THE INTEGRATION OF MULTILINGUALISM AND CULTURE INTO AUGMENTATIVE AND ALTERNATIVE COMMUNICATION SERVICES FOR SCHOOL-AGED CHILDREN IN KWAZULU-NATAL AND GAUTENG, SOUTH AFRICA

A REPORT ON A RESEARCH PROJECT PRESENTED TO

THE DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
SCHOOL OF HEALTH SCIENCES
UNIVERSITY OF KWAZULU-NATAL

SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE
MASTER OF COMMUNICATION PATHOLOGY
(SPEECH-LANGUAGE PATHOLOGY)

BY
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MARCH 2016

DECLARATION

As the candidate's Supervisors we agree/do not agree to the submission of this dissertation.

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Acknowledgements

The following individuals provided immense support, encouragement and time to assist me with completing this research project.

- My research supervisors, Saira Karrim and Jenny Pahl. Thanks for your feedback and assistance with completing this study. I appreciate the time you have spent in guiding me to make this research project a success.
- The University of KwaZulu-Natal School of Health Sciences who provided funding for this project.
- My parents and sister who have spent many late nights with me through this journey. Thanks for understanding my commitments to this project and providing all types of support- including transport, meals and hugs!
- The Speech-Language Therapists and Parents who participated in my research study. Thanks for making this project a reality. Your commitment to assisting me with this project is greatly appreciated and the insights you provided are valued.

Abstract

Language and cultural diversity influence how individuals of different backgrounds interact. This heterogeneity can affect how Augmentative and Alternative Communication (AAC) services are provided to children with complex communication needs. This qualitative research study explored how Speech-Language Therapists (SLTs) integrate multilingualism and culture when providing AAC management to school-aged children. Twelve SLTs and parents from two provinces in South Africa provided insights into methods of obtaining language and cultural information from family members who are culturally and linguistically diverse (CLD), methods of AAC assessment and intervention, how SLTs provide cross-linguistic and cross-cultural services and the challenges experienced. The data which was gathered using journals, individual interviews and questionnaires revealed that SLTs integrate families' language background into management by using 'informal' interpreters, enhancing their own proficiency in languages their clients speak and using informal assessment procedures. Culture was not explicitly explored at the outset of management leading to poor integration of culture in AAC services. School-aged children did not adequately communicate in multiple languages as the language of learning and teaching, English, was often promoted to the exclusion of multilingualism. Family collaboration in the school context was a challenge which leads to ineffective carryover and integration of language and culture in AAC service provision. The implications and limitations of the study are presented.

Keywords: Augmentative and Alternative Communication (AAC), AAC assessment, AAC intervention, Culturally and linguistically diverse (CLD), Cross-linguistic, Cross-cultural

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Abbreviations

AAC	Augmentative and Alternative Communication
ASHA	American Speech-Language-Hearing Association
BICS	Basic Interpersonal Communication Skills
CALP	Cognitive-Academic Language Proficiency
CLD	Culturally and Linguistically Diverse
HPCSA	Health Professions Council of South Africa
ICF-CY	International Classification of Functioning, Disability and Health-version for Children and Youth
KZN	KwaZulu-Natal
LoLT	Language of Learning and Teaching
LSEN	Learners with Special Educational Needs
NGO	Non-Governmental Organization
SASLHA	South African Speech-Language Hearing Association
SLT	Speech-Language Therapist
SGD	Speech Generating Device

Glossary

AAC device	An electronic aid which converts nonverbal communication behaviors (such as touching a picture on a display) into verbal messages (Lancioni et al., 2007). Examples of AAC devices are speech generating devices (SGDs) and adapted AAC devices such as a laptop which uses AAC software (Baxter, Enderby, Evans & Judge, 2012).
AAC system	A set of symbols, codes and messages which are organized and combined in a rule-based manner to facilitate communication. The system uses one or more output methods, namely unaided symbols or aided symbols (Beukelman & Mirenda, 2013).
Aided symbols	A symbol which uses equipment external to an individual to allow a person to communicate (van der Meer et al., 2012). Aided symbols can be used with non-electronic/low technology (e.g. Picture Exchange Communication System) or electronic/high technology (e.g. SGD) output methods (Baxter et al., 2012; Beukelman & Mirenda, 2013).
Basic interpersonal communication skills (BICS)	Basic interpersonal communication skills are language skills children use in informal settings and are based on the context in which they are used (Aukerman, 2007; Schon, Shaftel & Markham, 2008).
Cognitive-academic language proficiency (CALP)	Cognitive-academic language proficiency describes the language ability required in decontextualized contexts, such as the classroom where the language associated with learning is more difficult and technical (Aukerman, 2007; Schon et al., 2008).
Code switching	Code switching is defined as speaking two languages interchangeably (Grech & McLeod, 2012).

Complex communication needs	This describes individuals who have developmental and acquired disabilities which cause significant communication impairments, for which AAC is used. Some conditions which result in children having complex communication needs are autism spectrum disorder, cerebral palsy and Down Syndrome (Binger & Light, 2006; Light & McNaughton, 2012).
Cross-cultural service provision	Collaboration with children and families who have cultural beliefs, norms, family roles, ways of interaction and routines which are different to the professionals (Harry, 2008; Schon et al., 2008).
Cross-linguistic service provision	Providing services in at least two different languages, where the professional is proficient in only one language (Mihalcea, Banea & Wiebe, 2007).
Culture	The knowledge, "values, beliefs, norms and attitudes" created and shared by a group of people that is continuously changing and affects how individuals think, feel, behave and communicate (Lemmer, Meier & van Wyk, 2006, p. 16).
Culturally and linguistically diverse (CLD)	Children and families who have various cultural practices, values, social norms and beliefs which affect their learning and use of languages (Grech & McLeod, 2012).
Emergent literacy	Emergent literacy precedes and supports the development of reading and writing (also known as literacy). Skills in this area include oral language, identifying the names of letters, grapheme-phoneme correspondence, "environmental print, print concepts, pretend reading, emergent writing, and phonological awareness" (Lanter, Watson, Erickson & Freeman, 2012, p. 309).

Informal interpreter	Informal interpreters are untrained individuals who are used in contexts where professional interpreters are unavailable or inaccessible, and can include bilingual staff, family members and children (Garrett, Roberto-Forero, Dickson & Whelan, 2008; Hart, Cheatham & Jimenez-Silva, 2012).
Interpreter	An individual who is trained to translate oral or manual communication from one language to another (American Speech-Language-Hearing Association [ASHA], 2004a). Interpreters must also be competent in providing cross-cultural services, identifying and understanding dialectal differences and specific terminology used in a profession (Hart et al., 2012).
Language of learning and teaching (LoLT)	One official South African language is selected as the learning medium to teach and assess learners in a school (Barkhuizen & Gough, 1996; Department of Basic Education, 2012b). The school governing body institutes the language policy and selects the language which is used (Department of Basic Education, 2011).
Methods of communication	This describes ways of transferring messages from one person to another. AAC options constitute different methods of communication (ASHA, 2004b).
Multiculturalism	Awareness that people have CLD backgrounds and understanding and accommodating for them allows better interaction between people of different backgrounds (Verster, 2004).
Multilingualism	Comprehending or producing "two or more languages in oral, manual, or written form" irrespective of proficiency, use, and the age at which a person learns the languages (Grech & McLeod, 2012, p. 121).

Multimodal communication	Multimodal communication is a holistic approach where multiple AAC communication options are used together to convey messages (ASHA, 2004c; Srinivasen, Mathew & Lloyd, 2010).
Parent	A child's biological mother or father, maternal or paternal grandparent, legal guardian or primary caregiver who cares, interacts and communicates with the child on a daily basis (Marshall & Goldbart, 2008; Strode & Slack, 2011). For this study, a parent was also a person known by the SLT managing the child, and had collaborated with him or her to support the child's progress.
Procedure (in assessment and intervention)	This describes a process to complete a technique or practice, such as an ecological inventory and feature matching (ASHA, 2004b) for assessment and the Picture Exchange Communication System for intervention.
Subtractive bilingualism	Subtractive bilingualism occurs when a child's learning of two languages occurs unevenly. This causes a child's second language to become stronger and the first language to decline (Manyike, 2013).
Unaided symbols	This type of symbol uses an individual's own skills and abilities to facilitate communication, so they do not require external assistance (Lancioni et al., 2007; Mirenda, 2003). Examples of where these symbols are used are in manual signing and gesture systems (van der Meer, 2012).

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CHAPTER 1
Introduction

This chapter provides an overview of the research study specifically the context, the methods used to conduct the study and the outline of the chapters that follow.

1.1 Background

South Africa is a multilingual and multicultural country and therefore services provided to children who have complex communication needs should reflect this. South Africans are usually exposed to more than one language during childhood, between the home and school contexts (Jordaan, 2015). As a result, most children are raised in a multilingual environment (Watermeyer & Penn, 2009), where two or more languages are used in their daily lives. Language learning occurs from birth and culture is inherent in the way language is used and developed, and later how cultural knowledge is understood (Booyse, le Roux, Seroto & Wolhuter, 2011). Culture and language are inseparable and therefore need to be considered during assessment and planning of therapy services. Due to the culturally and linguistically diverse[1] (CLD) background of children and families Speech-Language Therapists (SLTs) provide services to, SLTs must focus on providing appropriate services to families and their children.

Globally there is difficulty with providing culturally and linguistically appropriate speech-language therapy services. This is due to there being few SLTs who are proficient in languages in which they are providing services (Rodriguez, 1998), limited appropriate assessment and therapy materials (Bevan-Brown, 2006), poor involvement of family members (Woods, Wilcox, Friedman & Murch, 2011) and miscommunication due to cultural biases (El-Amouri & O'Neill, 2011). These challenges and shortfalls of management with families who are CLD are reasons why family centered practice must be ensured. Kummerer (2012) states that assessment and therapy is more effective when families' language and cultural background are integrated into speech-language therapy management. This involves how SLTs engage with, explain to and

[1] CLD refers to children and families who have various cultural practices, values, social norms and beliefs which affect their learning and use of languages (Grech & McLeod, 2012).

support families and children during the management process so families and SLTs are in agreement with decisions that are made. Family centered practice is not effectively implemented in practice (Crais, Roy & Free, 2006). Reasons for this are that South African SLTs have challenges with culturally and linguistically appropriate resources, financial and time constraints, and the distance families live from practice settings (Pascoe, Rogers & Norman, 2013; South African Human Rights Commission [SAHRC], 2002). This affects how family centered services can be provided.

South African schools for learners with special educational needs (LSEN) who serve children with intellectual impairment and severe language delays are not obliged to have more than one language as the medium of instruction (Government of South Africa, 1997) which causes a dilemma for school-based SLTs. Ethical practice guides SLTs to promote multilingualism in schools (Penn, 2015). Decisions about the language or languages that are used in therapy and about the communication system or device should be based on parents' and SLTs' joint input (Rodriguez, 1998). This leaves the language of learning and teaching (LoLT) or both the child's home language and the school's LoLT to be used as the languages of therapy. Assessment in a multilingual and multicultural environment without planning and consideration of the families' views often creates communication breakdown between parents and SLTs (Harry, 2008) which can lead to negative experiences for parents during the therapy process and overall failure of therapy.

Multilingualism in augmentative and alternative communication (AAC) has not been extensively researched (Pickl, 2011; Rossi & Balandin, 2005). This leaves a gap in how professionals practice in the field of AAC and a lack of evidence of how services should be implemented by professionals who serve this population. Many researchers (see Bevan-Brown, 2006; Dietz, Quach, Lund & McKelvey, 2012; Grech & McLeod, 2012; Thordardottir, 2010; and Wyatt, 2012) highlighted areas professionals must consider when providing services and investigated the gaps in current service implementation to children who require AAC and are CLD. However, research has not elaborated on how AAC services in general and those for this population are

provided to children who are CLD, particularly how SLTs take into account the diverse cultural and language backgrounds of children.

1.2 Problem Statement

South Africa's linguistic and cultural diversity requires SLTs to provide AAC services to children who are multilingual and who may be from different cultural backgrounds to their own. Currently the standardised assessment and therapy materials available in speech-language therapy are limited, and SLTs are commonly not fluent in the language and cultural background of their clients (Pascoe & Norman, 2011) which may cause some SLTs to adapt or use other methods to provide services. Therefore, this research study aimed to explore how multilingualism and culture are integrated into the AAC services provided to school-aged children in two provinces of South Africa.

1.3 Aim of the Research Study

To explore how multilingualism and culture are integrated into AAC services provided to school-aged children in KwaZulu-Natal and Gauteng provinces of South Africa.

1.4 Objectives

The research aim was achieved by obtaining insights into the following objectives:

1.4.1 To describe the methods SLTs use to obtain language and cultural information from family members of school-aged children who receive AAC services

1.4.2 To describe the procedures and methods SLTs use during AAC assessment and therapy with school-aged children who are multilingual

1.4.3 To describe how SLTs provide cross-linguistic and cross-cultural AAC services to school aged children

1.4.4 To explore the challenges of providing AAC services in a multilingual/multicultural context.

1.5 Description of the Study

This study explored the practices of SLTs who provide AAC services to multilingual children from cultural backgrounds different to that of the practitioner. Parents' views provided the families' perspective of SLTs' management of children who use AAC, thereby presenting a different perspective of SLTs' practice. As SLTs' experiences and practices were an important aspect of the study, a social constructivist framework was used to shape the research project (Creswell, 2009).

A social constructivist framework was used in this qualitative research study as SLT and parent participants were considered to have an understanding of the contexts in which they work, interact and live (Creswell, 2009). Therefore, this framework was used to explore these views by asking open-ended questions and recording responses from participants to determine multiple views and perspectives regarding the research area (Creswell, 2009). In the current study, in depth perspectives from SLTs and parents were collected to obtain insights about SLTs' practice in AAC with children who have complex communication needs. These insights indicate how SLTs currently practice in the area of AAC which may enable SLTs' practice to be enhanced and allow information to be shared. A social constructivist framework was appropriate for this study because it acknowledges that SLTs and parents have several views which construct their realities, thus objective responses cannot be obtained from them (Creswell, 2009; Patton, 2002). For these reasons, a qualitative approach was best suited to explore this topic.

A qualitative approach with a phenomenological design allowed the researcher to use open-ended questions to gather information regarding SLTs' and parents' experiences and practice regarding the topic area. Purposive sampling was used to select SLT and parent participants for the study and three data collection methods (journals, individual interviews and parent written questionnaires) were used to obtain an in depth understanding of participants' experiences. Thematic analysis was used so the data was systematically organized, examined and interpreted.

1.6 Significance of the Study

This exploration allows a realistic view of how SLTs provide cross linguistic and cross cultural services to multilingual and multicultural AAC users and may support a constructive way forward for providing AAC services to this client population. The findings from this research study may guide SLT practice in South Africa by providing options in the assessment and/or therapy process for SLTs.

1.7 Overview of the Study

There are five chapters in this dissertation which are presented as follows:

Chapter one provides an overview of the background of the study, the importance of the research and the aim and objectives which were explored. The approach and methods used to answer the research objectives are mentioned as well as the significance of the study.

Chapter two describes the background of AAC globally and in South Africa, the populations it is used with and how AAC is provided to LSEN. A detailed discussion of multilingualism and culture follows as this is the main focus of the study and is described in terms of its definition and the way it affects SLTs' provision of services. Literature in the area of AAC relating to culture and multilingualism is presented, which identifies gaps in current knowledge.

Chapter three explains the methodology of the research study. The aim and objectives of the study are presented and the study approach and design discussed. The processes used to select participants, compose the data collection tools and complete data analysis are explained. Ethical considerations and issues to ensure trustworthiness are also described.

Chapter four presents the study findings according to the main themes of the study. Results regarding the management of children who use AAC and are CLD are described in detail. Areas of AAC and CLD practice identified by participants which need to be developed are also discussed. The findings are interpreted in relation to the current literature so its relevance is highlighted. The chapter puts forward findings which relate to the research objectives.

Chapter five is the final chapter of the study and concludes the dissertation. The main findings of the study and their significance, the clinical limitations, research implications and the recommendations for future research are presented.

1.8 Summary

This chapter provided an overview of each area of the study and how this research dissertation was compiled. The background and purpose of the current research study were presented and then the objectives, methods, participants and data analysis procedures were described. This outline sets the general progression of the research dissertation which follows.

CHAPTER 2

Literature Review

Augmentative and alternative communication (AAC) service provision involves a range of professionals working collaboratively with families and children from various cultural and linguistic backgrounds. The success of AAC intervention is determined by many factors, including whether a communication option can be used in more than one language and the option's appropriateness to the sociocultural contexts in which a child interacts (Johnson, Inglebret, Jones & Ray, 2006). In South Africa, Speech-Language Therapists (SLTs) work in different contexts to implement AAC, which influences how services are provided.

The focus of the study was on how SLTs ensured that the cultural and language background of families' who are CLD is incorporated in the management they provide. Language and culture are closely linked (Booyse, le Roux, Seroto & Wolhuter, 2011; Yajuan, 2009), therefore exploring how SLTs' management of children who are CLD was centered around these interrelated areas reflects its connectedness in practice.

This chapter provides a critical review of how AAC services are provided to school-aged children who are culturally and linguistically diverse (CLD). The purpose of the current study is identified through this discussion as areas of practice for which further evidence is required.

2.1 The Background of AAC

Children who have reduced or insufficient communication abilities may interact and communicate using AAC (Cameron & Markowicz, 2009). AAC allows children who have "temporary or permanent impairments, activity limitations, and participation restrictions" with severe oral or written speech-language comprehension and/or production disorders a potential means to communicate effectively (American Speech-Language-Hearing Association [ASHA], 2002; ASHA, 2005, para. 3). As children who use AAC have varying physical, intellectual and communication skills, there are both unaided and aided symbols that can be used. As children who use AAC have complex communication needs and characteristics, many communication

methods, systems and devices are used during their lifetime for various functions (Topia & Hocking, 2012).

The prevalence of children with complex communication needs varies internationally because information is based on national and regional information. The prevalence of children who were eligible for AAC services was "0.3% to 1% of school-aged children" in the United States of America (USA) in 1997 (Glennen & DeCoste, 1997 cited in Beck, Bock, Thompson, Bowman & Robbins, 2006, p. 57). A study completed by Alant (1999) in Pretoria, South Africa reported that 38% of children in schools for learners with special educational needs (LSEN) who served children with severe intellectual impairment had complex communication needs. Globally, the prevalence of complex communication needs is increasing (Ryan et al., 2015) and in under developed countries is likely higher than 0,15% of the population, which is found in developed countries (Cameron & Markowicz, 2009). The higher prevalence rate in South Africa suggests that many school-aged children may have complex communication needs which may require the use of AAC. Therefore, there is a significant need for AAC services to be provided to school-aged children. Factors which contribute to an increased prevalence of complex communication needs in developing countries such as South Africa include prenatal and perinatal factors, illnesses, injuries due to road traffic accidents and infectious diseases such as HIV/AIDS and tuberculosis (The Community Agency for Social Enquiry [CASE], 1999; World Health Organization [WHO], 2011).

AAC is used with populations of various etiologies and presentations, including cerebral palsy (CP), Down syndrome, Autism Spectrum Disorder (ASD), childhood apraxia of speech and intellectual impairment of unknown etiology (Beukelman & Mirenda, 2005; Wilkinson & Hennig, 2007). All of these conditions may have co-occurring deficits such as auditory, visual, motor, seizure and behavioral disorders which affects a child's use of an AAC device or system (Beukelman & Mirenda, 2005; Clarke & Price, 2012). AAC is used with individuals of any age, including those who have had complex communication needs from childhood (Hines, Balandin & Togher, 2011). People with disabilities in developing countries obtain limited therapy and education services (Cameron & Markowicz, 2009; Geiger, 2012). Reasons for this low

percentage may include eligible individuals not being identified for services, reduced funding for AAC intervention and a shortage of professionals (Alant, 2007; Cameron & Markowicz, 2009). Professionals who serve a child with complex communication needs are influenced by a child's primary condition and to whom they are referred (Blue-Banning, Summers, Frankland, Nelson & Beegle, 2004; Lamontagne, Routhier & Auger, 2013).

2.2 AAC Services

The team of individuals who provide services to a child who requires AAC may include the individual who uses AAC, their family and communication partners, educators, SLTs, occupational therapists and physiotherapists (Beukelman & Mirenda, 2005). Team collaboration is important as it influences a child's progress with an AAC program, allow team members to learn from one another and to have shared or integrated management goals (Calculator, 2009). Parents participate one on one with their child to conduct intervention daily therefore SLTs and other professionals need to consider the child and their family's goals by providing family centered intervention (Cress, 2004). Parents are an integral member of the AAC team as they comment on the social appropriateness of AAC interventions suggested by team members (Soto, Müller, Hunt & Goetz, 2001), including the suitability of language and culture in management.

SLTs have a lead role in AAC (Hunt, Soto, Maier, Müller & Goetz, 2002) as their expertise lies in facilitating communication and language skills, which is the primary purpose of AAC (ASHA, 2007). SLTs have a multifaceted role in the area of AAC which is critical to implementing effective services and transferring AAC to children's communication environments. SLTs' main role as the communication specialist on the AAC team is to assess and select communication goals for a child in different communication settings, identify and personalize AAC systems or devices, train others to facilitate the use of AAC, coordinate team members during the management process and monitor and provide feedback about how AAC is used (Calculator, 2009; Johnson et al., 2006). The number of SLTs practicing in the field of AAC in South Africa is unknown. A survey completed in the USA reported that 93% of SLTs regularly received referrals for children in hospital settings who may have qualified for AAC (Rosenfeld, 2002). This figure indicates that SLTs in the USA had a high caseload of children who may have used

AAC. As the need for AAC is thought to be higher in developing countries (Cameron & Markowicz, 2009), like South Africa, there may also be many South African SLTs who provide AAC services.

Cultural and linguistic diversity is common in South African schools (Breton-Carbonneau, Cleghorn, Evans & Pesco, 2012) and in the country in general (Barratt, Khoza-Shangase & Msimang, 2012). This CLD context affects how speech-language therapy services must be provided to be equitable and relevant for children and their families. Another factor which impacts how SLTs provide services is families' socioeconomic status. For example, there is a significant disparity with the average household income between families and population groups (Statistics South Africa, 2012), which can affect family roles, resources, exposure to learning contexts, care and access to services. As children have the right to use languages and practice the culture of their family without social exclusion (United Nations General Assembly, 1989), SLTs must adapt their provision of AAC services to the CLD environment in which they practice.

2.3 Multilingualism[2]

Multilingual practice by South African health professionals when assessing and treating patients is not optimal or effective due to language and cultural differences (Deumert, 2010). SLTs' reduced confidence in providing services to children who are CLD (McLeod, Verdon, Bowen & the International Expert Panel on Multilingual Children's Speech, 2013) is due to their limited training, inappropriate resources and limited access to interpreters. Speech-language pathology university programs in South Africa include AAC during undergraduate training which provides SLTs with the theoretical knowledge and clinical practice in AAC to provide services that are appropriate to the cultural and linguistic diversity of children and family receiving speech-language therapy services (Health Professions Council of South Africa [HPCSA], 2012). This indicates that SLTs in South Africa may or may not consider themselves adequate providers of AAC services when they manage children who are CLD. Although AAC and culturally sensitive practice is included in undergraduate training (HPCSA, 2012), there are few appropriate

[2] Multilingualism describes comprehending or producing "two or more languages in oral, manual, or written form" irrespective of proficiency, use, and the age at which a person learnt the languages (Grech & McLeod, 2012, p. 121).

resources for children who are CLD (Ryan et al., 2015). This creates a potential gap in how services to multilingual children are provided. The number of children with complex communication needs who are multilingual increases with the rise in the global population (Pickl, 2011). This will increase the likelihood of SLTs providing services to children who are eligible for AAC and are multilingual in South Africa and globally.

Ideally, the principle of inclusive education should underlie education for children with special education needs. The South African Education White Paper 6: Special Needs Education (Department of Education, 2001) policy defines inclusive education as a system that acknowledges the differences between learners which can affect learning. Language differences and communication related disorders need to be managed with appropriate adaptations to the curriculum, teaching methods, environments and assessment methods to meet the needs of all learners (Jackson, Ryndak & Billingsley, 2000). Continuous professional self-assessment ensures services are provided effectively and optimally in the school setting (Jackson et al., 2000). Inclusive practices must be applied within the classroom, school and community contexts to ensure successful outcomes. Calculator and Black (2009) indicated that these principles can be applied to AAC practice as communication is a crucial aspect in all the above mentioned areas. This involves the learner who receives services as well as the learner's family (Engelbrecht, Oswald & Forlin, 2006; Jackson et al., 2000). A South African study which explored how inclusive practices are implemented concluded that poor engagement with relevant stakeholders and limited collaboration to compile a management plan contributed to poor inclusion outcomes (Engelbrecht et al., 2006). Therefore, inclusive education in South Africa may not be widely available.

Access to services for children with intellectual and or developmental delays is challenging for some populations in South Africa, similar to the Latino population in America as services are not readily accessible. The Latino population underuse rehabilitation services as they believe it is very difficult to obtain professional services which are culturally and linguistically appropriate, which is an important consideration for them (Gannotti, Kaplan, Handwerker & Groce, 2004). Therefore access to culturally and linguistically appropriate services for those who require AAC

may be difficult globally. This indicates multilingual services are not sufficiently provided by professionals in research or practice (Pickl, 2011; Ryan et al., 2015), which highlights the importance of the current research study.

2.4 Issues Regarding Multilingual School-Aged Children

There are eleven official languages in South Africa (Constitutional Assembly, 1996), therefore the language profile of citizens is largely multilingual (Watermeyer & Penn, 2009). It is likely that many children are exposed to one or more languages once they start school, thereby promoting multilingualism. The language of instruction in all South African schools must be an official language and is determined by the school governing body and parents (Department of Basic Education, 2012b). The school context in South Africa consists of children from various linguistic backgrounds attending schools where the language of instruction is often English, which is noted as the language of privilege (Barkhuizen & Gough, 1996) as it is the international language in which travel, business, entertainment and prosperity are underpinned (Cunningham, 2001; Deumert, 2010). The language of instruction in mainstream schools remains unchanged even with learners who have a first language different to the language of instruction (Cummins, 2007).

Many African languages are seen negatively by their native speakers because English is perceived as the language of education and economic opportunity (Alexander, 1996; du Plessis & Louw, 2008). This societal perception of English in relation to the remaining ten South African official languages can limit a child's socio-cultural interaction and affect their long term cultural practices. This use and perception of the English language are reasons parents enrol their children in schools which use English as the medium of instruction or prefer this language to other languages (Alexander, 1996; du Plessis & Louw, 2008). Ohashi et al. (2012) conducted an exploratory study which compared the early language skills of monolingual and bilingual children diagnosed with ASD. Their findings revealed that children's exposure to two languages did not cause differences in their language understanding, language expression and functional language skills when compared to children diagnosed with ASD who are monolingual communicators. This finding of bilingualism as a strength which allows children to interact and

communicate in their social environments supports the use of multilingualism for children with complex communication needs.

The Curriculum and Assessment Policy Statements (CAPS) is the current curriculum for learners from Grades R to 12 in mainstream schools and schools for LSEN and was phased in from 2012 to 2014 (Department of Basic Education, 2014). The CAPS introduced the English subject to younger learners than in the previous curriculum to help English language learners acquire the language earlier so that they would engage with the curriculum better (Department of Basic Education, 2014). This initiative by the Department of Basic Education is not likely to succeed in an English medium school environment as Collier and Thomas' (2004) longitudinal mixed methods research study in the USA revealed that English-language support for up to four years does not adequately equip English language learners with skills as sufficient as their peers who may be monolingual English speakers. This highlights the difficulty all children may have when learning in an unfamiliar language. The curriculum for children who experience difficulties with learning can be adapted. Adaptations which can be made are that the assessment criteria for progressing to higher grades can be reduced and assessment methods can be adjusted to best suit the learners' abilities (Department of Basic Education, 2012a; Department of Basic Education, 2013) but changes to the medium of instruction to facilitate learning are not mentioned in the policy documents reviewed. This gap in planning for multilingual school-aged learners can cause long term poorer academic success of these students as they have not sufficiently learnt the language used as their school's medium of instruction (Collier & Thomas, 2004).

The Language in Education Policy Act (1997) supports the development and use of AAC (Government of South Africa, 1997). Whereas this enables and promotes the use of AAC, there need to be support systems in place to learn a new language in the school context (Collier & Thomas, 2004). Children who do not have language disorders are commonly referred for special education services due to linguistic or cultural issues related to the acquisition of a second or third language (Schon, Shaftel & Markham, 2008). Limiting a child's communication to the language of learning and teaching (LoLT) is not valid when it is noted that multilingualism is important to a child's social and academic outcomes (Scanlan & Zisselsberger, 2015). The

cultural and linguistic backgrounds of children need to be respected and preserved by professionals (Yu, 2013) as children's language skills significantly affect their performance during assessment (Teoh, Brebner & McCormack, 2012) and their interaction with family members and individuals in their community (NAEYC, 2009).

School-aged children who are multilingual develop basic interpersonal communication skills (BICS[3]) and/or cognitive-academic language proficiency (CALP[4]) in each language they are exposed to (Cummins, 2008). Roessingh (2006) estimates that BICS make up only 10% of the academic skills typically developing school-aged children who are multilingual need to progress in the school context. School-aged multilingual children with complex communication needs who use AAC require support from their educators and SLTs to develop BICS in the school's LoLT (Bylund, 2011). Skills and tasks children need to achieve BICS in a new language include understanding and producing sentences with simple, descriptive structures; using vocabulary for familiar, daily items; using language which describes the present moment and preliteracy skills (for reading and writing) (Roessingh, 2006). BICS takes approximately two years to develop in typically developing children and CALP takes five years or more (Cummins, 2008; Roessingh, 2006). The length of time to achieve BICS and CALP for children who have complex communication needs may be longer than this. CALP skills include learning concepts from the school curriculum, learning more from reading than experience, attaining a vocabulary of 8000-12000 words, abstract thinking, reading academic literature and writing essays (Roessingh, 2006). Children who are multilingual develop CALP skills in their second or third languages, especially if these are used regularly and for academic purposes but may lose certain BICS or CALP skills in their first language or not fully achieve CALP skills in all their languages equally (Roessingh, 2006).

[3] BICS are language skills children use in informal settings and are based on the context in which they are used (Aukerman, 2007; Schon et al., 2008).

[4] CALP describes the language ability required in decontextualized contexts, such as the classroom where the language associated with learning is more difficult and technical (Aukerman, 2007; Schon et al., 2008).

