect in this research was identified by calculation of their dialect density, that is, the number of dialectal features they used in their communication during the adult-child interactions. There are a number of different methods reported in the literature for calculating children's dialect density in situations where children speak a non-standard dialect of English.

Oetting and McDonald (2002) studied different methods of characterising children's non-standard dialect use. They identified that token-based methods provided specific information about the rate (or strength) of dialect. This current research used a token-based method to calculate the child participants' dialect use, specifically, how many dialectal features the child used relative to the total number of words in the language sample. The calculation of dialect density (DD) involved dividing the number of coded features produced by the child in the interaction by the total number of words produced by the child in the interaction.

DD= Number of coded features of AE in the child's transcript /

total number of words in the child's transcript

Both grammatical and phonological features were included when counting the number of coded features each child produced; the fact that some children's communication included mostly grammatical features while others included mostly phonological features meant that a general category better reflected the presence of AE features in the sample.

This method of calculating DD was chosen because using the total number of words, as opposed to the total number of utterances, in the denominator reduces the effect whereby longer utterances are likely to contain more features (Craig & Washington, 2004; Oetting & McDonald, 2002). This method is suitable for young children who are still acquiring many grammatical skills; there is likely

85

to be a range in linguistic skill development amongst children of preschool age. The dialect density

measures of the sample were analysed using inferential statistics. Pragmatic aspects were also

considered from a qualitative perspective. In addition to measuring the child's dialect density across

cultural contexts, the children's vocabulary was also considered.

5.4.7.4 Measure of lexical diversity

Aboriginal children are often in a mainstream ECEC context where they are in the cultural minority

(Ellis et al., 2010; SNAICC, 2015). Literature describes the impact that culture and home language in

the ECEC environment may have on children's language use and consequently their linguistic and

social-emotional development, and learning outcomes (Anderson, 2010; Ball, 2009; Ellis et al., 2010;

Martin, 2017; Robinson, Nutton, McTurk, Lea & Carapatis, 2007). Although these considerations

have mostly been explored for children who are acquiring SAE as a second language, the relevance

of dialect has also been noted.

This research sought to investigate the effect of cultural context on the children's communication

and the quality of their interactions, by considering the children's expressive vocabulary across

categories of cultural-match. Calculating the number of different uninflected word roots that the

child uses provides an estimate of the diversity of the child's vocabulary (Rojas et al., 2016).

Vocabulary development in the years prior to school is an important consideration as an indicator of

children's later language and literacy outcomes (Paul & Norbury, 2012).

The number of different uninflected word roots is produced as a calculation of *number of different words* (NDW) in the SALT program. This NDW count was analysed with reference to the cultural-match context to determine any relationship between cultural context and the children's lexical diversity, that is, their expressive vocabulary and productivity (Rojas et al, 2016). It was hypothesised that the count of NDW obtained from the transcripts of the Aboriginal and non-Aboriginal children who were recorded twice would not differ significantly according to cultural-match context.

The NDW counts for each child were entered into SPSS; for both contexts of cultural-match and non-match, assumptions of normality were tested. In both these contexts, significance for Shapiro-Wilks tests were above $p = 0.1$, and z (absolute) measures of skewness and kurtosis were < 3, indicating that assumptions of normality were not violated (See Appendix K). A paired samples t-test was used to compare the mean of matched and non-matched contexts, with the dependent variable being the NDW and the independent variable being the matched / non-matched cultural context.

5.5 Phase one: Interviews with parents / carers and early childhood educators

5.5.1 Participants

A total of eight parents / carers of Aboriginal children participated directly in the interview process at phase 1; all of these parents / carers were Aboriginal. These participants included seven females who were mothers of Aboriginal children in the sample, and a grandfather, who was one of the main carers for one of the sample children. The ten ECEs who were videotaped interacting with the Aboriginal children were also interviewed by the researcher.

Interview data from parents and carers was triangulated with interview data from ECEs to provide insights from different sources about the children's learning and development. The triangulation of this data collection supported the reliability and validity of the findings as well as providing a rich, holistic portrayal of the children's communication and learning context (Minichiello et al., 1999).

5.5.2 Data collection: Interviews with parents/caregivers and educators

An interview process was employed to gather information about the participants' perceptions in order to provide descriptive information; the interview process allows for in-depth analysis about an area that has not been previously studied in detail. The interview data was collected by a single researcher with experience in this field of research and practice, thus validating the process. The sample of adults was purposively selected (Minichello et al., 1999; Patton, 2002) based on their contact with, and knowledge of, the child participants (Aboriginal). It was reasoned that these adults (educators and parents / carers) would be able to best provide the researcher with information about the children's communicative competence and a discussion of factors affecting this. So, the focus for selection was not based on the number of participants required but rather on their contact with the child. Each adult participant had a relationship with at least one of the children in the study.

A semi-structured approach to interviewing was adopted; this allowed the researcher to ensure that identified issues were addressed but that the interviewee was able to talk freely without being limited to a strict question-answer format (Patton, 2002). The aim of the interviews was to obtain rich detailed information so it was important for the interviewee to feel relaxed and comfortable in the situation allowing them to disclose information without fear of judgement.

In order to obtain honest disclosure, the researcher spent time prior to each interview developing trust and rapport with the interviewee. This rapport-building discussion took place before the actual interview, and consisted of informal discussion of relevant issues. An example of this pre-interview discussion with a parent/carer might include conversation about the siblings of the child in question, or the parent/carer's plans for the day.   Pre-interview discussion with the educators often involved chat about the tasks the educator had to achieve as part of their workload, or particular activities planned at the school or ECEC service that day, and often the impact of the weather. All adult participants were thanked for their willingness to participate in the research process.

Based on the rationale described in Section 5.3 in this chapter, the researcher aimed to discuss various issues with the interviewees. A framework of broad questions asking the participants about their knowledge and experience was developed by the researcher prior to the scheduling of interviews. This interview guide (Minichiello et al., 1999; Patton, 2002) was prepared with some sample questions (see Appendix H) to guide the discussion. Included in the interview guide were questions about the child's hearing and ear health. These questions were included in the conversations with the parents / carers because the status of many of the children's hearing was unknown and not documented on preschool files. The loose structure of the interview context was explained to the interviewees at the commencement of the interview. The interviews with the educators were audio-recorded. Some parents /carers expressed discomfort with being recorded in the interview context, so hand-written notes were taken during the parent / carer interviews and these notes were then read back to the interviewee to check the content and confirm the meaning.

5.5.3 Transcription of interviews with parents and carers

Data from the interviews with parents / carers and educators was transcribed in a word processing format and then entered into the qualitative data analysis software program NVivo 11 Starter for Windows (NVivo, QSR International, 2015). Qualitative processes were used to study educators' and parents' / carers' perceptions of Aboriginal children's communication. Qualitative coding and analysis aimed to reveal deep and detailed understanding of each situation and factors affecting it (Bazely & Jackson, 2013).

5.5.4 Analysis of interview data

The interview data from phase one was analysed in combination with interview data gathered from teachers in phase two. This allowed for a triangulation of the data across three sources (parents/carers, ECEs and teachers) and hence greater rigour and a richer depth of perceptions. The analysis process for the interview data will be described in detail in section 5.8.

5.6 Phase two: Teacher-child interactions

The Aboriginal children were followed through to the school context as part of the longitudinal aspect of this study in order to analyse their change in dialect use. At phase two, the principal or acting principal was approached and consent was obtained for the school to participate in the research (Appendix F). The schools provided administrative assistance, informing parents that the children were now participating in phase two of the research. Individual teachers were then approached, the research was explained and consent was obtained from the teachers to participate in phase two (Appendix G). The children were informed by their teacher about this second phase of data collection and verbal consent was obtained on this occasion, as children and parents had provided written consent previously.

5.6.1 Child participants

The Aboriginal child participants from phase one were followed through into the school setting as the child participants for phase two. At phase two the Aboriginal children were in their first year of formal schooling. Some attrition of the sample occurred because two of the original children moved out of the local area, resulting in a remaining sample size of 19 children in phase two. This is a retention rate of 90%.

5.6.2 Participants working in schools (teachers)

The adult participants in phase two were individuals working at the schools the children attended. These participants covered a variety of roles in the school context, including classroom teachers, assistant principals, support teachers or classroom aides. Overall there were 16 adult participants involved in phase two data collection. Of these, 15 were female and one was male. For ease of understanding the adult participants at phase two will be referred to as teachers. This will differentiate them from the adults in phase one, who are referred to as ECEs[4] or parents.

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[4] ECEs and teachers when mentioned as a group will be referred to as 'educators'.

All of the teachers who participated in phase two were non-Aboriginal. Table 7 describes the age,

gender, teaching experience and qualifications of the teachers.

Table 7.

Age, Gender and Experience of Teachers

Participants' characteristics	(n=16)
Male	1
Female	15
Ages	
21-30 years	3
31-40 years	5
41-50 years	3
51-60 years	4
61-70years	1
Qualifications	
Masters' degree	3
Bachelor degree	12
Diploma	1
Years of teaching experience	
1-2 years (recently graduated)	3
3-5 years	4
6-10 years	3
Over 10 years	6
Experience teaching in early childhood	
1-2 years (new to early childhood)	4
3-10 years (practiced)	7
Over 10 years (experienced)	5
Experience with Aboriginal children	
Minimal (less than 3 children)	1
Some (3+ years / 3+ children)	8
A lot (10+ children or a high % in the school)	4
Extensive (community/life experience)	3

5.6.3 Data collection

As in phase one, interactions between the child participants and the teachers were video-recorded while participants were engaged in play with playdough. For phase two the researcher brought playdough and utensils for use in play to the school context, because playdough is not always a common resource in the school environment. The researcher also brought some utensils for the playdough, such as rollers and sticks which the participants could use in their play. Typically the teacher withdrew the child from the classroom or took them aside and interacted with the child while another adult took the rest of the class. On two occasions the adult participating in the video-recording was a support person at the school rather than the classroom teacher. In most school contexts only one child from the original sample was attending the school. Many of the children from the four participating early childhood services in phase one attended different schools, so there was not often an opportunity to gather data in a group context. The 19 children were attending 14 different schools. On the three occasions that it was possible, the children were grouped for data collection. All teacher participants were known to the child participants in phase two of the research.

5.6.4 Data transcription of phase two teacher-child interactions

The interactions between the children and their schoolteachers were transcribed in a similar manner to the phase one interactions; they were transcribed verbatim and entered into the SALT program (Miller & Chapman, 2010). These transcriptions were also coded for grammatical, phonological and pragmatic features (Miller, Andriacchi, Nockerts, Westerveld & Gillon, 2011).

5.6.5 Analysis of the change in dialect density over time

The longitudinal approach to data collection in this research was chosen to study the change in children's dialect over time. This research investigates children's dialect-shifting behaviour from an Australian perspective, as international research (Craig & Washington, 2004; Terry et al., 2012) into dialect density has found that children in Preschool and Kindergarten contexts demonstrate less

dialect-shift than children who have commenced grade school. Terry et al. (2012) found that children speaking non-mainstream American English adjusted their dialect towards the mainstream in their first year of formal schooling. It was therefore expected that the dialect density of the Aboriginal children in this research would reduce in their first year of formal schooling.

At phase 2, when the Aboriginal children were followed into a school context, their dialect density (DD) was again calculated from the video-recorded interactions with their school teachers. This calculation was performed in the same manner as in phase 1, that is, counts were made of each coded feature of AE for each child. The sample of Aboriginal children who were followed into the school context for the second measure of dialect density was relatively small (n=19). Due to this small sample size, a non-parametric test, the Wilcoxon matched-pairs signed-ranks test which is the equivalent of the paired samples t-test, was used to test the difference between the median scores for the children's initial dialect density at phase one and their dialect density at phase two.

When calculating change in dialect density only the phonological or grammatical features that were consistent with AE were considered as dialectal features (see Tables 5 and 7). It was hypothesised that measures of the Aboriginal children's dialect density would be less at phase two than at phase one. This was hypothesised because international studies of children's nonmainstream dialect use have shown a reduction in dialect density when children begin formal schooling (Terry & Connor, 2012; Terry et al., 2012)

The children's change in dialect density (ChDD) was calculated by subtracting their DD at phase two from their DD at phase one.

ChDD = DD1-DD2

The correlation between the initial DD at phase one and the change in dialect density (ChDD) was studied as a simple bivariate correlation. This test relied on the assumptions of normality and linearity.

The scores for DD1 and DD2 were entered into SPSS and both data sets were tested for normality. DD1 had p-value of over 0.1, and absolute skewness and kurtosis of less than three, so normality was not violated. DD2 had a p-value of over 0.01 and absolute skewness and kurtosis of less than three, so although there was a moderate deviation from normality this was still not significant enough to violate assumptions. The normality of the difference between DD1 and DD2 was also tested. This showed a normal distribution (see Appendix N).

5.7 Phase two: Interviews with teachers

5.7.1 Participants

Teachers were purposively selected for data collection based on their knowledge of, and relationship to, the child participant(s). In most cases the adult was the child's classroom teacher or, on two occasions, the classroom support person. In fourteen of the sixteen interviews the teacher was the same person who had interacted with the child in the video-recorded session.

5.7.2 Data collection: teacher interviews

The interview process for phase two was similar to phase one. In most cases the data collection had been preceded by an email conversation between the teacher and the researcher so the teacher was aware of the structure of the data collection process. Teachers had planned a suitable location and made available a period of time to participate in the interview process. The interview guide (see Appendix H) was again used to guide the discussion. Interviews were audio-recorded and the researcher also took notes online.

5.7.3 Transcription of teacher interview data

The interviews with the teachers were transcribed verbatim by the researcher as word documents and then entered into NVivo (QSR International, 2015) for analysis. The interview data from parents

/ carers, ECEs and teachers were considered together in the analysis process as described in the next section.

5.8 Analysis of parents' / carers' and educators' perspectives of Aboriginal children's communicative competence and factors affecting this.

Interview data gathered in phase one and phase two was analysed collectively in consideration of research question 4. Thematic analysis (Braun & Clarke, 2006) was applied to the interview data that explored the perspectives of parents, carers, early childhood educators and teachers about Aboriginal children's communicative competence and emergent literacy skills. Braun and Clarke (2006) described thematic analysis as a method of data analysis in its own right, which can be subdivided further in a number of ways. The researcher may choose to apply inductive versus theoretical thematic analysis if there is a particular theoretical perspective held about the data. The process of thematic analysis can also involve coding at a semantic or a latent level; at a semantic level the data is coded purely for the explicit or surface meanings of the text. In contrast, coding at a latent level involves some interpretation of the underlying ideas or ideologies that may shape the data, or affect the surface/semantic content of the text: these underlying ideologies provide the basis for the thematic analysis at this level.

This data was analysed using theoretical thematic analysis, because the researcher applied knowledge from literature searches and experiences when coding the data. Information in the literature about adults' perspectives of bi-dialectal children's communicative competence (Haig & Oliver, 2010; Oliver, Rochecouste, Vanderford, & Grote, 2011; Peltier, 2010; Sterzuk, 2008), and factors affecting Australian Aboriginal children's academic performance (Dockett et al., 2012; Dockett et al., 2010; Dunn, 2001) helped to provide a basis for this coding. Theories in the literature allowed this data to be coded at a latent or interpretative level; that is, the researcher sought for underlying ideologies or assumptions that might be expressed as themes in the surface text. Triangulation of the data involved incorporating responses from different participant groups of

parents/carers, ECEs and teachers. The analysis of data from these three different groups of participants strengthened the rigour of the research. Coding was authenticated by another researcher, who read through the transcripts and coding to confirm that the allocated coding categories were appropriate.

The researcher postulated that a variety of factors could be affecting the Aboriginal children's development and performance, such as the child's ear health (as reported by carers), the child's communicative competence, their dialect density and their school / preschool attendance. These factors corresponded to themes that had been identified in the literature, thus allowing for theoretical thematic analysis to be performed on this data set. These and other factors were discussed with parents, carers and educators, in order to gather a variety of different viewpoints on possible influential factors. Once the data had been transcribed, the process of coding began. Saldana (2013) describes a code in qualitative analysis as a "short word or phrase that symbolically assigns a summative, salient, essence-capturing and / or evocative attribute for a portion of language-based … data" (Saldana, 2013, p3). The topics of general discussion on the interview guide formed the initial categories for coding. After the initial coding phase the data was re-coded into themes. Consistent with the process of thematic analysis (Braun & Clarke, 2006), individual extracts of data could be coded for multiple themes. For example, the following extract of data was coded under three categories, namely, 'attendance', 'literacy skills' and 'general health'.

> *"Literacy has been very slow. He has had lots of time off school, really a lot. He has*
>
> *had a lot of time off with tonsillitis. His attendance has been much better since*
>
> *winter is over. So he has improved recently and is starting to blend words" (T4)*

Further study and analysis of the data allowed the researcher to develop a thematic map displaying links between key concepts, broader categories and subthemes. This visual representation of the data helped to clarify the relationships that existed between the codes, the themes and the different levels of the themes. Subsequently the themes and subthemes were reviewed to refine and confirm

that these were consistent and relevant both within each coding category and also across the whole data set. Finally, the themes were able to be clearly defined and labelled. This allowed for each theme to be reported on and described fully.

This chapter has presented the methodological processes involved in this research. The results of the research will be presented in the following two chapters.

6. Results from Phase One

At phase one, data collection consisted of video-recorded samples of interactions between ECEs and children, as well as interviews with ECEs and parents / carers of the Aboriginal children. Analyses of this data allowed for consideration of the research questions about features of AE present in the communication of local Aboriginal preschool children, and the impact of cultural match between educator and child on the child's communication. In this chapter, the normality of the sample will be described first, then the results of the analyses for the first two research questions will be addressed in order.

6.1 Description of the Sample

As described in the previous chapter, the children were sampled according to local contacts and availability so the data were not gathered randomly. In order for appropriate tests to be applied, descriptive statistics were gathered to determine measures of central tendency. Demographic data was gathered for all the children and the educators (ECEs and teachers). The results of data gathered from the child participants are described in this section.

For the entire sample of child participants (Aboriginal and non-Aboriginal), the numbers of male and female were even (see section 5.4.2). All were in their final year of preschool before commencing formal schooling. The first year of formal schooling in New South Wales is called "Kindergarten". Children must be enrolled in Kindergarten by the calendar year in which they turn six years of age. The non-Aboriginal group included two females who were from a bilingual background (Indian and Thai). The remainder of the sample children were monolingual.

Overall, the age of the children did not deviate significantly from a normal distribution with kurtosis of 0.668 (SE = 0.0717) and skewness of 0.337 (SE = 0.365). Appendix L shows the descriptive statistics and histogram of ages for all the child participants (n=42). The Aboriginal children in the

sample (*n*=21) evidenced a similar distribution of age to that of all children in the sample (see Appendix L). The shape of the distribution met the assumptions for parametric testing.

6.2 Features of AE Present in the Preschool Population

In order to describe the dialect of Aboriginal English used by preschool-aged children in the greater Newcastle area, frequency counts were taken of dialectal features in samples of the children's conversation.

6.2.1 Calculations of linguistic features

The SALT program provided calculations of linguistic aspects of the children's language samples; these calculations were then coded by the researcher for statistical analysis.

An independent samples *t*-test was used to test for significant differences between the means of the two groups (Aboriginal and non-Aboriginal children) for the coded calculations which satisfied the Shapiro-Wilks test of normality (see Appendix J). Broad guidelines for interpreting the effect size using Cohen's *d* describe 0.2 as a small effect size, 0.6 as medium and 0.8 as a large effect size (Cohen, 1988). The codes that were analysed using the independent samples *t*-test were *responses to questions, percent intelligible utterances* and *total number of utterances.* The results for these *t*-tests are shown in Table 8.

There was a small, non-significant difference in the scores for responses to questions for the Aboriginal and non-Aboriginal children; $t(40) = 0.70$, $p = 0.50$, Cohen's *d* = .21. The Aboriginal and non-Aboriginal children produced a similar percentage of utterances as responses to questions from the ECE.

There was a small, non-significant difference in the scores for total number of utterances for the Aboriginal and non-Aboriginal children; $t(40) = 0.7$, $p = 0.50$, Cohen's *d* = .21. The Aboriginal children and the non-Aboriginal children produced a similar total number of utterances per transcript.

There was a significant difference in the scores for percent of utterances that were intelligible for the Aboriginal and non-Aboriginal children; $t(40) = 2.50$, $p = 0.02$, Cohen's $d = .77$. The Cohen's d statistic approaches a large effect size, demonstrating the difference between the two groups. The Aboriginal children produced fewer intelligible utterances as a percentage of their total utterances than the non-Aboriginal children (see section 5.7.1 for a description of unintelligible utterances).