Most South African schools have one or more languages of learning and teaching which usually does not match the child's first language (Lemmer et al., 2006). If the medium of instruction in a school for LSEN is a language to which a learner has not been previously exposed, SLTs may select or have to conduct intervention in the language selected by the school, instead of following best practice, which is to select the language to be used in intervention based on the SLTs' clinical expertise and parents' preference (Booyse et al., 2011; Grech & McLeod, 2012). Therefore, this may affect the quality of services SLTs provide in school-based intervention and can have negative outcomes for children who use AAC, as one language from either the home or school environment may be used in intervention, instead of possibly using both languages from the school and home contexts.

Emergent literacy is an area of learning for school-aged children. Emergent literacy precedes and supports the development of literacy and is facilitated by the educator and SLT (Mophosho & Dada, 2015). Emergent literacy and literacy skills equip children who are AAC users to compose messages which are precise and detailed, allow communication to be faster, expose a child to new vocabulary which expands the child's lexicon, and facilitate opportunities for employment (Harrison-Harris, 2002). Though these outcomes are expected for all children, Yoder (2001) stated that children with physical, communication and/or intellectual disabilities are not likely to have an optimum level of literacy knowledge and skills when entering school. This may be due to poor exposure to literacy concepts and learning opportunities as a result of families' socio-economic background, knowledge of language development and poor access to intervention services. Therefore, expectations for LSEN may vary according to their individual abilities but literacy must be included in the management of multilingual children who use AAC. This allows children to access the positive outcomes and opportunities literacy can provide.

Cross-linguistic practice involves providing services in at least two different languages, where the professional is proficient in only one language (Mihalcea et al., 2007). Cross-linguistic practice for SLTs in South Africa is frequent as there are eleven official languages (Constitutional Assembly, 1996) and the majority of qualified South African SLTs are proficient English and/or Afrikaans speakers (Pascoe et al., 2010). This results in the majority of clients

who are first language speakers of an African language (Watermeyer & Penn, 2009) being served by an SLT who does not speak their language. South African studies, such as Deumert (2010) revealed that cross-linguistic interactions between medical staff and patients were unsuccessful. Methods to repair communication such as using informal interpreters and professionals' dominant language with a few words of the patients' language were used but they were not always available or successful. An area related to cross-linguistic practice is culture, which needs to be considered when managing families and children with complex communication needs who are CLD (Rossi & Balandin, 2005). Therefore, a discussion of this area follows.

2.5 Cultural Diversity

Culture encompasses the "knowledge, values, beliefs, norms and attitudes" created and shared by a group of people that is continuously changing and affects how individuals think, feel, behave and communicate (Lemmer, et al., 2006, p. 16). Culture influences many aspects of life such as religious beliefs, beliefs about healthcare, feelings toward intervention, family relationships, what constitutes play, games which are commonly played, the style of social interaction, and language(s) which are spoken (Heien, Mots, Moser & Faota, 2012; Marshall, 2000).

South African national documents indicate that culture is a significant part of life which adds to the freedom which all individuals have in our democratic society and is a part of every individuals' personal identity (Department of Arts, Culture, Science and Technology, 1996). South African documents which place importance on culture are the Constitution of the Republic of South Africa (Constitutional Assembly, 1996) and the White Paper on Arts, Culture and Heritage (Department of Arts, Culture, Science and Technology, 1996). The Bill of Rights which is part of the South African Constitution declares that no individual can be discriminated against based on their cultural practice and language, and each person has the right to practice the culture of their choice without prejudice (Constitutional Assembly, 1996). The previous statements highlighted in national policies were introduced by South Africa's first democratically elected government in 1994 through the concept of multicultural education. Multicultural education ensures that the culture, ethnicity and religion of all persons is respected, acknowledged and

observed (Booyse et al., 2011). As culture is recognized as a part of every child and cannot be a reason for discrimination, SLTs must regard culture as an important area of a child's background when interacting with them and providing services. Parents have the right to select the language and cultural basis in which their child is to be educated (Booyse et al., 2011).

Cross-cultural practice describes interacting with children and families who have cultural beliefs, norms, family roles, ways of interaction and routines which are different to professionals (Harry, 2008; Schon et al., 2008). Cross-cultural and cross-linguistic practice is prevalent in South Africa between SLTs, clients and their client's families due to clients' varied cultural and linguistic backgrounds (Pascoe et al., 2010). McLeod et al. (2013) reported that SLTs' cross-cultural and cross-linguistic practice in general is not optimal, which may indicate that SLTs find CLD AAC users challenging to work with. Adapting practice to be culturally and linguistically appropriate allows SLTs to provide more ethical and effective services, therefore SLTs must adapt to their client's needs.

2.6 Families' Experiences with AAC

Children who use AAC adapt or generate their own communication methods, have their individual strengths, skills and unique cultural and linguistic backgrounds. Due to this, parents are significant contributors in the process of gathering information about a child who may be eligible for AAC. Goldbart and Marshall (2004) explored the experiences of parents with children who used AAC. Eleven individual interviews with parents revealed that they had insights into their children's personalities, communication behaviors, specific needs to be successful communicators, views of their role in the AAC team and of professional services. These perspectives are important to manage families effectively and emphasize the need for SLTs to include parents in the management process, as the success of AAC intervention is determined by whether parents' expectations are met or not (Marshall & Goldbart, 2008). Literature reports instances of poor collaboration between parents and professionals. Negative outcomes arise in parent-professional relationships when parents feel their points of view are not taken into account, they feel distrust from professionals, there is insufficient information sharing, professionals focus on children's weaknesses instead of their strengths, professionals do not

consider culture when interacting with parents and when parents' culture is not considered when they interact with their child (Bailey, Parette, Stoner, Angell & Caroll, 2006; Kalyanpur & Rao, 1991). These negative feelings could lead the child and family to be disillusioned which may affect management outcomes as the aims of therapy are not adequately achieved.

Developing a collaborative relationship between professionals working in schools for LSEN and families who are CLD has been difficult to establish and maintain due to poor cultural understanding by professionals (Harry, 2008; VanBiervliet & Parette, 2002). Since parents enter the collaborative relationship to obtain services for their child's benefit, it is expected that they may stay in it even if unequal sharing of information and limited team work occurs, which may be a common occurrence. McCord and Soto (2004) described that factors such as families' culture, level of literacy, social class, previous experience and families' perceptions of qualified individuals influence parents' collaboration with professionals. Chappell and Johannsmeier (2009) explored how community based rehabilitation in South Africa affected collaboration between families and persons with disabilities (the end users) and community rehabilitation facilitators (the service provider), using focus groups and semi-structured interviews. The findings indicated that training and educating parents increased their self esteem and confidence in managing their children with disabilities. An improvement in their children's skills facilitated a positive change in family relationships. This positive impact on children with disabilities and their families highlights the need for families to be more involved in the rehabilitation process (Chappell & Johannsmeier, 2009). This can be applied to SLTs' management with families and highlights that appropriate intervention needs to take into account the language and cultural background of the child and family, including their home life (McCord and Soto, 2004). SLTs in North America perceived a family's culture as a hindrance to assessment (Crais & Wilson cited in Goldbart & Marshall, 2004). SLTs may have this view as they are not familiar with how communication and AAC assessments must be adapted to be culturally and linguistically appropriate for children. This is why a family centered approach is promoted when managing a child who requires AAC. A family centered approach takes into account personal factors such as culture (Angelo, 2000 cited in Bailey et al., 2006; Boyd & Correa, 2005) and utilises parents as

team members to assist in adapting communications options to be individualized and appropriate.

Positive AAC therapy outcomes and expansion of professional skills are influenced by parents' involvement in the management process, the relationship between the parent and SLT and considering the demands on families who use AAC (King, Batorowicz & Shepherd, 2008; Egilson, 2010). Characteristics such as good communication, commitment to providing appropriate services, equal and shared roles, skills which professionals continually expand, respect for the other person and the child being served as well as trust are central to quality family-professional collaboration (Blue-Banning et al., 2004). Considering that families feel misunderstood, uninvolved and unfamiliar with SLTs during the management process and with therapy techniques and interventions (Goldbart & Marshall, 2004; King et al., 2008; McNaughton et al., 2008), it is vital to use supports and techniques to facilitate management positively.

Rosa-Lugo and Kent-Walsh (2008) adapted an instructional program consisting of eight steps to investigate the effects of a Latino parent training program and secondly, it's impact on their children's joint storybook reading who also use AAC. Four interaction skills parents were trained to use included "aided AAC modeling", expectant time delay, open-ended questions and responding more to communicative attempts (Rosa-Lugo and Kent-Walsh, 2008, p. 53). Results from the study showed parents learnt and used these four techniques with 91% precision or more. Children's communicative turn taking skills and expression of semantic concepts increased consistently throughout the training program and were maintained (Rosa-Lugo and Kent-Walsh, 2008). These results indicate that with close family collaboration and support, marked improvements can be made.

A family centered approach is best practice but in reality, family centered services are not frequently provided (Blue-Banning et al., 2004; King et al., 2008). Bevan-Brown (2006) discussed this in the context of the Maori culture in New Zealand. Family centered services were not provided effectively in this context because professionals did not regard culture as important

when providing services (Bevan-Brown, 2006). There was a shortage of professionals who spoke the appropriate language and knew about the appropriate culture, there was insufficient funding, and there were few or no culturally and linguistically appropriate resources (Bevan-Brown, 2006; Chiuri & Saxon, 2011). These factors are applicable to the practices and services provided in South Africa. Many SLTs are unfamiliar with the eleven official languages; therefore shortfalls identified with the Maori culture may arise around how culture is associated with the indigenous languages in South Africa. Shortfalls which occur in professionals' practice with families are that they develop biases towards families, do not critique their influence in the relationship with families (Boyd & Correa, 2005); have limited knowledge about different cultures (Olivos, Gallagher & Aguilar, 2010); do not consider culture as being important in the intervention process, and use inappropriate resources and materials for children who are CLD (Bevan-Brown, 2006). The professional, child and his or her family (who are important communication partners to the child) are critical in facilitating AAC management (Johnston, Reichle & Evans, 2004; King et al., 2008), which is why SLTs need to focus on enhancing their relationships with these stakeholders.

The services professionals provide to families who are CLD can be enhanced by incorporating basic principles which have been found to develop cohesive and productive relationships. Principles discussed in the literature aim to target flaws which have been identified in relationships and also enhance parent-professional collaboration in order to be beneficial for all individuals. There are many methods which professionals can use to become more culturally competent. SLTs can develop their own skills by being mentored by professionals who have knowledge and experience in working with learners who are CLD, can collaborate with families of children who are CLD throughout the management process, evaluate their personal views and biases regarding cultures they are exposed to and complete in-service programs before and during service with children and families who are CLD (ASHA, 2004a; Bevan-Brown, 2006, McCord & Soto, 2004). Educators and SLTs can also expand their resources to be appropriate for learners who may be from different cultures, and can facilitate ways for families to collaborate with professionals at school (Olivos et al., 2010). Professionals should involve parents in the management process by collaborating with them during meetings to ensure equal

sharing of information and decision making (Olivos et al., 2010) and throughout management, professionals can support the family emotionally, provide relevant information to them, access community supports to ensure appropriate services are provided and assist families logistically to ensure collaboration increases (ASHA, 2004a; Boyd & Correa, 2005). Collaborating with translators and interpreters assists SLTs who are not proficient in their client's language, meet the cultural expectations of the client and their family and facilitate better assessment and intervention services (ASHA, 2004a). These principles ensure professionals manage children who are CLD in a manner suitable with families, which increases the likelihood of interventions being successful and appropriate for the family to use outside the therapy setting. Dietz, Quach, Lund and McKelvey (2012) stated that research to guide decision making during AAC assessment is limited, which implies a scarcity of evidence based practice in at least one area of AAC. Due to this, a discussion of AAC services and management is presented below.

2.7 AAC Services

A few models guide AAC research and practice, but not all are used consistently in the field (Raghavendra, Bornman, Granlund & Bjorck-Akesson, 2007). This affects the advancement of AAC as research findings and practice are not consistent and do not develop concurrently. Literature around the use of models and frameworks in the field of AAC identified four which are used frequently. These are the Participation Model (Beukelman & Mirenda, 2005), the International Classification of Functioning, Disability and Health -version for children and youth (ICF-CY) developed by the WHO (WHO, 2001), models of communication and interaction of typically developing children or those without complex communication needs (Alant, Bornman & Lloyd, 2006; Raghavendra et al., 2007) and the Neurological, Ecological, Wholistic Team System (NEW TeamS) by Westby, StevensDominguez and Oetter (1996). Each model looks holistically at a child who requires AAC so interventions are suitable for their needs and abilities. These models will be reviewed in the discussion below.

The Participation Model is used to make decisions during the AAC assessment and intervention process for individuals of all ages (Beukelman & Mirenda, 2005). This model allows individuals using AAC to interact with people as naturally and effectively as possible (Beukelman &

Mirenda, 2005). ASHA (2004c) endorsed this model for use in AAC management and this model was noted to be best suited for this area currently (Beukelman & Mirenda, 2013). AAC assessment is a long term, continuous process due to the needs, environments and abilities of the user changing over time. The main areas completed during assessment are "a participation inventory", determining opportunity and access barriers and assessing specific language and communication skills (Beukelman & Mirenda, 2005, p. 139). Information regarding language, culture and family preferences for AAC intervention is gathered when completing a constraints and capability profile. In these profiles, factors that affect the future use of AAC intervention are identified to ensure an increased likelihood of success when the AAC system is used. The factors which can be important to families are the quality of interaction when the system or device is used, the appearance of the system or device and the language/s programmed in the device or used in the system (Beukelman & Mirenda, 2013). Assessment of other specific domains during a capability assessment such as motor and sensory/perceptual areas may be assessed by an occupational therapist and/or physiotherapist, as well as other appropriate professionals.

The second model used in AAC is the ICF-CY (Raghavendra et al., 2007). This model was adapted from the International Classification of Functioning, Disability and Health (ICF) (2001) framework which was developed for use with adults. The ICF cannot be used for children as activity, participation and environmental factors are not suitable for a younger population (Raghavendra et al., 2007). The ICF-CY was therefore developed to be used for children from infancy to the age of 17 years (McCormack, McLeod, Harrison, & McAllister, 2010). Areas to be considered when using this framework are a child's functioning, disability and contextual factors, which include environmental and personal subareas (Raghavendra et al., 2007). The main area of the ICF which was expanded on in the ICF-CY was the activities and participation domain (McLeod, 2006; McLeod & Threats, 2008). Changes incorporated into the ICF-CY caused SLTs to consider the communication behaviors children are expected to use at different ages, their rate of development, and the toys, activities and learning which they are to achieve.

ASHA's Preferred Practice Patterns for the Profession of Speech-Language Pathology (2004b) uses the ICF-CY model as a framework to effectively manage children holistically so the

effectiveness of intervention for the child, family and their communication partners is maximized (McLeod, 2006). Since a child's communication is assessed holistically during assessment and intervention using the ICF-CY, language and culture are also assessed in depth and are important factors when providing AAC intervention. A broader picture of a child's unique needs and requirements can be determined by using this model, which allows services to be individualized (Raghavendra et al., 2007). The ICF-CY allows the assessment and intervention process to be appropriate for children because it recognizes children's abilities change as they develop. Therefore ICF-CY codes reflect this as the original ICF codes were replaced or expanded upon (McLeod & Threats, 2008). The ICF-CY framework provides an international system all SLTs can use to provide AAC assessment and intervention services, using similar terms and processes which allows greater development of the field in the long term. The model also allows different professionals to work together as the ICF-CY framework is not specific to a health care field. Therefore, each AAC team member will have a similar understanding of areas to be investigated during the assessment process and when setting intervention goals (Raghavendra et al., 2007). Unfortunately, platforms for SLTs to discuss adaptations and share suitable revisions for AAC users may be limited.

The next category is general models of communication and interaction which aim to enhance understanding of human communication processes for children without intellectual, physical, emotional or sensory impairments. These models have been contested when used in the field of AAC, as the services provided to each child requiring AAC is different, therefore the use of any model will vary greatly in practice (Alant et al., 2006). Models of this nature applied in the field of AAC assists in determining language and communication areas which must be considered during management, as these areas are important in normal language and communication development (Alant et al., 2006). Models which are not AAC specific can lead to service delivery for children with complex communication needs not being adequately explored. There will also not be uniformity in how AAC is practiced when guided by the model. This affects the services provided by SLTs. An example of a model used in assessment and intervention of children with developmental language disorders or delays is the Functional Language Approach (Owens, 2004). This approach acknowledges that language varies depending on the context and

environments in which communication occurs, and explores this aspect thoroughly (Owens, 2004).

Another model to assess a child's developmental skills, including language, is NEW TeamS developed by Westby et al. (1996). This model does not primarily determine a child's developmental progress and qualification for services (Westby et al., 1996). The NEW TeamS model is used with other assessment procedures for children who have communication difficulties that are unfamiliar or unique and requires further exploration, as well as to answer specific questions teachers, parents and other professionals have (Westby et al., 1996). This model enhances assessment for children and their families by facilitating informed management for parents, guides assessment to take place in natural settings by a professional team who work in a collaborative manner to identify a child's current abilities in different developmental areas and their future potential (Westby et al., 1996). As discussed previously, this model was not developed for use in the AAC field, therefore models which are AAC specific need to be used. Use of the model may take long to implement, therefore it may not be realistic to use due to time constraints. It is therefore important that general language and communication models are used in the field of AAC but not without consideration of other AAC specific models, such as those discussed above.

CLD children have backgrounds which may be unique and unfamiliar to many professionals who have to work cross-culturally and/or cross-linguistically. The Participation Model, ICF-CY and two general communication models discussed above incorporate assessment principles and methods which are reputed to be suited to diverse populations. These methods are ecological, dynamic and observational assessments procedures, which will be discussed further below.

2.8 AAC Assessment

The Participation Model developed by Beukelman and Mirenda (2013) provides an in depth guide to assess children who may require AAC. Therefore this model will be used to guide the discussion about AAC assessment for children who are CLD.

The first important aspect of the Participation Model is that it allows SLTs to assess a child's potential communication needs, such as what they do and are required to do, and with whom they interact in specific environments (Beukelman & Mirenda, 2005). This part of assessment provides the SLT with their first view of a child's communication abilities and informs the level at which AAC assessment and intervention should be targeted. The second important aspect of assessment is identifying barriers to communication that may exist in the child's family or in environments in which they interact. Barriers include people's attitudes (their beliefs about a child's ability to use an AAC system or communicate and interact with same aged peers) and barriers associated with access (either those within or related to the child using AAC which limit their ability to communicate, such as their "capabilities, attitudes and resource limitations") (Beukelman & Mirenda, 2005, p. 145). Assessment of access barriers includes an assessment of the family, a crucial area of which is culture, as well as a detailed evaluation of a child's motor, sensory, language, communication and literacy abilities (Beukelman & Mirenda, 2005). These aspects of AAC assessment must be completed with consideration of the child's language and culture in order to provide suitable AAC services for them and their family.

The assessment of CLD children who have complex communication needs involves the phases of preassessment, or collecting background information about a child, and direct assessment (Grech & McLeod, 2012). Preparation to gather information during the preassessment phase can consist of completing a parent/caregiver interview and asking important communication partners to complete questionnaires or checklists (Roseberry-McKibbin & O'Hanlon, 2005; Saenz & Huer, 2003). Another preassessment procedure includes ethnographic assessment, where the child is observed in different natural routines such as at school, at home and the decontextualized setting with family in the therapy room (Spinelli, 2008). These procedures can assist the SLT to obtain cultural and language specific information about the child and the family from their perspective, from views of close communication partners or other professionals as well as by direct observation. How families use language and how their cultural practices are individualized need to be investigated sufficiently to ensure successful intervention services are provided. Aspects of communication which can vary with culture include the manner of greeting; language used to address individuals; initiating an interaction; directness during conversation; ways the

listener acknowledges the speaker; eye contact; facial expressions; silence; tone of voice; disclosure of personal, sensitive information; childrearing practices; views of disorder and disability; family structure and roles; decision making, importance of education and family's involvement in their child's education; and gender roles (VanBiervliet & Parette, 2002; Wyatt, 2012). These aspects of culture can be researched or fellow professionals such as translators or SLTs from the same culture can be asked to provide information about areas listed above (Wyatt, 2012). During the case history interview, important cultural features which have been identified through research can be confirmed with the family to indicate if these norms must be integrated into AAC assessment and intervention. Family specific cultural practices could then be integrated into the direct assessment phase to determine how the child interacts with adults with a similar cultural background and how the child interacts with his or her AAC system which is to be provided.

Information regarding language must also be taken into account when managing CLD children. Broeder, Extra and Maartens (2002) conducted a longitudinal study focusing on multilingualism in KwaZulu-Natal and South Africa in general. The study reported on the home and school languages of primary school children and reported the languages the primary school children said they would like to learn at school. Broeder et al. (2002, p. 29) stated that many African children are multilingual as they are able to understand and speak "English and/or Afrikaans" and another official South African language (Breton-Carbonneau et al., 2012). This indicates that children in South Africa who are CLD have a varied language background; therefore SLTs must ask specific questions in the case history interview regarding the languages spoken by the child and family members, languages spoken by the child in different contexts and with familiar communication partners, as well as the child's proficiency in these languages (Wyatt, 2012). Maros, Stapa and Yasin (2012) identified understanding, speaking, reading as well as writing as the four skills which identify an individual's proficiency in a language. Children who have complex communication needs may present with poor development of some of these skills therefore SLTs can evaluate language proficiency in terms of skills they may achieve, such as vocabulary, understanding spoken language, sentence production, , emergent literacy and literacy skills (Wyatt, 2012). Asking parents or caregivers about the child's exposure to each language

will assist the SLT in determining the appropriate language/s of assessment and intervention (Wyatt, 2012).

Following the preassessment, language and communication assessment takes place. An informal measure which can be used includes "criterion-based assessments" (Beukelman & Mirenda, 2005, p. 160), which explores a child's skills based on a set standard which can be language, culture or performance based (Grech & McLeod, 2012; Laing & Kamhi, 2003). Norm-referenced or standardized tests must be adapted for a child with a complex communication disorder to determine their abilities in different language domains. Use of this informal assessment procedure is not recommended due to its poor application with children who may be eligible to use AAC, therefore SLTs must rely on their differential diagnosis skills and use other procedures with this informal method (Saenz & Huer, 2003). Lastly, predictive assessments determine the appropriateness of an AAC option. This is completed by using a criterion assessment then choosing a suitable AAC option for the child to test its effectiveness (Beukelman & Mirenda, 2005).

Different types of assessment procedures should be conducted to increase the validity of the results (Kohnert, 2010). All these assessments should be conducted in each language the child is frequently exposed to, to enable the SLT to use evidence to determine the language or languages the child is most proficient in, and therefore the language or languages of intervention (Grech & McLeod, 2012). Though best practice is to assess the child in each language in which they are proficient, this may not occur due to the predominantly monolingual background of SLTs in South Africa (Pascoe et al., 2013). SLTs face a number of challenges when working with multilingual individuals, including developing systems that they can use in different communication contexts, enabling the transition between languages the child is proficient in (Rossi & Balandin, 2005) as well as conducting assessment and therapy services in a language with which SLTs are not familiar. As SLTs need to work cross-linguistically, an interpreter is important. In optimal conditions, an interpreter should be an individual who is trained in the discipline they are providing the translation service to (e.g. speech-language therapy), understand both the languages they are translating from and to proficiently, and have an understanding of the

assessment procedures the SLT is using (Wyatt, 2012). In South Africa, such interpreters are difficult to find and family may therefore be used or other professionals who are proficient in the child's language (Deumert, 2010).

The Participation Model (Beukelman & Mirenda, 2013) promotes a holistic assessment to guide management and develop a communication system for the AAC user. A capability profile is completed with all areas of functioning taken into account and is completed by the family, rehabilitation, medical, education and other appropriate professionals. Published accounts of how the Participation Model is used in AAC assessment in South Africa were not found, but areas of the model which may not be consistently applied include completing an operational requirements profile, assessing opportunity barriers and completing standardized assessments when assessing different skill areas. A reduced number of skilled professionals in different settings where AAC services are provided and difficulty completing family based assessments contribute to poor implementation of this model by South African SLTs. These aspects can be difficult to execute as South Africa is a developing country which is resource constrained in terms of qualified professionals and finance (Bornman & Donohue, 2013). These areas will be discussed further in relation to South Africa.

An operational requirements profile is completed by professionals to determine the features of suitable techniques, devices and systems which can be used in intervention (Beukelman & Mirenda, 2013). As AAC devices, especially high tech devices, are expensive they can be difficult to access for professional scrutiny before ordering for a client. Therefore, these devices may not be selected for intervention by AAC professionals in South Africa or will be deemed inappropriate after ordering and therefore the device may not be used. SLTs must also consider whether a child has the knowledge and experience of technology based components to determine if it will be culturally appropriate for the child and their family. Opportunity barriers regarding policy, practice, knowledge, skills and attitudes (Beukelman & Mirenda, 2013) are areas that require analysis during AAC assessment and intervention as they can significantly affect the outcome of AAC management. Poor public awareness in South Africa, limited experienced professionals and policies which are not implemented adequately reduce the effectiveness of

AAC intervention. Assessment services in AAC are affected by language barriers between professionals, clients and families as well as lack of adequate resources (Pascoe et al., 2013) and professionals with reduced confidence in practicing in this area. Although these issues provide setbacks to implementation of AAC services, South African SLTs and other AAC professionals still make solutions in order to best solve these issues that are appropriate for our context. AAC intervention is a multifaceted process which continues over a long period of time and the individuals, resources and skills required are numerous. This area will be discussed in the next section.

2.9 AAC Intervention

The first question SLTs ask at the outset of intervention is in which language or languages intervention should be conducted (Grech & McLeod, 2012). Deciding on the languages for therapy with multilingual children is a crucial step for those who use AAC, because the outcome of intervention is manual, written or object symbols used in aided or unaided AAC systems, which can be accessed by literate communication partners who may also be multilingual (Pickl, 2011). With school-aged children, this decision is also affected by the school's LoLT (Jordaan, 2015). This is a difficult decision for families and SLTs to make with multilingual children who require an AAC system or device, as there are different areas which must be considered.

The decision about which languages are appropriate for intervention needs to be based on general practice in the field as there is limited research in this area (Thordardottir, 2010). SLTs conventionally use one language during intervention as they often have to 'manage' using the language they know best, as there are few multilingual SLTs (Jordaan, 2008). SLTs make decisions based on what they know and the resources available to them (Kohnert, 2010; Thordardottir, 2010). As this practice is not evidence-based, it is not ethically correct to carry this out with multilingual children, so the SLTs' and families' perspectives are important to consider when making this decision (Thordardottir, 2010). Children's language background also has cultural significance for their family and if the language used at home is not taken into account when providing AAC management, subtractive bilingualism (a loss of the child's first

language due to limited use) may occur which can lead a child to be less involved with their family (Kohnert, Windsor & Ebert, 2009).

The use of the socially dominant language in therapy may occur regularly by SLTs in South Africa as cross-cultural and multilingual assessment of the "Black African population" is challenging (Solarsh & Alant, 2006, p. 110). This practice is not supported by research-based evidence (Cummins, 2007). Collier and Thomas (2004) determined from their longitudinal study over twenty years that a bilingual teaching program has significantly better outcomes for a child than instruction in their second language only. Issues to consider when deciding on how to integrate the child's languages in intervention are whether to use the language the child is most proficient in, all languages they are able to understand and communicate in, or the language which will have better functional outcomes for the child because subtractive bilingualism has occurred or they use their second language in more environments than their first language (Austin, 2007). If a LSEN school's language policy supports the use of one LoLT, then the child may predominantly receive instruction at school in their second language as it is socially dominant. The SLT may adapt their practice to ensure the use of both languages in the contexts in which the child interacts as this is evidence-based practice. Evidentiary support using assessment results is required to make a good decision, in consultation with the child's parents (Thordardottir, 2010).

In an American study conducted by Collier and Thomas (2004), the gap between a typically developing school-aged child's first and second languages was best reduced through a "dual language enrichment" program, where the mainstream curriculum is taught through both languages to which a multilingual child is exposed (p. 2). It was found to take six to eight years for a typically developing child to develop CALP skills in their second language (Collier & Thomas, 2004). The development of both languages by typically developing children in this study indicates the effectiveness of learning oral and written language skills in both languages when the school staff is facilitating this learning. Due to this, a child with special educational needs in the South African context may also benefit from an educational and speech-language therapy program that uses the languages they are proficient in to develop BICS and CALP

(Austin, 2007). A dual language program can be carried out by a multilingual speaker who is a teacher, a SLT or an interpreter who assists these professionals. If a monolingual speaker is the professional interacting with the multilingual child, they should access an interpreter who can offer their services independently or a classroom aid (Austin, 2007). In a dual language program, cross-linguistic services and learning languages where there is minimal proficiency is encouraged as this equips learners and staff with better skills to perform in their school context and other contexts where the languages facilitated in school are used. In South Africa though, access to an adequate number of multilingual language speakers or proficient first language speakers of African languages may be more difficult due to the lack of qualified individuals who can provide these services (Watermeyer & Penn, 2009).

Culture is an integral aspect of AAC which needs to be given attention by SLTs when planning intervention. Areas related to culture which need to be developed are producing communication systems, resources and materials, and providing AAC services that are culturally and linguistically appropriate (Cameron & Markowicz, 2009). In a developing country such as South Africa with people who have diverse cultural and linguistic backgrounds, developing materials that are appropriate for populations who are CLD is critical to ensure adequate management of children who require AAC. SLTs may provide services to clients who have a different cultural background from themselves (Kritikos, 2003) and few SLTs are multilingual (Chiuri & Saxon, 2011), therefore it is likely that most SLTs in South Africa are not proficient in the official African languages. Cross-cultural provision of services in the South African context is therefore a crucial area to obtain information about so the provision of speech-language therapy assessment and intervention services is improved. Establishing evidence based practices in the area of cross-cultural service provision is essential to ensure the effectiveness of therapy and to gain school and family support for providing services in this manner, otherwise these crucial role players will not realize the importance of this service.

Parents are important when making decisions regarding AAC, selecting a system, and introducing and implementing the system (Goldbart & Marshall, 2004). The decision regarding an appropriate unaided or aided communication system or device for a child should consider the

child's abilities and environmental requirements (van der Meer, Sigafoos, O'Reilly & Lancioni, 2011). Information gathered from parents and assessment procedures to assist in decision making include the child's current communication patterns, vocabulary requirements and areas of communication which should be initially targeted. There is a dearth of literature about the provision of AAC systems and devices suited for the multilingual child and adjustments or areas important to account for during the AAC assessment in this regard.