Table 8

Results of t-tests and Descriptive Statistics for Linguistic Codes, by Group

Variables / codes	Aboriginal (n = 21)		Non-Aboriginal (n = 21)		95%CI
	M	*SD*	*M*	*SD*	
Responses to questions	34.1	13.4	37.2	17.3	-12.8, 6.5
Total number of utterances	43.9	17.1	40.6	13.9	-6.5, 13
Intelligible utterances (%)	87.7	8.9	93.2	4.8	-9.9, -1.0

Note. CI = confidence interval, lower and upper

6.2.1.1 Linguistic features with customised codes

A wide variety of linguistic features of the children's communication were also coded, as described in Tables 5, 6 and 7 in the methodology chapter.

The features present in the dialects of individual children differed. For example, Child (C)7 and C23 had similar (high) levels of dialect density in phase one. C7's sample included ZeroAux and AltPro but no ZeroDet. In contrast, C23's sample included ZeroDet but no ZeroAux or AltPro. These features were still counted as features of AE, however, in acknowledgement of different sub-dialects.

The coded features of AE that were present in the children's samples were analysed using a non-parametric equivalent of the independent samples *t*-test, the Mann-Whitney *U* test, because assumptions of normality were violated (see Appendix M). The values for asymmetry and kurtosis between -2 and +2 are considered acceptable in order to prove normal univariate distribution (George & Mallery, 2010). This test was used to compare the median scores of the Aboriginal children and the non-Aboriginal children for each coded feature. Effect size was calculated using Pearson's *r.*

A Mann-Whitney *U* test (*n* = 42) on each of the following factors indicated that these phonological processes were more common in the Aboriginal children in the sample than the non-Aboriginal children: cluster reduction, consonant deletion, omission of /h/, substitution or omission of /θ, ð/, stopping, voicing, vowel-change, and other phonological processes (these were grouped into a single category, labelled 'other PP') (see Table 9). A two-tailed test was used; these features were phonological processes, so they could have been present in the speech of the non-Aboriginal children.

Table 9

Results for the Coded Linguistic Features, by Group

Coded feature	Aboriginal		Non-Aboriginal		U	p	r
	Mean (SD)	*Mdn (IQR)*	*Mean (SD)*	*Mdn (IQR)*			
CR	4.8 (4.3)	3.0 (6)	.4 (1.1)	0 (0)	59	<.001	.66
CD	2.5 (3.6)	1.0 (5)	.1 (.5)	.0 (0)	109	.001	.51
H	1 (3)	2 (3.6)	0 (0)	.1 (.3)	99	<.001	-.55
TH	5.0 (6.3)	2 (6)	2.1 (2.9)	1 (4)	138.5	.036	.32
S	1.4 (2.1)	.0 (3)	.1 (.2)	.0 (0)	133	.003	.45
V	1.4 (3.1)	.0 (2)	.7 (1.1)	.0 (1)	147	.004	-.44
VC	.7 (1.1)	.0 (1)	.3 (1.1)	.0 (0)	154.5	.032	.33
Other PP	1.5 (3.1)	1 (1)	.2 (.5)	.0 (0)	143	.022	.35
WSD	.6 (1.8)	.0 (1)	.2 (.5)	.0 (0)	210.0	.712	-.06
ZeroCop	.7 (1.1)	.0 (1)	.1 (.5)	.0 (1)	136.5	.002	-.48
ZeroPro	.7 (1.1)	.0 (1)	.5 (.2)	.0 (1)	207.0	.698	-.06
AltPro	.3 (.6)	.0 (1)	.1 (2.2)	.0 (1)	180.5	.098	-.26
ZeroAux	.7 (2.2)	.0 (1)	.8 (1.0)	1.0 (1)	159.0	.071 **(.035)**	-.28
AltDet	.5 (1.5)	.0 (0)	.1 (.7)	.0 (0)	199.0	.288	-.15
ZeroDet	1.1 (1.8)	.0 (1)	.3 (.9)	.0 (0)	156.0	.051 **(.025)**	-.30
AltComp	.1 (.9)	.0 (0)	0 (0)	0 (0)	210.0	.317	-.15
ZeroAgr	.1 (.2)	.0 (0)	0 (0)	0 (0)	210.0	.317	-.15
Q-Int	.2 (.7)	.0 (0)	.1 (.3)	.0 (0)	219.0	.961	-.01
ZeroSub	0 (0)	0 (0)	.1 (.2)	.0 (0)	210.0	.317	-.15

Coded feature	Aboriginal		Non-Aboriginal		U	p	r
	Mean (SD)	Mdn (IQR)	Mean (SD)	Mdn (IQR)			
AltTns	.5 (1.2)	.0 (0)	.2 (.4)	.0 (0)	214.0	.825	-.03
ZeroTns	.3 (.6)	.0 (1)	.2 (.5)	.0 (0)	190.5	.291	-.16
ZeroPos	.1 (.5)	.0 (0)	0 (0)	0 (0)	210.0	.317	-.15
ZeroPrep	.1 (.3)	.0 (.0)	0 (0)	0 (0)	189.0	.076	-.27
						(.038)	

Note. A two-tailed test was used. The p-values for ZeroAux, ZeroDet and ZeroPrep when a one-tailed test is used are also shown in **bold**.

The occurrence of zero copula was more common in Aboriginal than in non-Aboriginal children. The absence of the copula (ZeroCop) using a two-tailed test was significantly more likely in the utterances of the Aboriginal children than the non-Aboriginal children, for example, "No, that angry." (C8). This is consistent with documented linguistic features of AE.

The remainder of the coded features, when tested with the Mann-Whitney *U* test, showed no significant difference between the distributions for the Aboriginal and non-Aboriginal children, when the direction of the hypothesis was not specified and a two-tailed test was used. A two-tailed test was used as these features could have been present in the speech of the non-Aboriginal children.

However, a directional hypothesis that the occurrence of features would be greater in the Aboriginal than the non-Aboriginal children in the sample, allowed for a one-tailed test, where the p-value was halved. Using the one-tailed test the distributions of the coded features of ZeroAux, ZeroDet and ZeroPrep were found to be significantly different between the groups, as highlighted in Table 9.

When a series of tests are used, the likelihood of achieving significant results due to chance are increased. The likelihood of false positive results can be counteracted by a Bonferroni adjustment to

alpha. Using the Bonferroni adjustment on these results, where the number of tests was 23, only the features of cluster reduction, consonant deletion, omission of /h/ and ZeroCop were found to be significantly more likely in the speech of the Aboriginal children, than that of the non-Aboriginal children

6.2.1.2 Phonological coding considerations

In terms of phonology Aboriginal children were significantly more likely than their non-Aboriginal peers to use the phonological processes of cluster reduction, consonant deletion, and /h/ omission. The processes of cluster reduction and /h/ omission are consistent with literature on AE. That is, the presence of these features can be traced to features of AE. The increased presence of the process of consonant deletion in Aboriginal children was confusing because it has not been indicated in linguistic descriptions of AE. The consonant deletions that were noted in the Aboriginal children's speech were typically in final position in words, but occasionally in initial position. These were noted using word-level analysis of linguistic features. When considered at single word level, the results indicated that the Aboriginal children had increased rates of consonant deletion (CD).

When the transcripts were considered as connected speech, the process of consonant deletion could be regarded differently. One example of final consonant deletion (FCD) from the transcript of C27 is shown below. In the following example, the utterance is coded at word level.

that   one   (English transcription)

dæ   wʌn   (phonetic transcription)

[S][FCD]   (SALT codes)

The appropriate coding at word level for this utterance above would be FCD yet the child's pronunciation perceptually sounded like AE, implying the presence of AE features in this utterance. When considered at a discourse level the code could be altered to cluster reduction across word boundaries. See the re-coded example:

that   one   (English transcription)

 dæ   wʌn   (phonetic transcription)

[S] [CR]   (SALT codes)

When the codes for consonant deletion were re-considered as cluster reduction across word

boundaries, the results of a Mann-Whitney U test indicated that occurrences of consonant deletion

at word level were not significantly different between the two groups of Aboriginal (*Mdn* = 0) and

non-Aboriginal children (*Mdn* = 0) *U*= 220.5, *p* = 1.0, *r* = <.001.

6.2.2 Non linguistic features

6.2.2.1 Discourse and pragmatic results

 Differences in discourse and pragmatic features were also apparent between the Aboriginal and

non-Aboriginal children (see Table 10).

A Mann-Whitney U test on the coded discourse calculations indicated that the percent of utterances

that were verbal was greater for non-Aboriginal than for Aboriginal children, and the percent of

utterances that were interrupted was greater for Aboriginal children than for non-Aboriginal

children.

A Mann-Whitney U test on the customised codes for non-verbal (pragmatic) behaviours indicated

the occurrence of communicative gesture (hand and body movements) and the occurrence of

communicative head movements were both more common in the communication of the Aboriginal

than the non-Aboriginal children.

Table 10

Results for the Coded Non-Linguistic Features by Group

Coded feature	Aboriginal		Non-Aboriginal		U	p	r
	M (SD)	*Mdn* (IQR)	*M* (SD)	*Mdn* (IQR)	*U*	*p*	*r*
% utterances that were verbal	84.8 (13.5)	88.5 (10.0)	93.3 (6.0)	94.6 (8.9)	119.5	.011	.38
% utterances that were interrupted	2.3 (2.5)	1.5 (4.0)	.7 (1.7)	.0 (0)	134	.013	.38
Occurrences of communicative gesture	4.4 (2.9)	4.0 (6)	2.2 (2.4)	1.0 (3)	122.5	.012	.38
Occurrences of communicative head movements	4.1 (4.2)	3.0 (7)	1.9 (2.3)	1.0 (5)	144.5	.05	.38

The occurrence of communicative eye gaze was also recorded but results could not be calculated because of difficulties with the data collection process. These will be discussed in section 8.1.3.

6.3 Effect of Cultural Match between ECE and Child on Children's Communication

The effect of the cultural match between ECE and child on the child's communication was evaluated through the calculation of two measures. The first measure was the child's dialect density (the frequency of coded AE features) in each cultural context. The second measure was the child's lexical diversity (the number of different words used during the interaction) in each cultural context.

6.3.1 Dialect density of the Aboriginal children in the sample at phase one

In order to calculate the Aboriginal children's dialect density (DD), the number of coded features (morpho-syntactic and phonological) of AE dialect per interaction was compared with the child's total number of words in the interaction. This measure was calculated for each of the Aboriginal children who continued in the longitudinal study (n=19). The results revealed diversity in the children's dialect density (DD). The minimum DD was .019 and the maximum DD was .339. The standard deviation was 0.089 (see Figure 2).
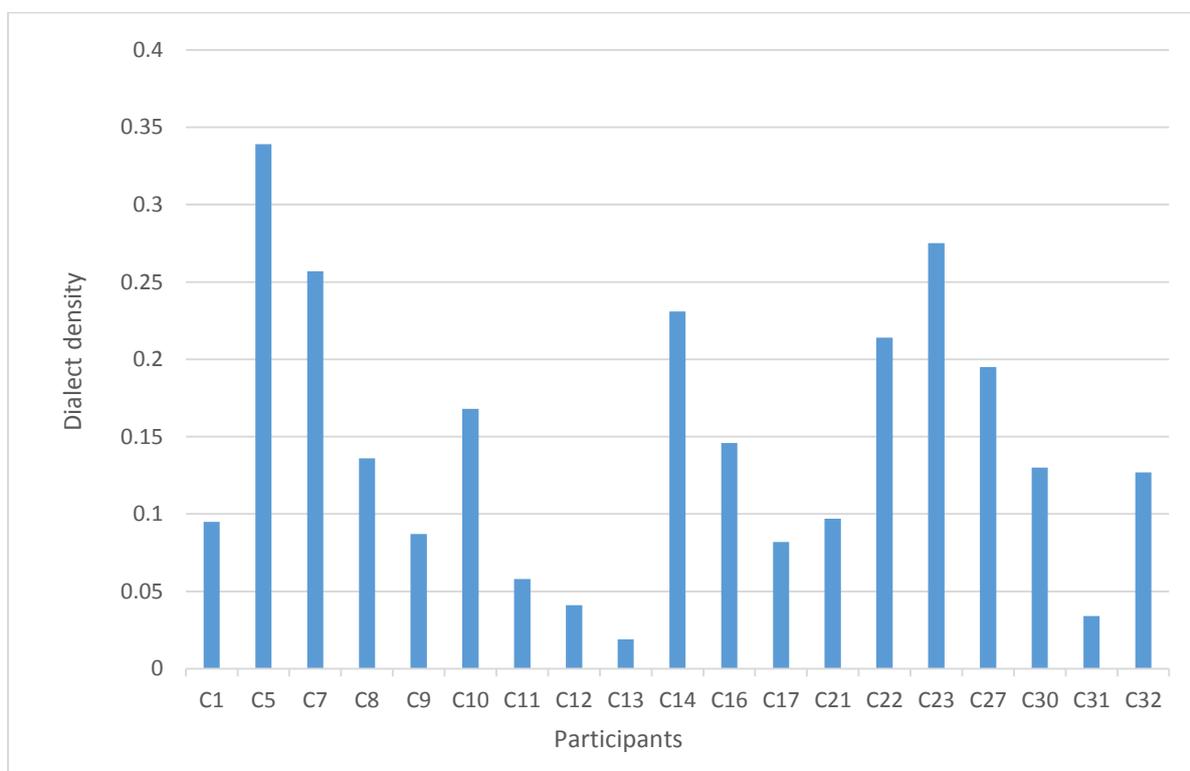
Figure 2. Dialect density in the sample of Aboriginal children at phase one.

6.3.2 Effect of cultural match on coded features of interactions between educator and child

The presence of coded features for the sample of four Aboriginal and six non-Aboriginal children (n=10) who were videotaped twice, once with the Aboriginal and once with the non-Aboriginal educator was analysed for the effect of cultural match on the children's communication.

A Wilcoxon matched-pairs signed-ranks test was run on the coded features of AE counted in the Aboriginal children's interactions (n = 4). This non-parametric test was used because of the small sample size. Results indicated that there were no differences in the median for any of the coded features across the categories of cultural match (see Table 11).

Table 11

Results of Wilcoxon Matched-pairs Signed-ranks Test for Dialectal Features by Cultural Match

Coded feature	Cultural match Mdn (IQR)	Non-match Mdn (IQR)	Z	p
CR	10 (11)	11 (17)	1.6	.09
WSD	0 (1)	0 (2)	1.0	.32
H	3.5 (12)	1 (4)	.4	.66
TH	6 (8)	9 (21)	.7	.47
Stopping	1.5 (10)	1.5(3)	.0	1.00
Voicing	.0 (1)	.5 (4)	1.3	.18
Vowel change	1 (1)	.5 (3)	1.3	.18
Gliding	1 (10)	2.5 (11)	.8	.41
ZeroPro	.5 (1)	1 (4)	1.6	.11
AltPro	.0 (1)	.0 (2)	.45	.66

ZeroAux	.5 (3)	.0 (2)	1.4	.16
AltDet	.0 (2)	.0 (1)	.45	.66
zeroAgr	.0 (1)	.0 (1)	.0	1.00
AltTns	.0 (1)	.0 (1)	1.0	.32
ZeroCop	1 (3)	.0 (2)	1.0	.32

6.3.3 Effect of cultural match between ECE and child on the child's lexical diversity.

The number of different words (NDW) that all the children (Aboriginal and non-Aboriginal) produced in different cultural contexts was also analysed. The sample satisfied tests of normality (see Appendix K for statistical details).

The results of the Wilcoxon matched-pairs signed-ranks test (n = 10) indicated that scores for NDW were significantly higher in the cultural-matched context (*M* = 70.9, *SD* = 20.77, *Mdn* = 71.5, *IQR* = 22) than in the non-matched context (*M* = 52.4, *SD* = 13.96, *Mdn* = 49.5, *IQR* = 23), *z* = -2.55, *p* = 0.011.

6.4 Summary

Parametric and non-parametric tests were used to investigate the use of AE dialect in Australian Aboriginal preschool children and the relationships between dialect use and children's interactions with their ECEs. Results revealed that the sample group of Aboriginal children, compared to the group of non-Aboriginal children, provided fewer responses to questions, and fewer intelligible utterances as a percentage of their total utterances, during interactions with their ECEs.

The occurrence of cluster reduction, consonant deletion, the omission of /h/ and zero marking of the copula were found to be more commonly occurring in the communication of Aboriginal than non-Aboriginal children. The Aboriginal children were also found to produce a lower percentage of

utterances that were verbal and a higher percentage of interrupted utterances than the non-Aboriginal children. Results also showed Aboriginal children to be using more occurrences of communicative gesture and head movements than their non-Aboriginal counterparts.

The cultural match between Aboriginal children and ECEs was not found to be significantly related to the children's dialect density. However, the number of different words as a measure of lexical diversity for a subset of children, both Aboriginal and non-Aboriginal, was found to be significantly greater in a cultural match context than a non-match context.

This chapter has presented the results of statistical analyses carried out on data obtained from phase one of this research. In the following chapter the results of statistical analysis of quantitative data gathered in phase two will be presented. The analysis of qualitative data, which was gathered across phase one and phase two, will also be presented in the next chapter.

7. Results following Phase Two

The research design involved longitudinal data collection, with Aboriginal children followed into their first year of formal schooling. This chapter describes the analysis of the data that was collected at both phases of the research in order to explore the research questions about Aboriginal children's change in dialect density over time, and the perceptions of parents / carers and educators about Aboriginal children's communication and factors affecting this.

7.1 Change in Dialect Density over Time.

The Aboriginal children's dialect density (DD) was calculated at both phase one and phase two in order to calculate their change in DD over time. The phase one measure (DD1) was taken prior to the child starting school and the phase two measure (DD2) was taken when the child had commenced formal schooling. Table 12 shows the children's DD at phase one and phase two of data collection, as well as their change in dialect density from phase one to phase two (DD1-DD2).

Of the 19 children in the sample, 13 evidenced a reduction in DD at the second occasion of data collection. The dialect density for the remaining six children was increased on the second occasion of data collection. This is demonstrated by the negative numbers; these children's DD count was higher at phase two than phase one.

Table 12

Change in Aboriginal Children's Dialect Density from Phase One to Phase Two.

Child	DD1	DD2	Difference between DD1 and DD2 (DD1-DD2)
Children whose DD decreased from phase one to phase two			
C1	0.095	0.047	0.048
C5	0.339	0.273	0.066
C7	0.257	0.255	0.002
C8	0.136	0.065	0.071
C9	0.087	0.048	0.039
C10	0.168	0.074	0.094
C11	0.058	0.03	0.028
C14	0.231	0.063	0.168
C22	0.214	0.205	0.009
C23	0.275	0.115	0.16
C27	0.195	0.147	0.048
C30	0.13	0.063	0.067
C31	0.034	0	0.034
Children whose DD increased from phase one to phase two			
C12	0.041	0.068	-0.027
C13	0.019	0.084	-0.065
C16	0.146	0.148	-0.002
C17	0.082	0.087	-0.005
C21	0.097	0.169	-0.072
C32	0.127	0.288	-0.161

Note. A decrease in dialect density from phase 1 to phase 2 is expressed as a positive number and an increase in dialect density is expressed as a negative number

Dialect density measures satisfied the assumptions of normality (see Appendix N). A paired samples t-test (n = 19) indicated that, at the level of the whole group, scores for DD2 (M = 0.14, SD = 0.09) were not significantly lower than scores for DD1 (M = 0.12, SD = 0.09), $t(19)$ = 1.5, p = 0.07. Although the p value is close to significant, the effect size is small to medium, d = 0.34. This indicates that overall the children's DD scores were not significantly different from phase one to phase two.

The scores for DD and Change in DD were checked for linearity. Figure 3 shows the linear relationship that exists between the two variables. The relationship is such that the higher the child's dialect density at phase one, the larger the change in DD at phase two. The assumptions of linearity and normality having been satisfied, correlation between dialect density at phase 1(DD1) and change in dialect density (DD1-DD2) was also tested.
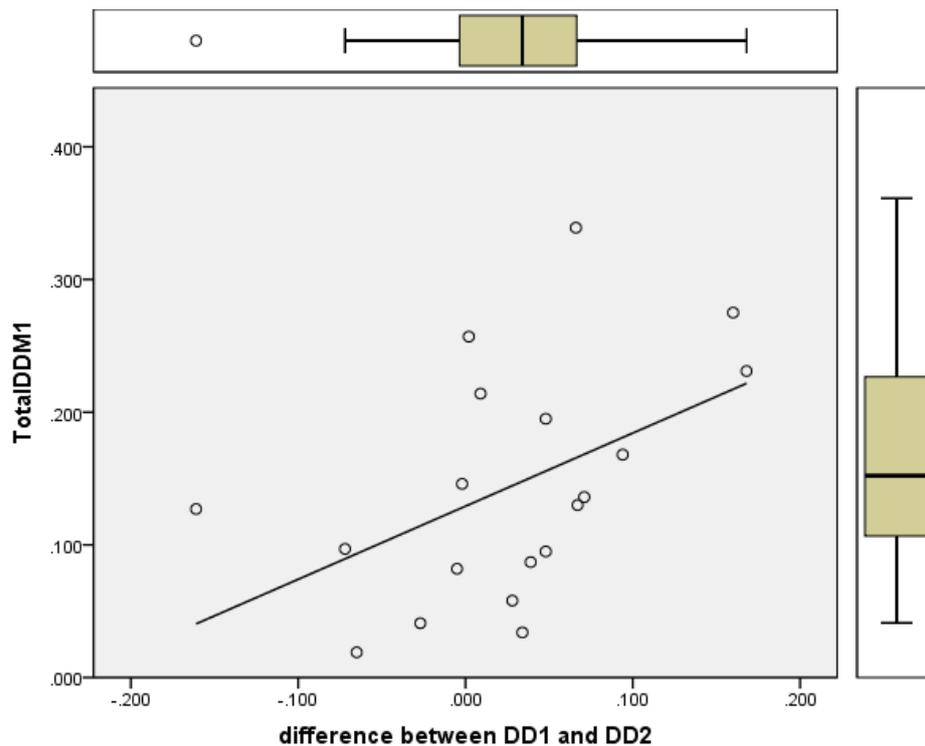
Figure 3. Linear relationship between DD and Change in DD

A Pearson product-moment correlation coefficient was computed to assess the relationship between the dialect density of the children at time one and their change in dialect density at time two. There was a positive correlation between the two variables, $r = 0.480$, $n = 19$, $p = 0.019$. This correlation shows that those who had a higher DD at phase one demonstrated a larger positive difference between DD1 and DD2. This means that the higher the child's DD was to start with, the greater the change (reduction) in DD over time. This finding needs to be interpreted with care, considering high DD scores could be associated with lower scores in phase two because of statistical regression towards the mean (Field, 2009).

7.2 Descriptive statistics: adult participants

The adult participants, on which data was collected during phase one, were ECEs and parents. The ECE participants comprised nine females and one male. The parent/carer participants comprised seven females and one male. This is reflective of the typical gender balance of ECEs and carers for the preschool population (ABS, 2017a). In total, 16 teachers participated in the data collection for phase 2 of this research. The educators who participated in the data collection consisted of 15 females and one male, which reflects the balance of gender in education in Australia (ABS, 2010, 2015). Sometimes teachers' aides or other teaching staff with whom the child was familiar participated in the video-recorded interaction. On two occasions in phase two the teaching staff who interacted with the children were not the same as the teacher who participated in the interview.

7.3 Perceptions of Educators and Carers about Aboriginal Children's Communicative Competence

The transcriptions from interviews with ECEs, parents and teachers were analysed using theoretical thematic analysis in order to reveal the perceptions of educators and carers about Aboriginal children's communicative competence. During the interviews, participants discussed relevant topics with the interviewer (see Appendix G) and considered factors that they perceived impacted on the Aboriginal children's communication and development. Thematic analysis involved an initial round

of open coding of the data, followed by more specific analysis of themes in the data (Braun & Clarke, 2006). The categories for the initial open coding are shown in Appendix O

Core themes and subthemes emerged from the data as it was coded and analysed. These themes and subthemes are depicted in Figure 4. The subthemes are labelled as key concepts because they emerged as important considerations within each core theme that were perceived to be relevant to the children's development.
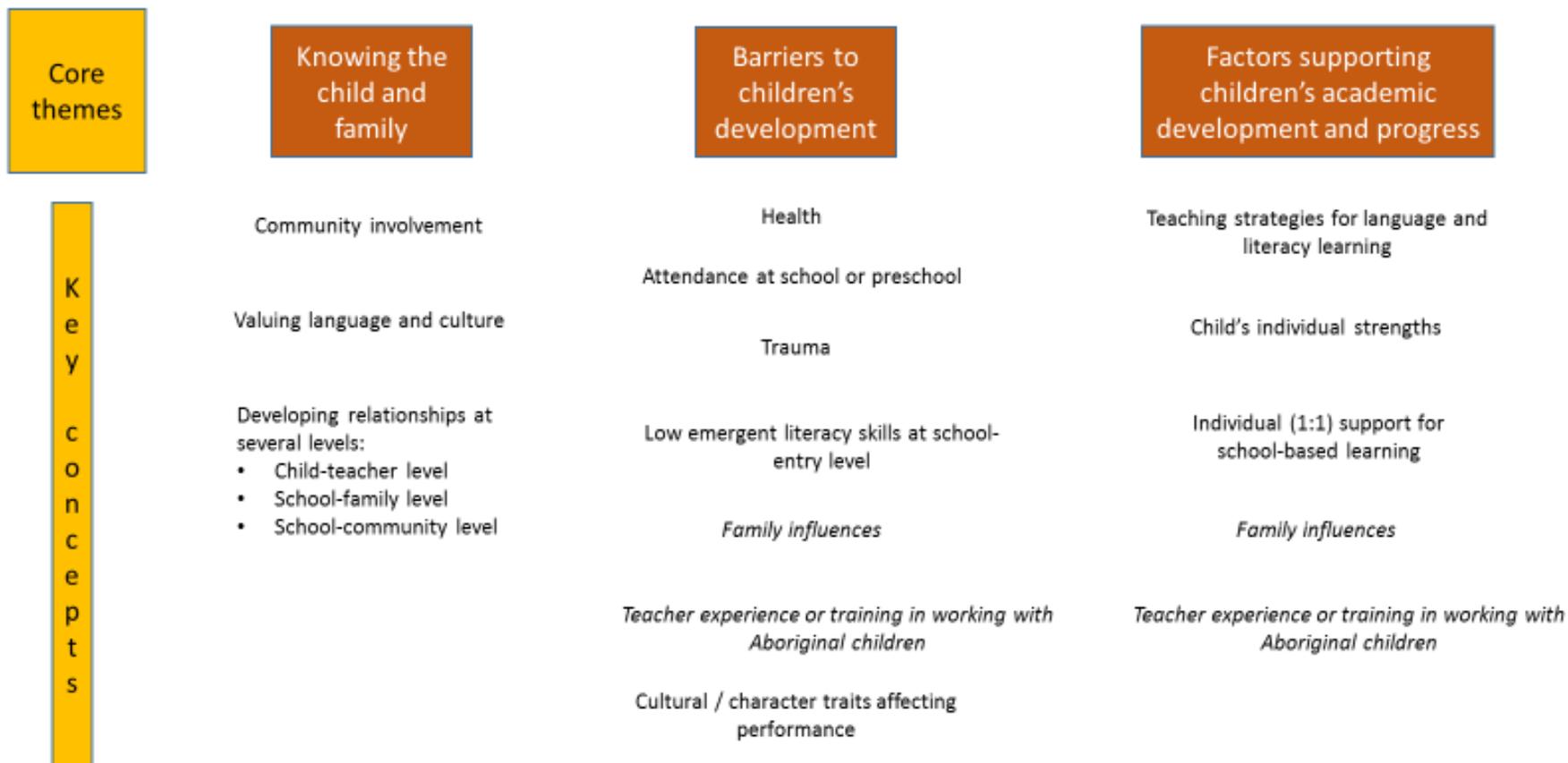
Figure 4. Core themes and key concepts of perceptions held by educators and carers about factors affecting Aboriginal children's communication and development. Key concepts expressed in italics may be interpreted as either barriers or facilitators, depending on circumstances.

The core themes were:

1. *Knowing the child and their family* shapes perceptions (of both the educator and the Aboriginal child) and builds understanding

2. *Barriers* to Aboriginal children's communication and literacy development

3. Factors *supporting the Aboriginal child's learning development* and progress.

The core themes reflect Early Years Learning Framework (EYLF) for Australia (ACECQA, 2009) as well as the framework of barriers and facilitators to intervention, presented in the World Report on Disability (WHO, 2011). It is important to note that some of the key concepts are binary in that they may function as a barrier or a facilitator, depending on the individual case. For example, family influences may have positive or negative effects on children's learning and development. These themes, and the key concepts within each theme, will be discussed individually in the following sections. Extracts from the transcripts of the participants' interviews are presented as quotes throughout this chapter, to illustrate the key concepts and core themes.

7.3.1 Knowing the child and their family

ECEs, teachers and parents/carers all spoke of the importance of developing an in-depth knowledge of the child, their family and community in order to make clear judgements about the child's skills and to support the child in their development. Participants' comments that related to knowing the child and family were coded under *community involvement*, *family life*, *relationships* and *valuing Aboriginal culture and language*.

7.3.1.1 Community involvement

The importance of community involvement was a concept that was mentioned frequently and perceived by the participants to have a significant impact on the child's communication and overall development. The comments from Aboriginal ECEs and parents/carers (P) tended to emphasise the personal and cultural importance of community engagement, for example P2 implies that he and his

partner are happy with the school the child is attending because of the school's emphasis on community involvement.

We really happy with the school, good community there. Lots of Koori kids. (P2)

The Aboriginal ECEs, when asked about community involvement, explained that it was a part of their life, and because they worked for an Aboriginal organisation, one of the benefits was that they were able to attend community events in their role as ECE with the children.

I'm very involved in the community and the culture. I grew up in the community. I'm a Coop member. I attend cultural events with my family, like NAIDOC and Aboriginal children's day. (ECE5)

Extensively, everything that we want are available here. It's what we are, lucky for us! We just get to go to everything, but our days out, things like that, we go to, we attend to, we're lucky in that sense. (ECE3)

The perspective of the non-Aboriginal participants, namely teachers (T) and ECEs, was slightly different; these participants tended to acknowledge that it was an important aspect to include in the child's education, as illustrated in the following quote.

I'm not directly involved but we do include the community in the school and are focussing on engaging the community and the families, building relationships. (T2)

7.3.1.2 Valuing language and culture

Accepting and valuing the Aboriginal children's culture and language was mentioned by many of the ECEs and teachers.

Traditional language is sacred. I majored in Aboriginal studies. Now I'm on the Aboriginal Education Committee. Traditional language is different to AE which is more of a dialect. (T7)

We actually have learnt the Kattang language very recently, we started it last year, we're pretty good, we know 2 songs, so getting there, we know a few words for a few animals too. We have an uncle that comes in and does the Kattang language with us, which is really great, the kids absolutely love it. (ECE1)

This theme included acknowledgement of the children's heritage; teachers reflected on the social-political history and its effects on Aboriginal people today.

I grew up in the era of white history at school. You have to respect what they've grown up with and how they have overcome so many disadvantages. (T2)

Teachers drew upon their theoretical knowledge when commenting on Aboriginal children's use of dialect.

I did Aboriginal Education as a subject. We learned about not discounting their language, acknowledging what they bring to the school and trying to incorporate this as much as you can. (T3)

ECEs who were Aboriginal brought their own experiences into their descriptions of language and culture, for example:

There's a bit of a difference in pronunciation from Aboriginal to non-Indigenous. We also use different volumes and tones. I have noticed that. (ECE2)

Some teachers, when asked what they thought about the way Aboriginal children talk, indicated that they did not notice much difference between the speech of Aboriginal and non-Aboriginal children in their context.

I don't see a huge difference especially in Kindergarten because they're all still at a very early stage in their learning. (T15)

> *I don't think that M is any different to any other child except that he does have a few*
>
> *problems with his pronunciation (T14)*

These teachers did not acknowledge the Aboriginal children's culture nor language in their teaching practices. For example, in response to the question, *"What strategies (if any) do you use to teach Aboriginal children language and literacy?"* several teachers replied that the strategies they used with Aboriginal children were no different to the strategies they would use with other children.

> *Not different from non-Aboriginal children. We do lots of talking and listening with*
>
> *partners and in small groups. Lots of classroom based communication activities and*
>
> *guided reading (T15)*

7.3.1.3 Developing relationships

This theme is a natural extension of the previous two themes about engaging with the Aboriginal community and valuing language and culture. The importance of developing relationships with the child and their family was mentioned by ECEs, teachers and parents / carers, as demonstrated in the following extracts from Aboriginal and non-Aboriginal participant transcripts. One participant refers to collaboration with the Aboriginal Education Officer[5] (AEO), as one aspect of developing relationships.

> *We are working with an Aboriginal lady from KU to help make connections. I think it*
>
> *is progressing well. The families are happy to come here and bring their children*
>
> *back. We try to make it as welcoming as possible. I think we have a good relationship*
>
> *with the community. We keep in contact with the local school and the AEO. We are*
>
> *working on developing relationships. (ECE4)*

---

[5] The role of Aboriginal Education Officers in NSW schools involves providing support to Aboriginal children and families. They also work closely with teachers to develop culturally appropriate resources and programs. AEOs are employed by the NSW Department of Education to work in schools which have high enrolments of Aboriginal children (Department of Education, 2017a).

Her mum is supportive and we are gradually building a relationship. The school is

building a relationship with this family. F (mum) has become a lot more confident

about interacting with the school … She has a few kids at the school and has not

really been at the school much until this year even though we are trying to engage

them. She is coming along to the school assemblies now with her younger kids. She

used to worry and not send the kids if they didn't have the right uniform, socks or

lunch or something, I had a talk to her and said that that those things were not the

most important, that it was more important that they came to school. I think she

was really afraid of the system and really scared of doing the wrong thing. The son

getting selected for prefect has really built confidence in the whole family now. I

think they feel a lot more accepted. (T2)

We got a good relationship with the preschool here, with all the staff like. His

sister went here and me and S know the kids are looked after well here. (P2)

The participants' comments about knowing the child and family were coded as a core theme

because of the concept that understanding the child is based in knowledge and relationships

developed at many levels. The participants acknowledged the importance of relationships developed

with the service provider (school or preschool, and teacher or ECE) at individual, family and

community level. They also acknowledged the importance of knowledge and awareness of language

and culture; educators drew on their theoretical as well as practical experience in discussing this

aspect of knowing the child and family. These perceptions relate to the Early Years Learning

Framework (ACECQA, 2009) theme of 'belonging, being and becoming'. Participants demonstrated

their awareness of the importance of considering the child as a whole by referring to their

community, their culture and the development of relationships across these domains. In

acknowledging the importance of community, culture and relationships, the ECEs, parents / carers

and teachers recognised that deeper knowledge of the child and their support system allows the

individual to make more holistic, relevant and applicable judgements about the child's development and communication.

7.3.2 Barriers to children's development

Teachers, ECEs and parents / carers all mentioned factors that impeded Aboriginal children's progress developmentally or academically. These barriers were considered as a core theme; participants acknowledged these barriers as part of a problem-solving exercise, that is, identification of barriers towards progress is the first step in planning and implementation of strategies and steps to overcome these barriers. Key concepts for this theme are discussed below. The key concepts are not described in hierarchical order; different aspects / barriers were relevant for different children.

7.3.2.1 Health

Fundamental to the child's educational progress was their health. This was acknowledged by both educators and parents / carers.

> He has had lots of time of school, really a lot. He has had a lot of time off with
> tonsillitis. His attendance has been much better since winter is over. So he has
> improved recently (T4)

Specifically, mention was made of hearing and otitis media (OM) or ear infections. Teachers acknowledged the impact these can have on children's progress and development.

> But at the same time we need to be aware of OM and glue ear and that affects
> their speech because they have developed their speech depending on how they
> have been hearing sounds. (T1)

7.3.2.2 Attendance at school or preschool

Both ECEs and teachers acknowledged that children's attendance impacted on their performance at school and preschool.

> *She has had a lot of time off school. She could be achieving higher if her*
>
> *attendance was better. (T8)*

Sometimes the child's attendance was considered as a whole family issue and teachers identified some of the broader reasons for poor attendance, and acknowledged the supports that encouraged attendance.

> *Her older siblings are at the school, and there were previously attendance issues.*
>
> *Now mum is working at the local Aboriginal centre across the road so the kids are*
>
> *at school on time. (T1)*

7.3.2.3 Trauma

The impact of trauma in the home on children's development was mentioned by both parents / carers and educators. This is a delicate issue, with confidentiality considerations, and as a result educators were guarded in their descriptions of trauma but they discussed the effects.

> *Not very well. She came to school very moody and every so often would lose it*
>
> *completely. She has had terrible trauma at home and that has affected her I'm*
>
> *sure. She was really delicate for the first 6 months, very upset. We have a safe box*
>
> *of her favourite things for her to go to when she needs comfort. She would throw*
>
> *herself down on the floor for seemingly a very small issue. (T9)*

Parents / carers were even more guarded in their mention of this subject, but did imply the occurrence of family trauma and mentioned appreciation of the support that service providers had given

> *His sister goes there and they been good to her, very understanding. She been*
>
> *through a lot. (P2)*

7.3.2.4 Family influences

In a broader sense, the family environment, parents' education and the support they were able to offer their children were acknowledged by teachers.

> *Mum's literacy skills are low. So mum doesn't feel confident helping her. Some*
>
> *parents may not have had very positive experience at school so don't feel*
>
> *confident to support the kids. (T1)*

> *Well regarding the families, I know from my experience that that makes a big*
>
> *difference. The children's exposure prior to school in emergent literacy skills*
>
> *affects their performance in Kindergarten. Like the better educated Aboriginal*
>
> *families, their children are better prepared for school. (T4)*

Specifically, the communication or dialect used in the family home / community was acknowledged by several non-Aboriginal teachers as affecting the child's communication and literacy development.

> *I think that for quite a few it's their home language. I'm not stereotyping them*
>
> *but how they speak at home, that's how their parents speak so that's how they*
>
> *speak too. We need to be aware of the influence that home life has on their*
>
> *language development. (T1)*

> *He says 'eh' at the end of his sentences all the time. So he will say "That's a*
>
> *book, eh?". I've gently but kindly told him that we don't end our sentences with*

"eh" all the time. But he keeps doing it. His father is really interested and helpful

and I talked to him about this problem. I really thought that it would be picked

up at home, but maybe that's how they talk at home. I don't know, I really

thought he would be improving by now. There are a few things like that he does.

(T6)

Aboriginal ECEs also described children's language. They expressed interest in the different dialects that children used reflecting their different communities. The two educators in the following excerpt were discussing the communication of children at the preschool.

I think it's funny, well it's picked up from home, you can tell where they're from, the

more Aboriginal it is the further out I find they come from, the further out west.

It's funny cause if you know their family and what community they're from, can we

use kids' names in this? For example, A and they're cousins with C and they're

obviously D's family and they talk the same.

They come from ZZ, so that community is very tight and all talk…

It's almost like a Texas slang, you know what I mean, you know where they come

from the way they speak, but everyone's like that. (ECE3)

7.3.2.5 Low emergent literacy skills at school-entry level

Teachers commented on children's poor emergent literacy skills at the beginning of their formal education as a barrier to their learning. Aspects such as vocabulary development and phonemic awareness skills were specifically mentioned.

That's something interesting; we have had to do a lot of phonics and PA with M.

She needed lots of one-on-one. She didn't come to school with these skills, no

alphabetical knowledge. She didn't seem to have had a lot of exposure to this. (T3)

These children don't have vocabulary, when they start. They are missing this. So we

do lots of reading books and explaining vocab (T13)

7.3.2.6 Cultural effects

Teachers mentioned cultural characteristics present in the communication of some of the Aboriginal children which they felt affected the children's performance in learning situations. For example the tendency for a child to 'not talk' when addressed directly, especially in large group situations was mentioned. This characteristic is consistent with the shame response in Aboriginal culture (Harkins, 1994) however educators did not acknowledge the cultural basis to this response. Teachers also mentioned children's tendency to learn well in a small group context, featuring collaborative learning processes. This is a communication style that is also consistent with the Aboriginal cultural perspective (Malin, 1990; Sharifian, 2008). Educators mentioned characteristics they had witnessed among Aboriginal children in the classrooms but did not link these to theory-driven expectations. The following comments are some examples of how educators discussed some characteristics of children's communication which could be reflective of cultural variation in learning and communication styles.

…he can communicate well, just another one of those whether he chooses to or

not. You can ask A something and he'll just look at you without giving you an

answer, that sort of thing, it can become frustrating with A, but he does have the

skills there. (ECE3)

She is pretty quiet but she participates well. She is really good in group situations,

that's where she really excels. She engages well with the group and the learning

experience that way. (T2)

7.3.2.7 Teacher experience or training in working with Aboriginal children

During the interviews teachers were asked to comment on their experience in working with

Aboriginal children, and whether in their training they had learned about Aboriginal children and

their language. There were a range of levels of experience among the participants. Many teachers

also commented that they had not had a lot of training about Aboriginal children and their language.

> *I have really had to pick it up along the way. I did an Aboriginal subject at Uni but*
>
> *there was no real teaching about Aboriginal children and their language. (T13)*

> *Extensive experience. I worked at W for 8 years and L for 2 years… I grew up in N*
>
> *and G so I've lived in areas with a high percentage of Aboriginal people. (T1)*

> *Not much at uni. I learned more after I graduated. I've done the courses on*
>
> *"Stronger, Smarter". I've done "Sister Speak". I've had lots of post grad training*
>
> *and experience. (T1)*

> *I did Aboriginal studies. That brought in the Aboriginal perspective, and where*
>
> *they are in terms of how they compare to non-Aboriginal or mainstream. We*
>
> *learned about their hearing, and other issues, social or whatever that may arise.*
>
> *(ECE4)*

The issues that teachers in this research discussed as possible barriers for the Aboriginal children's

progress were consistent with issues identified in the literature (AEDC, 2014). Health and social

factors such as trauma or poor school attendance affect a child's academic performance. Aboriginal

children's performance is related to the barriers as identified in this research as well as the

aforementioned theme of knowing the child and family. In order to overcome some of the barriers

impeding Aboriginal children's academic progress, the first theme outlined in this research,

Knowing the child and family, must be considered.