AAC systems can be categorized by features in the equipment, with two broad classes being systems with unaided and aided symbols. Unaided AAC symbols do not require a mechanism outside of an individual to produce it while aided symbols function with a mechanism external to an individual to retain and present symbols (Wilkinson & Hennig, 2007), such as a device or other physical equipment. Aided symbols may use technology that enables it to operate. The availability of different types of AAC systems is restricted in South Africa due to few professionals being trained in implementing AAC (Alant, 2007; Bornman & Alant, 2002). Therefore more readily used, adaptable, cost effective and familiar AAC systems are those which use unaided symbols.

Different approaches and strategies are used in AAC intervention. Common approaches used are person centered planning and multimodal communication approaches and AAC strategies used frequently are milieu teaching, aided language stimulation and the system for augmenting language. Kummerer (2012) also puts forward eight components of language intervention which monolingual and multilingual SLTs can use when managing Hispanic families, but in the South African context can be applied to different language and cultural groups with which SLTs may not be familiar. The use of these intervention components, approaches and strategies will be discussed further below.

Person centered planning approaches

It is important for school-aged children to interact with same aged peers, especially if they are in an LSEN setting. Beukelman and Mirenda (2005) describe approaches that aim to establish interaction between a child using AAC and typical aged peers, which include "Making Action

Plans (MAPS), Circle of Friends, and Planning Alternative Tomorrows with Hope (PATH)" (p. 266). These approaches aim to help children in the school context develop meaningful friendships and consider different aspects of this process, to enable the child using AAC to interact maximally and communicate with varied individuals (Beukelman & Mirenda, 2005).

Multimodal communication

Multimodal communication is a holistic approach where verbal, aided and non-verbal modalities are integrated to convey messages in a range of ways (ASHA, 2004c; Purdy, Wallace, 2015; Srinivasen, Mathew & Lloyd, 2010). This approach is crucial when planning AAC intervention once communication partners, contexts and routines are identified (Beukelman & Mirenda, 2013). Multimodal communication allows more opportunities for the AAC user to be understood by communication partners.

The above two approaches have separate aspects that are focused on, namely the communication partners, contexts and the AAC strategies used when communicating. Using both approaches during AAC intervention allows the AAC team to identify, educate and inform potential communication partners of the AAC user's communication options (Beukelman & Mirenda, 2005). This increases the likelihood of communication exchanges being effective and therefore more successful. These approaches can integrate the below strategies to develop a child's skills in using an AAC system or device.

Milieu teaching is a naturalistic intervention strategy where the SLT or communication partner is required to manipulate and organize the communication context to elicit requests from the child, using AAC (Beukelman & Mirenda, 2005). This approach can be used in daily routines and different contexts to which the child is exposed (Beukelman & Mirenda, 2005). Communication partners are critical in this approach as they are required to support the child's learning of making requests and using AAC systems or devices. Different prompts and strategies to elicit requests are used to achieve the desired behavior (Beukelman & Mirenda, 2005).

Aided language stimulation is a strategy where the SLT or communication partner facilitates receptive language as well as the use of expressive language with the AAC device or system provided (Beukelman & Mirenda, 2005). Different techniques are used in this process to create opportunities to communicate with the child during the day, such as pointing to the AAC system or device, producing verbal cues and drawing the child's attention to the communication option simultaneously (Beukelman & Mirenda, 2013; Dada, 2004). Frequent use of this strategy allows the child and communication partner to interact in a way similar to natural, implicit language learning (Mophosho & Dada, 2015).

The system for augmenting language (SAL) is a strategy used for AAC intervention with children of any age, who have moderate to severe intellectual disabilities including those who present with prelinguistic language skills (Romski, Sevcik, Cheslock, & Barton, 2006). This strategy requires familiar communication partners to interact with the child in natural settings to facilitate the use of an AAC device or system. The communication partner is required to provide models to demonstrate to the child how the AAC system or device should be used (Romski et al., 2006).

Aided language stimulation and SAL are similar strategies as they are both completed in natural communication contexts with the child receiving language input to understand or use a communication option (Beukelman & Mirenda, 2013). The differences between these strategies are that an AAC device, such as a speech generating device (SGD), is required for SAL and the strategies used to implement SAL are simpler (Beukelman & Mirenda, 2013). SAL is easier to complete as it is a more direct strategy because it is used when children have developed a basic understanding of an AAC system. Milieu teaching, the third strategy described above, is a naturalistic intervention approach which can be used to complement the previous approaches to create language contexts where the child is manipulated to produce language, non-verbally (with a gesture or picture-based AAC system) or with spoken language (using a SGD). These three strategies are well suited to be used for children and families who are CLD as they require familiar communication contexts where the child learns to use a new AAC system or device. The communication option can be made language appropriate by the AAC team collaborating with

the family or an interpreter to ensure words printed on the system are correct and AAC symbols are culturally appropriate.

Kummerer (2012) puts forward an eight step program to facilitate SLTs' collaboration with multilingual families when involved in cross-cultural management. In the USA, people who come from Hispanic backgrounds are not well served as their cultural and linguistic heritage and communication style and background are not well known to professionals (Kummerer, 2012). Therefore this program was developed to facilitate more effective management with professionals and families who are CLD. The eight components of the program are to establish trust between families and professionals, complete a parent/ caregiver interview with the view that parents know their child best, develop shared intervention goals, initiate and individualize treatment using a slow process to generalize the settings in which intervention is completed, then involve parents by making them equal partners who are able to collaborate with professionals, and promote parents to interact and develop from each other's shared experiences (Kummerer, 2012). These elements of working with families who are CLD can be applied to the South African context in the field of AAC due to our diverse cultural and linguistic heritage, with which most professionals may not be familiar. This guide to family centered management provided by Kummerer (2012) can assist professionals to be mindful of these aspects throughout intervention.

2.10 Summary

This chapter described the field of AAC, specifically the populations it is used with and how frequently school-aged children, who are the focus of this research study, qualify for this type of management. South Africa is a developing country with a rich CLD background, which makes it a unique context in which to provide AAC services. Government and school language policies were described with how this affects school and SLTs' practices when providing services. Services are limited due to few contextually appropriate resources such as materials and individuals to assist with interpreting, to name a few. Current SLT assessment and intervention practices were detailed together with ideal procedures that ensure CLD information is obtained

so intervention is appropriate to the child's language and family background which will facilitate AAC interventions to have the best opportunity to be successful.

CHAPTER 3

Research Methodology

This chapter explains the aim, participant recruitment and selection methods, data collection methods and analysis procedures used to explore the research aim. The reasons for the procedures and methods used are presented to explain the way in which the research study was completed.

3.1 Aim

To explore how multilingualism and culture are integrated into AAC services provided to school-aged children in the provinces of KwaZulu-Natal (KZN) and Gauteng, South Africa.

3.2 Objectives

3.2.1 To describe the methods SLTs use to obtain language and cultural information from parents of school-aged children who receive AAC services

3.2.2 To describe the procedures and methods SLTs use during AAC assessment and therapy with school-aged children who are multilingual

3.2.3 To describe how SLTs provide cross-linguistic and cross-cultural AAC services to school aged children

3.2.4 To explore the challenges of providing AAC services in a multilingual/multicultural context.

3.3 Research Approach and Design

A qualitative approach was used for this study as it focused on obtaining views and personal experiences from individuals (Denscombe, 2003). This approach was suitable as it allowed the researcher to gather insights about SLTs' practices when conducting AAC assessment and intervention with children who are multilingual and from CLD backgrounds. A phenomenological design was selected to obtain in depth, detailed information regarding parents' experiences and SLTs' practices when working with multilingual children from various cultural backgrounds (Hesse-Biber & Leavy, 2011; Patton, 2002). Phenomenology is an approach that is

subjective in nature rather than objective, where descriptions are interpreted to gain an understanding of the research area (Denscombe, 2003). The views and experiences obtained from participants allowed the researcher to better understand the factors, methods and procedures used when working with this population. The use of three sources of participant data allowed the researcher to triangulate the data.

3.4 Participants

3.4.1 Study Population

The study was conducted with two groups of participants, which are SLTs who provide AAC services and parents of school-aged children who receive AAC services, selected from two provinces in South Africa, KZN and Gauteng. Participants from different provinces allow the results of the study to better reflect South African SLTs' practice in the field of AAC, rather than if only one province was selected. A wider range of views and experiences could be explored from participants who come from different geographical and linguistic backgrounds. The main source of data in the study was obtained from SLTs and parent participants' data was used to triangulate findings collected from SLTs.

3.4.2 Participant Recruitment

The recruitment process for SLT and parent participants is explained below (refer to Figure 1).

3.4.2.1 SLTs

Lists of schools, institutions and private practitioners who employ SLTs were compiled from databases available from websites of the Department of Health and Department of Education, the South African Speech-Language Hearing Association (SASLHA) and non-governmental organizations (NGOs) for private practitioners, in KZN and Gauteng. The lists contained the following number of institutions: 44 KZN LSEN schools, 60 Gauteng LSEN schools, 70 KZN government hospitals, 38 Gauteng hospitals, 260 private practice SLTs and 3 NGOs. The researcher contacted these institutions to determine if SLTs were employed in these settings. This process revealed that SLTs are employed in 14 KZN LSEN schools, 19 Gauteng LSEN schools, 29 KZN government hospitals, 24 Gauteng hospitals, 260 private practice SLTs and 3

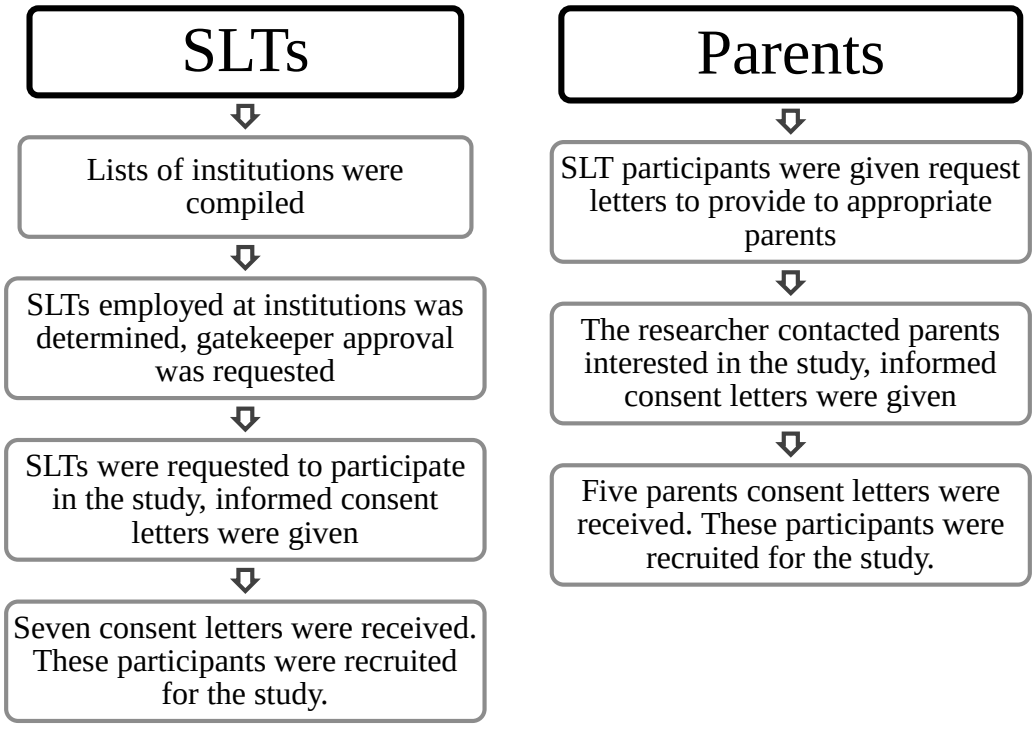

Figure 1. The process used to recruit SLTs and parents for the research study

NGOs. Letters which requested consent from the Departments of Education and Health in KZN and Gauteng, medical managers, hospital managers, school principals, the directors of NGOs and private practitioners were sent to obtain authorization to access SLTs employed in these institutions (refer to Appendices B-H). Telephone calls were made one week later to departments and institutions from which replies were not received, to determine if request letters were received by the institution and if not the letter was resent.

Once permission from relevant authorities was obtained, letters were sent to SLTs requesting their participation in the research study (refer to Appendix J). They were asked to fax or email their replies confirming their interest in participating in the study or contact the researcher so it could be collected from them personally. SLTs were asked to keep the information document provided to them and were given a copy of the consent letter they sent to the researcher.

Seven SLT informed consent letters were received for the study where the SLT whose response was received first was asked to participate in the pilot study. SLT participants were employed in different practice settings which included two in KZN LSEN schools, one in a Gauteng LSEN school, one in a KZN government hospital, two private practice SLTs and one SLT employed by an NGO.

3.4.2.2 Parents

SLT participants were given a letter (refer to Appendix I) to provide to parents of school-aged children they manage, who use AAC and are multilingual. The letter explained that their details would be given to the researcher for the purpose of contacting them to participate in the research study. SLT participants were given letters according to the number they indicated on their participant consent form, which were only in English as SLTs reported that all parents were proficient in English. Five parents responded to the letter which was sent out and agreed to participate in the research study (refer to Appendix K).

3.4.3 Sampling Technique

SLTs who practiced in the field of AAC and parents of school-aged children who use AAC were identified using purposive sampling (Leedy & Ormrod, 2013). Purposive sampling was used as the researcher required specific SLTs and parents who could provide valuable "opinions, knowledge, ideas or experiences" about the research topic (Gibson & Brown, 2009, p. 56; Leedy & Ormrod, 2013).

A small number of SLTs worked in the area of AAC (Beukelman & Mirenda, 2005) despite there being many SLTs practicing in Gauteng and KZN. This sampling technique was therefore appropriate as SLTs who were most suitable for the study were identified (Barbour, 2001; Denscombe, 2003). To ensure experiences from SLTs were represented equally in KZN and Gauteng provinces, an attempt was made to select an equal number of SLTs from each province, whose cultural and linguistic backgrounds vary.

Purposive sampling was used to select parents so a variety of language and cultural backgrounds could be represented. This technique also ensured parents who were contacted had a connection with SLTs who participated in the research study. All SLT and parent participants recruited for the study met the participant criteria, so individuals were not denied participation in the study. The criteria were met as children of parent participants were confirmed to be multilingual by their SLTs who provide them with services and parents confirmed this in the parent consent forms that they completed. A limitation of this sampling method is that it restricts the conclusions of a study to those who participate.

The process used to select SLT and parent participants is described in Figure 2 below, using the selection criteria described in Tables 1 and 2 respectively.

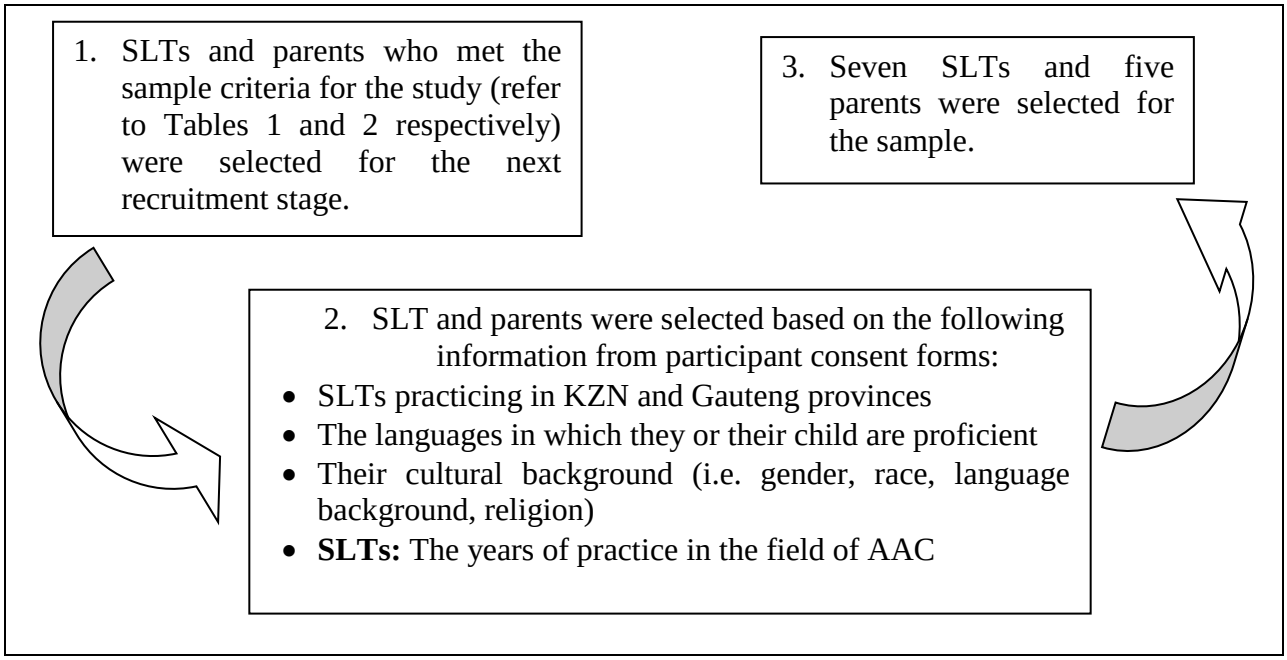

Figure 2. The process of purposive sampling used to select SLTs and parents for the study

3.4.4 Sample Size

The total number of SLT and parent participants in the research study was twelve participants, as this was within the typical range of five to 25 participants necessary to complete a phenomenological study (Leedy & Ormrod, 2013). The breakdown of SLT and parent participants who were involved in the research study is:

a. SLTs: Seven SLTs participated in the study where one of these SLTs participated in the pilot study.

b. Parents: Five parents participated in the research study, one of whom participated in the pilot study.

The SLT and parent who participated in the pilot study were used as participants in the main study as these were the only participants who used AAC in a hospital setting. The pilot participants were the first participants who agreed to participate in the research study. Inclusion of these participants allowed the results to be valid and reflective of SLTs' practice in all settings (Tredoux & Smith, 2006). Everatt (2000) explains that an assumption of all research is that the results represent a range of views from those practicing in the field. Due to this, it was important to include the pilot study participants' opinions and experiences in the study. Important features of the main study were completed in the pilot study (Thabane et al., 2010). The same data collection methods were used with all participants and areas of information used in the tools were not dramatically altered in a way that makes the pilot study results invalid. Areas pertinent to the research study were collected from pilot study participants and those who participated in the main study. The views of parents were primarily used to triangulate findings, so this limited the findings obtained in the study.

3.4.5 Participant Selection Criteria

The SLT inclusion criteria and rationale are provided in Table 1. In summary, they were that the SLT must:

3.4.5.1 be a qualified SLT, registered with the Health Professions Council of South Africa (HPCSA)

3.4.5.2 practice in KZN or Gauteng provinces of South Africa

3.4.5.3 have a minimum of 6 months experience practicing in the field of AAC and serve a child who uses AAC and is multilingual

3.4.5.4 provide services to children diagnosed with ASD, intellectual disability and/or cerebral palsy.

3.4.5.5 provide assessment and therapy services to school-aged children who used AAC at the time of the study

3.4.5.6 provide AAC cross-linguistic and cross-cultural services to a minimum of one child who uses AAC and is multilingual

3.4.5.7 provide AAC services to children between the ages of 5-12 years at the time of the study

3.4.5.8 consent to the researcher recruiting parents of school-aged children they manage, for the study.

The inclusion criteria for parents are detailed in Table 2, and were that parent(s):

3.4.5.9 were of children who were seen by participating SLTs and were multilingual

3.4.5.10 must be literate in at least one of the following languages: English, Afrikaans, isiZulu, isiXhosa, Setswana, Sesotho, Xitsonga and Sepedi.

According to Strode and Slack (2011) a 'parent' is an individual who is a child's guardian, takes care of a child daily, and provides them with financial support. A biological mother and father, grandparent and legal guardian are accountable for these responsibilities by law whereas a caregiver is not (Strode & Slack, 2011). Though South African law separates caregivers and parents, in everyday life, both are considered to have the similar or the same roles. This was the perspective of Marshall and Goldbart (2008) as they included as parents in their study grandparents, foster parents, and a child's primary caregivers.

Therefore, a parent was defined in this study as an individual who:

- Was a child's biological mother or father, maternal or paternal grandparent, legal guardian or primary caregiver

- Provided every day care to a child
- Interacted and communicated with the child daily
- Was known by the SLT managing the child, and had collaborated with him or her to support the child's progress.

Table 1

Participant Selection Criteria for SLTs

Selection Criteria and Rationale
1. *SLTs must be qualified and registered with the HPCSA.*
South African SLTs who graduated with a Bachelors degree have the theoretical and practical background in the field of AAC from their training at a tertiary institution (HPCSA, 2012) or as a SLT practicing in the field. The HPCSA curriculum guidelines (HPCSA, 2012) state that university training programs must equip students with the knowledge and clinical skills to provide culturally and linguistically appropriate assessment and therapy services to all clients, provide services which are appropriate in the South African context, and students must have the knowledge and skills to provide AAC services (HPCSA, 2012). During training, students have access to appropriate equipment and provide culturally sensitive services with the participation of family, to clients from various social and linguistic backgrounds (HPCSA, 2012).
2. SLTs must practice in KZN or Gauteng provinces of South Africa.
Six universities in South Africa offer degrees in Speech-Language Pathology- two in the Western Cape, two in Gauteng, one in KZN and one in Limpopo (Bowen, 2013). Gauteng and KZN are two of four provinces in South Africa where the NGO Interface, which provides AAC specific services, has branches two of which are in Gauteng province (Interface, 2010). This supports the possibility that more SLTs who practice AAC with multilingual clients and who have background knowledge of AAC would be identified in these two provinces. These provinces were also selected due to their proximity to the researcher and the ease of travel.
3. SLTs must have a minimum of six months experience practicing in the field of AAC and serve a child who uses AAC and is multilingual.
This criterion ensured all SLTs have practical knowledge in the field of AAC in order to have an understanding of this area to participate in the study and share their experiences.
4. SLTs must provide services to children diagnosed with ASD, intellectual disability and/or CP.
Each of these disorders are non-progressive in nature and includes different areas of limited functioning. Significant characteristics of each disorder are described below. • Children diagnosed with ASD have varying abilities in "cognitive, social, motor and adaptive" areas, with a specific area of difficulty being social communication (ASHA, 2006,

para. 3).

- Intellectual disability results in significant limitations in intellectual functioning and adaptive behavior in the areas of conceptual, communication, social and functional skills (Schalock et al., 2007).
- CP is a congenital neurological impairment which results in a child possibly having motor, perceptual, sensory, feeding and communication difficulties. A prevalence study in Northern Ireland completed for the period 1980-2001 revealed that of the 88% of children who had oral motor and communication impairments, 37% had communication impairments where 17% of these children were not able to communicate at all (Parkes, Hill, Platt & Donnelly, 2010). This indicates that children diagnosed with CP often have communication impairments.

Wormnæs and Malek (2004) investigated AAC practice of SLTs in Egypt and found the prevalent diagnostic populations to which intervention was provided were ASD, intellectual disability and CP. SLTs generated the same diagnostic population groups who most frequently received AAC services in two studies conducted in New Zealand and in the USA (Ryan et al., 2015; Sutherland, Gillon & Yoder, 2005). Due to these studies, these three disorders were selected to focus on in the study.

Population groups with hearing and visual impairments were excluded as the current study aimed to gain an understanding of how SLTs provide cross-cultural and cross-linguistic services to multilingual clients exposed to spoken languages and the cultural influences of these on assessment and intervention services. The development of language in these populations groups may differ if they use Braille and sign language (Vohr et al., 2012; Wilton, 2011), which would not be common AAC options that are used with children diagnosed with ASD, CP and intellectual disability.

5. SLTs must provide assessment and therapy services to school-aged children who require AAC, at the time of the study.

SLTs who practice in the field of AAC are more likely to be knowledgeable about AAC practice. This criterion ensured participants had the knowledge and experience to provide valuable insights into AAC assessment and intervention for children attending school who are multilingual.

6. SLTs must provide cross-linguistic and cross-cultural AAC services to at least one school-aged child who is multilingual.

SLTs who worked in the field of AAC at the time of participation in the study were more likely to have had current practical experience in providing services to a child exposed to two or more languages. This type of experience provided current data about cross-linguistic services. The cultural background of the child was not significant at this point of the study as multilingual clients were likely to come from a cultural background different to the SLT managing the child.

Selection Criteria and Rationale

Prospective participants were asked a set of questions as part of the consent letter to ensure they worked with multilingual children in languages in which they do not have optimal proficiency. This ensured SLTs selected for the study provided cross-linguistic AAC services. VanBiervliet and Parette (2002) discussed that SLTs and other health professionals do not take into account cultural factors that can impact families' implementation of intervention and therefore may affect the effectiveness of management. This indicates that though SLTs may have experience in working with children and families of various cultural backgrounds, their cross-cultural practice may not be optimal. Therefore exploring how cross-cultural and cross-linguistic services are completed by South African SLTs allowed these services to be enhanced and practiced by more SLTs.

7. *SLTs must provide AAC services to children between the ages of 5-12 years at the time of the study.*

The age range of 5-12 years included children who may have been exposed to and developed emergent literacy or literacy skills, depending on their speech and language abilities (Beukelman & Mirenda, 2005). Emergent literacy skills range from oral language skills to precursors of reading and writing such as phonological awareness and awareness of books (Lanter et al., 2012). The abilities of children with complex communication needs vary with each child's speech production, intellectual and motor skills, therefore AAC services aim to establish or enhance emergent literacy skills before literacy skills are targeted (Peeters, de Moor & Verhoeven, 2011). The inclusion of an age group where literacy skills are being acquired allowed valuable information to be collected as additional assessments, intervention techniques and system options can be used. Children younger than five years were excluded from the study as they were not considered to be of school going age, which begins in Grade R for children five years and older (South African Development Community [SADC] & Conference of Ministers of Education of the Africa [COMEDAF] V, 2011; South African Department of Basic Education, 2013).

8. *SLTs must consent to the researcher recruiting parents of school-aged children they manage, for the study.*

Parents are an important source of information during a case history interview and SLTs may consult them for information regarding a child's social, cultural, language, communication, medical history, and other significant information. Parents are also involved during AAC selection, initiation and implementation (Goldbart & Marshall, 2004). Due to this, parents were included in the study as they were another source of information to explore SLT practices. Therefore, SLTs were required to consent to the researcher accessing parents from their practice.

Table 2

Participant Selection Criteria for Parents

Selection Criteria and Rationale
1. Parents of children who were seen by participating SLTs and were multilingual
Parents were included in the study to make the results insightful and representative of practice which occurs in daily life. Parents are the only individuals, other than the child receiving intervention, who have received service from SLTs participating in the study. Due to this, parents are an independent and reliable source of information regarding SLT practice and the cultural and linguistic appropriateness of AAC services they received.
2. Parents must be literate in at least one of the following languages: English, Afrikaans, isiZulu, isiXhosa, Setswana, Sesotho, Xitsonga and Sepedi.
These languages were selected as they are the seven most spoken languages in Gauteng and KZN provinces (Statistics South Africa, 2012). Therefore, parents who were given participation and informed consent letters would most likely understand these languages.

3.4.6 Participant Description

A description of SLT and parent participants is provided below, as well as school-aged children they are associated with.

SLT participants (see Table 3) were all female and their experience in the AAC field ranged from 4 to 23 years. Two SLTs practiced in Gauteng and five in KZN, the settings in which they practiced include a government hospital, LSEN school and private practice. Five SLTs' were Indian and two were white. The first language spoken by all SLTs was English. One SLT was multilingual, as she communicated using English and Afrikaans. Four SLT participants reported that they have access to informal interpreters in their place of work. Three SLTs are employed by government schools for LSEN and three are employed privately by schools for LSEN as they also work in private practice settings. One SLT, who participated in the pilot study, worked in a government hospital.

Table 3

Description of SLT Participants' Language, Cultural and Employment Backgrounds (n=7)

SLT participant	Languages proficient in	Province	Practice setting	Years of AAC practice	Cultural information	
					Gender	Population group
A (pilot)	English	KZN	Government hospital	4	Female	Indian
B*	English	KZN	LSEN school[ɞ]	18	Female	Indian
C*	English	Gauteng	LSEN school[ɞ]	7	Female	Indian
D*	English	KZN	LSEN school[ɞ]	8	Female	Indian
E	English, Afrikaans	Gauteng	Private practice, LSEN school[ɟ]	4	Female	White
F*	English	KZN	Private practice, LSEN school[ɟ]	23	Female	White
G	English	KZN	Private practice, LSEN school[ɟ]	6	Female	Indian

* SLTs who had access to informal interpreters
ɞ SLTs employed by Department of Education
ɟ Private practice SLTs who worked in LSEN school settings

Parent participants (refer to Table 4) were only accessed from KZN, where five mothers participated in the study. Parents were African and spoke two languages proficiently, English and isiZulu. Parents were all employed and their children attended schools for LSEN, in which most SLT participants worked.

The children (refer to Table 5) SLT participants worked with were multilingual (exposed to two spoken languages) and diagnosed with ASD, CP and/or intellectual impairment. One child's use of AAC was confirmed by the SLT.

All SLT participants practiced cross-linguistically as children came from homes where isiZulu was spoken as well as English. As SLTs were not of African ethnicity and all parent participants were, SLTs worked cross-culturally. SLT and parent participants were distributed unequally between KZN and Gauteng provinces. This affected the range of individuals in the parent and

SLT samples obtained, as the language and cultural backgrounds of participants were not as varied, as anticipated.

Table 4

Description of Parent Participants' Language, Cultural and Employment Backgrounds (n=5)

Parent participant	**Languages proficient in**	**Province and employment status**	**Cultural information**	
			Gender, relationship to child	Population group
A1 (pilot)	English, isiZulu	KZN, employed	Female, mother	African
B1	English, isiZulu	KZN, employed	Female, mother	African
B2	English, isiZulu	KZN, employed	Female, mother	African
D1	English, isiZulu	KZN, employed	Female, mother	African
F1	English, isiZulu	KZN, employed	Female, mother	African

Table 5

Description of Children's Backgrounds who were related to SLT and Parent Participants

Children's parent	**Is her child multilingual?**	**Diagnosis**	**Uses AAC?**	**Population group**
A1 (pilot)	Yes	ASD	Yes	African
B1	Yes	ASD	Yes	African
B2	Yes	CP	Yes	African
D1	Yes	ASD, intellectual impairment	Yes	African
F1	Yes	ASD	Yes	African

3.5 Data Collection

This section describes the three data collection tools which were compiled for SLT and parent participants and how they were used.

3.5.1 Pilot Study

A pilot study was conducted as it ensured the content of the data collection instruments were understood by participants and the procedures to collect information for the study were

appropriate (Leedy & Ormrod, 2013). A pilot study was conducted over two weeks with one SLT who met the selection criteria, prior to the data collection phase of the study. The SLT selected to participate in the pilot study was required to write a journal for one week and participate in an individual interview with the researcher. During this time, the researcher contacted and emailed a questionnaire to one parent of a multilingual child to whom the SLT pilot participant provided AAC management. At the end of each stage of data collection, the SLT and parent were asked to evaluate the instrument used and the procedure which was implemented.

The SLT pilot participant was asked to evaluate the journal on the following areas (see Appendix L): the amount of time and frequency of writing journal entries, the appropriateness of the areas of discussion in journals, the ease of completing journals, the process of sending completed entries and journals to the researcher, gaps in the areas of discussion which the researcher should address and additional comments the SLT wanted to make. The SLT was asked about the following areas in a written format after the individual interview (see Appendix L): the clarity of the questions asked, the interview setting and researcher's manner of conducting the interview, the duration of the interview, additional areas which should be asked about in the interview, and additional comments. The written questionnaire was evaluated by the parent participating in the pilot study via a feedback form (see Appendix M) which asked about the following: the ease of answering the questions, the clarity of questions asked, the presentation of instructions and questions, the amount of time to answer the questions, the appropriateness of questions, and additional comments which they would like to make (Lancaster, Dodd & Williamson, 2004).

Feedback received from pilot study participants about amending data collection tools included that the SLT journal should provide a guide for SLTs otherwise writing was noted to be confusing as the SLT needed to refer back to the journal writing letter provided with the journal, to complete it effectively. The SLT suggested that the areas and subareas which would guide SLTs' writing should be recorded in the journal for easy reference for SLTs during completion of the journal. Feedback received by the SLT participant for the individual interview was that questions should be separated where possible to specify the linguistic and cultural areas which

needed to be discussed, as this would help SLTs to answer questions completely. To assist SLTs to provide accurate answers and understand questions posed to them, it was also recommended that SLTs be given a page to record key words from the question, to guide their thinking. All suggestions made by the SLT participant were applied to the data collection tools and to the process of using them.

Feedback from the parent questionnaire revealed that the format of how some questions needed to be answered was not straightforward (i.e. the last four questions originally in a table format). The researcher replaced these tables to have questions regarding each broad area to be addressed as separate questions. A topic which the parent indicated was not addressed in the questionnaire was areas besides the communication option, which affects how a child uses a communication option, such as the ability to listen to instructions, children who do not comply easily with boundaries and those who are not able to attend adequately to use communication options provided by SLTs. The researcher considered these areas important to the overall effectiveness of therapy and would be an area that speech-language therapy would address. Due to this, the researcher added the following question to the questionnaire, 'How does your child's communication option help him or her to function in his or her daily life?' This question addressed how the communication option provided by the child's SLT assisted them socially with interaction and communication, which are important areas targeted in therapy.

3.5.2 Data Collection Methods

The data was collected in three phases beginning with written journals, then individual interviews with SLT participants. The last phase required parents to complete questionnaires.

3.5.2.1 Phase 1: SLT Journals

The first phase of collecting data required SLTs to write journals about their experiences and practices in specific areas (see Appendix N). Entries were made over two weeks, after SLTs' interaction with children (Gibson & Brown, 2009) in a natural, every day setting (Hyers, Swim & Mallett, 2006). Journals provided an unobtrusive method of collecting descriptive data from participants (Berg, 2009; Hyers et al., 2006) and provided accurate perceptions of participants'

experiences (Gibson & Brown, 2009). Diaries, which were referred to as journals in this study, were used to collect information over a period of time about how SLTs felt they provided services which gave the researcher an understanding of their practice (Balogun et al., 2003; Nicholl, 2010). Journals reported information that was recorded on a frequent basis to the researcher about SLTs' practice in AAC with children from varied cultural backgrounds who were multilingual.

Criteria which guide how journals are used in research are scarce. Literature advised that guidelines for writing, keeping and submitting journals are flexible and could be specified by the researcher (Balogun et al., 2003). Nicholl (2010) explained that the time which participants kept journals must be carefully considered because it may affect "recruitment and response rates, [the] volume of data collected and subsequent analysis" (p. 18). Due to these considerations, SLT participants were asked to write in their journals over a two week period. This short period of time allowed some insights to be obtained from SLTs which were correlated and elaborated on by other methods of data collection (Balogun et al., 2003). SLTs who practiced AAC may see a few clients each week, therefore writing in a journal over two weeks provided the researcher with current and new information related to SLTs' management of different children who required AAC.

The researcher provided participants with a format of how to compile their journal either electronically or in a book, where participants were given a choice of which method they would use. Participants were asked to send their journals after the two week period to the researcher via post or email. If the SLT participants were located within reasonable proximity to the researcher, their journals were picked up by the researcher. The data gathered from the seven journals were analyzed to prepare for the second phase of data collection. Self addressed envelopes with standard mail postage were provided to participants to send completed journals to the researcher.

3.5.2.2 Phase 2: SLT Interviews and Field Notes

The second phase of data collection comprised of conducting individual interviews with each SLT participant. These interviews inquired and probed deeper into the analysed journal entries

participants provided, to clarify statements and obtain richer meanings and insights (Hesse-Biber & Leavy, 2011; Lichtman, 2006). As the study explored how SLT participants experienced and viewed multilingual practice and their cross-cultural provision of AAC services, interviews were an appropriate data collection method (Denscombe, 2003). Interviews were conducted in English for at least one hour, which is the minimum time for interviews take place (Hesse-Biber & Leavy, 2011).

English was used to facilitate individual interviews as all SLT participants were expected to be proficient in English, as they would have studied in one of the six tertiary institutions in South Africa which offer training in Speech-Language Pathology, where the main languages of instruction is English and Afrikaans (Ministry of Education, 2002). Six SLT participants were monolingual English speakers. The remaining SLT was bilingual and a second language English speaker, therefore SLTs participated in English. Another reason English was used was that it is the researcher's first language; therefore questions could be rephrased if requested by participants, and answers from SLTs would be understood so follow up questions could be asked. Conducting interviews in English therefore ensured that the results obtained would be consistent and accurate.

Interviews were conducted at participants' place of work as it was most convenient for them. The researcher and each SLT participant sat opposite each other for the interview. A Speed-Link model PDR-3 electronic voice recorder was used, with high sensitivity setting so better sound quality was obtained, in order for the interview to be transcribed and analyzed at a later time. The researcher wrote field notes to capture information which could affect the results obtained from SLTs.

Field notes were completed during and after the interview (Denscombe, 2003) and were used when the researcher observed important occurrences, such as the interview setting, participants' non-verbal behavior, points not addressed by participants that may have been an oversight which was significant for the study, and notes which were recorded during analysis of the data (Denscombe, 2003; Gibson & Brown, 2009; Hesse-Biber & Leavy, 2011). A common error

made when this data collection method is used is that observations regarded as important from the researcher's cultural and knowledge background are written, and conclusions based on this are reached prematurely without all factors and issues being taken into account (Hesse-Biber & Leavy, 2011). Therefore, these factors were considered when field notes were recorded, so all results and impressions were limited in bias.

3.5.2.3 Phase 3: Written Questionnaires for Parents

The last data collection phase was completed by sending questionnaires to parents of children using AAC, who SLT participants managed at the time of the study. Questionnaires were used with parents as it allowed information to be gathered from individuals from different language and cultural backgrounds, was easily administered at different locations and could be used at a low cost (Phillips & Stawarski, 2008). Questionnaires were provided to parents by the researcher via email, post or hand delivery and were self-administered. All five parent participants selected their questionnaires to be in English, as recorded on the consent forms received. Parents were asked to write their name on their questionnaires so it could be identified correctly when they were returned. Parents' names were kept confidential by the researcher as a letter-number code was used throughout the data analysis process and when study findings were reported.

3.5.3 Data Collection Instruments

The study consisted of three data collection instruments, each of which was used in one of the three phases of data collection.

3.5.3.1 SLT Journals (refer to Appendix N)

The SLT journals were completed over a two week period where SLTs wrote at least one entry addressing three areas in each entry. Journals were written with a prestructured format as it allowed the researcher to obtain specific, organized data that provided input from all participants on the same issues (Gibson & Brown, 2009). This structure aided the researcher in analyzing the information collected and ensured all data was consistent (Gibson & Brown, 2009). Participants were asked to write about their knowledge, experiences and practices in the following three areas: experiences of working cross-linguistically, management of a client who is of a different

cultural and linguistic background to the clinician and providing services to a client in two or more languages. Table 6 outlines the areas SLTs were required to address in their journal writing regarding AAC practice with children who are multilingual, about cross-cultural and cross-linguistic practice, as well as the motivation for these topics. These areas guided participants' journal writing as this may have reduced their stress, which improved their ability to respond (Balogun, Huff & Johnson, 2003)

Table 6

Description of and Rationale for Areas of Discussion in SLT Journals (see Appendix N)

Areas	Rationale
Experiences of working cross-linguistically in AAC	Insights into the challenges and solutions of working in a language and culture different from their own offered information that may guide other SLTs and professionals about how to meet this challenge.
Management of a client who is of a different cultural background to yourself (the SLT) Providing services in two or more languages to children and their families	SLTs' experiences about working in this context were explored. Balandin and Iacano's (1998) survey of Australian SLTs provision of AAC services revealed that SLTs felt their AAC skills were inadequate, therefore service provision in this area was not optimal. SLTs also reported that a lack of resources and funding caused AAC services to be rendered poorly in some cases. As South Africa is a multilingual and multicultural country, these comments provided information about why AAC services for children who are CLD may be limited or ineffective and suggestions for other SLTs could be offered.

3.5.3.2 SLT Interviews (refer to Appendix O)

The second instrument was an interview schedule used by the researcher to conduct interviews with each SLT participant. After the information obtained from all the journals was analysed, individual interview schedules were compiled to gain clarification and a deeper understanding of the relevant information (Hesse-Biber & Leavy, 2011). Interview schedules were constructed based on each SLT's journal entries, on common issues which were noted between SLT participants, as well as areas which required exploration based on literature in the field. Table 7

lists the common questions asked to all SLTs and describes their motivation and Table 8 lists some examples of individualized questions which were presented to SLT participants. Semi-structured interviews were conducted, as this format allowed the researcher to ask predetermined questions (which were derived from the analysis of journals and literature), accept new information expressed by participants during the interview (Hesse-Biber & Leavy, 2011), and allowed the researcher the option of rephrasing questions (Lichtman, 2006).

Table 7

Description of and Rationale for Common Questions asked during SLT Interviews (see Appendix O)

Questions	Rationale
1. Describe how you conduct parent or caregiver interviews when they speak a different language to you and are of a different cultural background. 2. Describe how questions you ask to two families in a case history interview- one who has a SIMILAR and the other a DIFFERENT cultural and linguistic background to you, compare.	Interviews and other methods used to obtain case history information are essential in an assessment to gather information about a client, and is a critical tool for SLTs. Essential information to obtain when working with children who are CLD should concern the family and child in order to best serve them functionally and appropriately. Areas to be considered are the child and family's preferences and goals, the cultural and linguistic background (Wyatt, 2012) of the child and family, cultural views about daily events and routines (Heien et al., 2012), parents' insights into their child's abilities and personality (Marshall & Goldbart, 2008) as well as their socioeconomic background (ASHA, 2004b). Insights into SLTs' experiences of conducting interviews with parents about multilingual clients who required AAC provided information about SLTs interviewing strategies, how they obtained case history information, difficulties they encountered, approaches they used to obtain cultural information and other information related to this area.

Questions	Rationale
3. Describe the adaptations you have made during AAC assessment and intervention for multilingual clients who are from a cultural background that is different from you.	Cultural differences between families and professionals have caused negative perceptions and outcomes in terms of collaboration and intervention success (Kalyanpur & Rao, 1991; Harry, 2008). In the South African context where language barriers between families and professionals also present a challenge, the outcomes of intervention also depend how this barrier is dealt with (Pascoe et al., 2013). As SLT participants in the study have experienced working with children who are CLD, ways in which they have managed language and cultural differences were obtained.
4. There are two parts to this next question. 4a) Firstly, describe the types of AAC systems and devices that you have recommended or used with multilingual school-aged children. 4b) Now based on your answer, explain the factors which guided you to select these AAC systems and devices for your clients.	Answers to these questions explored how AAC services for children who are CLD are provided and reasons for this. Many factors affect decision making which is child-specific, such as their abilities, SLTs' expertise, and financial constraints (Alant, 2007; Sutherland et al., 2005). Therefore, SLT participants provided reasons for their practice in the South African context in relation to which resources they have access.
5. Describe how you have created or adapted communication systems and devices to be culturally appropriate for multilingual clients.	It is valuable to know the processes, methods and techniques SLTs used to identify, adapt or create devices or systems for clients that are culturally and linguistically appropriate, and those which are used in more than one language. This indicates how SLTs practicing in the AAC field manage similar children in this CLD setting.
6. Describe how the resources you have in your place of work allow you to provide AAC services effectively to culturally and linguistically diverse school-aged children.	CLD literature reported that materials, resources and services provided to this population are inappropriate (Bevan-Brown, 2006; Bullock et al., 2013). SLT responses indicated context specific issues which affect adequate assessment and intervention services as participants are experienced in this area, and therefore may suggest ways resources are used to fit in the

Questions	Rationale
	South African context.
7. Describe the factors that POSITIVELY influence and facilitate your management of multilingual clients. 8. Describe the factors that NEGATIVELY influence your management of multilingual clients.	Information regarding the facilitators and barriers for SLTs managing this population indicated where practice needs to be improved and possible solutions and pitfalls that SLT colleagues may use or identify to ensure better outcomes when managing this population.
9. Describe how you have developed your skills in order to provide AAC services to culturally and linguistically diverse children.	Methods and procedures used by professionals to serve CLD populations are not effective and appropriate (Wu & Chu, 2012). This suggests that SLTs may not be exposed to working with this population group during their training. Their skills must therefore be developed in other ways, which answers to this question provided.
10. How can AAC courses and speech-language therapy practice improve to serve culturally and linguistically diverse school-aged children in the future?	Internationally, tertiary training for SLTs is not effective in addressing the specialized skills required to provide AAC services (Dietz et al., 2012; Siegel, Maddox, Ogletree & Westling, 2010), which includes CLD practice. SLTs who practice AAC with children who are CLD could inform SLTs and professionals of ways to complete this.
11. Tell me about some general areas you consider valuable in your experience with working with multilingual children.	Families and children from CLD backgrounds bring different life experiences and practices into the professional-family relationship (Parette & Brotherson, 2004), which need to considered during management. Therefore this question allowed SLTs to explain areas which they encountered during their practice with children who are CLD that may not occur frequently or be well known.
12. Discuss how you plan your sessions and manage your time when providing services to culturally and linguistically diverse children.	Providing services to children who are CLD and their families can be more intensive as background information, assessment, adaptations to procedures and constant review of the services provided needs to occur, which also needs to be individualized to each family (Blue-Banning et al., 2004; Harry, 2008). Therefore,

Questions	Rationale
	SLTs experiences in this area may serve to facilitate better outcomes when managing children who are CLD.
13. Describe your experiences of working with parents and family who are introduced to using AAC.	McNaughton et al.'s (2008) study to determine parents' perspectives of their children's experiences with AAC revealed challenges with selecting appropriate devices, how families and professionals collaborated, the information sharing process and how the device was used in the community and over the long term. SLTs' view of collaborating with parents identified South African specific constraints and issues which need to be planned for to better serve families and to sustain the efficacy of management.
14. Describe your experiences of how parents and family members have transferred AAC to their daily contexts and home environment. 15. Describe how you involve parents in therapy and your experiences in carrying this out.	Some principles of family centered management include good communication between families and professionals, equal and shared roles, respect for the other person and the child being served as well as trust (Blue-Banning et al., 2004; Parette & Brotherson, 2004). Kummerer (2012) expands on principles of family centered management by suggesting ways it can be made appropriate for families who are CLD. These principles guide professionals on facilitating family focused management and ensure interventions are appropriate to families' culture and language background. Therefore this question explored how South African SLTs adopt these principles to ensure effective management.
16. Do you have any additional comments you would like to make about what we have discussed or about your practice with children who use AAC?	This concluding question allowed SLTs to discuss new points or explain areas mentioned previously and provided an opportunity for a total discussion of this area to be completed as any areas not asked by the researcher could be mentioned by SLT participants.

Table 8

Description of and Rationale for Individualized Questions asked during SLT Interviews (see Appendix O)

Questions	Rationale
1. With your experience of practicing AAC with multilingual and multicultural learners, how have you been able to facilitate transfer of your therapy goals to the learner's home context?	Contexts in which children are brought up and frequently interact provide the foundation for their linguistic, social and cultural development and learning experiences (National Association for the Education of Young Children [NAEYC], 2009). As the research study focused on SLTs AAC management of school-aged children, the communication contexts to which these children are frequently exposed are the home and classroom. Therefore questions about how AAC is generalized to these contexts were asked.
2. Let's talk about your collaboration with educators and how therapy aims are generalized to the classroom context.	
3. Explain how two or more languages are integrated in your AAC management of multilingual learners.	Multilingualism is a resource to children who interact naturally in CLD settings (Souto-Manning, 2006). Due to this, parents, educators and SLTs should respect this diversity and facilitate its use in different contexts (Souto-Manning, 2006). Therefore, this question explored how SLTs facilitate multilingualism in their daily practice with learners who are CLD and exposed to two or more languages in their communication contexts.
4. Due to the wide range of languages in which learners at the school you work at communicate, describe the resources you have that assist you with assessing and managing learners with special educational needs who use AAC.	South African SLTs' cross-linguistic practice with children who are CLD affects the resources SLTs use to conduct case history interviews and assessments (Barratt et al., 2012). As most available speech-language therapy resources are developed overseas (Pascoe & Norman, 2011) and for typically developing children, it cannot be used in AAC assessment with South African

Questions	Rationale
	children. It is therefore important to explore the contextually appropriate AAC assessment and therapy resources used by SLT participants which meet the demands of their clinical settings.
5. How does the medium of instruction at your school, English, influence the language of therapy when a child is a first language non-English language speaker?	South African schools for LSEN often use English as the language of learning and teaching (Barkhuizen & Gough, 1996; Lemmer et al., 2006) which conflicts with the language background of some children who are CLD. ASHA (2004b) states that best practice involves SLTs' integrating all the languages to which a child is exposed in management. Therefore this question explored how SLTs provide linguistically appropriate services to children who are CLD in the school context, which may only support the use of the school's LoLT.

Note: A few examples of individualised questions posed to SLT participants are presented in the above table.

3.5.3.3 Written Questionnaires for Parents (refer to Appendix P)

The written questionnaire was given to parents of children SLT participants managed. Parents were asked questions regarding their experiences of SLT services, specifically how cultural and linguistic services were provided to their child (refer to Table 9). Denscombe (2003) stated that questionnaires could be used to investigate the "opinions, attitudes, views, beliefs [and] preferences" of participants (p. 146). As parents have experienced their child's use of AAC in different social situations with different individuals, information regarding their child's ability to interact using techniques facilitated in therapy or provided by the SLT was obtained. This information was valuable in exploring SLT assessment and therapy practices.

Twelve open ended questions and two closed ended questions were asked and instructions and reasoning for the questionnaire were explained to ensure parents understood the importance of

their views in the study (Leedy & Ormrod, 2013). Open ended questions allowed participants to express themselves independently and in detail (Denscombe, 2003). Questionnaires were self-administered, written and completed in English as all parents reported this as their language preference on the letters of consent collected previously. The language used in all versions of parent questionnaires was simple, clear and easy to understand, therefore technical words and words with imprecise meanings were not used as it may cause confusion (Leedy & Ormrod, 2013). The questionnaire was edited based on feedback received from the parent participant in the pilot.

Table 9

Description of and Rationale for Questions in the Parent Questionnaire (see Appendix P)

Questions	Rationale
1. Describe how the Speech-Language Therapist completed the interview to gather information from you when your child was assessed (that is, how they interacted with you).	As many referrals received by SLTs are not based on a thorough knowledge of the child's language background (Roseberry-McKibbin & O'Hanlon, 2005) and cultural norms and linguistic factors are important considerations which could facilitate or hinder the interview and management process (Olivos et al., 2010), these areas need to be discussed during parent/caregiver interviews. The initial interview with a child's family also provides SLTs with an opportunity to understand whether parents think their child has a communication difficulty, the reasons behind their difficulty, and ensures parents understand the assessment and intervention process to be completed (Roseberry-McKibbin & O'Hanlon, 2005; Blanchett, Klinger & Harry, 2009). Therefore, parents' description of their experiences indicated how SLTs considered language and culture when gathering information from parents as well as the background information obtained to guide management.

Questions	Rationale
2. Please write questions you think Speech-Language Therapists should ask during assessment about a child, their family and everyday life, as well as their language and cultural background.	These questions provided insights into aspects that parents perceived as important to obtain during the assessment phase. VanBiervliet and Parette (2002) state that rehabilitation professionals require additional knowledge and awareness of the "social and cultural aspects of the AAC assessment, prescription and implementation process" (p. 131). Parents' insights into the areas mentioned in the question indicated how SLTs' assessment could be connected with the client's social, family and language background.
3. Describe the communication option(s) your child uses at home and school.	This question provided the researcher with an insight into communication systems and devices being recommended and used with children with severe communication impairments in the South African context as well as how and when they are used as the option used may change according to the demands of a situation or environment.
4.1 Describe how you were given information about your child's communication option(s). 4.2 Describe the assistance you have been provided to help your child use their communication option(s). Describe difficulties you have experienced with helping your child use their communication option(s). 4.3 How could the difficulties mentioned above have been reduced to enhance your child's use of their communication option(s)?	Families' views, concerns and feedback of suggestions made by SLTs are critical aspects to family centered management which allow SLTs to manage the family holistically and increases the probability that intervention will be effective (Crais, Roy & Free, 2006; Parette & Brotherson, 2004). Discussions with family about difficulties encountered during the management process and an equal role sharing, trusting relationship ensure parents and SLTs work collaboratively (Blue-Banning et al., 2004). The questions alongside address the type of relationships families and SLTs have and also probe the effectiveness of the systems and devices used by the child and family who are CLD.
5. Explain whether the communication option your child currently uses is appropriate with: • Languages spoken in your home • Languages spoken outside of your	Garcia, Loureiro, González, Riveiro and Sierra (2011) stated that contextual factors and individual characteristics are not usually considered during AAC management which causes low use or abandonment of the assistive devices, systems and

Questions	Rationale
home, which your child listens to or communicates in • The cultural practices of your family	techniques given. This question explored the benefits parents perceived the AAC device and/or system provided to their child, and whether management is culturally and linguistically appropriate.
6.1 Did your child's Speech-Language Therapist ask you which language you want therapy to be conducted in? Circle your answer. **YES NO** 6.2 Does your child use more than one language to communicate with his or her communication option? Circle your answer. **YES NO** 6.3 Please explain what features of the communication option allow your child to be successful or not when communicating with others.	This question provided insights into the supports and barriers which affected the use of AAC methods and techniques for clients and their families. Alant et al. (2006) indicated that some issues around AAC are not well understood, possibly causing poor clinical outcomes in these areas, such as multimodal communication. Answers to this question revealed the areas that SLTs could improve their services in, to be more appropriate to the South African context.
7. Describe how does your child's communication option helps him or her to function in his or her daily life	A critical area to focus on in collaborative, family centered intervention is the outcomes noted in the home environment and in contexts the child frequently interacts (Parette & Brotherson, 2004). The aim of intervention for all children is a positive change in their daily life, therefore this question explored the outcomes of intervention and whether parents observed changes to the child's functioning in their home contexts.

3.6 Data Analysis

Thematic analysis was used to analyze the research data in five consecutive stages. This type of analysis allowed the researcher to analyze the data at increasing levels of specificity (Hesse-Biber & Leavy, 2011), to explore the similarities, perspectives and participants' (SLTs' and parents') feelings of the area researched. Analysis did not begin with formulated codes but developed during the stages described below (Hesse-Biber & Leavy, 2011). A hierarchical approach was used to analyze the information gathered from the different sources. Refer to Figure 3 below for a summary of the data analysis process.

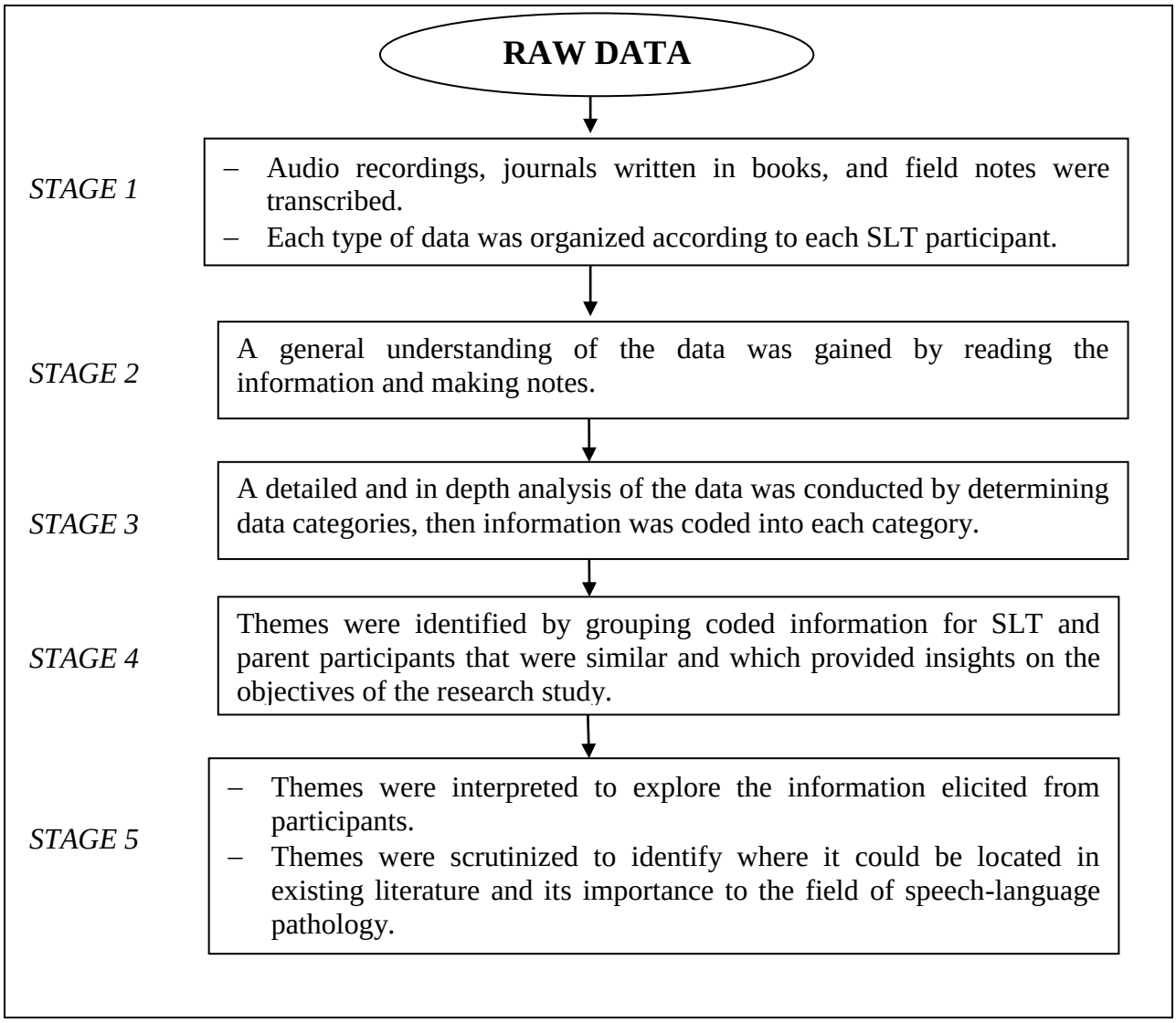

Figure 3. A description of the data analysis process used in the study

Stage One

This stage consisted of transcribing data sources into electronic format. Therefore journals written in books, audio recordings of SLT interviews, verbatim field notes and parent questionnaires were transcribed by the researcher from their sources (Henning, 2004). The transcription of journals was completed first as these entries finalized the interview schedules, which were required for phase two of data collection. SLT journal entries, interview transcripts and parent questionnaires were then grouped according to each participant, to enable easier

analysis. Each set of transcribed data was given a reference number in order to keep the information ordered during analysis and each line in all transcribed data was numbered individually to assist with referencing excerpts accurately when reporting the data (Denscombe, 2003). Sorting the different types of data in this way allowed appropriate interpretations to be made about each group of data, which could then be integrated to make clear deductions from the entire data set later in the analysis process (Creswell, 2009).

Stage Two

All the data sets were read to understand the overall ideas and meanings of participants' views (Creswell, 2009; Henning, 2004). Notes about general thoughts the researcher had during this time were recorded on computer as field notes, which were later used in the analysis process (Creswell, 2009). Formal meanings of the research data, which would be given by codes, were not produced yet, as this commenced once a global understanding of the data was obtained (Henning, 2004). The main aim of this stage was to gain a thorough understanding of the information collected before deeper analysis occurred.

Stage Three

The researcher completed a detailed analysis of all three sets of data by coding it into similar categories, after which the meanings within each category were determined (Creswell, 2009). The coding system initially entailed labeling paragraphs, sentences or phrases of information as "major topics, unique topics" and other (Creswell, 2009, p. 186), which is a process named open coding (Denscombe, 2003). Codes were infrequently given to single words as the meaning needed to be specific (Henning, 2004). As these codes were applied to sort the data, new codes were identified and included in the process of coding all the data (Creswell, 2009). Coding of data was completed on a computer, by highlighting text in colors representing different codes (Henning, 2004).

Once all the information was coded, descriptive labels were created for each code to determine relationships between categories, then similar categories were assimilated or interrelationships noted (Creswell, 2009). Label names which were given to each code were based on literature in

the area, and not based only on the researcher's perceptions of the data. At the end of stage three, all the data was coded and labeled in a system where relationships and major ideas were established.

Stage Four

Once the stage three coding was completed, the researcher generated themes by grouping related codes (Denscombe, 2003; Henning, 2004). Creswell (2009) explained a theme as a heading which discusses multiple views from participants, that is supported by quotations and evidence. Themes were identified if similar perspectives or issues were brought up by more than one participant, which increased the researcher's confidence in the themes raised (Denscombe, 2003). Once themes were identified, relationships between themes were made to provide a detailed understanding of all the data obtained (Henning, 2004).

Stage Five

Themes established in stage four were interpreted in relation to literature in the area. Henning (2004) proposed questions the researcher should ask at this final stage of analysis to ensure adequate insights have been discerned and relations made. Some of these questions included: How are the themes related in meaning?, What is missing?, How do the themes address the research questions?, How do all the themes relate to my background knowledge of the topic? What additional analysis must be completed? (Henning, 2004, p. 106). These questions helped the researcher identify gaps in knowledge, new findings, solutions or alternatives to problems, and areas of further study. Specific themes which related directly to the research objectives were selected and scrutinized to determine if they correlated with existing models, paradigms and practices in the field of speech-language pathology or related fields (Ryan, 2006). This deep level analysis allowed more general conclusions about the findings to be made as well as interpretations of the data in relation to the research objectives (Ryan, 2006).