Dockett et al. (2012) discussed Aboriginal children's school readiness, and numerous authors have described strategies for supporting these children to develop necessary skills prior to school entry (Ellis et al., 2010; Mason-White, 2014; McRae et al., 2000; McTurk et al., 2011). These strategies include community education and support, with the development of trusting relationships, respect and capacity building considered fundamental to the success of developing school readiness (Australian Council of Educational Research (ACER), 2012; Jo Taylor, 2011). The theme of knowing the child and family, which incorporates developing relationships, community involvement, and valuing language and culture, supports the literature in this area.

Cultural ways of communicating, and different learning styles also influence Aboriginal children's response to the school environment. The different communication styles of Aboriginal children have been described in the literature because these cultural differences can impact on the teacher-student relationships and hence the child's learning experience (Harkins, 1990, 1994; Malin, 1990). Teachers in this research demonstrated diverse levels of knowledge and awareness of Aboriginal culture and communication. Oliver et al. (2011) noted that teachers' knowledge and experience with AE affects their ability to support / teach Aboriginal children.

7.3.3 Factors supporting Aboriginal children's academic development and progress

7.3.3.1 Teaching strategies

During the interviews, ECEs and teachers discussed strategies they implemented to support Aboriginal children's language and literacy development. Different educators used different strategies, and the context of ECEC as opposed to a formal school setting also affected the types of strategies that were implemented.

Many teachers and ECEs used modelling as a strategy to enhance the children's communication skills.

That's a tricky one, cause you don't like to overcorrect kids and hurt their confidence,

so I think it's mainly just repetition by saying things the right way and I think they

pick up on that as well, without making a big fuss out of it, their confidence is so

huge that you don't want to tell them "that's wrong, say it this way", you just say it

the right way and hope… and hope enough times, you say it enough times, they just

get it. (ECE3)

Children need to learn what context they're in and how they talk in that context. It's

important not to stop them talking their way, but to model the correct language for

the context. I use lots of modelling, not telling them that they're wrong but repeating

it back to them and confirming it. (T2)

As can be seen from the above quotes, educators used the technique of modelling for a number of

reasons; it was regarded as a more positive strategy than correction and therefore less detrimental

to the child's self-confidence. Teachers also acknowledged the importance of accepting the child's

home language, and teaching metalinguistic awareness, such as use of the appropriate language for

context.

The acknowledgement of AE was discussed both theoretically and personally. For example T3, a non-

Aboriginal participant, drew on her university studies, to explain the rationale supporting her

teaching techniques.

We learned about not discounting their language, acknowledging what they bring to

the school and trying to incorporate this as much as you can. We should not correct

them because we don't want to affect their self-esteem. (T3)

Aboriginal participants emphasized the importance from a more personal perspective, confirming

theoretical approaches

I think its important that we foster their lingo and don't get them to try to say the

words in a different way. (ECE5)

Some participants also described how the content and structure of their teaching was adjusted in acknowledgement of the children's culture and language. Educators described the importance of including Aboriginal culture and language in their teaching, in order to make it more relevant for the children.

In my teaching I incorporate Indigenous stories into their rich reading experiences.

(T3)

I base it in the culture to get them interested in wanting to learn. (ECE5)

Closely associated with the technique of modelling, was the educators' use of repetition as an important learning strategy, both to emphasise the model or for confirmation and comprehension.

I learned that repetition when they get it wrong is probably the best tool. Some people don't believe in rote learning, but repetition is definitely the key. (T10)

Confirming what they have said is also important. So when they say something to me I'll repeat it back to make sure I have understood it correctly. (ECE4)

Educators were divided on whether or not they would correct a child's speech or pronunciation. Although some were cautious about using correction because of consequences for self-esteem or self-confidence, others explained that they regularly corrected children's communication attempts.

I correct L. She never baulks with the fact that I correct her. If she says free instead of three we practice saying three correctly. I show her how to say it and she repeats it after me. She really tries…

I correct all the children in Kindergarten. I wish they were corrected at home in their grammar and pronunciation. Sometimes people don't realise how much it impacts on their spelling. (T11)

Educators, especially in the ECEC context, focussed on developing the Aboriginal children's independence and confidence. The following quotes, both from Aboriginal ECEs, illustrate this:

Think our way is, we yarn it up to them, just by talking. The one thing we have learnt, is down to their level, bringing out confidence in them first and encouraging that. We've had kids that wouldn't speak. Build a good relationship first. (ECE3)

Get them used to routine, to become more independent. Help them with their emotions; expressing themselves instead of lashing out. (ECE2)

Teachers discussed the importance of exposure to verbal language, and opportunities to practice communication informally, to develop the children's language and emergent literacy skills.

I employ narrative a lot. I also expose them to rich texts in books. I talk about my family a lot and embellish the stories so it has some relevance to the children and their learning…

We sit in a circle, a sharing circle to encourage and develop their communication and language. In term 1 and term 2 we do lots of sharing stories and conversations and really develop the children's skills in verbal communication. (T16)

I give them jobs in the classroom so they have to talk. We have our sounds program – Jolly Phonics. We use mirrors too, to see the shape that our mouth makes when we say sounds. I use lots of singing and jingles. It's all about having fun with language and helping them to realise that its ok to make a mistake. I provide opportunities for them to be speaking in the classroom, for example, we have a café corner in the classroom. We have lots of social play opportunities. We encourage positive role models - they all have year six buddies. (T1)

Structured learning approaches were also mentioned by several teachers; these programs were being implemented system-wide to support early literacy development in Kindergarten children from areas of low SES, who may not demonstrate strong emergent literacy skills at school entry. The L3 program was one that was mentioned by several teachers (Department of Education 2016; Neilson & Howell, 2015); these teachers had participated in professional development to enable them to run the program in the classroom.

> *We follow the L3 approach to learning literacy here – the language, literacy, learning*
>
> *program. It's a very structured introduction to reading and learning. (T3)*

> *We have the L3 program. It's aimed at Aboriginal kids. It encompasses a lot of what*
>
> *you do in the classroom. (T7)*

Techniques of modelling, repetition, correction, general language development, and incorporating Aboriginal culture and language were techniques that were mentioned by several educators. Some educators also mentioned specific techniques they employed, including the use of visuals to support verbal language. The following quotes from ECEs describe some of the different approaches implemented and indicate the diverse perspectives and priorities of the different ECEs.

> *I really concentrate on getting them to focus. They need to tune in to what we're*
>
> *saying. I give them a lot of time to process what has been said and what they need*
>
> *to do. They need lots of processing time. I ask them to repeat back instructions to*
>
> *make sure they comprehend.*

> *I use lots and lots of visuals, heaps of visuals. Our communication here is really*
>
> *visual, supported by verbal. Instead of the other way around. (ECE4)*

> *Getting them to write their names when they're doing their paintings and that sort*
>
> *of thing. Sometimes we use the alphabet chart. (ECE6)*

The many different strategies employed by the educators indicated their different knowledge bases and training. For example, those educators with training in Aboriginal culture and communication, tended to incorporate cultural experiences more into their teaching.   Different perspectives on development of school readiness and emergent literacy were also reflected in the strategies that the educators used in developing children's language and literacy skills.

Participants from all groups mentioned the importance of modelling and repetition in developing Aboriginal children's language and literacy skills. There were, however, some other observable trends in the data, for example:

Aboriginal ECEs were more likely to focus on independence and confidence in the children than non-Aboriginal ECEs.

ECEs were more likely to use visuals to support the children's learning than teachers. The ECEs also mentioned the need for developing the child's attention and concentration, and awareness of print.

Teachers utilised structured learning approaches to language and literacy development as well as emphasising the importance of providing rich verbal language experiences. Teachers also used correction more as a strategy.

7.3.3.2 Individual (1:1) support for school-based learning

As well as discussing different classroom-based strategies they employed to develop children's language and literacy skills, many teachers also emphasised the individual support that the children received as integral to their learning. Sometimes this support was provided through the learning support teacher, classroom aid or speech pathologist. All 1:1 supports that the teachers mentioned were provided through the school.

> *Well, we had a lot of trouble understanding him initially. His communication now*
>
> *is probably average. At times he still struggles to form a sentence. He has*

difficulties putting his words together. Both boys get help from extra support for

literacy. (T15)

We have had to do a lot of phonics and PA with M. She needed lots of 1:1. She

didn't come to school with these skills, (T3)

The speech pathologist has worked with her. They focused on blends and

particularly her /s/ sound. Her intelligibility has certainly increased. She confidently

shows things at assembly. She is confident to get up and speak in front of people.

(T1)

7.3.3.3 Child's individual strengths

Children's individual strengths were acknowledged as relevant for supporting their learning also.

She has very strong numeracy skills; her numeracy skills are at the end of grade

one level. She is very strong in that area. (T2)

He copes very well. He is one of the higher readers. Orally he is only a 2, but

other strengths support his communication well. He is a really good reader. He is

at level 13 now! (T7)

7.3.4 Further considerations

Although the themes have been expressed as categories, some of the key concepts are relevant

across categories and can be regarded as barriers *or* facilitators to children's development. For

example teacher's training and experience with Aboriginal children could be realised as a barrier to,

or a factor supporting, the child's progress, depending on the amount of experience a teacher had.

Family influences could also be positive or negative: in the following extracts teachers provided

examples of how a positive home environment supported the child's learning.

She does have good support at home so they have followed through with activities

to develop her literacy skills. (T5)

He is doing great in literacy – he's my top kid! His mum is very hands-on at home.

She is a teacher trained as well. He is also very active in his own learning. He is very

self-regulated. His literacy is at a level 13, which is above average. (T6)

There were many barriers and facilitators identified in the research. The theme of relationships and knowing the child and family appears to be interconnected to the other themes. For example, if teachers were aware of some of the barriers or strengths of the child and family they explained how they would be more able to individualise their teaching in response to these.

Some key concepts influenced others, for example if the teacher was experienced or trained in Aboriginal culture they often had a greater understanding of the importance of valuing Aboriginal culture and language. They also had developed some successful teaching strategies based on knowledge and experience. The key concepts (barriers and facilitators) could also be considered in terms of whether they were related to the system or the individual child/family. This will be discussed further in Chapter 8, section 4.2.

7.4 Summary

This chapter has described the analysis of the data collected longitudinally across phase one and two of the research process. Dialect density scores did not show a significant change over the time period studied for this sample of Aboriginal children. However, there was found to be a positive correlation between the children's dialect density at phase one and their change in DD over time. This pattern of greater decrease in DD at phase two was evident for those children who had a higher DD at phase one.

The educators and parents / carers of the Aboriginal children presented many factors that could be impacting on the children's development. There were a variety of different interpretations about Aboriginal children's communicative competence, with some participants noting differences in the children's communication, indicating an awareness of AE dialect. Some participants however did not notice any difference between the communication of Aboriginal and non-Aboriginal children.

These findings will be discussed in more detail in the following chapter.

8. Discussion

This research explored the features and the use of Aboriginal English (AE) dialect in young Australian Aboriginal children living in a regional / urban location. As dialect is associated with culture, the effect of cultural match between educator and child was also investigated for the impact this had on the child's communicative interactions. The longitudinal structure of this research allowed for investigation of Aboriginal children's change in dialect use over time. The perceptions of carers and educators of Aboriginal children's communicative competence was explored in this research; participants discussed factors that they perceived may affect Aboriginal children's development and progress at school. An advisory panel was involved throughout the research process. Members of this panel provided cultural insight and interpretation of the results, which optimised the credibility of the findings as well as having the potential to aid the translational possibilities of the research.

Differences in dialect and culture between mainstream and Indigenous communities have been acknowledged in both Australian and international contexts (Ball & Bernhardt, 2008; Pescoe, 2014; Sharifian, 2010). The implications that these differences hold for the role of the speech pathologists working in these contexts has also been discussed (Ball & Lewis, 2011; Gould, 2008a; Lowell, 2013). Recommendations for effective speech pathology involvement include consultation and collaboration with community and a dedicated attempt at culturally responsive intervention (IAHA, 2015). As with other non-mainstream cultures, consideration of the child's context and the cultural practices of the community are required in order to interpret appropriately the child's skills and needs.

The results of statistical analysis in this research provided some interesting information about Aboriginal children's dialect use. However, due to the small sample size for some of these analyses, it is also relevant to consider individual cases and the factors that were indicated in these cases.

Patterns in the data will also be discussed for situations where statistical findings were not significant.

8.1. Preschool children's use of AE dialect in the Newcastle area

This research sought to identify and describe the features AE dialect spoken by Aboriginal children in the local Newcastle area and to compare this with the communication of the non-Aboriginal children. It was identified that *all* the Aboriginal children in the sample produced some dialectal features. There was, however, a range of different features used across the sample with some children producing features that other children did not produce. The communication of some non-Aboriginal children also included features consistent with AE dialect, indicating there was sometimes overlap between the dialects of the two participant groups. Butcher (2008) mentioned that AE shares some features of other non-mainstream dialects of English spoken in Australia. It is worth noting that some of the non-Aboriginal children in the sample may actually have been Aboriginal. One educator specifically mentioned that a particular child didn't 'identify' as Aboriginal but this may not necessarily reflect the child's cultural heritage. The parents may have chosen not to identify the child as Aboriginal for their own reasons. The sample children came from a range of different backgrounds and social circumstances.

8.1.1 Diversity in dialect

AE dialectal features varied according to children and locations within the greater Newcastle area. Children from different locations demonstrated different dialectal features. Aboriginal ECEs also commented on the differences in dialect of children from different Aboriginal communities. This finding is consistent with literature about geographical variations in AE dialect. This phenomenon was noticeable even across the relatively small geographical distance that this research encompassed. The position of Newcastle as a regional centre may have affected this finding; some families had moved into Newcastle from outlying communities because more services were available

in the regional centre than in rural settings. The children of these families may have been speaking the regional dialect of their home community.

A range of dialect density was also found across the sample of Aboriginal children. Some children spoke a mild or acrolectal form of AE with only a few features present in their communication. The communication of other children in the sample included many more features, indicating that their dialect was positioned further towards the basilectal end of the continuum of AE. The children's background and social circumstances were as diverse as their dialects. The dialect and background of two children from the sample are described in detail to illustrate the diversity of the children in this research. Both children used a similar number of utterances in their interaction with the ECE. Child C9 at phase one had a dialect density of .087, which was low relative to the rest of the Aboriginal sample. She had an utterance count of 92 verbal utterances. Her sample included the following dialectal features: cluster reduction (2 counts), TH-substitution (1 count), one occurrence of another phonological process, and one count each of ZeroPro, ZeroDet, ZeroAgr and ZeroCop. C9 was a young girl who was born and raised locally and lived at home with her mother, father and four siblings. Her father was Aboriginal and her mother was non-Aboriginal. Her mother had attended school until year 11; her father had a TAFE qualification and was employed at the time as a labourer.

Child C23 at phase one had a much higher dialect density of .275. His verbal utterance count was 88. His sample included the following dialectal features: cluster reduction (12 counts), weak syllable deletion (1 count), H-omission (16 counts), TH-substitution (6 counts), Stopping (3 counts), Vowel change (1 count), Gliding (1 count), ZeroPro (1 count), ZeroDet (6 counts), Q-Int (3 counts). His mother explained that C23 had been born and raised for the first three years of his life in central Australia, often 'going bush' with his father, who spoke an Indigenous language, for periods of time. His mother, who had left school when she was still in high school, had to her home community in the greater Newcastle area with C23 and his younger sibling to live, approximately 18 months before phase one of data collection. At the time of data collection the mother of C23 was a full-time carer

for the children. As these two examples illustrate, sometimes dialectal differences may be associated with a range of other factors, such as the level of parental education or where the child has lived.

8.1.2 Dialectal features

Results of this research showed that more phonological than morpho-syntactic features were identified as significantly different in the dialects of the children in the greater Newcastle area. However, the dialectal features that the Aboriginal children used in their communication were diverse; many features that were produced were not found to be significantly different in comparison to the non-Aboriginal children's use of these features. This is not surprising in light of the literature about AE, which acknowledges the significant overlap between features of AE and features of other non-mainstream dialects (Butcher, 2008; Eagleson, Kaldor & Malcolm, 1982).

With the exception of the phonological process of consonant deletion, the phonological features that identified the speech of the Aboriginal children as significantly different to that of the non-Aboriginal group of children were consistent with previously identified features of AE in the literature (Butcher, 2008; Eades, 1995). The phonological features identified in this research were cluster reduction, stopping of fricatives, voicing, substitution or omission of / h/,/ ð/ , /θ/, and vowel change consistent with AE, eg been -> [bɪn]. However, when a Bonferroni adjustment was made, only cluster reduction and /h/ omission were identified to be significantly different across the two groups. Although the presence of consonant deletion in the Aboriginal children's speech was also found to be a significant difference between the two groups this can be explained by re-classification of this feature as cluster reduction across word boundaries, as described previously (see section 6.2.1.2).

Two examples of AE phonology reported in the literature are the substitution of stops for fricatives and the reduction of consonant clusters. Butcher (2008) explained that very few of the original Indigenous languages made a distinction between stops and fricatives; as a consequence, in AE, fricatives are often produced as stops. Consonant clusters were also very rare in Indigenous

languages, and cluster reduction is included as a feature of AE. In the communication of the Aboriginal sample children, the phonological process of cluster reduction (CR) was statistically more present than in the communication of the non-Aboriginal sample. This is a phonological process that is regarded by speech pathologists as an error process if it persists after four years of age, based on the developmental speech characteristics of SAE speaking children (Grunwell, 1997). The omission of the glottal fricative /h/ by the Aboriginal children would also be regarded as an error process because this phoneme, according to SAE norms, would typically be expected to be produced by children three years of age. The age of the children in the sample was such that these processes would normally be expected to have resolved for the mainstream population. However, research by Toohill, McLeod & McCormack (2012) suggests that processes such as these within the speech of Aboriginal children may be considered as AE features rather than error processes. Toohill, McLeod & McCormack (2012), found that taking AE features into consideration in the assessment of Aboriginal children's speech impacted on the severity of the diagnosis of speech sound disorders for this population in their sample.

The morphological features of AE identified in this research are also consistent with previous descriptions of AE in the literature (Butcher, 2008; Eades, 1993). Zero marking of the copula and, when a one-tailed test was used, zero marking of auxiliary verbs and determiners, were found to be statistically different in the communication of the Aboriginal as opposed to the non-Aboriginal sample children in the current research. The copula and auxiliary verb forms are unmarked in many Aboriginal languages and consequently the absence of these can be regarded as features of AE (Butcher, 2008). These features of AE have been identified in the dialect of Aboriginal children in Australia across geographical locations (Pearce et al., 2015; Miller et al., 2014). Alternative forms for determiners have also been identified as consistent with AE (Pearce et al., 2015). The Aboriginal children in this current research produced many different morpho-syntactic features characteristic of AE. The large number of different grammatical features may help to account for the limited significant findings for grammatical differences. Miller et al. (2014) made similar findings, in that

although a variety of different features of AE were produced by the Aboriginal children in the study, only seven features were found to be common. The findings from this current research indicated that the children were using a variety of features of AE with only some common features. The specific findings from this research cannot be generalised to other areas, they are only indicative of AE in this local area. As has been noted (Butcher, 2008; Pearce et al., 2015) dialects differ geographically and many features may not be consistently present across communities. These findings are relevant for speech pathologists working with Aboriginal clients, who need to be aware of the diversity of the AE dialect, and the possible features which can affect diagnosis.

8.1.3 Head and body movements

Differences in pragmatics and discourse were also noted in the communication of Aboriginal children compared to the non-Aboriginal group. Some of these were in keeping with previous research. Consistent with many Indigenous cultures, traditional Australian Aboriginal culture was an oral culture (Malcolm, 1994a; Moriarty, 2001). This differs from the western European perspective which has as its base a more literate culture (Westby, 1995). Patterns of behaviour and communication as well as the learning processes associated with this oral cultural heritage are embedded in the social and communicative practices of many modern day Aboriginal Australians (Dunn, 2001; Malcolm, 2013a, 2013b). Westby (1995) describes some dimensions of cultural variability that can form a framework for understanding some of the differences in communication that exist between cultures. One of these dimensions relates to the use of contextualised language, wherein the meaning of an interaction relies on the context of the situation. In 'low-context' communications most of the content or meaning is encoded explicitly in the text (or words) of the communication, without relying on references to the context. A communication can be described as 'high-context' if most of the information or meaning in the exchange can be gleaned from the personal or physical environment in which the exchange takes place. High-context communication includes more non-specific terms and references to the context and may also involve the exchange of a higher proportion of 'utterances' or interactions that are non-verbal in nature (Westby, 1995).