3.7 Trustworthiness

Trustworthiness in qualitative research describes the degree to which the research findings are a true reflection of the area explored (Krefting, 1991). The researcher increased trustworthiness throughout the study by completing procedures to make sure the findings and conclusions are as accurate as possible. The following methods were used in the present study to ensure trustworthiness.

- The researcher rechecked the transcribed interviews to ensure transcription of SLT participants' statements were correct (Creswell, 2009).
- Codes in the data analysis phase of the study were consistent throughout the coding process to ensure the meanings were constant. This was ensured by defining the codes during the process of coding and comparing statements in the same code category to ensure it matched the code definition (Creswell, 2009).
- Member checking was used. The data provided in SLTs' journals was analyzed by the researcher then confirmed and investigated more thoroughly during individual interviews. SLTs were asked to identify if the researcher's interpretations of their views matched their intended meanings (Shenton, 2004). This ensured the researcher's analysis of the participants' journal entries was accurate (Creswell, 2009).
- Information which did not conform to the themes of the study or which was negative was reported on (Creswell, 2009). This increased the credibility of the results as the responses obtained from different individuals were not always similar (Creswell, 2009; Shenton, 2004). If such results were identified, they were reported in the results and discussion section.
- The three data sources obtained from SLTs and parents were triangulated to provide a stronger support for themes and conclusions made in the study (Creswell, 2009; Denscombe, 2003). SLT journals were triangulated with the information gathered from the individual interviews, and parents' perspectives were correlated with the SLT data obtained.

3.8 Ethical Considerations

The researcher completed an online ethics course to ensure proper conduct and practice throughout the research study (refer to Appendix A). The following ethical standards were upheld throughout the research process:

Autonomy: The researcher respected the choices of participants in all regards, including decisions to take part in the research study and to terminate their participation at any stage (HPCSA, 2008). SLTs and parents were entrusted to make informed decisions without coercion or reprimand.

Confidentiality: Personal information regarding the SLT and parent participants remained confidential when the study findings were compiled, when data was stored upon completion of the research study and when the data was destroyed (HPCSA, 2008). SLTs faxed or emailed their replies or replies were collected by the researcher. Participants' confidentiality was achieved by using a coding system to mark the SLT and parent informed consent letters. All data sources were coded, with a letter system for SLTs and a letter-number system for parents, which originated from the SLT code.

Protection from harm: The participants (parents and SLTs) were at no risk of "physical, psychological, social, economic, or legal harm" (Creswell, 2009, p. 89). The researcher ensured SLTs were safe, and not placed at physical harm, as interviews were conducted at SLTs' place of work. If this could not be arranged, another suitable venue was organized which was in a public place with security. Participants were not at risk for other types of harm due to the ethical considerations taken in the study, which included informed consent, confidentiality, disclosure and autonomy.

Disclosure: The researcher provided prospective participants with information regarding the research study and possible benefits and non-benefits they would receive in the information document (Appendices J and K). Prospective participants were able to contact the researcher and research supervisors if further information regarding the research study was required. Information provided to prospective participants was in a language and at a level which could be easily understood. The appropriateness of the level of language used was determined from the pilot study. All participants selected for the study were given a copy of the signed consent form.

Duty to other health professionals: The researcher respected "other health care practitioners" and did not cause participants (e.g. parents) to doubt the competency or professionalism of SLTs who participated in the research study (HPCSA, 2008, p. 8). This was ensured by explaining to parents on the parent information and consent document (Appendix K) and parent questionnaire (Appendix P), that questions asked did not reflect how SLTs should be providing services. The questions asked allowed the researcher to explore the services which were currently provided by SLTs in the field of AAC. The results of the current research study will be shared among colleagues who are interested in the study findings.

Approval from a relevant ethical board: Before participants were recruited for the study and the data collection phase of research began, the relevant ethical committees/organizations approved in writing the commencement of the research (HPCSA, 2008). This indicated that the research study met the ethical standards set by the University of KwaZulu-Natal Human and Social Sciences Research Ethics Committee (ethical clearance number: HSS/1278/013M, refer to Appendix Q).

Dissemination of research findings among participants: SLT participants were provided with a resource CD at the end of the research study. The CD contained the research dissertation which provided SLT participants with feedback about the study findings. Parent participants received a brochure summarizing the study aim, objectives, research methodology, study findings, limitations and contributions of the study to the current body of literature.

Storage of research data: The information collected and stored by the researcher was accessible only to the researcher and research supervisors. Data saved on a computer was password protected. At the end of the study, transcribed data, computer documents and audio recordings were stored at the University of KwaZulu-Natal for five years, after which it would be destroyed by shredding and/or deleting.

3.9 Study Procedure

The following steps were completed to conduct the study and prepare the dissertation for submission.

1. The research proposal was sent to the School of Health Sciences Research Ethics and Higher Degrees Committee.

2. The research proposal was sent to the Human and Social Sciences Research Ethics Committee for ethical approval.
3. Ethical clearance was obtained from the Human and Social Sciences Research Ethics Committee (ethical clearance number: HSS/1278/013M).
4. Permission from gatekeepers was required to access SLTs at their institutions. The following institutions were sent permission letters (refer to Appendices B-H): Department of Health, Department of Education, organizations which specialize in AAC (i.e. NGOs) and private practice SLTs. SLTs who work in private practice were asked if they were interested in obtaining more information about the research study.
5. Once permission letters from the above mentioned organizations and SLTs in private practice were received, letters requesting SLTs to participate in the research study (refer to Appendix J) were provided to these institutions or private practice SLTs.
6. Letters of consent from SLTs who were interested in participating in the study were obtained. Purposive sampling was used to select seven SLTs to participate in the study, one of which participated in the pilot study.
7. Parent information letters (refer to Appendix I) were given to SLT participants to give to parents who met the selection criteria for the study, and SLTs were notified of their selection to participate in the research study. Parent participants were contacted by the researcher to complete the consent form (refer to Appendix K) once the researcher received their contact information.
8. The pilot study was conducted with one SLT and one parent.
9. The data collection phase of the study was conducted. During this period, journals and interviews were completed by each SLT participant and parent questionnaires were concluded.
10. Data analysis was completed by using thematic analysis to analyse the transcribed data obtained from SLT and parent participants. Thereafter the research report was compiled.

3.10 Summary

This chapter described the process of exploring the study objectives by detailing the study design, methods of data collection and analysis procedures. A phenomenological design together

with the use of journals, individual interviews and written questionnaires allowed the researcher to obtain data which were used to answer the research question critically and focus on issues relevant to the South African context.

CHAPTER 4

Results and Discussion

The study results are presented and discussed in this chapter. The data gathered from SLTs through journals and individual interviews, and written questionnaires completed by parents, were analyzed using thematic analysis. Seven SLTs and five parents participated in the study which explored SLTs' provision of AAC services to multilingual children who are CLD attending schools for LSEN. Thematic analysis of the data transcripts revealed four main themes (refer to Figure 4) which explored the objectives of the study.

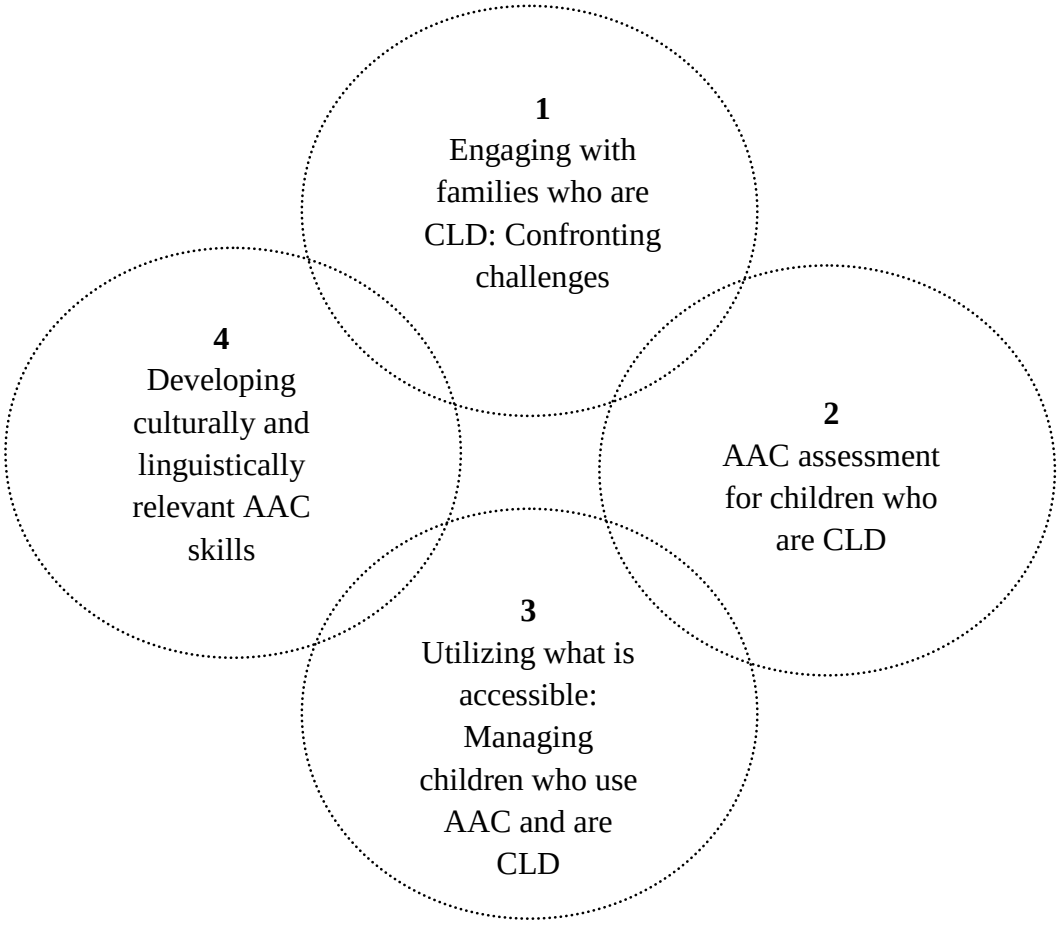

Figure 4. Major themes reflecting participants' experiences of working with school-aged children who use AAC and are CLD.

4.1 Engaging with Families who are CLD: Confronting Challenges

Gathering background information and communicating with families who are CLD are challenging areas of practice but are integral to appropriate and effective management of children who use AAC and who are CLD. SLT participants described that they gathered case history information from families who are CLD using general questions, which were not well suited to obtaining significant information from this population. SLT participants' awareness of this issue facilitated discussion of strategies they used to interact and communicate more effectively with families who are CLD. This allowed families' background to be explored comprehensively to inform the management process. Figure 5 illustrates these subthemes, which will be discussed further below.

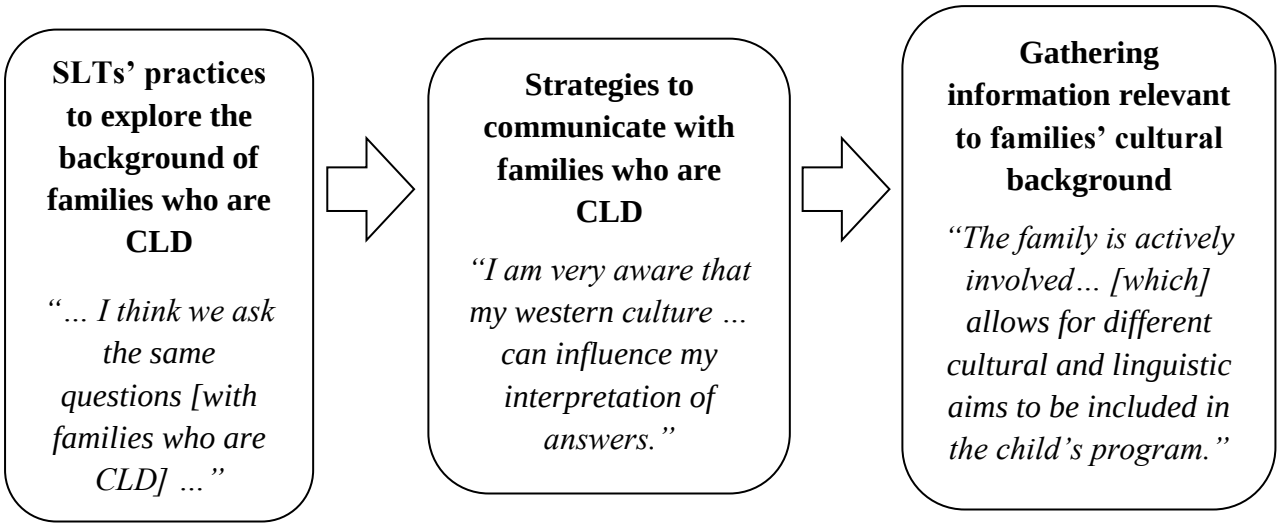

Figure 5. Subthemes for Theme 1- Engaging with families who are CLD: Confronting challenges

4.1.1 SLTs' Practices to Explore the Background of Families who are CLD

Case history forms or questionnaires guided SLT participants when collecting information from a child's family prior to or during an interview. Most SLT participants revealed that they used standard case history forms and questionnaires for all families. Therefore, these tools were not adapted prior to assessment for families who are CLD. The case history forms used by SLT participants were in English and reflect topics from the dominant "western" culture. This was deduced from SLTs' responses as participants reported that they gained information about families' cultural practices when they specifically asked them or during the course of intervention when families' cultural practices and beliefs influenced the child's

progress. This practice by SLTs did not take into account the multicultural and linguistically diverse backgrounds of families and children. The strategies SLTs employ to assess families should be culturally and linguistically appropriate (ASHA, 2007) and this includes adapting case history questionnaires to optimize the information provided, to inform SLTs of families' background. A family's cultural background was explored by SLT participants after a parent provided cultural information. When a SLT was familiar with a culture, they adapted questions automatically based on this. This demonstrates that SLTs often rely on families to disclose their background. SLT participants do not overtly explore the cultural background of families, which may cause shortfalls in management where interventions are ineffective or unfamiliar to families. SLT participants described that parents share information about their views on disability, western medication and use of traditional medicine. These areas are fundamental to how AAC is acquired by the family and child as well as the level of success which could be expected (Blanchett et al., 2009; VanBiervliet & Parette, 2002). This shows why SLTs need to individualize their case history protocols and tools to adequately engage with families who are CLD.

SLT A	**… we have a standardized um case history questionnaire and we just follow that and we don't actually take into consideration culture, uh, when doing a case history interview, ... maybe sometimes the parents may, uh, like divulge a certain little bit of cultural information, so in that respect I'll follow through and probe questions in that regard, …**

Case history tools which remain consistent for all families and children, irrespective of their language, cultural, developmental and communication background do not recognize the significant impact these factors have on effective AAC management. Case history procedures which SLT participants used allowed them to obtain information about children's birth, family and communication history, children's current communication methods and functional needs, previous therapy the child has received, the family's concerns, expectations of therapy and challenges they experience. Two parent participants described the need for SLTs to understand their views of their child, the composition of their family and their child's experiences and needs.

Question	**Please write questions you think Speech-Language Therapists should ask during assessment ...**
Response from Parent B2	**Do you understand your child's needs?, do you believe that your child is a normal person, that can do anything that you do?**

These areas were confirmed by other researchers as crucial to discuss with families as they provided SLTs with initial insights into areas of therapy which were important to families (King et al., 2008; Schon et al., 2008). This can affect long term AAC use. Further areas which SLTs should explore during the case history gathering process for children who qualify for AAC services are the influence of and assistance provided by extended family members to the immediate family, the language background of the family, the status and use of the language or languages by the family, the family's belief systems about intervention and the family's perceptions of the cause of their child's condition (King et al., 2008; Schon et al., 2008; VanBiervliet & Parette, 2002).

The questions SLT participants asked family about during case history interviews were limited to 'general' communication methods used by children. AAC specific questions may not be asked by SLT participants due to language barriers, which cause more complex questions to be harder to communicate (Deumert, 2010) without the assistance of an interpreter. Another reason is that SLTs' practice with children and families who are CLD is poorly associated with families' cultural background, as they frequently do not consider families' values, language and cultural practices (Blanchett et al., 2009). This will lead to SLTs not providing family centered intervention, as they are unaware of how AAC is used in children's home context, which will affect the generalization of AAC intervention.

Parent participants' views regarding culture and how it was integrated into SLT participants' management did not indicate that their cultural practices were not considered. Two parents described that respect and greeting were expected of all children in the family and was upheld by the child when they used their AAC communication option. Communication styles in terms of the form of address, the behavior expected in social situations, requests for clarification and how issues should be expressed (Lemmer et al., 2006) may not have been discussed by parent participants due to social validation bias. Bornman, Sevcik, Romski and Pae (2010) explained that parents display this bias when questions are answered in a manner

they think is more socially acceptable, and thereby do not provide their real views about a topic. Parent D1 explained that she and her partner discuss their child's communication option. This is likely to take place without the SLT's input, as SLT D described that she has limited contact with parents. This feedback from SLT D and parent D1 provides an example of poor communication and collaboration regarding AAC intervention, which may cause management to be ineffective as poor carryover and generalisation to the home context can occur. Research has also revealed that families perceive professionals as experts and therefore feel that professionals should make the decisions and guide the decision-making process (Bailey et al., 2006; Woods et al., 2011). SLT E discussed that in her experience, she encountered parents who have this perception of SLTs which results in parents taking a passive role in therapy.

SLT E	**… in terms of the culture between therapists and parents, if you are a professional you do your job and parents find it difficult to expect that they also have a role in therapy. So …, [parents feel] if you do your job as a professional the[n they] shouldn't have to do their work. It's very difficult for them to understand that they have a role to play as well.**

This view conflicts with established family-centered practice, which emphasizes that SLTs need to explicitly discuss with families their views of their child's communication and functioning so it can be integrated in the management plan (Blanchett et al., 2009). Collecting specific AAC background information is crucial for the decision making process (Parette & Brotherson, 2004) which affects the success of AAC management. Language intervention, including AAC management, is more effective when cultural and linguistic adaptations are made which are specific to the child and family (Kummerer, 2012).

4.1.2 Strategies to Communicate with Families who are CLD

The different settings in which SLT participants work is where they often engage with children and families who are CLD and communicate in languages in which SLTs are not proficient. This practice with children who are CLD has been documented in other South African studies (Deumert, 2010; Watermeyer & Penn, 2009) and internationally (De Lamo White & Jin, 2011; El-Amouri & O'Neill, 2013; Scanlan & Zisselsberger, 2015). Effective communication with families who are CLD is facilitated by SLT participants using different

strategies to reduce language barriers. These strategies are important to implement during cross-linguistic and cross-cultural interactions. These strategies (refer to Figure 6) and their applications with families who are CLD are discussed below.

Figure 6. Strategies SLTs use to communicate with families who are CLD

Questions asked by SLT participants during a case history interview are open ended so parents could elaborate on the general areas asked. Families' responses allowed SLTs to ask follow up questions, which provided information about areas SLTs may not have initially explored as well as monitor the meaning of information shared. Secondly, verification strategies used by SLT participants to engage meaningfully and as accurately as possible with families who are CLD included rephrasing, repeating and clarifying answers provided by the

family. This allowed SLTs to confirm family members' understanding and ensured that questions are answered in its entirety.

Another strategy used by SLT participants is that other professionals serve as a cultural broker, as they are familiar with a family's cultural background. They assist to ensure that the questions asked and information obtained are appropriate and meaningful (Penn & Watermeyer, 2014). The next strategy SLT participants implemented involved their construction of language, where simpler terminology and sentence structure was used, and questions about specific areas ensured important background information was obtained.

SLT E	**I often rephrase parents' answers in summary for them to alter my interpretation, if it is inaccurate.**

Watermeyer and Penn's (2009) study revealed similar strategies to verify understanding and ensure communication accuracy, to those described in the current research study. Their study explored how pharmacists who spoke English and Afrikaans determined Setswana-speaking patients' understanding of instructions for taking antiretroviral medication. The strategies used included clarifying misunderstandings, demonstration, retelling information to verify understanding, closed ended questions, monitoring patients' verbal and non-verbal behaviors for misunderstandings, and repeating instructions during an interaction and on subsequent visits (Watermeyer & Penn, 2009). Penn, Frankel, Watermeyer and Müller (2009) also discussed how SLTs use these strategies when interacting with adult clients with acquired communication disorders. Therefore, the current research findings show that these verification strategies are practiced by SLTs and other health professionals in the South African CLD context.

Three SLT participants reported that they speak their first language, English, when completing case history interviews, as they found most families they interact with can understand or communicate in English, especially when it was simplified to ask about specific topics. SLTs observed that parents understood them accurately from parents' verbal responses and actions. This practice was also described in other South African research studies, such as Deumert (2010), in the area of cross-linguistic communication in CLD settings.

SLT C	**Ok, so um generally what I've found is that … sixty percent of [parents] … know [a] bit of English you know. So it's enough to conduct like a case history and … they pick up on the word. If you say "Road to Health" ah, you know "clinic card" or "birth certificate" you you can get the information and even the report and things.**

Communicating in English ensured SLTs asked families appropriate questions, but affected SLTs' understanding of responses when families could not respond in English. Families may feel discouraged by this practice as SLTs cannot understand them and they feel insignificant in the management team (Hart et al., 2012). The information families provide is therefore limited to what SLTs can best understand, which may not be related to culture as this is more abstract and may be harder for SLTs to comprehend. This causes a gap in the information sharing process which is crucial to facilitate effective AAC services (King et al., 2008). This practice is an option which may be used though, if SLTs cannot access an informal or trained interpreter.

The next strategy SLT participants use to communicate with families and children who are CLD is visual aids used in conjunction with speech in SLTs' dominant language, i.e. English or Afrikaans. Communication boards, documents and pictures promote parents' understanding and offer SLT participants a consistent method to convey questions to families. El-Amouri and O'Neill (2011) reported that nurses working in multicultural government and private hospital settings in the United Arab Emirates also used visual aids. The visual aids developed by nurses in El-Amouri and O'Neill's (2011) study included pictures, diagrams, videos, translation books and dictionaries. Similar visual aids were also mentioned by SLT participants in the current study. South Africa is unique in terms of its linguistic and cultural diversity, socioeconomic distribution and political heritage, all of which influence the development and use of resources by SLTs (Pascoe & Norman, 2011; Pascoe et al., 2013). Standardized and contextually appropriate resources have not yet been developed for all languages and backgrounds of children managed by SLTs. Therefore communication boards, pictures and real objects used by participants are suited for the South African context as they can be adapted to any context and family, and these methods use resources easily available to SLTs. Visual aids were noted to be used less often than

interpreters in the current study and by El-Amouri and O'Neill (2011), as misunderstandings can occur if visual representations are not culturally relevant. The issues raised by families may also not be explored by SLTs as both individuals cannot ask questions of each other. Visual aids should be used to supplement interactions when informal interpreters are available.

Individuals who assist SLT participants with interpretation are untrained, as trained interpreters are not easily accessible (Garrett al., 2008) especially in South African SLT practice settings (Penn, 2015). SLT participants discussed that individuals who assist with interpretation are professionals such as educators, colleagues who are SLTs and physiotherapists; or non-professionals such as cleaning staff, kitchen staff, administration staff, a child's facilitator, class assistants and family members. Informal interpreters were possibly accessed more often by SLTs than trained interpreters as they were present in contexts in which SLTs worked and they did not charge for their services (Meeuwesen, Twilt, ten Thije & Harmsen, 2010). As interpreters are required frequently and financial resources are limited for SLT participants, the appropriateness of interpreter services needs to be considered according to their training background.

The role of interpreters who assist SLT participants is to communicate information from children and family members, which is in a language different from those SLTs understand and speak (ASHA, 2004a). Interpreters also inform SLT participants about a family's cultural practices and guide some SLTs on aspects of planning language and culturally appropriate therapy. Interpreters are required for these purposes and during assessment, diagnosis and treatment to ensure effective and appropriate service provision (Garrett et al., 2008). Communication breakdown between SLT participants and families was noted to occur more often with SLT participants who worked in schools for LSEN and in government hospitals as opposed to SLT participants who worked in private practice settings. A similar situation was documented by Deumert (2010), who found that health professionals in government hospitals in the Western Cape also experienced poor communication with isiXhosa speaking patients, who were not proficient in the professionals' languages, which were English and Afrikaans. In Deumert's (2010) study, informal interpreters such as nurses, cleaners, security guards and family members were accessed when communication between the professional and family was limited.

SLT C	**In the past or even currently I have had to employ the services of … class[room] assistants or the educator to assist me with the assessment of the learners. This has worked well and I have conducted more accurate assessments in this manner. Something that has also helped me … was conducting my speech therapy groups … with the class assistant. The class assistant or educator would usually be proficient in two or other languages that the learners were proficient in and would assist me with my sessions and therapy plan.**

Though informal interpreters served as integral supports to interact with children and families who are CLD, the reliance on an individual who was unfamiliar with the AAC assessment and intervention process was not ideal for SLT participants. This could cause inappropriate translation of complex issues and concepts which are related to the speech-language pathology field (Garrett et al., 2008). The inclusion of a person who may not be regularly involved in AAC management was described by SLT participants as creating a barrier to collaboration between SLTs and families. Meeuwesen et al. (2010) stated that patients often view informal and professional interpretation services as negative to their relationship with a professional. This is due to the inclusion of an external individual to the team, who may be unfamiliar to families (Penn & Watermeyer, 2014). Though parents in the current research study did not comment on SLTs' cross-linguistic practices, poor family compliance was reported by all SLT participants and the use of interpreters may contribute to this.

SLT E	**Also, training caregivers is difficult and time consuming when translation is required. Therapist-parent and therapist-caregiver relationships are difficult to judge and foster with a middle-man providing translations.**

Terminology, ethical issues regarding use of informal interpreters and poor development of the patient-nurse relationship were issues raised in a study based in KwaZulu-Natal which explored nurses' communication with isiZulu speaking clients (Engelbrecht, Nkosi, Wentzel, Govender & McInerney, 2008), which are similar to issues raised in the present study. When individuals who interpret are non-professionals or untrained interpreters, ethical issues of confidentiality, the quality of service provided and breaching of cultural customs must be considered (Engelbrecht et al., 2008). In addition to terminology and ethics, nursing students

who participated in the study reported that isiZulu-speaking peers felt they were unfairly used when asked to assist with interpretation (Engelbrecht et al., 2008). This is important for SLTs to consider if they frequently use staff in their work setting who are not employed for this role. Due to these disadvantages of using informal interpreters, SLTs use other approaches in addition to interpreters to interact with families and children who are CLD.

The next approach SLT participants described to manage language barriers is that they developed their proficiency in languages they did not speak. Some participants reported that learning other languages is an important skill as SLTs can be self reliant when interacting with families who are CLD, especially when an informal interpreter is unavailable. When SLTs interact with parents in their first language, SLTs better engage parents and allow them to interact with SLTs, which enhances the likelihood of effective management. Learning a new language is crucial for professionals to best serve their clients in a rehabilitation and advocacy manner, but the process of learning a new language is slow (Deumert, 2010).

SLT G	**Language barriers are always a challenge however I am able to use basic isiZulu skills.**

When an interpreter is available, SLTs who developed basic knowledge of their clients' language listen to translated questions and answers produced by families and the interpreter to ensure accurate translations are provided. As most SLT participants are monolingual English speakers who attempt to learn their clients' languages, this method allowed SLTs to provide linguistically sensitive services.

4.1.3 Gathering Information Relevant to Families' Cultural Background

Culture is an aspect of family centered practice, which is one evidence-based model used to manage families and children (Bruder, 2000; Parette & Brotherson, 2004) in the field of speech-language pathology. Families' cultural background was crucial to the type of assessment and intervention processes implemented by SLT participants. Culture was significant for SLT participants as it affected families' beliefs and values, the languages spoken, the family structure and individual roles, communication intent as well as families' implementation of therapy. Due to this, SLT participants stated that cultural information needs to be discussed explicitly at the outset of management and throughout intervention.

Participants indicated that though this needs to be done, it is usually not planned for. Rather it is explored when it becomes crucial to intervention and is usually more important to certain team members, such as the educator and SLT.

Family centered practice was noted from SLT participants' descriptions to not be effectively implemented, which is a similar finding identified by other researchers (Bruder, 2000; Parette & Brotherson, 2004). Culturally significant areas which are not frequently explored by SLT participants include identifying families' needs and expectations for their child, assisting the family to implement therapy and contextualizing intervention to be appropriate to contexts in which the child interacts (Woods et al., 2011). One parent participant confirmed the previous statement that SLTs need to find out their expectations for their child and two parent participants indicated that respect and politeness markers are always expected of their children, irrespective of their communication abilities. These cultural practices are therefore important to consider when providing family-centered intervention.

SLT E	**Um, to be honest it it's not something that we specifically talk about. It's not something that we plan usually as a team. It's something that happens … almost… as part of the process. It's very, ah, unconscious, you see. So we always talk about the different languages that the children are exposed to, the background um as part of the team and usually when we're planning for the assessment or after we've assessed separately.**
Parent A1	**[Three] magic words, [He]llo, please, and thank you are used, a child can't be involved in adults conversation unless they are just casuals ones, …**

Participant E identified SLTs and educators as the only professionals who engage with families to obtain cultural information as they are concerned with the long term learning and communication outcomes of children, which are closely related. Educators target crucial learning areas that are linked to children's age, the sequence of development and children's contexts and environments (NAEYC, 2009). The SLT participants who collaborated closely with educators reported that these areas are typically discussed and collaborated on. Other professionals who interact in a team approach, such as Occupational Therapists and Physiotherapists, have targets which are based on children's physical status, access to

environments and completion of daily activities. Areas targeted by Occupational Therapists and Physiotherapists can be generalized by the child without skills being facilitated directly in children's daily social contexts and environments (Egilson, 2010). Therefore, the roles of different professionals may have established this perspective by SLT E.

Obtaining cultural information directly from families was harder for SLT participants than collecting information related to families' language background. This may be due to the range of areas culture comprises, which may differ between various subcultures (Cohen, 2009). As culture is a concept which is specific to every family and is not commonly discussed between individuals in any routine or social context, this area is usually elaborated on when asked about explicitly. As SLT participants do not frequently ask families for cultural information or do not focus on it enough, ineffective and inappropriate management is provided (Blanchett et al., 2009) as SLTs make the socially dominant culture more significant than families' culture.