The Aboriginal children in this research sample produced significantly fewer verbal utterances than the non-Aboriginal controls, and significantly more non-verbal communicative acts, such as gesture or head movements. These findings suggest that the Aboriginal children's communication may be more context-dependent, which is consistent with observations from previous research (Eades, 1995; Malcolm, 1994a). This information is relevant for speech pathologists working with Aboriginal children and families; Cahir (2011) emphasises the importance of considering context in the assessment of Aboriginal children's communicative competence.

The communication of the Aboriginal children in this research also included significantly more utterances that were coded as unintelligible than that of the non-Aboriginal children. In the analysis process, for any part of an utterance to be coded as unintelligible, it could not be understood by the transcriber, who listened several times to the recording, and during the interaction the educator did not clarify nor reveal the meaning of the utterance. Excerpts of the Aboriginal children's communication were coded as unintelligible during interactions with both the Aboriginal and non-Aboriginal ECEs. Most of the ECEs (six out of eight) who were communicating with the Aboriginal children were themselves Aboriginal, which may have influenced the discourse in these interactions and contexts. The fact that the children's utterances were not intelligible to the transcriber may relate to the 'hearer-oriented' perspective of AE (Malcolm & Koscielecki, 1997). When regarded from this perspective, relatively less responsibility rests with the speaker to ensure the listener has comprehended their utterance, and relatively more responsibility lies with the listener, compared to discourse in SAE. In this AE cultural context the children's unintelligible utterances may not be regarded as problematic, because the ECE has accepted some responsibility for comprehension of the utterance(s).

Non-verbal behaviours such as head movements and body gestures were noted to occur more frequently among the Aboriginal children in the sample compared to the non-Aboriginal children. The analysis process was unable to capture, however, some of the subtleties of these non-verbal

behaviours. Observations by the researchers provided additional information about how these behaviours were used. Head movements were used differently (as well as more frequently) by some of the Aboriginal children. Typically the head movements used by the non-Aboriginal children, such as a nod or a shake of the head, expressed confirmation or denial. Some Aboriginal children in the sample also used head movements to gain attention, or indicate direction. For example, C23 used a backward flick of the head to gain the educator's attention while simultaneously saying the educator's name.

The non-verbal behaviour of eye-gaze was also recorded because of reports in the literature about the different use of eye-gaze in Aboriginal and non-Aboriginal communication (Eades, 1982; Harkins, 1990). Although recorded, this behaviour was not analysed due to some inconsistencies in data collection. For example, the coding of this non-verbal communication was hampered at times by position of the camera. If the child moved during the interaction sometimes their face moved out of the camera focus, so eye gaze could not be coded. Positioning of the educator in relation to the children may also have affected the amount of eye contact that was used. For example the child's proximity to the educator, or whether they were sitting opposite or adjacent to each other, might have affected their use of eye contact. For reasons such as these the coding of eye-gaze was not analysed.

Several of the Aboriginal children (namely C5, C17, C29, C32) were observed to use very subtle head or eye-movements in response to questions. Unless the communication partner was watching carefully these responses would have been missed, and indeed the reaction of the communication partner sometimes indicated that this was the case.

8.1.4 Behaviours noted in Aboriginal children's communication.

Aboriginal traditional ways of seeking information have been identified in the literature as different to the direct question-answer techniques that are common in Western approaches (Eades, 1982, 1996; Malcom et al, 1999). In this current research it was noted that sometimes the Aboriginal

children did not answer 'display questions' posed by the educators if the response was available in the context. The example below is from an interaction during phase two of data collection with C16. The educator (E), who is non-Aboriginal, has asked a question with a seemingly obvious answer; the child chose not to respond to the question. In the following example, the child was making a snowman out of playdough and had just placed two small pieces of playdough at the base of the snowman. To the observer it was clear that these were feet.

> E: Oh ok, that's his feet is it?
>
> C: (no response)
>
> E: Are they his feet?

Observations regarding the responses of the educators to the Aboriginal children's communication are relevant because of the two-way nature of language and communication; the communication partner's responses affect the ongoing interaction. One example is educators' responses to discourse strategies or behaviours associated with Aboriginal English use (Malcolm, 1994a). The shame response in Aboriginal culture has been described in the literature as a reticence to communicate when an individual is in a situation where they are uncertain about the rules that apply (Harkins, 1994). This response was occasionally accidentally elicited from children by a non-Aboriginal educator. As an example, one educator asked a child to sing an excerpt from a movie. The child (C16) refused twice verbally and used head gestures to support her refusals. When the educator persisted with the request the child removed eye contact and stopped speaking. This was followed by a lengthy pause until the researcher intervened to establish a comfortable communication topic again that did not require a performance from the child. The ease of communication between educator and child may be affected by their cultural communication responses, which has implications for the development of the relationship between educator and child. Although the number of 'responses to questions' that were calculated by the SALT program was not found to differ significantly between Aboriginal and non-Aboriginal children, this finding

does not take into consideration qualitative differences in the children's responses, such as whether or not the child combined eye-contact with their verbal response.

One category in which there was found to be a significant difference was the percent of utterances during the interactions that were interrupted; Aboriginal children's interactions in the ECEC context featured more interrupted utterances than those of the non-Aboriginal children. The children were typically interrupted by their Aboriginal peers during their interactions. Malcolm (1994b) discussed several strategies used by AE speakers as an aspect of conflict avoidance, which may help to explain the higher percentage of shared speech among the Aboriginal children.

Communication without causing offence is an important skill in any culture. In traditional Aboriginal society this was instilled through knowledge of kin relationships, which dictated who could speak about what to whom. With its foundations in communal living the European concept of privacy was non-existent in Aboriginal society, however there were strict understandings about who was in charge of knowledge / information and therefore who was authorised to communicate about it (Malcolm, 1994a). Malcolm (1994b) has suggested that on many occasions the discourse strategies used by AE speakers are governed by the principles of 'conflict avoidance'. Conflict avoidance strategies include 'gratuitous concurrence' and 'co-narration'. The strategy of gratuitous concurrence is a process whereby the listener may agree with the speaker verbally, thus avoiding conflict at the time of the interaction, however they may not follow through with their agreement. Co-narration occurs in situations when something is jointly known by the group. Speakers may share the telling of the information or story, rather than one person telling the story, depending on who is authorised with the knowledge. The increased percentage of interrupted or overlapping speech by the Aboriginal children in this research could be considered an example of the strategy of co-narration. Sometimes, the reason for the children interrupting each other was that they were helping each other to express themselves, as shown in the following example between child (C11), a peer (L) and an educator (E):

E: Where is it?

E: In your bag?

L: I don't have it {shaking head}.

E: It's at home?

L: No {shaking head}.

L: Santa… (pause)

C: Santa's bringing it for her.

On other occasions when both the children appeared eager to talk, if one hesitated another took advantage of the opportunity and jumped in to interact:

E: Just sometimes hey?

C: I don't like…

L: The (umm)…

C: I like (umm) drink cuppa tea with cookie.

On the second occasion of data collection, the Aboriginal children were not usually seen in group interactions because when they commenced school they dispersed to different geographical locations. Only occasionally children from the same community who had commenced as participants at phase one were attending school in the same year at the same school. In these situations, it was possible to collect data in a combined group involving the two child participants at phase two. This data collection context best matched the phase one data collection context. On two of these occasions, the transcripts recorded higher than usual levels of overlapping speech, in comparison to other data collection contexts. It would have been interesting to have studied the whole of the Aboriginal sample children's interrupted / overlapping speech at a school age level, if the conditions

had allowed for this. It would also have been interesting to have followed the non-Aboriginal children into school, and compared some of the discourse and pragmatic features that were noted in phase one. These investigations however were out of the scope of this study; further research is required to investigate Aboriginal children's discourse and pragmatics (see section 9.3.4).

8.2. Cultural Match Between ECE and Child: Effects on Children's Communication

This research explored the effect of a shared cultural background of ECEs and children on the children's communication. Literature supports the involvement of culturally-matched educators in ECEC contexts when working with children from different cultural backgrounds to the mainstream (Harvey & Myint, 2014; SNAICC, 2015). Gould (2001) and others also acknowledge the impact that a culturally matched adult can have in the speech pathology assessment of Aboriginal children, in that they will talk more, and more naturally, allowing for the collection of more valid assessment information.

This study investigated the effect of cultural match on the communication of children with their educators at a preschool level. It was expected that the communication of the Aboriginal children would differ depending on the cultural context, that is, whether they were communicating with an Aboriginal or a non-Aboriginal ECE. Specifically, it was hypothesised that the cultural match context would facilitate more communication and a higher dialect density (ie, more use of AE) in the Aboriginal children. There was only one ECEC site where both Aboriginal and non-Aboriginal educators were available for data collection. Data was collected on the interactions of ten children at this site who were videotaped twice, once with an Aboriginal and once with a non-Aboriginal ECE. This is a relatively small sample size so non-parametric tests were used in the analysis process. Only four of the ten children were Aboriginal so, due to the small sample size, observations of individual cases are also discussed as relevant in section 8.2.1.

International studies of dialect density indicate that children begin to adjust their communication to the context in the first year of formal schooling (Craig & Washington, 2004; Terry & Connor, 2012;

Terry et al., 2012; Terry et al., 2010), that is, they begin to use more features of the standard dialect and fewer non-standard dialectal features in the school context. This dialect-shifting may occur because children at this time have more exposure to the standard dialect through the school context than they previously had in their early childhood years. In the following section children's ability to shift dialect in response to context is discussed with regard to their SAE exposure to date.

8.2.1 Effects of cultural match on dialect density in pre-school children

Overall no statistically significant differences were found between Aboriginal children's use of dialectal features in matched and non-matched cultural contexts. The results of the dialect density count in response to cultural context were quite varied and may have been affected by a variety of factors, including the individual children's history and social circumstances. Table 13 displays details about the four Aboriginal children whose dialect density was recorded in the two separate cultural contexts.

Table 13

Description of the four Aboriginal Children who had Two Episodes of Data Collection at Phase One.

Child	Age in months	Case information
C21	66	Male, older sibling of C22, removed from family, in out-of-home care with an Aboriginal family
C22	55	Male, younger sibling of C21, removed from family, in out-of-home care with an Aboriginal family
C23	55	Male, living at home with mother and younger sister. Regularly attends preschool.
C27	57	Female, living at home with mother, father and five siblings. Traumatic home environment. Irregular attendance at preschool.

The analysis of DD across cultural context revealed that two of these children had a higher DD in the cultural match context and two did not.

As can be seen from Table 13, children C21 and C22 were brothers who had been removed from their home and were in an alternate care arrangement within an Aboriginal family and community. The older sibling (C21) had been attending preschool for longer and so had had more exposure to SAE than his brother. His dialect density in a cultural match context was .175 and in a non-match context was .155, indicating a change in dialect density in accordance with cultural context. His brother's DD measures did not demonstrate a change in accordance with cultural context. The third male, C23, who had a relatively stable home life had regularly been attending preschool for two years. His dialect density in the cultural-match context (.281) was higher than in the non-match context (.255). The fourth child, C27, a girl, had a traumatic home life and her attendance at preschool had been very poor, so she had had less exposure to SAE than C23, who was from the same local community. The measures of DD for this child did not demonstrate a change in accordance with cultural context.

Although the differences are very small and statistically results were insignificant, the DD counts might be explained by considering the child's exposure to SAE. Literature findings from the US (Craig & Washington, 2004; Terry & Connor, 2012; Terry et al., 2012) point towards the impact that exposure to standard dialect in the school system can have on children's code-shifting abilities. As children speaking non-standard home dialects are exposed to the standard dialect in the education system they develop their ability to code-shift according to context. The ability to code-shift, a skill which has been demonstrated by children in the early school years, has also been found to relate to the children's later academic success (Connor & Craig, 2006; Terry et al., 2010).

In this current research, the DD measures of the children who had been exposed more to SAE in the preschool context than their peers, suggested that these children were adjusting their dialect (albeit

only slightly) in response to the cultural context. That is, the number of AE dialect features was reduced when these children were interacting with non-Aboriginal ECEs. These results suggest that the children's exposure to SAE in the preschool context may have facilitated their acquisition of code-shifting. Aboriginal children in Australia have lower than average levels of attendance and participation in ECEC services in the year prior to school entry (Biddle & Cameron, 2012). Findings from this current research may provide support for the enrolment in ECEC services of Aboriginal children in the year prior to school, because this offers Aboriginal children the benefit of increased exposure to SAE dialect before school entry. This exposure may aid their adjustment to the school context, by facilitating their development of code-shifting abilities and thus enhancing their chances of later school success.

8.2.2 Effects of cultural match on measure of lexical diversity

Significant differences were found for the number of different words (NDW) as a measure of lexical diversity for the sample of Aboriginal and non-Aboriginal children in response to cultural context. Children in the sample, both Aboriginal and non-Aboriginal, generally evidenced greater lexical diversity (higher NDW) in interactions with culturally matched educators.

All four Aboriginal children had higher NDW in a culturally matched context, indicating that culture-match between educator and child provided a context in which children were more able to demonstrate the extent of their vocabulary knowledge. This culturally matched context may also allow the children to expand upon and develop their current vocabulary knowledge through more lengthy and complex discourse opportunities. The relationship between vocabulary knowledge and future academic progress is well documented (Paul & Norbury, 2012), indicating the significance of these findings with regard to learning experiences for children of non-mainstream cultures.

8.2.2.1 Implications of cultural match findings.

The AEDC outlines the importance of skills in the areas of language and cognition, communication and general knowledge for children's achievement and success at school (Commonwealth of

Australia, 2015). Linguistic skills developed prior to school commencement help prepare children to commence school well-equipped to cope with the learning expectations of a formal education system.

The findings from this research indicated the value that a culturally-matched ECE may bring to the education of children from non-mainstream cultures in a mainstream ECEC setting, allowing them the opportunity to use and expand their vocabulary in their home language or dialect. This opportunity to expand their language development provides some of the identified pre-requisite support for later literacy development. These results were found in an urban context where the AE dialect is so similar to the SAE that many teachers are not even aware that children are speaking in dialect. The effect on children's communication of having a culturally matched ECE in this context was notable; the impact of cultural match may be even more pronounced for Aboriginal children in a more rural or remote context, where the AE dialect is heavier, or children speak an Indigenous language in the home. Further research is required in this area to explore the effect of cultural match on children's communication.

8.3. Change in Dialect Density over Time

One question that this study aimed to investigate was whether Aboriginal children in Australia adjust their dialect (shift their dialect towards the standard) in their first year of formal schooling. This research sought to explore Australian Aboriginal children's non-standard dialect use longitudinally because of findings in the literature regarding the patterns of non-standard dialect use among African American English speaking children. A tendency for children speaking non-standard dialects such as African American English to shift their dialect towards the standard during their first year of formal schooling has been noted (Craig & Washington, 2004). These findings are interesting because of the link between children's early literacy development and their ability to shift dialect from non-standard to standard in response to context. Literature exploring dialect density and literacy development have indicated that well developed linguistic and metalinguistic skills prior-to-school

are related to both a children's ability to shift dialect and achieve academically (Terry & Connor, 2012; Terry et al., 2012).

8.3.1 Dialect density measures

The sample of Aboriginal children (less two participants due to attrition) were followed into the school context and their DD at phase two was compared with their DD at phase one. When measured statistically, with an effect size that was small to medium, the children's change in DD over time was not found to be significant. Overall however, many of the Aboriginal children in this research (13/19) presented with a lower measure of dialect density on the second occasion of data collection, when they had commenced formal schooling. The results indicate that these children had adjusted their dialect to the SAE context. That is, there was a reduction in the frequency of AE features that they were using in their speech. Some children did not demonstrate dialect shifting, and in fact presented with a higher DD measure when recorded in the later sampling period. In many cases the amount of change in dialect density between the phase one and phase two measure was very small (see Table 13). This small amount of change may be related to the largely acrolectal dialect of this sample population; because many children did not evidence a large number of AE features in their speech in the first instance, they did not need to adjust their dialect very much towards the standard.

8.3.2 Patterns in the data

 There was a positive correlation between children's level of dialect density at phase one and the amount of change in dialect density at phase two. Typically, the higher the child's initial dialect density, the greater the change in their dialect density at phase two. This finding is not surprising as these children, who have a high initial DD, have a greater capacity to change their DD in order to conform to SAE.

There are several implications of this to be considered however. Children from non-mainstream cultures, as discussed in section 2.1.2, may have an increased learning load in the period when they

153

first start attending school; Aboriginal children may need to learn new discourse practices of the classroom, new vocabulary and new dialectal features (Malcolm et al., 1999). This is in addition to the regular curriculum, which all children in the class are learning. The load on the child from the non-mainstream (in this case, Aboriginal) culture is therefore greater than for children of mainstream culture. They may appear to struggle with curriculum content because they are still learning the 'hidden curriculum' (Cazden, 2001) of the mainstream classroom discourse culture.

Terry et al. (2012) found that the ability of a child from a non-mainstream culture to dialect-shift in the school context was predicted by the child's linguistic skills in the areas of expressive vocabulary and non-word repetition. Linguistic skills, combined with other emergent literacy skills (such as phonological awareness) and competencies, such as those described in the AEDC (Commonwealth of Australia, 2015a), will affect how well each individual child is able to cope with the classroom demands. Also influential are the extraneous factors that may impact on an Aboriginal child's coping, such as their experiences (Kikkawa, 2016) their health, and other social determinants of health (Department of Social Services, 2015; AIHW, 2016). Analysis of the interview data from the current research provided information in concurrence with the literature: carers and educators of Aboriginal children perceived there to be a variety of factors, such as those described above, that affect individual children's development and academic progress (see section 8.4).

For Australian Aboriginal children, the classroom context may facilitate or inhibit children's transition into mainstream education, depending on how supportive it is of the child's learning needs (Dockett et al., 2012; Dockett et al., 2010; Dockett et al., 2008). The skills and experience of the educator may also impact on the classroom learning environment; Oliver, Rochecouste, Vanderford and Grote (2011) noted that teachers with limited knowledge and experience of AE are more likely to have negative attitudes towards dialectal communication. These negative attitudes "can have detrimental effects on Aboriginal students' educational experiences and prospects for engagement" (Oliver et al., 2011, p71).

8.4. Perspectives on Aboriginal Children's Communicative Competence

This research also investigated the perspectives of family and carers about Aboriginal children's communicative competence. Findings indicated that some participants recognised that Aboriginal children spoke differently to mainstream children, while others did not. All the Aboriginal adult participants acknowledged the differences in communication and some of the non-Aboriginal adult participants also acknowledged the children's different dialect or communication skills.

Educators and carers who were interviewed for this research discussed a range of different factors that affect Aboriginal children's communication development in the early childhood years. The number of different sub-themes that emerged from the data indicated great variation in factors that were perceived to affect Aboriginal children's learning, supporting the understanding that each child needs to be considered individually.

Educators and carers discussed the importance of building relationships with the community, and their knowledge of the child and family as important factors affecting their ability to support the child in learning experiences. At an ECEC level especially the importance of community involvement was emphasised and particularly the building of relationships between the ECEC context and the child's family and community. Of the two mainstream ECEC contexts, one employed an Aboriginal ECE, and the other liaised with an Aboriginal advisor, and was seeking to engage a community member as a volunteer or employee.

Other factors that could be regarded as barriers or facilitators for children's communication development included the child's health and attendance at school or preschool, their exposure to trauma, their emergent literacy skills at school-entry and the individual areas of strength which could support their skills in other areas. Teachers valued the experience or training they had in working with Aboriginal children and families. They acknowledged the importance of culture however did not identify as cultural some of the behaviours they observed in children, for example, 'shame'. Several teachers commented that family circumstances influenced children's language

development. Teachers discussed the strategies they used to teach Aboriginal children literacy: developing the children's verbal language skills was recognised by many experienced teachers as important. Modelling and repetition were likewise identified by many teachers as strategies they would use. Teachers also valued the extra support that was provided at school for children with specific needs, for example in the area of phonological awareness.

Phonological awareness (PA) skills are one example of curriculum content that teachers in this research mentioned, although the children's PA skills were not directly assessed during the research. PA skills comprise one aspect of metalinguistic skill development. Some teachers noted that the Aboriginal child in their classroom required extra support to develop PA skills. Skills in PA are acknowledged as important precursors for literacy learning (Gillon & Dodd, 1994). Terry & Connor (2012) have discussed the complexity of considering dialect variation and PA skills as predictive of literacy development. Children's early PA skill development may be influenced by a variety of factors, not least of which is their hearing ability. Galloway (2008) described the importance of healthy ears and hearing for the acquisition of speech, language and consequently literacy skills. If children's hearing has been impaired they are likely to have more difficulty learning PA skills and consequently their literacy development may also be affected. This is an important consideration given the high proportion of Aboriginal children who suffer from otitis media (WHO, 2000). In cases, however, where Aboriginal children have not suffered otitis media and associated hearing impairment, yet they are still slower than expected in their literacy development, other factors must be considered.

Cultural and environmental factors must be considered for the relevance these hold for a child's learning. As members of the advisory panel suggested, the issue of literacy acquisition is a 'bigger picture thing' than simply the degree of PA skill development that a child has prior to school enrolment. The culture of the classroom, the relevance of the teaching and the individual support

and acceptance of children and their families at the school all contribute to the success of the child's learning experience.

8.4.1 Educators' responses to Aboriginal children's communication

No educators mentioned the shame response during their interview discussions, indicating that they were either unaware of this aspect of Aboriginal culture, or perhaps that they had not recognised it in the children they were teaching. Some educators, who acknowledged cultural communication differences, stated that they did not notice these features in the communication of children in their classroom. Both of the teachers in the following examples had studied Aboriginal culture at university but had not noticed discourse or pragmatic features in the children they were working with, perhaps because of the subtlety of the features that the children were presenting with.

> *My approach to working with Aboriginal children is not different to working*
>
> *with other children. I haven't worked with children with real cultural issues*
>
> *like avoiding eye contact and that sort of cultural effect. (T2)*

> *The kids in my class haven't really had much in the way of Aboriginal English*
>
> *so I haven't had to support their grammar. (T7)*

Some of the behaviours that the teachers described in the children could be linked to their culture and learning practices. For example, teachers who discussed children's strengths frequently mentioned the Aboriginal children's well-developed skills in small group activities, as shown in the quote below:

> *In informal situations she is very good – she is great in group situations. She is*
>
> *easy to talk to and generally a good communicator (T3)*

Traditionally Australian Aboriginal culture was collectivist, valuing the achievement of the group rather than the individual (Eckermann et al., 2010; Moriarty, 2001) and characteristics of this

157

approach still contribute to the cultural vitality of current Aboriginal culture. From a very early age Aboriginal children are encouraged to collaborate and support each other in their learning (Malin, 1990). This early encouragement prepares children well for small group learning and participation activities at school. However the difficulties that some educators in this research noted in individual Aboriginal children participating in discussions in front of the whole class needs to also be considered from a cultural perspective. The Aboriginal concept of shame includes being singled out from the group, particularly in a situation where an individual is unsure of what is expected of them. Aboriginal children may have had very limited exposure to learning experiences that require them to demonstrate their knowledge in front of a large group, such as the class. This type of learning experience was observed by several teachers to be challenging for the Aboriginal child in their classroom, as shown in the following response from an educator who was asked to comment on the child's communication skills.

> *Just average actually. He doesn't communicate very well. He is very quiet.*
>
> *When you have a conversation with him he's not too bad. But he is really very*
>
> *quiet. He needs prompts to participate in class discussions. He does talk in*
>
> *small groups. (T4)*

8.4.1.1 Implications of children's acrolectal dialect on teachers' perceptions and strategies

The highest DD for a child in this sample was 0.339 and many had DDs of much lower. This has implications for how these children may be perceived from a cultural perspective by the educators. Many of the children in this sample were also fair haired or fair skinned, so did not look distinctively Aboriginal. Members of the advisory panel suggested that the low density of the children's dialect, the similarity of this with other non-mainstream dialects, and the visual appearance of the children might not be indicative of their cultural practices and learning styles. One panel member suggested

that in a more rural or remote location, where language and visual appearance marked the children as distinctively Aboriginal, the educators might be more inclined to accept the importance and relevance of the children's culture and consider their different learning needs. In this urban location however, where the sample children neither look nor sound extremely Aboriginal, their cultural roots may not be considered to be as relevant. This perception may affect how the educators tailor their teaching to meet the child's needs. If the children do not appear to the educators to be traditionally 'Aboriginal' then the educators may not perceive a need to adjust their teaching techniques in accordance with this. Several educators, when asked *"What strategies do you apply (if any) when teaching Aboriginal children literacy?"* replied that the strategies they used were no different to strategies they would use with other children.

Members of the advisory panel questioned the relevance of some of the mainstream curriculum content to the Aboriginal children's lives. A few educators mentioned how they incorporate Aboriginal culture and stories into their teaching to increase the application and relevance of the curriculum content (see section 7.3.3). This is an area that needs to be addressed in future research.

8.4.2 Systemic and personal factors affecting Aboriginal children's development and academic progress

The many sub-themes identified in this research are consistent with literature findings. These sub-themes, which encompass a variety of facilitators and barriers to children's development, can also be considered according to whether they pertain directly to the individual child or to the education system. Three individual child participants were selected to demonstrate the variety of factors that educators suggested may have affected children's learning and development. The interplay between barriers / facilitators and personal / systemic factors contributing to the development and progress of these children is illustrated in Table 14.

Table 14

Case Studies Illustrating Systemic and Personal Barriers and Facilitators to Children's Learning

C27	Barriers	Facilitators
Systemic factors	Lack of extra support at school	Experienced classroom teacher
	Teacher's lack of cultural training, lack of involvement in Aboriginal community	Individualised teaching strategies
Personal/family factors	Trauma at home	
	Child's poor attendance at preschool	
	Parents' low level of education	
	Parents' unemployment	
Teacher's comments	*'Communicates… not very well.*	
	Academically she is down in the bottom group. She is in our group of children that we are concerned about' (T9)	
C11	Barriers	Facilitators
Systemic factors	Teacher with minimal experience	School supportive of Aboriginal culture and community
	Teacher has minimal cultural or community involvement	
Personal/family factors		Regular preschool attendance
		Tertiary educated parents
		Family support for school-based learning
Teacher's comments	*'He communicates very well. His literacy is above average.'(T6)*	
C5	Barriers	Facilitators
Systemic factors		Experienced teacher, with knowledge and experience of Aboriginal culture

		Extra support provided at school for child in areas of need
Personal/family factors	Irregular preschool attendance	
	Parents' low literacy levels	
	Minimal family support for school-based learning	
Teacher's comments	*'She is achieving just below the level expected for her stage. Her literacy is limited to a very basic level.' (T1)*	

Child C27 was a girl with many siblings and a traumatic home environment, which was considered a barrier to her development. Additional barriers were her parents' low level of education, their long-term unemployment status, and the child's poor record of attendance at preschool. These could be regarded as personal or family-based factors affecting her progress. Systemic barriers to her development mentioned by her teacher included the lack of extra staff at the local school for individual one-on-one support for children's learning. The fact that the classroom teacher has had many years of experience working in early childhood and recently working with Aboriginal children could be considered a facilitator, however her lack of training in Aboriginal culture and lack of involvement with the local Aboriginal community could be considered as systemic barriers. The teacher commented that she prioritised managing this child's emotional and behavioural issues, before addressing academic learning. She reported concerns about this child's academic and social-emotional development.

Child C11 lived at home with his mother, father and younger sister. Both parents were university educated with degrees in education, which could be considered to be a personal facilitator for his development. Other facilitative factors included this child's regular attendance at preschool and reported good health. Systemic barriers were that the classroom teacher had minimal experience in working with Aboriginal children in early childhood and minimal involvement with the local Aboriginal community. The parents however reported that this school as a system was supportive of

the Aboriginal culture and community. The teacher reported that the family were very involved and supportive of the child's education. She reported that this child is progressing very well with his academic learning.

The third child, C5, had five siblings and attended preschool somewhat inconsistently, which could be considered to be a personal barrier affecting her academic progress. A systemic factor facilitative of progress for this child included the many years of experience and training that her classroom teacher had had in working with Aboriginal children. This teacher was also very involved with the Aboriginal community at the school, coordinating the Aboriginal dance group and meeting parents to set learning goals for the Aboriginal children. This could be considered a further facilitator at a systemic level. Additional barriers at a personal/family level could be the low literacy skills of this child's parents. The teacher commented that the mother was not confident in supporting her daughter with school-based learning. The teacher reported that this child's literacy levels were low but that she was participating well in language and communication activities at school.

The above descriptions give some indication of the interplay between factors that the educators suggested may affect the Aboriginal children's learning and development. Both the number and the distribution of factors may have an impact on individual children's progress. For example, when both personal and systemic factors are facilitative as in the case of C11, it might be expected that the child will have maximum opportunity to progress, however if a child is affected by both personal and systemic barriers, as in the case of C27, this may hinder their development.

8.5. Implications of the research for SPs and ECEs

The findings from this research hold several implications for speech pathologists and ECEs who work with Aboriginal children and families. One implication of the findings for SPs working with Aboriginal families is the need to be aware of differences in culture, phonology, morphology, discourse and pragmatics within AE. This will affect the conversations that the professionals have with families. It is likely the AE features noted in the child's speech are also common features in the communication of

the community. It was suggested by members of the advisory panel that SPs need to be mindful of this so that they are respectful in their conversations with family members.

SPs need to recognise that educators' decisions to correct children's speech are in the interests of supporting the child's literacy development. Open collaboration between SPs and educators however also needs to include discussions about disorder and difference so that Aboriginal children can be most effectively supported in their learning (Gould, 2008a, 2008b).

Educators need to be aware of the subtleties of AE and the associated cultural differences, and adapt their teaching in response to this (Malcolm 1994a; Oliver, et al., 2011). School teachers with extensive experience and post-graduate education in working with Aboriginal communities emphasised the importance of developing emergent literacy skills, and facilitating the development of the children's verbal communication skills as a precursor for literacy development. These are strategies which address the findings of the AEDC (Commonwealth of Australia, 2015a) and concur with recommendations from the literature (Dockett et al., 2012, Dockett et al., 2010, Dockett et al., 2008). They used stories and narrative to apply the learning to the child's real life experiences and they acknowledged Aboriginal culture in the learning process, which is also recommended by Mason-White (2012, 2014). Although none of the schoolteachers who were interviewed for this research were Aboriginal, one teacher worked very closely with an Aboriginal teachers' aide, and several teachers mentioned collaborating with the community and especially the child's family to set goals and plan for the child's learning. These strategies are in keeping with recommendations from government funded programs for supporting Aboriginal children at school (What Works Program, 2011).

8.6. Summary

In this chapter, the findings from research into AE dialect of Aboriginal children in the greater Newcastle area have been discussed. The results of this research were that the communication of Aboriginal children in Newcastle does include features of AE dialect. The significant differences

between Aboriginal and non-Aboriginal children's communication demonstrate that there are a number of features which can be considered as indicative of AE in the local area.

Using a measure of dialect density, the change in dialect use of the Aboriginal children was studied longitudinally as they progressed into formal education. Consistent with International research in the area of dialect shifting for children from non-mainstream cultures, the majority of the Aboriginal children in this sample did shift their dialect towards the mainstream in their first year of formal schooling, although this change was not statistically significant. It remains unexplained why some children did not evidence dialect-shifting.

Dialect was studied as an aspect of culture that may affect children's communication and interactions with their educators. The findings from this current research demonstrated the relationship that exists between the cultural-match of ECE and child and children's lexical diversity. Specifically, it was found that when the culture of the ECE matched that of the child, the child's communication featured greater lexical diversity than in a non-matched cultural context

Children's use of AE dialect in response to context was also considered with regard to their exposure to SAE. In a small sample of children, those who had greater exposure to SAE were noted to shift their dialect slightly in response to the culture of their ECE. These findings were not found to be statistically significant.

This research also explored educators' perceptions about Aboriginal children's communicative competence, as well as factors affecting these children's literacy and academic progress. The myriad of factors that were raised by carers and educators have been discussed in this chapter in terms of systemic and personal influences that may affect Aboriginal children's development and learning. Conclusions drawn from the research findings in general will be discussed in the following chapter.

9. Conclusions, Implications and Future Directions

This research explored the use of AE dialect among Aboriginal preschool-aged children in the Newcastle area of Australia. The focus of the study was to determine how the children's dialect differed from that of their non-Aboriginal peers, and to explore how this may affect their interactions with educators. This research also considered the perspectives of the children's educators and carers regarding Aboriginal children's communication.

9.1 Conclusions and implications

This research identified several features of AE to be present in the communication of Aboriginal preschool children in the local area; significant differences were identified between the dialect of the Aboriginal and non-Aboriginal children in this study. These findings support the current evidence-base about AE. Even in this small geographical area there was found to be variability in the dialect of the Aboriginal children, a finding which is consistent with the literature (Butcher, 2008; Laffey et al., 2014; Malcolm & Koscielecki, 1997; Pearce et al., 2015). The amount of overlap between the dialect of the Aboriginal and non-Aboriginal children in this research was also noted to be consistent with literature findings that features of AE are also found in other Australian dialects (Butcher, 2008; Eagleson et al., 1982).

These findings have implications for health and educational professionals such as teachers and speech pathologists who need to be aware and respectful of children's dialects and also of the community dialect. This is important when engaging in conversations with families about children's communication, especially when discussing children's communication in terms of disorder or difference. Cultural differences may also need to be acknowledged and recognised by educators or others working with Aboriginal children, as this will affect assessment findings and intervention or education processes.

Secondly, this research explored how cultural context affected Aboriginal children's communication. In considering this issue two areas were considered; the child's lexical diversity and the density of the child's dialect in conditions of cultural match and non-match. The findings from this research indicated that a culturally matched context between ECE and child resulted in a positive effect on the children's lexical diversity. This area requires further investigation. Dialect density measures according to cultural context were also explored however the sample size for this analysis was very small so findings were not generalizable and needed to be considered with reference to the individual children's case history and social circumstances.

The third research question explored the extent to which Aboriginal children shifted their use of dialect towards the standard dialect during their first year of formal schooling. Although most Aboriginal children who participated in this research did evidence dialect shifting in their first year of schooling, these results were not statistically significant. The children who had a heavier dialect evidenced more of a shift towards the standard. One implication of this is that these children may have an extra learning load in terms of adjusting to the classroom communication, so may be less able to absorb some of the content of the teaching (Cazden, 2001). They may need extra time or extra support to learn curriculum content.

In regards to Aboriginal children's communication, the use of Aboriginal English or 'lingo' was mentioned by only some of the participants. Some of the non-Aboriginal participants did not acknowledge language/dialectal or cultural differences in Aboriginal children's communication. One conclusion that can be drawn from the qualitative research is the confirmation that teachers and parents / carers recognise many, often inter-related, contributing factors that may influence the language and literacy development of Aboriginal children in Australia. This is consistent with literature findings (AIHW, 2016; Dockett et al., 2010, 2012; Kikkawa, 2016; Mason-White, 2014). Another conclusion from the qualitative research is that educators who have experience and / or training in working with Aboriginal children and families possess a deeper awareness of culturally

sensitive teaching approaches. They acknowledge the importance, and endeavour to facilitate the building, of relationships at many levels, with the child, their family and the community. They also accept the child's language and culture and aim to integrate this into the teaching practices. This finding is also supported in the literature (Oliver et al., 2011).

One clear implication of these findings is the importance of professional development for educators about Aboriginal culture and communication. Undergraduate or post-qualification training in awareness of Aboriginal culture generally and communication skills specifically would be valuable, as well as strategies to engage families and support the learning of Aboriginal children.

Another key implication is the importance of including Aboriginal educators in ECEC contexts. The presence of trained / qualified Aboriginal educators in the early childhood context has been recommended by other authors (Ellis et al., 2010; Fasoli et al., 2004) as important in developing relationships and ensuring services are culturally safe places for children and families. This research further underlines the important role that Aboriginal educators in early childhood contexts may play in facilitating interaction and communication opportunities with Aboriginal children. These communication opportunities have implications for children's vocabulary and later literacy development.

9.2 Limitations

There were several limitations that need to be acknowledged in this research. The transcribers of the data were not blind to the independent variable, as some of the children were obviously Aboriginal, so this may have affected the transcription process.

The small sample size is also acknowledged. This resulted in the use of non-parametric tests (which have less power than their parametric counterparts) to analyse the children's dialect density, change in dialect and their communication in different cultural match conditions. The lack of information about the hearing status of the children in this study is also acknowledged as a limitation because hearing impairment impacts on communication.

The children involved in this study were all enrolled in ECEC. Although some Aboriginal children are not attending ECEC in the year before they enrol at school, it was difficult to access these children for the purposes of this research. This sample of Aboriginal children was not random but rather purposively selected; the sample of children was representative of Aboriginal children attending ECEC in the local area. Although the sample size was small and the child participants were limited to children enrolled in ECEC, it is to be noted that this study was an initial exploration of dialect among Australian Aboriginal preschool children. As such, the findings provide some direction for future studies, which may involve larger and more diverse samples of participants.

In the data collection phase of the research limitations were noted in regards to the groupings of the children for data collection. The researchers sought to elicit realistic examples of children's communication in ECEC contexts by employing naturalistic and culturally sensitive methods of data collection (Paul & Norbury 2012; Sheehan, 2011). To reduce the likelihood of eliciting a shame response from the Aboriginal children it was especially important that these children interacted in groups rather than as individuals (Harkins, 1990; Nelson & Allison, 2004). The ECEs generally nominated the children into groups, and they made these choices based on their knowledge of the children's friendship circles. The ECEs were aiming to elicit communication from the child participants so the decisions about children's groupings were made with this focus rather than considering factors such as culture or gender. The diversity of culture and gender in child peers may have affected the children's communication however this was not explored in the research due to the number of variables involved.

The threat of researcher bias in the qualitative aspect of this research was also considered. The researcher engaged in self-reflection throughout the research process, as a strategy to support the accurate reporting of the research results (Finlay, 2002; Roller, 2012). Although it must be acknowledged that the researcher originally entered into this exploration triggered by some observations made in a clinical context, the issue of reflexivity was considered and addressed by

involving relevant others such as the advisory panel members in the evaluation of the findings. As well as involving the advisory panel members, feedback from the adult participants was gathered following the reports to the services on the research findings, at the conclusion of the research process. Comments from the directors of the ECECs and participants indicated that the findings reflected the real-life context. As one participant commented at the end of the presentation of research findings, "Well, no real surprises there!". Participants did comment however that they found the findings to be "interesting and useful with our work". They also commented that the results could be helpful in supporting some suggestions for changes in their individual ECEC contexts.

Another limitation involved with the qualitative analysis was the issue of saturation of qualitative data (Bowen, 2008). The number of key areas that were discussed in the interviews posed some difficulties for establishing a point of saturation. Saturation was reached in some key areas before others, so the interviews continued to be transcribed and analysed because the researcher did not want to miss any key pieces of information. For example, in response to the key question "What do you think about the way Aboriginal children talk?" saturation was reached quite quickly, as participants either identified differences in the Aboriginal children's communication compared to that of non-Aboriginal children, or they did not recognize any differences. In contrast, the key question, "What strategies do you apply (if any) when teaching Aboriginal children literacy?" took much longer to reach a saturation point as different educators discussed many different strategies they used in the classroom and in general communication with children.

9.3 Further Research

The findings from this research highlighted several areas that require further investigation. These are detailed below.

9.3.1 Diversity of AE dialect

The Aboriginal children in this current research were noted to be using an array of different AE dialectal features, some of which were used only infrequently. Acknowledging the diversity of the

AE dialect across Australia it is noted that the speech of the Aboriginal children in this study may not reflect the dialect of Aboriginal children in other areas. Further research on a larger scale could provide more descriptive information about the diversity of AE dialect across Australia.

9.3.2 Exploring cultural match

When children were matched culturally with their ECE, their lexical diversity measure was higher, that is, their interactions evidenced higher counts of number of different words (NDW) than when they were communicating with their non-matched ECE. This finding was apparent for both the Aboriginal and the non-Aboriginal children and holds important implications about the cultural context for children in ECEC. It is not only relevant for Aboriginal children but also needs to be considered for children of minority cultures generally. There is clearly a need for further research in the area of cultural match between educator and child in the early childhood years and the relationship with the child's communication, in particular their lexical diversity.

Another area of future investigation would be the extent of the Aboriginal child's exposure to mainstream dialect in the early childhood years. A question that this research raised was whether a child's increased exposure to mainstream dialect (while still maintaining exposure to non-mainstream dialect at home or in their community) facilitates the child's ability to dialect-shift in response to cultural context.

9.3.3 Longitudinal study of Dialect Shifting

Although this research did not find a statistically significant relationship between Aboriginal children's progression into formal schooling and a shift in their communication towards a mainstream dialect, this could have been affected by the acrolectal dialect of the children in the study. The relationship that exists between dialect density, dialect shifting and literacy acquisition (Terry & Connor, 2012) makes this an important area for future investigations. Further research in this area is recommended with a larger sample of Aboriginal children who have a more diverse range

of dialect density. Longitudinal study of Aboriginal children's dialect shifting behaviour could explore the changes that take place with the commencement of formal schooling, and the implications this may hold for the children's literacy development.

9.3.4 Pragmatics and discourse

The findings of this research indicated some differences in discourse and pragmatics between Aboriginal and non-Aboriginal children in this urban context. Specifically, differences were noted between the Aboriginal and the non-Aboriginal children in terms of their non-verbal communicative behaviours and also their discourse which featured more use of overlapping/interrupted utterances in the Aboriginal sample. The measures of these features however in this research were broad and future investigations in this area would require more detailed data collection and analytical procedures. Further in-depth research is required to explore differences in discourse and pragmatics for any possible relationships that may exist between these features and Aboriginal children's learning opportunities.