Cultural competence is an important aspect of service SLTs need to improve over time in a manner congruent to the cultural and linguistic populations they work with (ASHA, 2004a). Cultural competence is developed by SLTs identifying if a culture is collectivistic or individualistic in nature, how individuals of different social standings interact within that culture, the style of communication, the value of time and goal setting (Battle, 2012). Analysis of the research data revealed that SLT participants may not enhance their cultural competence in their daily practice as two SLT participants described that while completing journals for this research study, they became aware that their cross-cultural practice with children who are CLD could be improved. Therefore this study allowed SLTs to realize ways to better serve children and families who are CLD who use AAC intervention, which is a valuable outcome of this research. Cultural competence may only be improved by SLT participants when different or unfamiliar cultural backgrounds are identified. As SLTs often manage children from CLD backgrounds, practice can be enhanced if SLTs are cognisant of their cultural competence.

SLT E	**So recently I did a home visit … because generalization was a big issue. … And it was very interesting to find [my] impression of the family and everything that we'd spoken of was very different when the whole family was being in their home context. … And I think that it's because I didn't actually put enough emphasis on the family- on how important their culture and linguistic variables are. So they didn't feel that that information was worth sharing, and I didn't encourage it enough, which means that we had a gap in therapy for a very long time.**

Five SLT participants asked families about their daily routines, the number of family members in the home and their roles, family's expectations for therapy (Srinivasen et al., 2010), how a child's home is structured, the languages the child is exposed to, the language background of the family, the family's interests and hobbies, and the appropriateness of AAC methods which SLTs recommend. The obstacles which prevented SLT participants from exploring families' cultural background comprehensively are their large caseload and time constraints. Due to these unavoidable influences affecting service provision, it is crucial that SLTs discuss with families the importance of communicating to them about issues impacting therapy, concerns they have or changes they implement in therapy. This will allow families and SLTs to improve and individualize intervention to ensure better outcomes.

4.2 AAC Assessment for Children who are CLD

AAC assessment is influenced by the settings in which SLT participants work. SLT participants' assessment of children who are CLD is completed using a wide range of practices in terms of the contexts in which assessment is completed, the methods employed, the materials used and types of collaboration employed with other professionals (refer to Figure 7). These subthemes will be explored in the sections below.

4.2.1 Assessment Context

Observation of children in their daily communication contexts provided SLTs with valid information regarding children's communication skills and the targets which children needed to achieve (Bagnato, McLean, Macy & Neisworth, 2011; Parette & Brotherson, 2004). This is referred to as an ethnographic (Saenz & Huer, 2003) or authentic (Bagnato, 2005) assessment

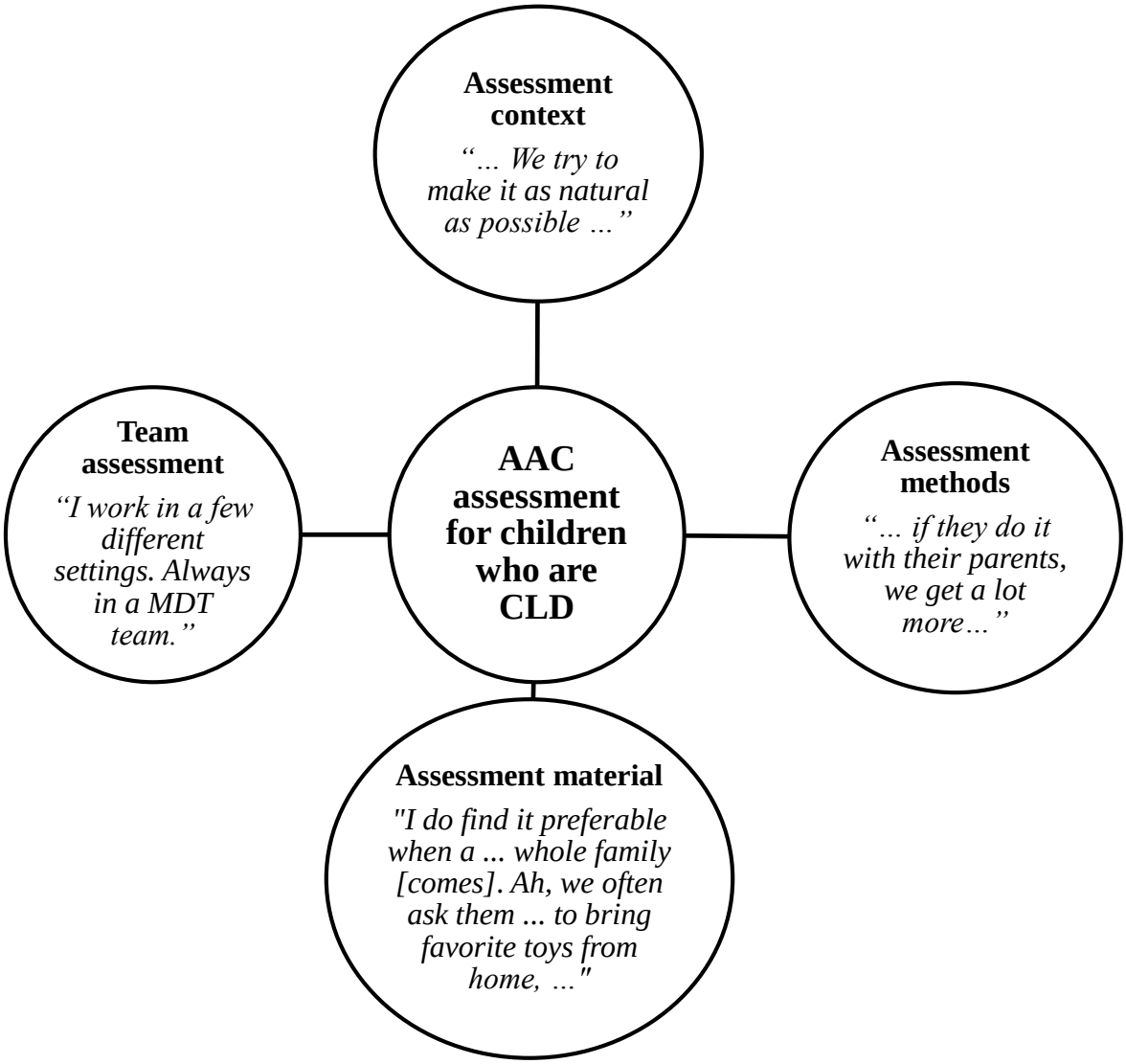

Figure 7. Subthemes related to Theme 2: AAC assessment for children who are CLD

and can be completed by using an ecological inventory where the child's setting, communication partners and communication opportunities are identified (ASHA, 2004b). Structured observation where the SLT designs naturalistic contexts in which the child interacts to elicit communication behaviors can also be used (Norbury, 2014). Two authentic assessments were used by SLT participants, which were classroom based and home based assessments. Norbury (2014) described school and home based authentic assessments as informative assessments, which provides SLTs with areas to target that are based on the child's needs and capabilities. Classroom observation was used by school based and private SLT participants as the class themes, educator's expectations and communication

opportunities could be determined by the SLT and used as aims for intervention. This allowed intervention targets to be functional and meaningful to the child and educator.

SLT C	**I I think what [is] also nice is to do like a classroom observation. It's very important to actually know what's happening there. … Cause you can just be pulling out that child week after week into your therapy room and doing a certain kind of activity ah but you actually don't know what's happening there.**

Classroom based assessment is a type of authentic assessment procedure which measures a child's communication and functional skills in relation to the curriculum and the child's performance in this context (Bagnato et al., 2011; Paul, 2004). This assessment allowed SLTs to identify what areas to target in management and how best to facilitate targets in the appropriate context (Bagnato et al., 2011). Home based assessment is another type of authentic assessment procedure (Bagnato et al., 2011) which was used infrequently by participants but is significant to gaining insights into a child's functioning and family routine. Home based assessment was used by SLT E only and allowed her to directly observe a child's interaction and communication in a natural and unobtrusive setting. She reported that a parent expressed her gratitude to her for taking the initiative to complete a home visit, which was noted to foster a more positive attitude from the family regarding therapy and schooling.

SLT E	**The therapeutic relationship was fostered by therapy being extended into home-based services. This aided the family's positive attitude towards therapy … [with] the parents expressing relief … and appreciation that the therapist was willing to come to the home.**

Home-based assessments could also help SLTs to determine extraneous factors which may affect intervention and provide an understanding of the child's home environment to shape future assessment and intervention. In the field of inclusive education authentic, performance-based assessments are considered critical in assessing children with complex communication needs (Calculator & Black, 2009; Jackson et al., 2000). Possible reasons why authentic assessments were used by few SLT participants in the study are limited time and

cost constraints, as well as the location of a family's residence which may not be easily accessible (Bagnato et al., 2011) as well as approval from management. The need for home-based assessment is valid in the South African context, so SLTs should motivate for practicing this method of assessment.

4.2.2 Assessment Methods

SLT participants did not discuss a variety of methods which were used during AAC assessment for children with complex communication needs. One SLT participant mentioned the use of videos by family members to record a child's interactions at home which allowed SLTs to observe behaviors which were not noted in the therapy setting. The participant used videos primarily as a means of seeing the child's communication in other contexts and to examine behaviors which were not directly observed. Bagnato et al. (2011) described how computer-based technology, such as video and photographs, are implemented to carry out authentic assessments when SLTs could not personally observe a child's performance in different settings. Other SLTs could possibly use videos in assessment more as cell phones and other recording devices are accessible to many parents. In addition to the purpose described previously, videos can also be used to gain insights into families' home contexts, patterns of interaction and different communication acts the child is involved in.

SLT E	**The other thing that we ask again is that they take videos of stuff before they come, or if we do an ongoing assessment- only sort of two or three sessions- that something that the child didn't do in the session but we really need to see that the mother has exp- has expressed happened, that we ask them to take videos of it at home. Which is quite an easy thing because most people have a video, a video on their phone.**

Valid AAC assessment methods for children who are CLD which were discussed in the literature but were not frequently used or mentioned by SLT participants included completing a capability and constraints profile, device trials, using performance-based assessment tasks, using checklists to record SLTs' and families' observations, and assessing symbol systems and access methods which were suitable to children's abilities (Beukelman & Mirenda, 2013; Dietz et al., 2012; Hart, 2009). As SLT participants practiced generally in all clinical areas of speech-language pathology, these AAC specific methods were not used by them often. This

was also found by Dietz et al. (2012). Therefore, they may not be as familiar with AAC specific assessment tasks. Access to a range of AAC options and materials to complete assessment tasks may not have been available to SLTs due to limited financial resources and they may not have been able to loan devices from AAC users they worked with previously or from NGOs.

4.2.3 Assessment Material

Standard AAC protocols for assessing school-aged children are hard to develop as assessment methods and materials need to be appropriate to children's diverse physical and intellectual skills (ASHA, 2004b; Dietz et al., 2012). Additionally, children who are CLD and are assessed for AAC represent a subpopulation that require SLTs to consider children's cultural and linguistic background and complete necessary adaptations. Informal procedures were used by SLT participants to complete communication assessments because they were most appropriate for children who are candidates for AAC and are CLD. Standardized tests are inappropriate for these children's language background and the typical language development of the population on which they have been tested (Teoh et al., 2012). Due to these limitations, when standardized assessments were used by SLT participants, they were used qualitatively to guide SLTs on areas which needed to be assessed or for resources which could also be used for children who have complex communication needs.

SLT E	**So a lot of … the a-assessment … is very informal. I don't use a lot of standardized assessments just because they are not standardized on the population I am working with. Um, and if we do use anything partially standardized or normed, um, I add a lot of informal observation with it.**
SLT C	**I think what's nice is the informal assessments as opposed to the formal assessments. We have both, but informal is much easier, you get to see what the child can understand from real objects and therapy, ah, stimuli.**

A study which explored the assessment techniques of general practice SLTs and clinical specialists in AAC revealed that general practice SLTs frequently used standardized or informal communication assessment procedures without considering the child's functional communication skills (Dietz et al., 2012). Alternatively, AAC specialists focused on the

child's communicative competence using different AAC options, and information regarding the child's language skills was gathered by family reports and from assessments completed by other professionals (Dietz et al., 2012). The practices of these two groups of SLTs indicate that SLTs in the current research study initially focused on the communication skills of the child and thereafter provided AAC options to meet their communication needs. Dietz et al. (2012) emphasized that SLTs should assess the child's use of an AAC option at the time of assessment to obtain more functional outcomes for the child and family, and continue modifying AAC options over an extended time as part of the functional assessment. Functional outcomes should be the goal of AAC management for children with complex communication needs, which is initiated through a holistic assessment (Dietz et al., 2012; Johnston et al., 2003).

Informal assessment procedures used by SLT participants involved a range of methods which could be used over a prolonged duration and were completed in different communication contexts (Stow & Dodd, 2003). Communication assessments completed by SLT participants used real objects and toys brought from home, which allowed the assessment context to become more comfortable for the child and increased the potential of eliciting more realistic communication behaviors. A study conducted in a rural town in Kenya equipped families with materials to implement home-based AAC intervention (Bunning, Gona, Newton & Hartley, 2014). These materials included real objects, an object board, pictures cut from food item packaging, and communication boards which displayed pictures of real objects and familiar people (Bunning et al., 2014). These contextually relevant items and pictures ensured stimuli were familiar and culturally appropriate to the family and child. Similarly, SLT participants used real objects during assessment to increase the appropriateness of assessment to the child's background. One SLT mentioned that the tasks and activities completed during assessment are facilitated by parents, as this puts the child at ease to communicate more naturally.

Using real, familiar objects and family members to facilitate assessment is regularly completed by SLTs (ASHA, 2004c). These practices allow SLTs to accommodate assessment procedures for children who have culturally and linguistically diverse backgrounds as family members become facilitators, supports and communication partners for their children (King et al., 2008). Introducing familiar aspects of a child's surroundings to an unfamiliar setting

encourages more realistic behaviors from the child, which helps SLTs complete a valid assessment. One parent participant reported that she never had direct contact with the SLT, possibly due to her child receiving SLT services in a school setting where parents are usually less involved (Egilson, 2010) due to work commitments and financial constraints. In this case, SLTs need to find other methods to communicate and interact with parents. This will be discussed further in subtheme three.

4.2.4 Team Assessment

Team collaboration for children using AAC is considered the most appropriate way to implement management (ASHA, 2004b). Collaboration between SLT participants, families and other professionals during the AAC management process occurs due to the various needs of the child with which they work (Bailey et al., 2006; Calculator & Black, 2009). SLT participants collaborated with other professionals and families using a multidisciplinary team approach, though SLT E reported a transdisciplinary approach was always intended. Multidisciplinary team collaboration involves professionals implementing services in their own scope of practice and they interact on a formal basis whereas transdisciplinary collaboration occurs when team members share roles, learn from each other and communicate using informal methods (Sheehan, Robertson & Ormond, 2007). Transdisciplinary practice is the goal when collaborating in a team with families (Batorowicz & Shepherd, 2011) as SLT participants found that more ideas are generated when confronted with a challenge or new circumstance and interprofessional learning occurs, which influences how professionals practice.

SLT E	**I work in a few different settings. Always in a MDT [multidisciplinary team] team. Usually … the aims for it needs to be transdisciplinary. It doesn't always happen.**
SLT F	**A team approach of educators and professionals, with varied multicultural and multilingual backgrounds, and active parent involvement allows for successful and effective services to be provided for the children [in] families [who speak] in two or more languages.**

Two SLT participants reported working in a transdisciplinary team consistently during case history taking and one SLT during classroom-based intervention and during joint planning and review of children's Individual Educational Developmental Programs (IEDPs). A parent participant also confirmed that parent-SLT meetings took place. Classroom-based intervention and compiling IEDPs were also identified in the literature as being completed using a transdisciplinary approach (Calculator, 2009). These activities may have been prioritized to be completed within a team as the case history interview provided the initial insights into a child's communication abilities and personality, their family and their aspirations, needs and concerns. This type of co-ordination also allowed professionals and families to assist each other in identifying, interpreting and understanding cross-cultural interactions which take place in a language SLTs may not be familiar with. These are all critical foundations which need to be addressed, to be effective in AAC management as well as other areas of SLT practice such as managing children with cleft lip and palate.

Louw, Shibambu and Roemer's (2006) study explored South African families' cultural perspectives regarding involvement in a cleft lip and palate team. Families were from six of the nine South African provinces and the researchers concluded that development of team members' cultural competence and awareness skills facilitated better collaboration with families. Therefore transdisciplinary management is an effective approach to develop team members' cultural competency. Classroom intervention may have been implemented within a team as all professionals need to aim for a child to progress, learn and develop skills in this context. As all aims need to culminate in positive change in the classroom, this context is most efficient and functional for the child's progress. A joint planning process in developing an IEDP is important as it ensures all team members are in agreement with intervention aims and that all team members can implement the plan.

Hunt et al. (2002) conducted a transdisciplinary team-based intervention study in inclusive primary school settings in San Francisco, USA. Monitoring procedures of observation of children's performance, consistent team meetings and implementation of support strategies in children's daily communication contexts caused an increase in children's initiation of communication, classroom participation and reduced use of the support strategies at the end of a seven month period. The researchers did not disclose the linguistic and cultural backgrounds of children and team members involved in the study. The positive gains noted

from management indicated that the strategies were successful, but the degree of success could be better determined by looking at the cultural and linguistic dynamics of professionals and children involved in the management. This study indicates how team collaboration can be implemented to facilitate positive gains in LSEN who use AAC. Important factors from the study which facilitated the implementation of transdisciplinary collaboration were regular meetings, monitoring children's performance in their communication contexts, and understanding and implementing the IEDP in team members' different settings.

In the current study, SLT participants reported that a multidisciplinary team approach is used most often due to team members' time commitments, other work responsibilities and the needs of families. These reasons indicate why multidisciplinary team management of children using AAC is commonly realized (Moonsamy & Kathard, 2015). The members of teams in which SLT participants work assist and support each other during case history interviews by being a scribe, conducting the interview, serving as an interpreter and clarifying or revising cultural views or interpretations not perceived by other team members (Huer, Parette & Saenz, 2001). The SLT participants working in teams who use this collaborative method assess a child individually with the family's participation and once all assessments are completed, the team collaborates on the findings obtained. This practice by SLT participants represents how they have adapted their practice to the constraints presented by environmental, time and resource factors.

Parent and educator involvement in the AAC team has been identified by SLT participants as most important to effective intervention. The classroom context provides SLTs and educators with opportunities to integrate language with academic and literacy skills, areas which both professions have important roles in implementing and which are crucial to children's academic success (Mophosho & Dada, 2015). This allows other team members to be accountable for AAC implementation and its effectiveness (Calculator, 2009). Educators were identified as crucial team members who work with SLT participants as outcomes are affected by educators' understanding of how AAC is used, its importance for the child and discussing with SLTs the challenges with implementing it in the classroom. Additionally, SLT participants discussed that they need to ask educators about their learning goals, assessment standards and the class layout to integrate these in their intervention plans.

SLT B	**I think parental involvement is very important AND (emphasis) having the … educator involvement. … To have … teacher awareness of AAC and [for them to understand] the value of AAC is very important.**

Parent and families' involvement in the team is crucial to ensure valuable outcomes (Huer et al., 2001), but SLT participants noted that this was hindered by language barriers and having an incomplete understanding of the child's background. The generalization of AAC intervention to home can be best facilitated when professionals consider families' values and beliefs (Calculator & Black, 2009) and when joint decision making occurs (Olivos et al., 2010). Parent participants did not address their role in the AAC team, indicating they may have had poor awareness of their role in the team. It must be noted that all parent participants were employed and their children accessed speech-language therapy services at a government hospital and LSEN schools. This finding could be due to families' work commitments, family responsibilities, financial constraints and distance to professionals limiting regular professional-family interaction. SLT E who described her close contact with families during management, explained that poor understanding of families' background leads to unequal role sharing, ineffective home transfer of therapy and decreased trust.

SLT E	**This [i.e. language barriers] often changes the dynamic between parents and professionals and if they are new to the world of disability, can put them at a disadvantage in terms of their perception of their role and status in the team. … I find if, if the parents [are] invited into the process they are a lot more, sort of reciprocal in the information that they give and not as passive, so that's why we do it that way.**

As parents and family are crucial team members, SLTs need to ensure that parent's interests, concerns and priorities for their child are valued throughout this process. Some SLT participants attained this by specifically asking parents to actively participate during discussions and provide feedback on intervention practices, which may be difficult to implement due to factors influencing intervention. These will be discussed in the section below.

4.3 Utilising what is Accessible: Managing Children who use AAC and are CLD

AAC intervention is provided to children from diverse cultural backgrounds and SLTs are trying to meet this demand with various AAC options (Huer et al., 2001). AAC intervention for CLD school-aged children is influenced by many factors, which can be identified and integrated in management using frameworks such as the Participation Model (Beukelman & Mirenda, 2013) and the ICF-CY (WHO, 2007). Though SLT participants did not explicitly identify these models as guiding their management, positive parent participant views of AAC implementation indicate the child and family are considered in management. The type of management SLT participants provide is contingent on children's abilities, the AAC options SLTs can access and how educators and family engage in implementing communication goals. These subthemes are represented in Figure 8 and are explored below.

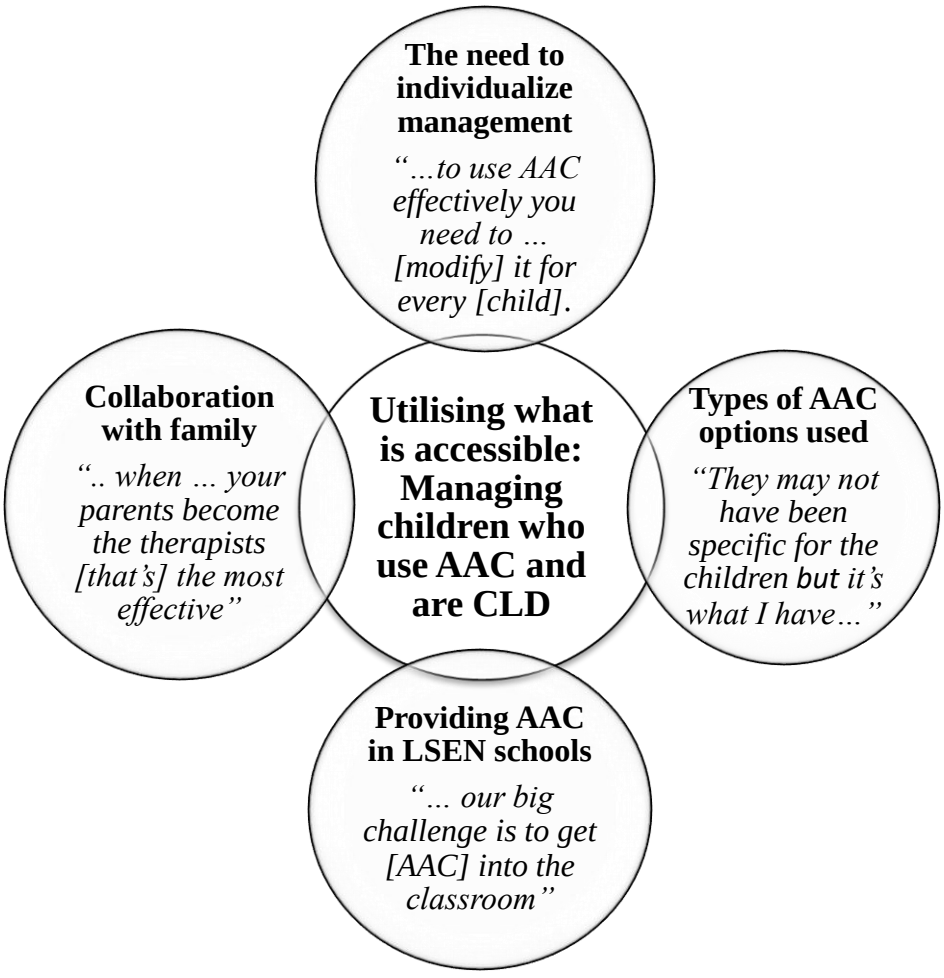

Figure 8. Subthemes related to Theme 3- Utilizing what is accessible: Managing children who use AAC and are CLD

4.3.1 The Need to Individualize Management

All SLT participants indicated that the primary consideration of AAC intervention was to ensure the AAC options and methods used with a child are suited to their cognitive potential. A child's cognitive skills are important to consider as it ensures management is developmentally appropriate and that symbol systems and communication options selected for a child are suitable, which increases the effectiveness of management (Johnson et al., 2006). If cognition is not considered during AAC management, especially for children who have associated behavioral and physical impairments, intervention is likely to have poor outcomes (Johnson et al., 2006). Participants obtained information to understand a child's cognitive abilities by assessment reports provided by a psychologist or medical doctor, or through interaction, observation and discussion about a child's behaviors and skills with his or her family. To ensure better use of the AAC options provided to children with intellectual impairment, SLT participants adapted instructions and questions, symbol systems and AAC options given to children using AAC. Parent participants also reported using short questions, repetition and waiting for children to respond to questions to facilitate their communication. This together with considering the child's personality guides SLT and parent participants on how to progress with intervention. It also allowed them to adapt AAC assessment and intervention to better engage the child to facilitate their learning optimally.

SLT B	**Cause I look at more the symbol to text, not text to speech right, … Because that is what I look [for, with] the population that I'm working with, ... So very much symbol based stuff.**

The next general area SLTs considered was the functional appropriateness of communication options. The cultural background, values and socioeconomic status of a family who is CLD influences a child's pattern of learning (Bridges, 2004). Due to these factors SLTs, family and other relevant professionals need to jointly plan and implement AAC management to obtain adequate achievement of communication goals (Cohen, 2009; Harlin & Rodriguez, 2009). Some of the ways SLT participants made intervention functional were to actively involve parents in therapy planning so it could be adapted to suit their home contexts, finances and family dynamics. In the LSEN school context, SLT participants completed AAC management during routines such as lunch time and collaborated with educators to match targets and aims to classroom themes. Other SLT participants facilitated the development of

vocabulary themes appropriate to children's daily routines and environments using real objects from their daily surroundings. One SLT also recorded a parent's voice on an aided high technology device, which encouraged a more realistic interaction for the child. These examples of how SLT participants implemented intervention in the child's daily routines and contexts using familiar items facilitated the meaningful use of AAC, which produced positive management outcomes (Calculator, 2009).

Providing functional intervention in decontextualized contexts such as a therapy room in a hospital, private practice or school was raised as a problem by most SLT participants. This issue is significant as cross-cultural and cross-linguistic differences between families and SLTs as well as contextual differences compared to families' familiar environments can complicate the management of children who are CLD. A review of 116 speech-language pathology articles by Snell et al. (2010) revealed that pull-out environments were the second most common setting in which communication intervention was completed, but intervention was predominantly facilitated by educators and parents. Decontextualized contexts may be used often by professionals, including SLTs, as they are more convenient especially if there is limited time in which to complete an intervention session. The context in which SLTs worked may not be in close proximity to a child's daily communication environments and professionals may prefer to see the child in this context if therapy is more direct and structured. Due to this, it is important that SLT participants make family involvement a large part of therapy and make adaptations to stimuli, objects, instructions and therapy targets.

SLT E	**Um in terms of planning as well, there's a lot more focus on family and the mother being brought in, so playing a lot more of an active role and I find that then planning is very dependent on them, because for instance if I wanted a child to um, be using a system in a more naturalistic way I've got to try and incorporate it into routines that are applicable to the family and that sometimes is difficult ...**

Another aspect related to the family which SLT participants considered during AAC management is their socioeconomic status. This affects the potential of families to buy their own AAC devices (Soto et al., 2001) and the environments in which it is used. Due to this, SLT participants ensured aided communication options such as communication boards and

devices were durable when loaned or given to families. This together with how parents view the appearance of the device, the ease of its use in terms of functionality as well as how it is perceived in the community or family affects the selection of an AAC option (ASHA, 2004b; McNaughton et al., 2008; Srinivasen et al., 2010).

SLT C	**I think, ah, having that option of you know, we still have the paper-based, which is easily accessible to the child. … you can make a copy and send it home as well. Um, makes it nice whereas like with our iPad® we sort of restricted where we just using it at school and it's too expensive as well for the parents to be able to buy. ...**

AAC management was also influenced by SLT related factors, such as their practice constraints. Funding was a critical area affecting the types of AAC options SLTs have available and those they can obtain. For example, as SLTs know the potential communication outcomes an iPad® can have on children's communication, participants used their personal devices at their school and private practice or iPads® were provided by the Department of Education for use at school. Insufficient funding to implement AAC is a worldwide issue as professionals working in San Francisco, USA, and Chennai and Bangalore in India noted this issue (Soto et al., 2001; Srinivasen et al., 2010). Participants in these research studies resorted making their own AAC materials and low technology communication options or they used materials which would be accessible to families in order to facilitate transfer to the home environment (Bunning et al., 2014; Soto et al., 2001; Srinivasen et al., 2010). The AAC options SLTs had available or purchased were also dependent on insights they gained at professional training courses, options recommended by SLT colleagues and options which were successful with previous clients. As AAC systems and devices are expensive, SLT participants often needed to consider the longevity of the device for a particular child, how it could be used as part of a multimodal communication approach with other AAC options and how it could be applied meaningfully and appropriately in the child's home and school contexts (Srinivasen et al., 2010). This increases the value and use of an AAC option in different communication settings.

The last significant factor affecting SLTs' provision of AAC services is SLTs' attitude to providing AAC management. Three SLT participants discussed the importance of having a

positive attitude towards providing AAC services, developing their own cross-linguistic, cross-cultural and AAC related practice skills and always being confident about a child's learning potential (Soto et al., 2001; Srinivasen et al., 2010). All these factors were significant influences on SLT practice for the participants in the study and determined the AAC options selected for a child.

The areas discussed above revealed that SLT participants considered child related, family specific and environmental factors when planning and completing intervention. An eclectic approach to intervention was adopted by all participants as this allowed them to adapt their assessment and intervention to be culturally and linguistically appropriate (an area which is not explicit in the Participation Model), use the child's skills and capabilities to target functional communication skills (specified in the Participation Model, Functional Approach, and ICF-CY framework) and individualize management to the child, family and context which varies between different families.

4.3.2 Types of AAC Systems Used

Different types of systems were reported by SLT participants for school-aged children, such as unaided communication or aided low technology and aided high technology options. A discussion of each of these options follows, specifically the common types of AAC options used and how they are adapted for children who are CLD.

The most frequent unaided AAC options used were gestures, sign language and Makaton. The types of gestures used by SLT and parent participants were not specified but examples of gestures referred to in literature included pointing, eye gaze, head nods or shakes, a finger to the mouth to indicate to be quiet and tapping someone to get their attention (Binger & Light, 2006; Brady, Thiemann-Bourque, Fleming & Mathews, 2013). The common use of gestures was also reported in Srinivasen et al.'s (2010) study done in India, which is a multicultural context similar to South Africa. Professional participants in Srinivasen et al.'s (2010) study described that gestures could be used in different settings therefore making them easily adaptable. Some parent participants phrased their use of sign language as signs which may indicate that they used idiosyncratic and formal sign language to communicate with their child. The use of sign language may be functional in that it does not require cultural adaptations when used with different spoken languages, as it is a language itself (Stokoe,

2005). SLT participants used sign language as it facilitated a child's understanding and expression of spoken languages, thereby facilitating learning of more than one language (Wijkamp, Gerritsen, Bonder, Haisma, & van der Schans, 2010). For this reason, SLT participants used sign language with children who are multilingual.

Unaided AAC options were frequently implemented by SLT participants as it was easily accessible and functional. Chung, Carter and Sisco (2012) also noted the predominant use of unaided AAC options by learners in inclusive education settings who had access to unaided and aided high technology AAC options as it was readily available and easier to implement (Johnson et al., 2006). Unaided AAC options provided a method for facilitating multilingualism for children and families who interact in environments and contexts where more than one oral or sign language is used (Wijkamp et al., 2010).

SLT E	**Also, learning a manual signing system can act as a link between the languages, reinforcing concepts.**

Four parent participants reported using two languages with unaided options at home. These options were sign language, speech and gestures which included head movements and a child pulling an adult to what they wanted. It is considered best practice to facilitate all languages used by a child with language impairments, by integrating the use of the languages in natural communication contexts (Goldstein & Kohnert, 2005; Government of South Africa, 1997; Thordardottir, 2010). South Africa's Language in Education Policy (1997) considers multilingualism a part of all South Africans' identity and recognizes that it is promoted in home contexts (through simultaneous bilingualism) and in school contexts (through sequential bilingualism) (Government of South Africa, 1997). Therefore parent participants' use of unaided AAC options with more than one language in their home contexts indicates that multilingualism is promoted with children using AAC, as outlined in the Policy. The use of a visual mode of representing language was observed by SLT participants to allow children to better understand spoken languages used around them and respond using AAC options they had available. Taking into consideration that culture is closely related with language, cultural practices impact how sign language is used within a family (Marshall, 2000; Srinivasen et al., 2010). A SLT participant discussed how parents indicated that 'thank

you' is produced in a gesture similar to the sign language production of the word. Therefore, an adaptation to use the culturally appropriate representation of the target was adopted.

SLT F	**… or, we've had to adapt signs to different cultures. Um, for example I think I mentioned the sign for 'thank you' … when we started spending time with the parents they said that the children would just reach their hands up for it and say thank you because … in their culture that's how they said thank you and most of the children were saying 'thank you' that way.**

A narrow range of aided low technology options was described by SLT participants and those available were dependent on the context in which the SLT worked. Symbols used in low technology options included pictures, picture communication symbols (PCS) from the Boardmaker® program, Makaton symbols and orthography (written print). Symbols were used in the following communication options: visual schedules, the Picture Exchange Communication System (PECS) and communication boards.

The aided low technology communication options used by SLT participants were easily accessible and were pre-printed for use in therapy, transferred to the child's home context and used in schools. The software program Boardmaker® was used to develop communication boards and visual schedules. It was observed by SLT participants that communication boards allowed children to develop prelinguistic skills, make requests and have visual cues available to attempt imitated or spontaneous speech production. Different spoken languages were used with communication boards and SLTs described adapting the orthography used with printed symbols to be language appropriate. The use of visuals to support children's learning of additional languages was also described in research studies, such as Ferlis (2012) and Fueyo (1997).

Tablets and iPads® were the most common aided high technology non-dedicated AAC device used in LSEN schools and private settings by SLT participants, which was a finding also noted in recent literature (McLay et al., 2015; Schlosser & Koul, 2015). These mainstream devices were more cost effective than dedicated AAC devices and allowed children using these devices to access other connected devices and technologies (McNaughton, Bryen, Blackstone, Williams & Kennedy, 2012). The Community Agency for

Social Enquiry (CASE) completed a study investigating the nature of disability among families of different races in the nine provinces of South Africa who stayed in urban and rural settings (CASE, 1999). Their findings revealed that communication devices for persons with disability were commonly provided by governmental institutions (CASE, 1999), though the specific type of aided communication options provided or its functional uses were not described. CASE (1999) described LSEN who attend school as a small group of children with disability. These children were therefore considered more likely to access AAC communication options as their schools were suitably resourced (CASE, 1999). As children from different social and cultural backgrounds attend schools for LSEN, it was expected that some children may be from rural environments or lower socioeconomic backgrounds who may have not used aided high technology devices. As three SLT participants who worked in schools for LSEN and two SLTs who worked in private practice reported frequent use of iPads® during intervention, it was deduced that iPads® are an accessible device for LSEN, though some learners may not be familiar with its use initially. iPads® available in schools for LSEN were provided by the Department of Education or were the SLT's personal device. Therefore, these devices are only used at school and are not used in children's homes. Due to this, SLT C explained that iPad® training for older LSEN takes place in therapy sessions before they generalize its use in the classroom setting. Children seen by private practice SLT participants were usually familiar with operating an iPad® as they used it as a gaming device, which was also noted in the children in McLay et al.'s (2015) study.

SLT C	**… most of [the applications on the Tablet] now ha[ve] been used for the older kids and some of them are quite good on [it]. So at the moment they're getting training with … using those apps um, for communicating … their wants and needs and a-answering questions in class and things. Ah, but … cause we're still training, our next phase is to get it into the classrooms for those older kids.**

SLT participants explained that the use of iPads® and Tablets were appropriate for children with complex communication needs as it engaged their interest, thereby increasing their motivation to complete communication related activities and tasks using the device. These devices allowed SLT participants to provide AAC management with an accessible resource which could be used for any child, with little preparation due to the range of applications which could be stored on a device. SLTs also demonstrated, instructed and provided

resources to parents with information about appropriate applications to use with their children. Parents were observed by SLT participants to prefer the iPad® as a communication output device as it looked "normal" and is widely available, in comparison to other high technology communication devices.

SLT G	**So I'm using a lot of the apps on the iPad® or I'm like downloading certain apps that are applicable and then I'm showing the parents how to use it. Or I just get pictures … that I've found that's applicable and then I'll get them to store it on their iPad®. So they can use it … like picture cards.**

Meder and Wegner (2015) explored families' perspectives about the use of iDevices, such as iPads®, where participants were predominantly located in the USA. Most participants purchased an iPad® as they were easy to use, affordable and could be used for many purposes (Meder & Wegner, 2015). A range of AAC applications have been developed for iPads®, some of which can be downloaded for free (Bradshaw, 2013). The types of AAC applications that can be used with children who have complex communication needs include features such as converting text to spoken language, using symbols in grid systems, eye gaze software, word prediction to assist with typing, phrase level symbols, Social Story symbols and PECS applications (Bradshaw, 2013). One SLT participant mentioned an application, 'Verbal Me' which uses orthography and picture based symbol to speech software for nonverbal children (Apple Inc., 2015, Verbal Me Description). A range of functional and learning areas are targeted in this application such as the alphabet, opposites and getting dressed (Apple Inc., 2015, Verbal Me Description). An AAC specific application such as this as well as other general learning applications are appropriate when it can be used with children who are CLD. Three SLT participants mentioned that applications are usually in English and in a foreign accent, which is culturally and linguistically inappropriate for the South African context.

SLT F	**Otherwise we just use, ah, apps like *Verbal Me,* where it's got colour charts and number charts and things where the child can just um, point to the charts. And then we will say … the [word] instead of the computer saying it.**

SLT E	**So the sort of readymade stuff like is available in apps .... Um, parents actually comment on the fact that it's America[n] for instance or the the phrasing and intonation is inappropriate – that unfortunately there's not much we can do about.**

Applications used on iPads® and Tablets were adapted by SLT participants to be used cross-linguistically with children whose first language was not English. SLT F explained that general concepts such as colors and numbers were targeted where the child was asked to respond once she had instructed them verbally in their appropriate language.

Some SLT and parent participants implicitly described using different AAC communication options in a multimodal approach[5]. Speech and/or sign language were predominantly used by children who are CLD in a multimodal approach. These unaided communication options were the only options frequently used in this approach because it was easy to transfer to different communication contexts, where familiar partners adequately understood the child. A multimodal approach needs to be used in AAC intervention as it best supports the child with complex communication needs to use their strengths to interact and participate in different environments (ASHA, 2004c; Srinivasen et al., 2010). The use of this approach in AAC intervention is documented by McLay et al. (2015), McNaughton et al. (2008) and Srinivasen et al. (2010). Huer et al. (2001) reported that sign language and speech (unaided communication options) were used by children in the home context and aided high technology devices outside of the home. All these AAC options were understood by the family but each was used at a specific time and context which was most suitable to the communication partners (Huer et al., 2001). Multimodal communication is also effective for children who are CLD, as SLT participants explained that it facilitated understanding of multiple languages when the same PCS were used in different contexts.

4.3.3 Providing AAC in LSEN Schools

The LoLT in the LSEN schools SLT participants worked was English. The South African Language in Education Policy (1997) indicates that multilingualism does not have to be

[5] Multimodal communication is a holistic approach where multiple AAC communication options are used to convey messages (ASHA, 2004; Srinivasen et al., 2010).

promoted in schools for children with severe intellectual or communication disorders (Government of South Africa, 1997). If the Policy was implemented as stated, English should have been used in the LSEN schools SLT participants worked in, during teaching and speech-language therapy services, which Scanlan & Zisselberger (2015) described as a two way immersion model. Similar to SLT participants' description, Breton-Carbonneau et al. (2012) reported this is often not strictly adhered to as unofficially, distinctions were made between a school's official language policy and actual practice (Kathard & Pillay, 2015). As some children who entered LSEN schools were monolingual isiZulu speakers, SLT participants reported that educators often code switched[6] between the LoLT and children's home language to facilitate their development of BICS and CALP in the schools' LoLT. Code switching by South African educators during the foundational phase grades was also noted by Breton-Carbonneau et al. (2012) in their study determining educators' practice in multilingual classroom settings. If code switching was not utilized, the language barrier in the school context would impede children's learning and would contravene children's rights as stated in the Language in Education Policy (Government of South Africa, 1997). Multilingual practice was used by SLT participants with the assistance of informal interpreters, which allowed children to adapt to the school learning environment (Brock-Utne, 2007). SLT participants reported that children manage with this style of communication.

SLT D	**… children who are first language isiZulu speakers and if their teacher is a first language isiZulu speaker um the teachers, even though it's an Eng- ah English medium school, they still communicate and give instructions to the children in both English and Zulu ...**

AAC intervention targets were facilitated by SLT participants using children's first language, especially when they were school-aged and developing the LoLT. This practice allowed children to develop CALP in their first language which aided the development of BICS and CALP in the child's second language or LoLT (Modirkhamene & Esfandiari, 2014). AAC options which were adapted to be used in children's first language include speaking children's first language while using sign language, PCS, iPad® applications and orthography. Three SLT participants reported they were obligated to facilitate the LoLT, as

[6] Code switching is defined as speaking two languages interchangeably (Grech & McLeod, 2012).

stated in their school's language policies. The implementation of these policies caused subtractive bilingualism[7]. Therefore, children predominantly communicated in English in the LSEN school and home contexts. Parent participants expressed no concerns about their child's predominant use of English in the home and school contexts. This may be due to the hegemony of English and that older school-aged children may be perceived to need to speak English to have better employment and social opportunities (du Plessis & Louw, 2008). Subtractive bilingualism in a learner from a CLD background has implications for how the learner will be integrated into their family's cultural practices, as multilingualism develops through social interaction (Kohnert, Yim, Nett, Kan & Duran, 2005; Souto-Manning, 2006). Responses from parent and SLT participants regarding the consent to use English in therapy conflicted, as parent participants reported they were consulted about this practice and SLTs discussed that this was not often completed due to poor contact with parents. The difference in reports may indicate that parent participants do not disagree with the use of English in schools due to the hegemony of English and therefore have not reported a difference in knowing about this. As SLTs are trained on how multilingualism develops and characteristics of a person with this language background, it was expected that SLT participants, especially those in the LSEN school context, would counsel parents about this area but this was not mentioned.

A few SLT participants described occurrences where LSEN used two languages to communicate. This practice is recommended as it is related to positive "social, emotional and cognitive development" outcomes for children from multicultural backgrounds (Kohnert et al., 2005, p. 253). This was facilitated by SLT participants integrating both languages when completing AAC management, such as using the orthographic form of words in both languages. Visual supports provided a link for a child to understand concepts in multiple languages, as the visual cue provided stayed the same. AAC options such as iPad® applications were used with English and the child's first language.

[7] Subtractive bilingualism occurs when a child's learning of two languages occurs unevenly. This causes a child's second language to become stronger and the first language to decline (Manyike, 2013).

SLT F	**Supporting language visually, using … Makaton signs and picture communication symbols, where the signs and symbols remain the same even if the language changes within the sessions. … The visual support seems to aid the auditory processing and word retrieval in either language.**

SLT B reported that she integrated languages in AAC intervention by producing a word in both languages or she switched between both languages in a session. This multilingual approach was described with vocabulary as the therapy target, therefore the area of language facilitated using this multilingual approach was not complex. As insights from SLT participants only provided views on their experiences with younger children developing sequential bilingualism, further exploration of how management for older children facilitates this is needed. Thordardottir (2010) discussed that factors which must be considered when planning bilingual intervention with any child is their language use in their current and future communication environments, the topics and contexts in which the child's languages are used and their communication partners' use of language in different environments. SLTs' practice needs to focus on achieving multilingual learning opportunities in the school environment (Brice & Brice, 2015) as multilingualism is an important feature of a child's cultural background.

SLT participants emphasized that AAC was an integral system in LSEN schools as it was used in various ways for different purposes. As parent contact is a significant issue affecting generalization, some SLT participants focused on generalizing therapy aims to the classroom context as this was more achievable in their work setting.

A steady line of communication needs to be kept with the child's educator so SLTs are informed of the child's progress and challenges, and the educator's goals and difficulties in managing the child (Hart, 2009). Wium and Louw (2015) stated that SLTs and educators should closely collaborate as both professions seek to facilitate children's communication, learning and literacy skills.

SLT E	**Once they in the school and they've settled in then we usually do a school visit or a series of school visits and then, keep in contact with the teacher.... I find the difficulty in the school setting is you [are] seeing a child very much in isolation based on what parents [have] written down on a piece of paper… – it's very hard to sum up.**

SLT F who practiced in an LSEN school collaborated with educators by being involved in weekly transdisciplinary team meetings to set therapy goals for the classroom context. SLT participants who managed children in the LSEN school setting conducted AAC intervention in individual sessions or in group sessions which took place in the classroom or therapy room. Intervention in LSEN school settings was reported to be a process which required SLT participants to develop a rapport with the child, be persistent and have patience. Once AAC aims and concepts were realized in the therapy context, targets were introduced to the classroom setting. SLT C described this progression as challenging but it had to be completed as it was the most functional for the child. She reported that an educator received training on the operation of an AAC option used by a learner and thereafter, the communication option was used in the classroom with continued SLT support. A SLT provided assistance by discussing the settings and features of the device, and issues which affected its optimal use.

Generalization of AAC to the classroom context was a collaborative effort where the SLT trained and assisted the educator, but only if educators were interested in accessing and using AAC (Wium & Louw, 2015). Educator-SLT collaboration is not optimal in South Africa due to the limited number of SLTs employed to work in schools for LSEN, poor trust (Wium & Louw, 2015) as well as poor understanding of AAC and SLTs' role in schools. Poor carryover to the classroom was reported by SLT participants when educators and other classroom based staff did not understand and support the use of AAC and when they had unrealistic expectations of the child and communication option. As these negative perceptions about AAC and its poor use were noted in schools for LSEN where SLT participants work, SLTs should empower, train and increase awareness of AAC to ensure improvements in AAC implementation.

SLT C	**Um, and and some teachers as well … Some teachers are really enthusiastic, you know, they really good about doing using the devices and, you know, allowing the child to have a turn as well. Um, some- they need more, more input, … you know it can it can be difficult sometimes to explain to them.**

4.3.4 Collaboration with Family

Parental involvement and fixed lines of communication throughout AAC management are critical to ensure intervention is transferred effectively (Huer et al., 2001). Most SLT participants and a parent participant confirmed this, as when parents were engaged in the management process from the start, professionals were best informed about the child, their family, daily routines, and the family's cultural and linguistic background.

SLT E	**Um, so the I think the most important thing is is opening up the dialogue to why and how it's not working, and for parents to understand that if-if if I give them an activity or … examples … and it doesn't work for them, why it's important for them to feed back to me. ... and parents often are quite reluctant to, um, encourage that process. It has to be pushed by the professional quite a lot before they engage in the process.**

SLT participants described that parents were involved in the intervention process by direct means, usually when they observed and implemented intervention in the private or hospital based setting. Parents who had employment obligations and those who had children in a LSEN school setting were involved in the management process indirectly. Communication between parents and SLTs occurred in various ways which were accessible to both parties and ensured parents were kept involved during the intervention process. Written communication occurred via message books, letters, handouts, emails and home programs. Verbal communication occurred face-to-face when parents picked up their child from school, at support group meetings, parent-professional meetings, during therapy feedback, videos of therapy passed onto family who could not attend sessions and via telephone. It is important to interact using these varied communication methods as SLT participants explained that it facilitated natural intervention, which most effectively supported the child's communication progress. Parent-SLT meetings were reported to be the starting point of further communication with parents in the LSEN school setting, as SLTs demonstrate how different

communication options are used and questions are discussed. SLT participants viewed parent attendance at these meetings as indicative of their commitment to the intervention process.

SLT C	**I think that it goes back to our parent meetings. Cause we have parent meetings … four times a year. And then over and above that would be like the Autism Support Group meetings ... [Due to] good attendance ... The therapists give their input, the educators give their input. ... it has to always start with … you meeting them face-to-face and thereafter it it's okay to write in the book ... But it has to be that initial meeting, so you know what's happening.**

Families are essential decision makers and informants (Batorowicz & Shepherd, 2011) yet SLT participants reported that they do not address with parents the areas of therapy which are important to them and how therapy matches their cultural and linguistic background. These areas are important for SLTs to identify and understand as they profoundly affect generalization (Johnson et al., 2006). As cultural practices can vary between families and SLTs may not be aware of them at the beginning of therapy, SLTs need to discuss this with parents to prevent or minimize ineffective and inappropriate SLT services.

SLT A	**One of the areas I've realized now is that I didn't take the family's decision into consideration. I did not ask them if it's acceptable to them if I introduce signs/gestures. I did not ask them if it was culturally appropriate.**

Ongoing counseling and support needs to be provided by SLTs to parents during AAC management (Seligman-Wine, 2007). This allows intervention to be understood and adopted by families and communication partners (McCord & Soto, 2004; Seligman-Wine, 2007). Participants discussed that they initiated this at the outset of management, providing information about different AAC options and methods, the importance of AAC and how to implement AAC in a cost effective, practical way. SLT participants reported that parents questioned the need for AAC with their children, and the process of counseling facilitated their understanding and acceptance of AAC. SLTs organized education, training and counseling opportunities to support parents to access resources, optimize how AAC is implemented at home and obtain emotional support by meeting parents in similar

circumstances to themselves. Seligman-Wine (2007) also highlighted that SLTs' use of the previous mentioned strategies encouraged families to accept and use AAC strategies which were recommended by professionals. SLT participants discussed that using videos and pictures of children who successfully used AAC options or by directly using AAC with parents observing its positive outcomes for their child enhanced the counseling process. Some parent participants confirmed that these programs were successful in assisting them with personal challenges and allowed them to gain information.

Parent B1	**We were forming a support group [and we] talk[ed] [about] whatever problem we were facing ... for the child. We discuss - at the end we found a solution.**
Parent B2	**… and were given a demo[nstration] on how to use pictures [and devices], and were introduce[d] to ... [some] sign language …**

The methods of counseling and ongoing communication with parents allowed SLTs to facilitate transfer of AAC intervention goals to the home context.

4.3.4.1 Issues Influencing the Implementation of AAC in the Home

SLT participants discussed reasons for the inadequate use of AAC in children's home context and positive aspects which encouraged the transference of AAC. These will be elaborated on further below.

All SLT participants who worked in a hospital, school and private practice described that AAC transfer to the home context was poor. Participants had little knowledge of the aspects of therapy completed at home and how they were implemented. This problem was partially related to how the practice setting involves parents in management. One SLT reported that at the LSEN school in which she works, she had no written contact with parents and there was poor attendance at parent feedback meetings. Poor family contact in this school may have been due to extraneous factors (which will be discussed in detail below) or because families are poorly motivated to use the communication system (Johnson et al., 2006) as they do not understand its purpose or they may not believe it can be successful with their child (Huer et al., 2001). The poor contact SLTs have with family limits the information they can obtain

about a child's community, family and their unique cultural practices (Harry, 2008). In other LSEN school settings, parent attendance at feedback meetings at the end of every term was also poor but these SLTs implemented programs at their school which ensured that parents had various opportunities to meet professionals and be educated about different AAC interventions. SLT C's school was in a semi-urban area where children from lower socio-economic backgrounds attended. This school provided opportunities which included support groups, training workshops and information evenings which increased parents' involvement and the success of AAC intervention. The difference noted in the parent education programs provided in LSEN schools could be a reason for poor parent compliance in some settings.

SLT E	**... And then … maybe that the parent- … feel[s] they don't have the, or maybe we haven't invited them enough to give their input. So they they take more of a passive role – … And that often makes all the difference in terms of the process when the parent takes an active role in the team and guides you where you need to go based on what will work for them.**

Another reason families may not have been able to come to schools regularly could be related to extraneous factors such as how far families lived from the child's school, family and work commitments, and their financial circumstances, which makes it difficult to afford transport to visit their child's school as well as access stimuli and resources to carry out intervention. The African Child Policy Forum (2011) reported that South Africa has a high rate of poverty as measured by families' low household income. Due to these unavoidable challenges, SLTs need to access families in other ways.

Researcher	**And, and with parents who don't come? Like to parent meetings, how do you facilitate anything in the home or…**
SLT C	**Nothing really happens then, to be honest. Nothing happens because ah, the reality is they not coming then how else…**

Parent and SLT participants discussed that they meet during support groups held at the school and in individual parent-SLT meetings. Parents reported they receive assistance to implement therapy through handouts and resources for use at home. Other solutions SLT participants discussed to increase parent involvement include holding parent development programs over

weekends, workshops, calling or emailing family to discuss children's progress, conducting home visits where SLTs have the financial and time resources available, and teleconferencing or videos using smartphones, iPads® or Tablets, where accessible and appropriate. Some of these methods were mentioned by SLT participants in Johnson et al.'s (2006) study. Higher chances of successful transfer of AAC interventions occurred when professionals and family collaborate in implementing AAC, when family wanted to use AAC options as they experienced its success and have support to carry on implementing it through training and self-adaptations, and when families have time to implement the interventions (Johnson et al., 2006; McCord & Soto, 2004).

SLT B	**... I train parents on Makaton. … So they come, they get taught and ah. So they-these things are generalizing at home because parents who were wondering "why is the child doing this" it's because it shows he knows more. So yes, those are the positive things that that facilitate it.**

Three SLTs reported holding workshops or information sharing group sessions with parents successfully. The remaining SLTs did not discuss this area in detail. Some initiatives discussed by SLT participants facilitated successful use of AAC by families but they could not be generalized to meet all the challenges discussed previously. The crucial factor was that SLTs needed to attempt to engage parents and families to make the management process effective. If SLTs do not persist in this endeavor, the only context where AAC can be used and stimulation received is at school, which is not realistic for the child to achieve independence and other functional goals (ASHA, 2004c).

If SLTs use the above methods but find poor attendance and feedback still occurs, a factor may be that communication is not culturally and linguistically appropriate. Communication with parents needs to be in a language family can understand and speak. If communication breakdowns occurred as parents cannot be understood or parents cannot discuss questions with SLTs, then their attempts to engage with SLTs will cease.

When SLT participants reported successful transference of AAC to home, factors which contributed to this include training parents (Huer et al., 2001) and parents' attitude toward AAC and AAC options (Johnson et al., 2006). Parent F1 described that AAC is successful as

it allowed the child to communicate and AAC could be used to facilitate the child's learning of multiple languages. SLT E noted that if parents were positive about the AAC option or noted success with how their child used it, they would independently try to enhance and individualize the communication option.

SLT E	**And [it was] something … mom was actually using before, … and for instance with her she's um taken it on so positively because of the amount of options that the E-tran board has given her, that she's gone and made her own photos and introducing new concepts and starting to do things like literacy with it which she's done on her own, so she see[s] the potential.**

SLT participants' described signs which showed AAC intervention was transferred to children's homes include unexpected progress noted in the classroom context or after a school holiday, parents sharing the communication system with other family members and achieving families' functional goals.

SLT C	**I think again it has to be the autism parents, especially um… with the signs, you know like the Makaton and the xxxx xxxxx training. Cause they, they use it with their kids, you know and you see it.**

4.4 Developing Culturally and Linguistically Relevant AAC Skills

Practice related research in speech-language pathology enhances SLTs' clinical knowledge, development and practice, which is an area of need as SLTs do not adequately understand families' background and children's communication needs (King et al., 2008). SLT participants' practice with clients who are CLD and how they implement appropriate intervention generally and in the area of AAC may enhance the practice of other SLTs. SLT participants had an average of ten years of experience practicing in the area of AAC and in the CLD South African context. A discussion of how SLT participants acquired understanding of issues related to practice in these areas is examined below.

SLT participants had many years of experience in the field of speech-language pathology and frequently attended courses to provide them with important information on how to manage children who were CLD and those who used AAC. Through experience and published

information in the field, SLT participants identified areas of practice which need to be further developed. SLT participants wanted to gain evidence based practice on how to use AAC with multilingual children, courses and detailed guides on AAC methods and techniques which could be used in the South African context, the effectiveness of therapy methods and techniques used by SLTs in practice and courses on culturally relevant speech-language therapy intervention. Ryan et al. (2015) discussed that SLTs also wanted information and research to be conducted in the areas of multimodal communication options, training programs for communication partners and the effectiveness of AAC in everyday contexts. These areas of need discussed by SLT participants and Ryan et al. (2015) reflect the need for practice in the field of AAC to be more focused on generalizing AAC to daily communication contexts, making it effective for AAC users in general and more specifically for CLD populations.

SLT G	**... more research into the field, … would give us more insight into … how we [are] using the approaches that we are using, what are we doing wrong. I mean sometimes you feel you doing the right thing, but maybe you could be doing it better.**

Three SLT participants discussed that their practice in the field of AAC was guided by information they were exposed to and learnt during their university undergraduate training. Costigan and Light's (2010) review of studies into SLT, special education teachers' and occupational therapists' training programs in the USA revealed that some SLTs received insufficient training in AAC. Though the training programs completed in the USA cannot be compared to those in South Africa as AAC is included in all speech-language pathology programs (HPCSA, 2012), it does highlight that the content of South African AAC courses may be enhanced to equip future professionals with more theoretical and clinical knowledge of this area.

SLT A	**... during tertiary level … it's just … a short course we do in AAC …, but making it more detailed at tertiary level and … putting emphasis on it, um before graduation … And, … quite interesting now with the whole cultural aspect, taking that into account [during] AAC courses as well.**

Practicing SLTs have expanded and obtained more detailed AAC and South African contextual information from courses. SLTs must complete continuous professional development in fields related to the scope of practice in a process of updating knowledge and learning in areas relating to the health needs and priorities of South Africa (HPCSA, 2014). Participants reported that professional courses did not fit the scope of AAC practice in the speech-language pathology field, therefore more relevant courses are needed. Examples of AAC courses provided in South Africa are those by the Centre of Augmentative and Alternative Communication (CAAC), at the University of Pretoria and at Interface KZN. Professional study programs and courses developed by the CAAC are relevant for different professionals working in the education, disability and rehabilitation fields (Alant, 2007; Centre for Augmentative and Alternative Communication, 2015). This gap in SLT professional development is crucial to practice due to the reduced availability of empirical information in the field of AAC (Ryan et al., 2015). Practical applications of AAC and adaptations for families who are CLD may be important for participants to learn more about as their management in this area was obtained from what they have learnt from prior experience (Calculator, 2009). SLTs may also not know how to apply areas of intervention developed in other countries, where resources may be more accessible (Bevan-Brown, 2006) and based on high technology, compared to the South African context. These areas discussed need to be researched further and the information disseminated among SLTs to have practical outcomes for children using AAC, children who are CLD and professionals practicing in these areas, especially SLTs.

4.5 Integration of Themes of the Research Study

The themes of this research study provided detailed perspectives about how AAC services were rendered to families and school-aged children in South Africa's CLD context. SLT and parent perspectives provided an understanding about how services were provided, areas of practice which needs to be enhanced and how this could be done. SLT participants also adapted their practice to the CLD context and therefore their insights offered a unique perspective to how AAC services are provided.

Many challenges exist in CLD contexts, which are worldwide phenomena. SLT participants used cultural and linguistic adaptations to meet these challenges in the South African context and identified their levels of competence and developmental needs. Speech-Language

Pathology best practices highlight the need for family-based management. Results of the current study related to implementing family-based management as challenges in providing AAC services were associated to whom the services were provided, who they were provided by and the contexts in which they were provided. As the use of AAC encompasses various skills and needs to be individualized, SLTs who have experience in the field are valuable sources of information, and can contribute their expertise to meet challenges which exist in the field. This is one outcome of the research study which must be developed to enhance the field of speech-language pathology.

Cross-linguistic and cross-cultural practice is a skill all SLTs need to have and develop as this is the core of successful service provision in a CLD context like South Africa. SLT participants' explained many ways in which services were provided to meet the needs of the CLD population they worked with, but practice in this area was considered difficult. This was due to the lack of resources and support from key stakeholders, the need for further SLT training and few opportunities for theoretical development available. This finding of the research study is a need which can be addressed to allow AAC services to be provided in ways which meet the needs of people who must be considered most important in this process, families and children who are CLD.

The perspectives of parents in the research study provided insights about how they viewed service provision and their use of AAC in their home contexts. Assessment of children who are CLD was constrained by SLTs' limited cross-cultural practice with families during the case history interview. Parent participants did not comment on this negatively though, indicating that they felt their child's needs and family values were considered. Parents' participation in their child's assessment and intervention was limited by financial constraints, work commitments, access to resources and the distance they lived from SLTs' practice settings. Some SLTs discussed methods to overcome these challenges in order to involve parents in the management process, which indicates a commitment to culturally and linguistically appropriate family-centered intervention. The hegemony of English was seen to affect the language use of school aged children in LSEN schools, even though parents' viewed this as positive. This indicates an area where SLTs need to educate parents, professionals and management in schools as SLTs are ethically bound to promote multilingualism in the school context (Penn, 2015).