9.3.5 Educators' approaches to working with Aboriginal children

Consistent with previous findings in the literature (Oliver et al., 2011), educators who participated in this research were found to have varying levels of experience and training in working with Aboriginal children. They were also found to be using a range of different strategies and approaches to teaching literacy in the classroom. Further research in this area could address the knowledge of educators about AE culture and dialect, and associated teaching practices. Participatory action research principles may provide a helpful structure when engaging in future research in this area (Baum, McDougall & Smith, 2006).

9.3.6 Aboriginal perspectives

In the collection of data from adult participants, the existing relationships between ECEs, services and community facilitated the engagement of parents / carers with the research process (Young et al., 2016). These existing relationships provided a culturally safe environment in which data

collection could take place. Culturally recognised techniques such as 'yarning circles' (Sheehan, 2011) are also described in the literature as appropriate means of collecting data and sharing information. Further research is required into Aboriginal perspectives about communication and children's development, as this area has only recently received attention in the literature (Graham & Byrne, 2017; Sandri & Gould, 2017; Webb & Williams, 2017). It is recommended that future research in this area adopts culturally recognised techniques. Some of the factors that affect Aboriginal children's language and literacy development could also be further explored through intervention research (Young et al., 2016).

9.4 Summary

Findings from this research identified that Aboriginal children in early childhood communicate in different ways to their non-Aboriginal peers. In the urban context of Newcastle the differences noted in phonology, morpho-syntax, pragmatics and discourse were subtle. They were, however, consistent with literature descriptions of Aboriginal English dialect. This is the first study to explore the AE dialect used in this area and as such will provide education and health professionals with valuable information; it will support speech pathologists to diagnose speech and language issues as differences or disorders, and consequently will also support clinical decision-making about management for these issues. The findings from this research add to the limited information in the literature about children's use of Aboriginal English in urban contexts; they provide insight into the variability of the AE dialect across Australia. The results of this research provide indications for future research directions in this area.

This research also sought to further investigate the relationship between children's use of non-mainstream dialects and their transition to school. It is the first research of its kind in Australia to address this issue and as such has provided many questions to guide future investigations. Researchers in international contexts have explored the relationships that exist between the dialect spoken by children from minority cultures, their dialect density, their shift in dialect use towards the

mainstream and their progression in literacy learning. Within the current study, dialect density in the communication of Aboriginal children was investigated across a number of different contexts. From a longitudinal perspective, it was sampled once in early childhood and again when children entered formal education. The children's dialect use was also studied in early childhood for a small sub-sample of children, across two different cultural contexts, on one occasion when the child's culture matched that of their educator and another when they did not match culturally. Differences in dialect density in response to context were slight and no firm conclusions could be drawn from this research however future investigations are warranted.

Although results from dialect density explorations were inconclusive, linguistic explorations provided more definite findings. This research found that the lexical diversity of children, both Aboriginal and non-Aboriginal, was greater in interactions when they were matched culturally with their ECE, than in non-matched contexts. This finding may be relevant for children across different cultures and provides an important area for further investigation.

The final area of investigation of this research was the information that parents / carers and educators shared about their perceptions of Aboriginal children's communicative competence and factors that they perceived impacted on the children's development and progress. The findings from this research supported literature that describes the many social, environmental and cultural factors that in combination serve to determine the likelihood of the child's ongoing development and progress. These factors require acknowledgement among health and educational professionals in order to best support Aboriginal children and families to improve the learning outcomes of Aboriginal children today.

The findings of this research have provided valuable information that adds to the existing evidence base about Aboriginal children's use of AE dialect. New areas for consideration have been introduced in the Australian setting, such as Aboriginal children's change in dialect use according to context and how this may relate to their language and literacy development. This research has

highlighted the importance of considering cultural context in ECEC, particularly for children of minority cultures. It has also added to information in the literature about educators' and carers' perceptions of factors that contribute to Aboriginal children's development and progress. This research adds to the limited amount of knowledge available about the factors impacting on Aboriginal children's early childhood education in the multicultural context that is mainstream Australia. In this critical period of development, before the child commences formal schooling, new insight into factors affecting school readiness, language and emergent literacy development are very important. This knowledge will help to guide researchers and practitioners towards a better understanding of the many factors that may be influential in the literacy development of Aboriginal children in Australia.

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Appendices

List of Appendices

Appendix A: Documents certifying ethical approval for this research

Appendix B: Participant Information and Consent Form for Directors

Appendix C: Participant Information and Consent Form for Early Childhood Educators

Appendix D: Participant Information and Consent Form for Parents / Carers of Aboriginal children

Appendix D2: Participant Information and Consent Form for Parents of non-Aboriginal children

Appendix E: Participant Information and Consent form for Children

Appendix F: Participant Information and Consent Form for School Principals

Appendix G: Participant Information and Consent Form for School Teachers

Appendix H: Interview Guide

Appendix I: Dialectal Coding Variables in SPSS

Appendix J: Tests of Normality for SALT measures

Appendix K: Tests of Normality for Number of Different Words

Appendix L: Age Distribution of Sample Children

Appendix M: Tests of Normality for more SALT measures

Appendix N: Tests of Normality for Dialect Density measures

Appendix O: Codes Generated at the Initial Round of Coding

Appendix A: Documents verifying ethical approval for this research

Curtin University
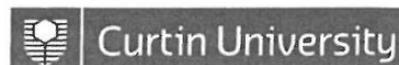
Memorandum

To	A/Prof. Cori Williams, School of Psychology and Speech Pathology
From	Professor Stephan Millett, Chair, Human Research Ethics Committee
Subject	Protocol Approval **HR 100/2012**
Date	3 October 2012
Copy	Ms. Gwendalyn Webb, School of Psychology and Speech Pathology Dr. Neville Hennessey, School of Psychology and Speech Pathology

Office of Research and Development
Human Research Ethics Committee

08
TELEPHONE   9266 2784
FACSIMILE   9266 3793
EMAIL   hrec@curtin.edu.au

Thank you for your application (4329) submitted to the Human Research Ethics Committee (HREC) for the project titled "*Explorations of dialect in Australian aboriginal preschool children*". Your application has been reviewed by the HREC and is **approved**.

- You have ethics clearance to undertake the research as stated in your proposal.
- The approval number for your project is **HR 100/2012.** *Please quote this number in any future correspondence*.
- Approval of this project is for a period of twelve months **02-10-2012** to **02-10-2013**. To renew this approval a completed Form B (attached) must be submitted before the expiry date **02-10-2013**.

Applicants should note the following:

It is the policy of the HREC to conduct random audits on a percentage of approved projects. These audits may be conducted at any time after the project starts. In cases where the HREC considers that there may be a risk of adverse events, or where participants may be especially vulnerable, the HREC may request the chief investigator to provide an outcomes report, including information on follow-up of participants.

The attached **FORM B** should be completed and returned to the Secretary, HREC, C/- Office of Research & Development:
When the project has finished, or
- If at any time during the twelve months changes/amendments occur, or
- If a serious or unexpected adverse event occurs, or
- 14 days prior to the expiry date if renewal is required.
- An application for renewal may be made with a Form B three years running, after which a new application form (Form A), providing comprehensive details, must be submitted.

Yours sincerely,

Professor Stephan Millett
Chair Human Research Ethics Committee

Memorandum

To	A/Prof. Cori Williams, School of Psychology and Speech Pathology
From	Mrs Mandy Downing, A/Manager Research Ethics
Subject	**PROTOCOL APPROVAL – EXTENSION HR100/2012**
Date	25 March 2014
Copy	Ms. Gwendalyn Webb, School of Psychology and Speech Pathology Dr. Neville Hennessey, School of Psychology and Speech Pathology

Thank you for keeping us informed of the progress of your research. The Human Research Ethics Committee acknowledges receipt of your progress report for the project *"Explorations of dialect in Australian aboriginal preschool children."*

Approval for this project is extended to **02/10/2016.**

Your approval has the following conditions:

(i) Annual progress reports on the project must be submitted to the Ethics Office.

Your approval number remains **HR100/2012.** Please quote this number in any further correspondence regarding this project.

Yours sincerely

Mrs Mandy Downing
A/Manager Research Ethics

Ms Gwendalyn Webb
48 Corona Street
HAMILTON NSW 2303

CORP14/11324
DOC14/436723
SERAP 2014140

Dear Ms Webb

I refer to your application to conduct a research project in NSW government schools entitled *Explorations of dialect in Australian Aboriginal preschool children*. I am pleased to inform you that your application has been approved. You may contact principals of the nominated schools to seek their participation. **You should include a copy of this letter with the documents you send to schools.**

This approval will remain valid until 11 September 2015.

The following researchers or research assistants have fulfilled the Working with Children screening requirements to interact with or observe children for the purposes of this research for the period indicated:

Name	**Approval expires**
Gwendalyn Webb	02/04/2019.

I draw your attention to the following requirements for all researchers in NSW government schools:

- School principals have the right to withdraw the school from the study at any time. The approval of the principal for the specific method of gathering information must also be sought.
- The privacy of the school and the students is to be protected.
- The participation of teachers and students must be voluntary and must be at the school's convenience.
- Any proposal to publish the outcomes of the study should be discussed with the research approvals officer before publication proceeds.

When your study is completed please email your report to: serap@det.nsw.edu.au.

You may also be asked to present on the findings of your research.

I wish you every success with your research.

Yours sincerely

Dr Susan Harriman
Leader, Quality Assurance Systems
September 2014

Policy, Planning and Reporting Directorate
NSW Department of Education and Communities
Level 1, 1 Oxford Street, Darlinghurst NSW 2010 – Locked Bag 53, Darlinghurst NSW 1300
Telephone: 02 9244 5060 – Email: serap@det.nsw.edu.au

Dear Sir/Madam,

Research Topic: Explorations of dialect in Australian Aboriginal Preschool children

My name is Gwendalyn Webb and I am currently commencing a doctoral research project, under the supervision of Associate Professor Cori Williams, at Curtin University. My project aims to investigate Aboriginal children's speech, and whether this affects their conversations with preschool educators and schoolteachers. Some local Aboriginal people are also helping to guide this research project.

In this project children (both Aboriginal and non-Aboriginal) will be videotaped having conversations with their educators whilst playing with playdough. The children's speech will be transcribed and analysed for dialect and language features.

I will also interview the educators and parents/carers of the children to discuss their perceptions of each child's speech. In consideration of the busy schedule in children's services only 2 educators from each centre will be asked to participate.

I would like to invite your centre to take part in this project. (Name of Preschool/ child care centre) is one of several children's services in the Hunter Region we have asked to take part.

What does participation in the research project involve?

I seek access to children who will be commencing formal schooling in 2014, their families and educators. As much as possible I will try to minimise any disruption to the routine of the centre during the research procedures. There will be very little administrative support required from the centre, however I would appreciate your support in giving families the information and consent forms.

How can this project benefit the participants, your school and the wider community?

1. This project will enhance the participants' awareness of the relationship between communication and learning. Theory and some previous research indicates that children's early language skills and non-standard dialect use (such as Aboriginal English) has implications for their later literacy learning. This research will enhance knowledge about this relationship in an Australian context.

To what extent is participation voluntary, and what are the implications of withdrawing that participation? Participation in this research project is entirely

voluntary. We require written consent from all participants; children, educators and parents/carers. Participants are able to withdraw their involvement at any time.

Is this research approved? The research has been approved by the Curtin University Human Research Ethics Committee (Approval number HR 100/2012) and Department of Education and Training (NSW) (Approval number: SERAP 2014140).

What will happen to the information collected, and is privacy and confidentiality assured? Information that identifies anyone will be removed from the data collected. The information will be kept on a password protected external hard drive for a minimum of 5 years and will only be accessible to those directly involved in the project. A summary of results of the research will be made available to the centre and the participants.

Do all members of the research team who will be having contact with children have their Working with Children Check? Yes. Please find evidence of my Working with Children Check attached to this letter.

Who do I contact if I wish to discuss the project further? If you would like to discuss any aspect of this study please contact my supervisor or the Aboriginal advisor. If you wish to speak with an independent person to get verification of ethics approval, please contact the Curtin University Ethics Committee. Names and contact details are provided below.

How do I indicate my willingness for the centre to be involved? If you have had all questions about the project answered to your satisfaction, and are willing for the school to participate, please complete the **Consent Form** on the following page.

This information letter is for you to keep.

Thank you

Gwendalyn Webb

Speech Pathologist, PhD candidate

Tel: 0400 270 174

gwendalynwebb@gmail.com

Associate Professor Cori Williams	Human Research Ethics Committee	Emma Beckett
Curtin University	Curtin University	Aboriginal Advisor
Tel: (08) 9266 7865	Tel: (08) 9266 2784	Tel: 0419 604 174
Email: c.j.williams@curtin.edu.au	Email: hrec@curtin.edu.au	Email: awabakal.preschool@bigpond.com

Consent Form (Service Directors)

- I have read this document and understand project, as described within it.

- I am satisfied with the answers I received for any questions I may have had.

- I am willing for this centre to become involved in the research project, as described.

- I understand that participation in the project is entirely voluntary.

- I understand that the centre is free to withdraw its participation at any time, without consequence.

- I understand that this research may be published in a journal, provided that the participants or the centre are not identified in any way.

- I understand that the centre will be provided with a copy of the findings from this research upon its completion.

Name of Director (printed):

Signature: _____ Date: /   /

Appendix C: Participant Information Sheet and Consent Form for Educators

Research Topic: Explorations of dialect in Australian Aboriginal Preschool children

Researcher: Gwendalyn Webb

This research will be carried out through Curtin University with the approval of the Human Research Ethics Committee (HREC) (Approval number HR 100/2012) and Department of Education and Training (NSW) (Approval number: SERAP 2014140).

The project is investigating whether the way Aboriginal children speak affects their conversations with preschool educators and schoolteachers. Some local Aboriginal people are helping to guide this research project.

I would like to invite you to take part in this project. (Name of Preschool/childcare centre) is one of the children's services in the Hunter Region we have asked to take part.

What does participation in the research project involve?

The research will involve you having conversations with children from this preschool/child care service. These conversations will be brief, approximately 10 minutes long, and will take place while the child is playing with playdough at the centre. The conversations will be videotaped. We will try to cause as little disruption as possible to the everyday routine of the centre.

It is your choice whether or not you take part in the research. Your decision either way will not affect your position at the centre. You may withdraw from the project at any time and any unpublished records will be destroyed.

What will happen to the information collected, and is privacy and confidentiality assured?

Your privacy is very important. We will remove your name, and any information that could be used to identify you, from the information we collect. We will safely store the information for 5 years so that only the researchers can see it, and then it will be destroyed.

I will record the results of the project in my doctoral paper and they may be published in a journal, but always without any identifying information. You and the preschool will be given a summary of the findings once the project is finished.

Who do I contact if I wish to discuss the project further?

If you would like to talk to someone about this project, you could contact my supervisor or an Aboriginal advisor on the details provided below. If you wish to

speak with an independent person to get verification of ethics approval, please contact the Curtin University Ethics Committee (contact details are provided below).

How do I become involved?

If you are happy to take part, please complete the **Consent Form** on the following page.

This project information letter is for you to keep.

Thank you,

Gwendalyn Webb

Speech Pathologist, PhD candidate

Tel: 0400 270 174

gwendalynwebb@gmail.com

Associate Professor Cori Williams	Human Research Ethics Committee	Emma Beckett
Curtin University	Curtin University	Aboriginal Advisor
Tel: (08) 9266 7865	Tel: (08) 9266 2784	Tel: 0419 604 174
Email: c.j.williams@curtin.edu.au	Email: hrec@curtin.edu.au	Email: awabakal.preschool@bigpond.com

Consent Form (Educators)

- I understand the information about the project.

- I have asked any questions I may have had and I am happy with the answers.

- I understand that it is up to me whether or not I take part.

- I am happy to take part in the project.

- I give permission for my conversation to be videorecorded.

- I understand that I can pull out of the project at any time.

- I am happy for the project to be presented at a conference and possibly published in a journal. I know that I will not be identified in any way.

- I understand that I will be given a summary of the findings after the project is finished.

Name of Educator (printed):

Signature of Educator: Date: /   /

Appendix D: Participant information Sheet and Consent Form
(Parent's/carers)

Research Topic: Explorations of dialect in Australian Aboriginal Preschool children

Researcher: Gwendalyn Webb

The project is investigating whether the way Aboriginal children speak affects their conversations with preschool educators and schoolteachers. Some local Aboriginal people are also helping to guide this research project.

This research will be carried out through Curtin University with the approval of the Human Research Ethics Committee (HREC) (Approval number HR 100/2012) and Department of Education and Training (NSW) (Approval number: SERAP 2014140).

I would like to invite your child to take part in this project. (Name of Preschool/childcare centre) is one of the children's services in the Hunter Region we have asked to take part. We have given your child a letter as well, and ask you to talk about it with him/her.

What does participation in the research project involve?

The research will involve you having a conversation with me about your child's speech. You will be able to have a local support person with you during this conversation to help explain anything. I will also be talking with your child's teacher as part of this project.

Your child will be asked to talk with his / her teacher for about 10 minutes while they are playing with playdough. This conversation will be videotaped. These conversations will take place at the child's preschool/child care centre and should not disrupt the everyday routine of the preschool.

It is your choice whether or not you and your child take part in the research. Your decision either way will not affect your family's relationship with your child's teacher. You may withdraw from the project at any time and any unpublished records will be destroyed.

What will happen to the information collected, and is privacy and confidentiality assured?

Your privacy is very important. We will remove your child's name and any information that could be used to identify him/her, or you, from the information we collect. We will safely store the information for 5 years so that only the researchers can see it, and then it will be destroyed.

I will record the results of the project in my doctoral paper and they may be published in a journal, but always without any identifying information. You and the

preschool will be given a summary of the findings for you to see if you would like to know what the research found.

Who do I contact if I wish to discuss the project further?

If you would like to talk about any aspect of this project, you could contact my supervisor, Cori Williams, or an Aboriginal advisor, Emma Beckett. If you wish to speak with an independent person to get verification of ethics approval, please contact the Curtin University Ethics Committee. Names and contact details are provided below.

How does my child become involved?

If you and your child are both happy for him/her to take part, please complete the **Consent Forms** on the following pages and help your child fill in the Consent Form attached to his/her letter.

This project information letter is for you to keep.

Thank you,

Gwendalyn Webb

Speech Pathologist, PhD candidate

Tel: 0400 270 174

gwendalynwebb@gmail.com

Associate Professor Cori Williams	Human Research Ethics Committee	Emma Beckett
Curtin University	Curtin University	Aboriginal Advisor
Tel: (08) 9266 7865	Tel: (08) 9266 2784	Tel: 0419 604 174
Email: c.j.williams@curtin.edu.au	Email: hrec@curtin.edu.au	Email: awabakal.preschool@bigpond.com

Consent Form (Caregivers)

- I understand the information about the project.

- I have asked any questions I may have had and I am happy with the answers.

- I understand that it is up to me whether or not my child and I take part.

- I am happy to take part in the project.

- I am happy for my child to take part in the project.

- I have talked about this project with my child and he/she wants to take part.

- I give permission for my child to be videorecorded.

- I give permission for my conversation to be recorded.

- I understand that we can pull out of the project at any time.

- I am happy for the project to be presented at a conference and possibly published in a journal. I know that I will not be identified in any way.

- I understand that I will be given a summary of the findings after the project is finished.

Name of Parent/Carer
(printed): _____

Signature of Parent/Carer: _____   Date: /   /

Research Topic: Explorations of dialect in Australian Aboriginal Preschool children

Researcher: Gwendalyn Webb

This research project is investigating the differences between the way that Aboriginal and Non-Aboriginal children speak, and whether these differences affect their conversations with preschool educators and schoolteachers. Some local Aboriginal people are also helping to guide this research project.

This research will be carried out through Curtin University with the approval of the Human Research Ethics Committee (HREC) (Approval number HR 100/2012) and Department of Education and Training (NSW) (Approval number: SERAP 2014140).

I would like to invite your child to take part in this project. (Name of Preschool/childcare centre) is one of the children's services in the Hunter Region we have asked to take part. We have given your child a letter as well, and ask you to talk about it with him/her.

What does participation in the research project involve?

Your child will be asked to talk with their teacher for about 10 minutes while they are playing with playdough. This conversation will be videorecorded. These conversations will take place at the child's preschool/child care centre and should not disrupt the everyday routine of the preschool.

It is your choice whether or not you and your child take part in the research. Your decision either way will not affect your family's relationship with your child's teacher. You may withdraw from the project at any time and any unpublished records will be destroyed.

What will happen to the information collected, and is privacy and confidentiality assured?

Your privacy is very important. We will remove your child's name and any information that could be used to identify him/her, or you, from the information we collect. We will safely store the information for 5 years so that only the researchers can see it, and then it will be destroyed.

I will record the projects results in my doctoral paper and they may be published in a journal, but always without any identifying information. You and the preschool will be given a summary of the findings for you to see if you would like to know what the research found.

Who do I contact if I wish to discuss the project further?

If you would like to talk about this project, you could contact my supervisor, Cori Williams, or Emma Beckett, a member of the Aboriginal advisory panel. If you wish to speak with an independent person to get verification of ethics approval, please contact the Curtin University Ethics Committee (contact details are provided below).

How does my child become involved?

If you and your child are both happy for him/her to take part, please complete the **Consent Form** on the following page and help your child fill in the Consent Form attached to his/her letter.

This project information letter is for you to keep.

Thank you

Gwendalyn Webb

Speech Pathologist, PhD candidate

Tel: 0400 270 174

gwendalynwebb@gmail.com

Associate Professor Cori Williams	Human Research Ethics Committee	Emma Beckett
Curtin University	Curtin University	Aboriginal Advisor
Tel: (08) 9266 7865	Tel: (08) 9266 2784	Tel: 0419 604 174
Email: c.j.williams@curtin.edu.au	Email: hrec@curtin.edu.au	Email: awabakal.preschool@bigpond.com

Consent Form (Caregivers)

- I understand the information about the project.

- I have asked any questions I may have had and I am happy with the answers.

- I understand that it is up to me whether or not my child takes part.

- I am happy for my child to take part in the project.

- I have talked about this project with my child and he/she wants to take part.

- I give permission for my child to be videorecorded.

- I understand that we can pull out of the project at any time.

- I am happy for the project to be presented at a conference and possibly published in a journal. I know that neither my child nor their children's centre will be identified in any way.

- I understand that I will be given a summary of the findings after the project is finished.

Name of Child (printed):

Name of Parent/Carer (printed): _____

Signature of Parent: _____   Date: /   /

Appendix E: Child Participant Information Sheet and Consent Form

Hello

My name is Gwendalyn. I have a project that I would like your help with.

The project is about how kids talk with their teachers.

 I would like you to help me by talking with your teacher at preschool for a few minutes while you play with playdough together.

I will be videoing you while you are playing with the playdough and talking with your teacher. You can watch some of the video, if you like, when I've finished.

I would like to video you again later, once you have gone to big school.

If you want to stop at anytime, that's OK, you can.

Your parents, or the person who looks after you, has talked with you about helping with the project.

If you would like to help with the project, please draw a circle around the smiley face on the next page.

If you don't want to help with the project – that's OK too.

Gwendalyn

Consent Form for Child

- I know that I can say 'yes' or 'no' to doing this project.

- I know that I can stop whenever I want.

- I know that I will be talking with one of my teachers, while we play with playdough.

- I know that I will be filmed while we are playing.

- I know that I need to draw a circle around the smiley face on this page before I can help with the project.

YES

I would like to help with
the project

NO

I do not want to help
with the project

Name of child: _____   Today's Date: /   /

Dear Sir/Madam,

Research Topic: Explorations of dialect in Australian Aboriginal Preschool children

My name is Gwendalyn Webb and I am currently commencing a doctoral research project, under the supervision of Associate Professor Cori Williams, at Curtin University. My project aims to investigate Aboriginal children's speech, and whether this affects their conversations with preschool educators and schoolteachers. Some local Aboriginal people are also helping to guide this research project.

As part of this project Aboriginal Kindergarten school children will be videotaped having conversations with their educators whilst playing with playdough. The children's speech will be transcribed and analysed for dialect and language features.

I will also interview the educators and parents/carers of the children to discuss their perceptions of each child's speech. Each interview and videotaping session should only take about 10 minutes.

I would like to invite your school to take part in this project. (Name of school) is one of several in the Hunter Region we have asked to take part.

What does participation in the research project involve?

I seek access to some of the Aboriginal children who commence formal schooling in 2014, their families and educators. As much as possible I will try to minimise any disruption to the routine of the school day during the research procedures. There will be very little administrative support required from the school, however I would appreciate your support in giving families the information and consent forms.

How can this project benefit the participants, your school and the wider community?

This project will enhance the participants' awareness of the relationship between communication and learning. Theory and some previous research indicates that children's early language skills and non-standard dialect use (such as Aboriginal English) has implications for their later literacy learning. This research will enhance knowledge about this relationship in an Australian context.

To what extent is participation voluntary, and what are the implications of withdrawing that participation? Participation in this research project is entirely voluntary. We require written consent from all participants; children, educators and parents/carers. Participants are able to withdraw their involvement at any time.

Is this research approved? The research has been approved by the Curtin University Human Research Ethics Committee (Approval number HR 100/2012) and Department of Education and Training (NSW) (Approval number: SERAP 2014140).

What will happen to the information collected, and is privacy and confidentiality assured?
Information that identifies anyone will be removed from the data collected. The information

will be kept on a password protected external hard drive for a minimum of 5 years and will only be accessible to those directly involved in the project. A summary of results of the research will be made available to the school and the participants.

Do all members of the research team who will be having contact with children have their Working with Children Check? Yes. Please find evidence of my Working with Children Check attached to this letter.

Who do I contact if I wish to discuss the project further? If you would like to discuss any aspect of this study with a member of the research team, please contact my supervisor or the Aboriginal advisor. If you wish to speak with an independent person to get verification of ethics approval, please contact the Curtin University Ethics Committee. Names and contact details are provided below.

How do I indicate my willingness for the school to be involved? If you have had all questions about the project answered to your satisfaction, and are willing for the school to participate, please complete the **Consent Form** on the following page.

This information letter is for you to keep.

Thank you,

Gwendalyn Webb

Speech Pathologist, PhD candidate

Tel: 0400 270 174

gwendalynwebb@gmail.com

Associate Professor Cori Williams	Human Research Ethics Committee	Emma Beckett
Curtin University	Curtin University	Aboriginal Advisor
Tel: (08) 9266 7865	Tel: (08) 9266 2784	Tel: 0419 604 174
Email: c.j.williams@curtin.edu.au	Email: hrec@curtin.edu.au	Email: awabakal.preschool@bigpond.com

Consent Form (School Principals)

- I have read this document and understand project, as described within it.

- I am satisfied with the answers I received for any questions I may have had.

- I am willing for this school to become involved in the research project, as described.

- I understand that participation in the project is entirely voluntarily.

- I understand that the school is free to withdraw its participation at any time, without consequence.

- I understand that this research may be published in a journal, provided that the participants or the school are not identified in any way.

- I understand that the school will be provided with a copy of the findings from this research upon its completion.

Name of Director (printed):

Signature: _____ Date: /   /
_____

Appendix G: Participant Information Sheet and Consent Form for School Teachers

Research Topic: Explorations of dialect in Australian Aboriginal Preschool children

Researcher: Gwendalyn Webb

The project is investigating whether the way Aboriginal children speak affects their conversations with preschool educators and schoolteachers. Some local Aboriginal people are helping to guide this research project.

This research will be carried out through Curtin University with the approval of the Human Research Ethics Committee (HREC) (Approval number HR 100/2012) and Department of Education and Training (NSW) (Approval number: SERAP 2014140).

I would like to invite you to take part in this project. (Name of School) is one of the schools in the Hunter Region we have asked to take part.

What does participation in the research project involve?

The research will involve you having conversations with children from this school. These conversations will be brief, approximately 10 minutes long, and will take place while the child is participating in a craft activity at school. The conversations will be videotaped. We will try to cause as little disruption as possible to the everyday routine of the school.

It is your choice whether or not you take part in the research. Your decision either way will not affect your position at the school. You may withdraw from the project at any time and any unpublished records will be destroyed.

What will happen to the information collected, and is privacy and confidentiality assured?

Your privacy is very important. We will remove your name, and any information that could be used to identify you, from the information we collect. We will safely store the information for 5 years so that only the researchers can see it, and then it will be destroyed.

I will record the projects results in my doctoral paper and they may be published in a journal, but always without any identifying information. You and the school will be given a summary of the findings once the project is finished.

Who do I contact if I wish to discuss the project further?

If you would like to talk about this project, you could contact my supervisor or an Aboriginal advisor on the details provided below.

How do I become involved?

If you are happy to take part, please complete the **Consent Form** on the following page.

This project information letter is for you to keep.

Thank you

Gwendalyn Webb

Speech Pathologist, PhD candidate

Tel: 0400 270 174

gwendalynwebb@gmail.com

Associate Professor Cori Williams	Emma Beckett
Curtin University	Aboriginal Advisor
Tel: (08) 9266 7865	Tel: 0419 604 174
Email: c.j.williams@curtin.edu.au	Email: wurrungconsulting@outlook.com

Consent Form (Educators)

- I understand the information about the project.

- I have asked any questions I may have had and I am happy with the answers.

- I understand that it is up to me whether or not I take part.

- I am happy to take part in the project.

- I give permission for my conversation to be videorecorded.

- I understand that I can pull out of the project at any time.

- I am happy for the project to be presented at a conference and possibly published in a journal. I know that I will not be identified in any way.

- I understand that I will be given a summary of the findings after the project is finished.

Name of Educator (printed):

Signature of Educator: Date: /   /

Appendix H: Interview Guide

General areas for discussion during the interview with educators

Demographic information

1. How long have you been working in early childhood?

2. How long in this position?

3. How old are you? Provide choices of age categories.

4. What are your qualifications?

5. What experience have you had in working with Aboriginal children?

6. Are you Aboriginal?

Personal beliefs and experience

7. What do you think about the way Aboriginal children talk?

8. What do you do to help Aboriginal children develop their language?

9. What did you learn about language development in your training?

10. What did you learn about Aboriginal children and their language, during your training?

11. To what extent are you involved with the local Aboriginal community?

12. What strategies do you apply (if any) when teaching Aboriginal children literacy?

13. Do you think [child] communicates well for his/her age? (Explain why you think this).

Coding variable	Classification	Coding description
Codes which describe AE		
CR	Customised code	Phonological code count
WSD	Customised code	Phonological code count
H	Customised code	Phonological code count
TH substitution or omission	Customised code	Phonological code count
Stopping	Customised code	Phonological code count
Voicing	Customised code	Phonological code count
VC	Customised code	Phonological code count
Zero PRO	Customised code	Grammatical code count
Alt PRO	Customised code	Grammatical code count
Zero AUX	Customised code	Grammatical code count
Alt DET	Customised code	Grammatical code count
Zero DET	Customised code	Grammatical code count
Alt COMP	Customised code	Grammatical code count
Zero AGR	Customised code	Grammatical code count
Zero PL	Customised code	Grammatical code count
Zero SUB	Customised code	Grammatical code count
Alt TNS	Customised code	Grammatical code count
Zero TNS	Customised code	Grammatical code count
Zero COP	Customised code	Grammatical code count
Zero POS	Customised code	Grammatical code count
Zero PREP	Customised code	Grammatical code count
QINT	Customised code	Grammatical code count
Other codes used to describe children's communication in the sample		
% Verbal utterances	SALT analysis	Calculated from transcript
% One word utterances	SALT analysis	
% Interrupted utterances	SALT analysis	Calculated from transcript
% Over lapping utterances	SALT analysis	
% Responses to questions	SALT analysis	Calculated from transcript
% Intelligible utterances	SALT analysis	
Total number of utterances	SALT analysis	Calculated from transcript
Age in months	SALT analysis	
EW	SALT code	Calculated from transcript
EU	SALT code	
NV:E	Customised code	Calculated from transcript
NV:G	Customised code	
NV:H	Customised code	Calculated from transcript
Other phonological processes	Customised code	
(eg gliding, consonant deletion, de-affrication)		Calculated from transcript
		Grammatical code count
		Grammatical code count

		Pragmatic code count Pragmatic code count Pragmatic code count Phonological code counts

Appendix J: Tests of Normality for SALT Measures

Shapiro-Wilks test and absolute skewness and kurtosis allowed for a t-test to be used for the analysis of the measures of the following variables.

Table J1

Shapiro-Wilks Test of Normality for SALT Measures

SALT measures	Shapiro-Wilks test of normality		
	Statistic	df	sig
Responses to questions	.94	42	.027
% of utterances that were intelligible	.94	42	.026
Total number of utterances	.97	42	.235
Child's age in months	.97	42	.305

Table J2

Absolute Skewness and Kurtosis for SALT Measures

SALT measures	Skewness			Kurtosis		
	Statistic	*SE*	*z*	Statistic	*SE*	*z*
Responses to questions	.73	.37	2.00	-.11	.72	-.15
% of utterances that were intelligible	- .62	.37	1.70	-.25	.72	-.00
Total number of utterances	.38	.37	1.03	-.6	.72	-.84
Child's age in months	.34	.37	0.92	-.67	.72	-.93

Appendix K: Tests of Normality for NDW

Table K1

Shapiro-Wilks test of normality for NDW where independent variable is cultural-match

NDW counts	Shapiro-Wilks		
	Statistic	df	sig
Cultural-match context	.935	10	.498
Non-match context	.961	10	.801

Shapiro-Wilks null hypothesis is that the data came from a normal distribution. If the p value is greater than alpha level (.05) then the null hypothesis is NOT rejected.

Table K2

Skewness and Kurtosis for NDW where independent variable is cultural-match

Context	Skewness			Kurtosis		
	Statistic	SE	z(absolute)	Statistic	SE	z(absolute)
Cultural-match context	.210	.687	.306	2.143	1.334	1.606
Non-match context	.197	.687	.287	-1.078	1.334	-.808

Note. When absolute skewness and kurtosis are within +/- 1, the assumptions of normality are upheld.

Overall, the age of the children was evenly distributed in a normal curve (M = 61.43, SD = 4.87) with Kurtosis of -.67 (SE = .72) and Skewness of .34 (SE = .37). Figure L1 depicts the histogram for all the child participants.
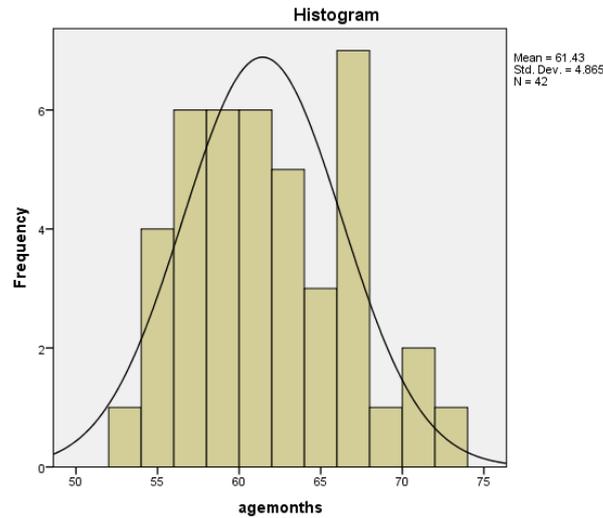
*Figure F1*. Histogram for ages of all children in the sample (n = 42)

The Aboriginal children in the sample evidenced a similar distribution of age (M = 59.48, SD = 4.09), with Kurtosis of -.82 (SE = .97) and Skewness of .35 (SE = .50). Figure L2 depicts the histogram for the Aboriginal child participants.
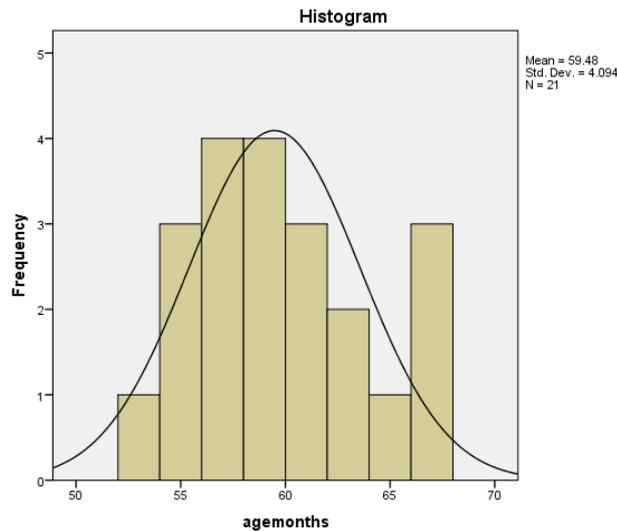

Figure F2. Histogram for ages of Aboriginal children in the sample (n = 21)

Appendix M: Tests of Normality for SALT Measures

The remaining measures of SALT did not satisfy assumptions of normality for parametric testing. Table M1 shows Shapiro-Wilks tests for these variables and Table M2 shows Skewness and Kurtosis for these variables.

Table M1.

Shapiro-Wilks Tests of Normality for SALT Variables

Measure	Shapiro-Wilks		
	Statistic	df	sig
% verbal utterances	.80	42	<.001
% one word utterances	.91	42	.003
% interrupted utterances	.70	42	<.001
% overlapping utterances	.86	42	<.001
NV:G	.88	42	<.001
NV:H	.82	42	<.001
CR	.73	42	<.001
WSD	.34	42	<.001
FCD / CD	.34	42	<.001
H	.43	42	<.001
TH	.68	42	<.001
Stopping	.52	42	<.001
Voicing	.36	42	<.001
VC	.56	42	<.001
Gliding	.68	42	<.001
Other PP	.39	42	<.001
ZeroPRO	.68	42	<.001
AltPRO	.43	42	<.001
ZeroAUX	.44	42	<.001
AltDET	.32	42	<.001
ZeroDET	.52	42	<.001
AltCOMP	.14	42	<.001
ZeroAGR	.14	42	<.001
ZeroSUB	.14	42	<.001
AltTNS	.43	42	<.001
ZeroTNS	.53	42	<.001
ZeroCOP	.50	42	<.001
ZeroPOS	.14	42	<.001
EU	.61	42	<.001
Q-INT	.31	42	<.001
EW	.41	42	<.001
ZeroPREP	.28	42	<.001

Table M2.

Skewness and Kurtosis for SALT measures

Measure	Skewness			Kurtosis		
	Statistic	Stand. Err.	z (absolute)	Statistic	Stand. Err. (absolute)	z
% verbal utterances	-2.14	.37	-5.87	6.23	.72	8.68
% one word utterances	.85	.37	2.32	.15	.72	.21
% interrupted utterances	1.35	.37	3.70	.56	.72	.77
% overlapping utterances	1.91	.37	5.24	6.09	.72	8.49
NV:G	.58	.37	1.6	-1.03	.72	1.43
NV:H	1.37	.37	3.74	1.94	.72	2.71
CR	1.64	.37	4.49	2.12	.72	2.95
WSD	5.28	.37	14.47	30.89	.72	43.09
FCD / CD	3.37	.37	9.22	10.90	.72	15.20
H	4.57	.37	12.51	24.17	.72	33.71
TH	2.86	.37	7.83	10.71	.72	14.93
Stopping	2.65	.37	7.27	7.06	.72	9.84
Voicing	4.37	.37	11.96	21.45	.72	29.92
VC	2.23	.37	6.10	4.38	.72	6.11
Gliding	2.21	.37	6.04	5.08	.72	7.08
Other PP	4.91	.37	13.46	27.14	.72	37.85
ZeroPRO	1.93	.37	5.29	4.23	.72	5.90
AltPRO	2.72	.37	7.46	6.81	.72	9.49
ZeroAUX	4.48	.37	12.28	23.26	.72	32.45
AltDET	3.86	.37	10.57	15.01	.72	20.93
ZeroDET	2.81	.37	7.70	7.71	.72	10.76
AltCOMP	6.48	.37	17.76	42.00	.72	58.58
ZeroAGR	6.48	.37	17.76	42.00	.72	58.58
ZeroSUB	6.48	.37	17.76	42.00	.72	58.58
AltTNS	3.88	.37	10.64	17.75	.72	24.75
ZeroTNS	2.03	.37	5.56	3.39	.72	4.73
ZeroCOP	2.40	.37	3.35	5.194	.72	7.24
ZeroPOS	6.48	.37	17.76	42.00	.72	58.58
EU	1.76	.37	4.81	2.12	.72	2.95
Q-INT	4.54	.37	12.43	22.87	.72	31.89
EW	3.25	.37	8.91	11.36	.72	15.84
ZeroPREP	3.45	.37	9.46	10.42	.72	28.54

Appendix N: Tests of Normality for Measures of Dialect Density

Table N1

Shapiro-Wilks Test of Normality for Dialect Density Measures

Measure	Shapiro-Wilks		
	Statistic	**df**	**sig**
DD1	.957	19	.516
DD2	.894	19	.038
DD difference	.961	19	.602

Table N2

Skewness and Kurtosis for Dialect Density Measures

Measure	Skewness			Kurtosis		
	Statistic	*SE*	*z*(absolute)	Statistic	*SE*	*z* (absolute)
DD1	.596	.52	1.137	-.321	1.01	-.317
DD2	.857	.52	1.635	-.339	1.01	-.334
DD difference	-.371	.52	-.708	1.121	1.01	1.105

Appendix O: Coding categories generated at initial round of coding

Code
Training
Training in Aboriginal culture and language
Language development training
insufficient
Strategies for language and literacy development
Visuals
talking and language activities
Structured learning approach
repetition
modelling
culturally based
correcting
attention /concentration
alphabetical knowledge
acceptance of AE
independence and confidence
relationships
Perceptions of AE
family life
trauma
Family goals. PLP
different
no different
Health
general health
ear health
Child's development

literacy skills

General development

extra support

Emotional

Communication skills

doesn't talk

classroom participation

Attendance

Children

Aboriginal links

some experience

minimal experience

experience with Aboriginals

community involvement