4.6 Summary

The four themes which emerged in this study explored how SLT participants are informed of the background of families who are CLD, their assessment and intervention practices when working with children who use AAC and are CLD, and the challenges encountered when working with this population. SLT participants used adaptations to work with children and families who are CLD to gather information about families' background, though culture was not an area which was thoroughly explored. SLTs also modified AAC options to be appropriate for children who are multilingual. English was the LoLT which was facilitated with the child's home language in schools for LSEN. SLTs provided multilingual management to implement effective services which could be generalized to other communication environments. Collaboration with the family and their involvement in AAC assessment and intervention ensured SLTs make services they provide culturally and linguistically appropriate. Poor contact with families often occurred due to extrinsic constraints, but SLTs and families collaborated indirectly to achieve effective AAC implementation. Areas which need development in the speech-language pathology and AAC fields were discussed by SLTs as CLD practice with children in AAC is common but not well defined in clinical and theoretical-based research.

CHAPTER 5

Conclusion, Limitations and Implications of the Study

The final chapter of this dissertation provides a conclusion to the research study from its conceptualization to completion. Following this, research implications and limitations are presented.

5.1 Conclusion

South African SLTs work with children and families who have multilingual and culturally diverse backgrounds. CLD management is an area SLTs frequently practice in all settings, as cultural and linguistic diversity is the norm in South Africa (Moonsamy & Kathard, 2015). As SLTs internationally and in South Africa are commonly monolingual English speaking individuals (Jordaan, 2008; Kritikos, 2003; Wium & Louw, 2013), families and children should be managed cross-linguistically and cross-culturally. School-aged children who are CLD were focused on in this study as there is limited research on how SLTs provide cross-linguistic and cross-cultural AAC services for multilingual children, such as those being served in South Africa.

Seven SLT and five parent participants were recruited for the study to obtain insights into how multilingualism and culture were integrated into AAC services provided to school-aged children in KZN and Gauteng. The objectives explored how SLTs gathered language and cultural information from family members, how they provided cross-linguistic and cross-cultural SLT services, the AAC assessment methods and therapy procedures practiced with children who are CLD and the challenges experienced by SLTs during AAC management of school-aged children. Parents' insights into these areas provided another perspective on how families perceived SLTs' provision of AAC services in the CLD South African context.

SLT participants completed a journal, followed by individual interviews. Parents' insights into the AAC services provided by SLTs were collected by completion of a written questionnaire. Data analysis of SLTs and parents' data was conducted by thematic analysis.

The four themes that emerged from the data included how SLT participants engaged with families who are CLD to obtain suitable background information, how SLTs completed AAC

assessment and therapy with school-aged children and the skills required to manage children with these backgrounds. It was found that SLT participants did not extensively probe into families' cultural background nor did they make adaptations in this regard, which is not in accordance with ASHA (2002, 2004a) and may affect the quality of services provided (McLeod et al., 2013). Culture is an intrinsic part of a family and child's identity, social interaction and communication style. Therefore, this area of management needs to be enhanced by SLTs developing their cultural competence about cultures with which they practice and by working more closely with families (McLeod et al., 2013). SLT participants identified that these initiatives must be made to implement culturally and linguistically appropriate services.

SLTs described cross-linguistic communication strategies which are used to interact with families who are CLD to enhance the quality of therapy services. The cross-linguistic strategy SLT participants frequently used was informal interpreters when interacting with families. Participants felt that using informal interpreters was not sufficient due to the limited trained individuals in speech-language pathology and the breach in confidentiality. This can affect the relationship between families and professionals. SLTs also developed their own proficiency in languages spoken by children and families with whom they worked. These methods increased the communication effectiveness between professionals and families, which lead to better AAC service provision.

AAC specific assessment procedures were not utilised by participants as SLTs frequently adapted standardized tests used with children who are CLD. This together with observation of the child in classroom context or during interaction with family allowed SLTs to acquire information about the child's communication skills. These procedures allowed SLTs to make more accurate evaluations of the communication skills of children who are CLD as they considered the child's language and cultural background. AAC assessments for children with complex communication needs can be enhanced if assessment procedures such as device trials and symbol assessments were conducted (Dietz et al., 2012; Mirenda, 2003). This would enable the child's use of AAC specific communication methods to be observed.

Participants described how AAC needs to be individualized for AAC users, the different AAC options used and how AAC intervention is carried through and realized in LSEN school

environments. Gestures and high technology devices such as iPads® were frequently used in schools with LSEN. This allowed children who are multilingual to communicate in more than one language when SLTs made adaptations to the voice output and orthographic symbols used with picture communication symbols. Cultural adaptations were also made to gestures so they were appropriate to families' background.

Though SLTs discussed areas in which they provide services to children who are CLD, they also experienced challenges. These challenges were due to poor family collaboration in the school context, insufficient access to research developments about working with children who are CLD and a lack of financial resources. These are ongoing challenges in the South African context (Pascoe et al., 2013) and SLTs in this study described ways in which they adapt their practice to make it more appropriate for children using AAC who are CLD.

The research study revealed that SLTs made inroads to serve children who are multilingual and culturally diverse as communication strategies were used to communicate with families who are CLD, adaptations were made to assessment procedures and SLTs integrated children's cultural and linguistic background in the AAC interventions which were implemented.

5.2 Limitations

- The number of SLT and parent participants in the study was on the lower end of the range initially proposed for the study. This affected the variety of SLT views in the study, in relation to their clinical setting and geographical location. Due to this, data did not reach saturation. This limitation caused the researcher to use the pilot study SLT and parent participants in the main study results to add a diverse view of AAC practice in the CLD context of South Africa.
- The use of AAC to facilitate written language was not explored in depth. The reasons participants may not have explained their management in this area is due to the predominantly young children to which SLTs provided AAC management and as most SLTs worked in schools for LSEN, they may have allowed educators to take the lead role in managing this area.
- Transcripts were reviewed by both the researcher and research supervisors. Only the researcher managed data coding.

SLT Participants

- SLTs who participated in the study may have reflected SLTs who adopted culturally and linguistically responsive practices and were aware of their level of cultural competence. These SLTs' could have therefore been more willing to participate in this study as they were comfortable with their cross-linguistic and cross-cultural practices.
- SLT participants' insights focused predominantly on younger school-aged children who are AAC users. Research into SLTs' provision of AAC services to preschool-aged children, older school-aged children and adults may provide different views from those presented in this research study.
- SLT participants' AAC practice in facilitating the literacy development of school-aged LSEN was not adequately explored in this study. SLT participants were not able to provide detailed insights about how literacy and AAC are integrated in intervention, though this was addressed in interviews. Literacy is an important area of AAC for school-aged children as it leads to the use of a wider range of AAC communication options, increased involvement in the classroom (Wilkins & Ratajczak, 2009) and to employment opportunities (Harrison-Harris, 2002). Another way the researcher could have included this area was by observing SLT participants' practice in this area. Additionally this area could be explored by including the views of educators who work in LSEN schools.

Parent Participants

- Parent participants' views were explored via written questionnaire only. This limited the insights obtained as responses could not be probed further by the researcher.
- Information regarding parents' financial, employment and marital background would have allowed the researcher to make better inferences about how these factors affect parents' collaboration in the AAC team and in the school context. Questions about these areas could have been asked in parent participant recruitment letters.

5.3 Implications

Research Implications

Future research exploring SLTs' management of children using AAC who are from CLD backgrounds should:

1. Explore how SLTs' AAC management of school-aged children who are CLD incorporates the use of more than one language. The data collection methods employed should be different from those used in the current study to increase participation of eligible SLTs and families
2. Explore how SLTs' AAC management of older CLD school-aged children integrates the use of more than one language
3. Explore SLTs' cross-cultural practice when working with children who are CLD and multilingual.
4. Explore the AAC options used by children who are multilingual and CLD in different communication settings
5. Explore how families of children who are CLD and use AAC are involved in the AAC management process
6. Explore how families who are CLD generalize AAC options and techniques to personal communication environments
7. Explore how preliteracy and literacy skills are facilitated with multilingual school aged children who use AAC
8. Explore the development of contextually appropriate assessment and/or intervention resources for CLD AAC users
9. Explore the development of culturally and linguistically appropriate assessment and therapy resources to address the need for more contextually relevant materials.

Clinical Implications

The research findings identified the following suggestions for SLTs' when providing AAC services for children and families who are CLD.

1. SLTs who practice in schools for LSEN need to create awareness among staff and parents regarding the function of AAC, the types of AAC options available and how it can facilitate improved learning and communication outcomes for children. SLTs should provide families with encouragement, support and opportunities to learn about using

AAC. This can be completed by arranging parent support groups, skill workshops, informal parent or family socials and regular parent-SLT meetings

2. A few SLTs became aware of their own cultural competence through participation in this research study. The areas identified which SLTs can develop and implement in their practice include direct consultation with families regarding their cultural background and practices, expectations of therapy and appropriateness of interventions to their family
3. SLTs can enhance their communication with families by developing their proficiency in languages of children and families with which they work
4. Transdisciplinary team management is the "ideal" team model which should be used by SLTs when collaborating with children, families and other professionals during AAC management. This model facilitates the most collaboration among all team members, which is best to create positive relationships with families and allows learning in different areas related to AAC and CLD practice
5. During multidisciplinary team management, team members can take roles of being a scribe, informal interpreter, interviewer and a cultural informant
6. SLTs should use the strategies discussed in this study to complete cross-linguistic and cross-cultural management with children and families. Some of the strategies include using open ended questions during a case history interview, using verification strategies to confirm families' understanding of SLTs' questions and instructions, using simple terminology and sentences and lastly, supporting families' understanding of SLTs' questions by using visual aids such as culturally and linguistically appropriate pictures and documents
7. SLTs need to individualize and adapt the case history forms used during AAC assessment with families who are CLD to ensure their diverse backgrounds are adequately explored to allow management to be appropriate and effective
8. Authentic based AAC assessments should be completed. SLTs can include families by encouraging them to participate in team meetings and assessment sessions. Indirect methods can also be used to involve parents in the assessment process through the use of video technology, parent-SLT meetings and communication via email, telephone or written questionnaires and letters
9. Principles of family-centered practice need to be used by SLTs in their daily interaction with families and children who are CLD. Families' cultural background should be explored in the following areas: families' cultural background, family composition, the

assistance provided by extended family members, family's view of the cause of their child's condition, a family's beliefs about intervention, family's values and practices about showing respect as well as parents' views, expectations and overall perception of their child's communication abilities. The different languages used by families should also be explored and the contexts in which they are used

10. SLTs must discuss with families at the outset of management their role in intervention, the need for open communication so SLTs and families can discuss their concerns, challenges and modifications which need to be made
11. Interpreters should be trained to practice in the field of speech-language pathology. This will allow SLTs' practice with children and families who are CLD to be ethical as confidentiality is maintained and more effective services are provided
12. SLTs must consider the effect of frequently using informal interpreters who are employed for other purposes. These interpreters can feel exploited and unappreciated, which may negatively impact the services they provide for SLTs
13. SLTs need to complete home-based assessments to increase the reliability of assessment with families who are CLD and to better inform intervention. This will also create a better relationship with families as they will realize SLTs are committed to providing quality services to their child
14. Clinical settings need to be better resourced in terms of having low technology and high technology communication options to further children's development and use of language
15. Families' views of AAC communication options which are given or loaned for use at home must be considered as this can affect how the options are generalized to children's daily communication contexts. Specific views which should be explored by SLTs include families' views on the appearance of the communication option, the ease which they are able to use it and how the communication option is viewed by family and community members
16. Camera and video technology via the use of smartphones, iPads® and Tablets should be incorporated in clinical and home settings during SLTs' assessment and intervention with families and children who are CLD. This will allow SLTs' to observe the child's communication skills in their familiar communication contexts. Parents who are unable to attend speech-language therapy sessions can be informed about intervention through the use of this medium of technology

17. Families who are from lower socioeconomic backgrounds should be given opportunities to engage with SLTs in different practice settings and be given opportunities to learn about AAC. This can be completed through providing handouts, providing handmade or low cost resources to perform intervention in their home settings and where feasible, to carry out home visits
18. Continuing professional development programs and workshops are needed for SLTs to acquire information and resources in the areas of working with children who are CLD, how to use AAC with children who are multilingual, AAC methods and techniques which can be used in the South African context, the effectiveness of the therapy methods SLTs use in AAC practice and courses on culturally relevant speech-language therapy intervention.

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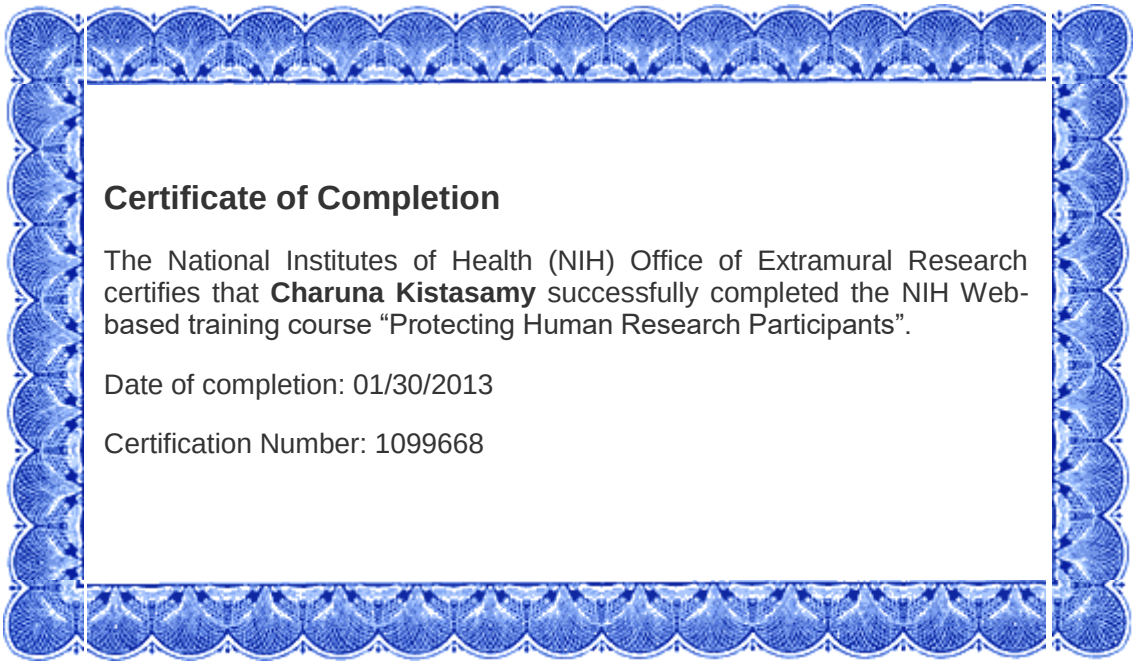
APPENDIX A

National Institute of Health Online Ethics Certificate



Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Charuna Kistasamy** successfully completed the NIH Web-based training course “Protecting Human Research Participants”.

Date of completion: 01/30/2013

Certification Number: 1099668

APPENDIX B

Letter of request to the Department of Education to recruit Speech-Language Therapists

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
SCHOOL OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

Director, Resource Planning

The (Name of province) Department of Basic Education

(Date)

Dear Sir/Madam

Re: Permission to access schools for learners with special educational needs to recruit Speech-Language Therapists for a research study

Title of study:

"The integration of multilingualism and culture into augmentative and alternative communication services provided to children in KwaZulu-Natal and Gauteng, South Africa."

I am a Speech-Language Therapist and am currently completing my masters research at the University of KwaZulu-Natal (protocol reference number HSS/1278/013M). The aim of my research study is to explore how multilingualism and culture are integrated into augmentative and alternative communication (AAC) services provided to school-aged children in the provinces of KwaZulu-Natal and Gauteng, South Africa. AAC offers individuals with severe speech and/or language disorders a means to communicate by using their own skills or items provided to them. AAC can range from pointing to pictures on a page to using electronic devices.

This area of research is important in the field of AAC as little research has been produced about how multilingualism and culture are taken into account when managing individuals who require this intervention. As South Africa is a diverse nation in terms of culture and language, this is a critical area for Speech-Language Therapists who provide these services. The results of this study may assist Speech-Language Therapists to complete management in

APPENDIX B

Letter of request to the Department of Education to recruit Speech-Language Therapists

a holistic way, using methods which have been used by Speech-Language Therapists working in the field of AAC. This will facilitate better outcomes for the client receiving the service as well as their family.

This research study requires Speech-Language Therapists to provide information about their current practices, experiences and challenges in working with children between the ages of five to twelve years who use AAC only and not about services in the institution at which they are based. Speech-Language Therapists will also be asked to provide the researcher with the names and contact details of parents whose children are receiving AAC services. The children of these parents must be exposed to two or more languages so parents' responses are relevant for the study. Speech-Language Therapists who participate in the study will be asked to write a journal over two weeks with preferably two entries or more. Following this, the Speech-Language Therapists will interact with the researcher in an audio recorded individual interview for approximately one hour. This interview will be conducted after working hours, at a time and venue which will be arranged with relevant management and participants', therefore the school routine will not be disrupted. In the final stage of the study the researcher will contact and hand out questionnaires to parents' of children who are receiving AAC services. The identities of schools, Speech-Language Therapists', parents' and children will remain confidential throughout the study. The total period of time over which information will be collected from Speech-Language Therapists and parents will be about two months. Throughout all stages of the research study, ethical principles and professional standards will be upheld.

As per the university protocol, permission was first obtained from schools which confirmed their participation. A list of schools is attached for your reference. It would be appreciated if you could grant me permission to approach Speech-Language Therapists in Department of Education schools for learners with special educational needs, in order to conduct my research study. Please sign the attached consent form if you will grant me access to these schools and return it preferably via email or fax by (date) (refer to the researcher's contact details below). Please contact the researcher on the number below, if you require more information.

Kind regards

APPENDIX B

Letter of request to the Department of Education to recruit Speech-Language Therapists

_____

Charuna Kistasamy

Researcher

B. Comm Path (SLP) (UKZN)

Contact details

Contact number: 076 538 9668

Fax: 086 667 6206

Email: charuna.kistasamy@gmail.com

Postal address: P.O. Box 2105,

Umhlanga Manors, 4021

_____

Saira Karrim

Research supervisor

Lecturer: Speech-Language Pathology

B. Comm Path (SLP) (UKZN)

M. Comm Path (SLP) (UKZN)

Contact details

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_____

Jenny Pahl

Research supervisor

Senior Lecturer: Speech-Language Pathology

B.Sc(Log) (UCT), MA (Stellenbosch), DipEd (Natal)

Contact details

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Research office

Phindile Nene

Postgraduate Officer

Contact details

Work: 031 260 8280

Email: nenep1@ukzn.ac.za

APPENDIX B

Letter of request to the Department of Education to recruit Speech-Language Therapists

PLEASE RETURN THIS PAGE

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
SCHOOL OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

I, (full name and surname) _____ am a (position) _____ at the Department of Education. I grant the researcher, Charuna Kistasamy, access to Department of Education schools for learners with special educational needs to conduct the study "The integration of multilingualism and culture into augmentative and alternative communication services provided to children in KwaZulu-Natal and Gauteng, South Africa."

Conditions of permission (if any):

_____

_____

_____

_____

_____

Signature: _____ Date: _____

APPENDIX C

Letter of request to the Department of Health to recruit Speech-Language Therapists

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
SCHOOL OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

Manager, Health Research and Knowledge Management Sub-Component
The (Name of province) Department of Health
(Postal address)

(Date)

Dear Sir/Madam

Re: Permission to access health institutions to recruit Speech-Language Therapists for a research study

Title of study:
"The integration of multilingualism and culture into augmentative and alternative communication services provided to children in KwaZulu-Natal and Gauteng, South Africa."

Dear Sir/Madam

I am a Speech-Language Therapist and am currently completing my masters research at the University of KwaZulu-Natal (protocol reference number HSS/1278/013M). The aim of my research study is to explore how multilingualism and culture are integrated into augmentative and alternative communication (AAC) services provided to school-aged children in the provinces of KwaZulu-Natal and Gauteng, South Africa. AAC offers individuals with severe speech and/or language disorders a means to communicate by using their own skills or items provided to them. These items can be non-electronic such as a board with pictures or electronic, such as a voice output communication aid.

This area of research is important in the field of AAC as little research has been produced about how multilingualism and culture are taken into account when managing individuals

APPENDIX C

Letter of request to the Department of Health to recruit Speech-Language Therapists who require AAC. As South Africa is a diverse nation in terms of culture and language, this is a critical area for Speech-Language Therapists who provide these services. The results of this study may assist Speech-Language Therapists to complete management in a holistic way, using methods which have been used by Speech-Language Therapists working in the field of AAC. This will facilitate better outcomes for the client receiving the service as well as their family.

This research study requires Speech-Language Therapists to provide information about their current practices, experiences and challenges in working with children between the ages of five to twelve years who use AAC only and not about services in the institution at which they are based. This information will be obtained by Speech-Language Therapists by writing a journal over two weeks then interacting with the researcher in an individual interview for approximately one hour. This interview will be conducted after working hours, at a time and venue which will be arranged with relevant management and participants', therefore service delivery will not be disrupted. Speech-Language Therapists will also be asked to provide me with the names and contact details of parents whose children are receiving AAC services. The children of these parents must be exposed to two or more languages so parents' responses are relevant for the study. I will approach these parents about participating in the study and will provide questionnaires to parents who consent to take part in the study. The identities of Speech-Language Therapists, parents and children will remain confidential. Throughout all stages of the research study, ethical principles and professional standards will be upheld. The total time period over which information will be collected from Speech-Language Therapists and parents will be about three weeks.

As per the university protocol, permission from the KZN Department of Health will be sought as soon as access to hospitals are confirmed and a list can be forwarded to them. Please sign the attached consent form if you will grant me access to these hospitals and return it preferably via email or fax by (date) (refer to the researcher's contact details below). Please contact the researcher on the number below, if you require more information.

Kind regards

APPENDIX C

Letter of request to the Department of Health to recruit Speech-Language Therapists

_____

Charuna Kistasamy

Researcher

B. Comm Path (SLP) (UKZN)

Contact details

Contact number: 076 538 9668

Fax: 086 667 6206

Email: charuna.kistasamy@gmail.com

Postal address: P.O. Box 2105,

Umhlanga Manors, 4021

_____

Saira Karrim

Research supervisor

Lecturer: Speech-Language Pathology

B. Comm Path (SLP) (UKZN)

M. Comm Path (SLP) (UKZN)

Contact details

Work: 031 260 7550

Email: Karrimsb@ukzn.ac.za

_____

Jenny Pahl

Research supervisor

Senior Lecturer: Speech-Language Pathology

B.Sc(Log) (UCT), MA (Stellenbosch), DipEd (Natal)

Contact details

Work: 031 260 7624

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Research office

Phindile Nene

Postgraduate Officer

Contact details

Work: 031 260 8280

Email: nenep1@ukzn.ac.za

APPENDIX C

Letter of request to the Department of Health to recruit Speech-Language Therapists

PLEASE RETURN THIS SLIP

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
SCHOOL OF AUDIOLOGY & SPEECH-LANGUAGE PATHOLOGY
COLLEGE OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

I, (full name and surname) _____ am a (position) _____ at the Department of Health. I grant the researcher, Charuna Kistasamy, access to Department of Health institutions to conduct the study "The integration of multilingualism and culture into augmentative and alternative communication services provided to children in KwaZulu-Natal and Gauteng, South Africa."

Conditions of permission (if any):

_____

_____

_____

_____

_____

Signature: _____ Date: _____

APPENDIX D

Letter of request to approach the Centre for Augmentative and Alternative Communication to recruit Speech-Language Therapists

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
SCHOOL OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

The Director

Centre for Augmentative and Alternative Communication

(Date)

Dear Sir/Madam

Re: Assistance with the recruitment of Speech-Language Therapists for a research study

Title of the study:

"The integration of multilingualism and culture into augmentative and alternative communication services provided to children in KwaZulu-Natal and Gauteng, South Africa."

Dear Sir/Madam

I am a Speech-Language Therapist and am currently completing my masters research at the University of KwaZulu-Natal (protocol reference number HSS/1278/013M). The aim of my research study is to explore how multilingualism and culture are integrated into augmentative and alternative communication (AAC) services provided to school-aged children in the provinces of KwaZulu-Natal and Gauteng, South Africa.

This area of research is important in the field of AAC as little research has been produced about how multilingualism and culture are taken into account when managing individuals who require this intervention. As South Africa is a diverse nation in terms of culture and language, this is a critical area for Speech-Language Therapists who provide these services. The results of this study may assist Speech-Language Therapists to complete management in a holistic way, using

APPENDIX D

Letter of request to approach the Centre for Augmentative and Alternative Communication to recruit Speech-Language Therapists

methods which have been used by Speech-Language Therapists working in the field of AAC. This will facilitate better outcomes for the client receiving the service as well as their family.

This research study requires information from Speech-Language Therapists who work in government hospitals, schools for learners with special educational needs, organizations which provide AAC services and those who work in private practice. Speech-Language Therapists will be asked to provide information about their current practices, experiences and challenges in working with children between the ages of five to twelve years who require AAC services only and not about services in the institution at which they are based. Speech-Language Therapists will also be asked to provide the researcher with the names and contact details of parents whose children are receiving AAC services. The children of these parents must be exposed to two or more languages so parents' responses are relevant for the study. Speech-Language Therapists who participate in the study will be asked to write a journal over two weeks with preferably two entries or more. Following this, the Speech-Language Therapists will interact with the researcher in an audio recorded individual interview for approximately one hour. This interview will be conducted after working hours, at a time suitable to participants', in a venue which will be arranged with relevant management and the participant. In the final stage of the study the researcher will contact and hand out questionnaires to parents' of children who are receiving AAC services. The identities of Speech-Language Therapists', parents' and children will remain confidential throughout the study. The total period of time over which information will be collected from Speech-Language Therapists and parents will be about two months. Throughout all stages of the research study, ethical principles and professional standards will be upheld.

It would be appreciated if you could grant me permission to approach Speech-Language Therapists who provide AAC services, in order to conduct my research study. As confidentiality must be maintained by the CAAC, it is kindly requested that you email request letters, with which I will provide you at a later date to Speech-Language Therapists. Speech-Language Therapists will be asked to contact me if they would like to receive further information about the study. Please sign the attached consent form if you will grant me access to your organization for

APPENDIX D

Letter of request to approach the Centre for Augmentative and Alternative Communication to recruit Speech-Language Therapists

the study and return it preferably via email or fax by (date) (refer to the researcher's contact details below). Please contact the researcher on the number below, if you require more information.

Kind regards

_____

Charuna Kistasamy

Researcher

B. Comm Path (SLP) (UKZN)

Contact details

Contact number: 076 538 9668

Fax: 086 667 6206

Email: charuna.kistasamy@gmail.com

Postal address: P.O. Box 2105,

Umhlanga Manors, 4021

_____

Saira Karrim

Research supervisor

Lecturer: Speech-Language Pathology

B. Comm Path (SLP) (UKZN)

M. Comm Path (SLP) (UKZN)

Contact details

Work: 031 260 7550

Email: Karrimsb@ukzn.ac.za

APPENDIX D

Letter of request to approach the Centre for Augmentative and Alternative Communication to recruit Speech-Language Therapists

_____

Jenny Pahl

Research supervisor

Senior Lecturer: Speech-Language Pathology

B.Sc(Log) (UCT), MA (Stellenbosch), DipEd (Natal)

Contact details

Work: 031 260 7624

Email: pahlj@ukzn.ac.za

Research office

Phindile Nene

Postgraduate Officer

Contact details

Work: 031 260 8280

Email: nenep1@ukzn.ac.za

APPENDIX D

Letter of request to approach the Centre for Augmentative and Alternative Communication to recruit Speech-Language Therapists

PLEASE RETURN THIS PAGE

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
SCHOOL OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

I, (full name and surname) _____ am a (position) _____ at the Centre for Augmentative and Alternative Communication. I grant the researcher, Charuna Kistasamy, access to the Centre for Augmentative and Alternative Communication to conduct the study "The integration of multilingualism and culture into augmentative and alternative communication services provided to children in KwaZulu-Natal and Gauteng, South Africa."

Conditions of permission (if any):

_____

_____

_____

_____

_____

Signature: _____ Date: _____

APPENDIX E

Letter of request to approach the branches of Interface

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
SCHOOL OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

The Manager

Interface KZN

(Date)

Dear Sir/Madam

Re: Permission to access Speech-Language Therapists to conduct a research study

Dear Sir/Madam

I am a Speech-Language Therapist currently completing my Masters research at the University of KwaZulu-Natal (protocol reference number HSS/1278/013M). The aim of my research study is to explore how multilingualism and culture are integrated into augmentative and alternative communication (AAC) services provided to school-aged children in the provinces of KwaZulu-Natal and Gauteng, South Africa.

I contacted you earlier this year for assistance with my research study. Due to low response rates from Speech-Language Therapists, I have changed the methods that I will be using to be more suitable to the time many Speech-Language Therapists may have available. The assistance I request from you is for the contact details of Speech-Language Therapists Interface employs and supports who have experience in AAC. If you are unable to give out the contact information of Speech-Language Therapists, then I can email you a letter which you can send to Speech-Language Therapists.

This area of research is important in the field of AAC as little research exists about how multilingualism and culture are being taken into account when managing individuals who require

APPENDIX E

Letter of request to approach the branches of Interface

this intervention. As South Africa is a diverse nation in terms of culture and language, this is a critical area for Speech-Language Therapists who are providing these services. The results of this study may assist Speech-Language Therapists to complete management in a holistic way, using methods which have been used by Speech-Language Therapists working in the field of AAC. This will facilitate better outcomes for the client receiving the service as well as their family.

This research study requires information from Speech-Language Therapists who provide AAC services and work in government hospitals, schools for learners with special educational needs, private practice, and organizations. Speech-Language Therapists will be asked to provide information about their current practices, experiences and challenges in working with children between the ages of five to twelve years who require AAC services. This information will be obtained by Speech-Language Therapists by writing a journal over two weeks then interacting with the researcher in an individual interview for approximately one hour. Speech-Language Therapists will also be asked to provide me with the names and contact details of parents whose children are receiving AAC services. The children of these parents must be exposed to two or more languages so parents' responses are relevant for the study. I will approach these parents about participating in the study and will provide questionnaires to parents who consent to take part in the study. The identities of Speech-Language Therapists, parents and children will remain confidential. Throughout all stages of the research study, ethical principles and professional standards will be upheld.

It will be appreciated if you can assist me to access Speech-Language Therapists. Please sign the attached consent form if you will provide me with information to access Speech-Language Therapists for the study and return it preferably via email or fax by (date) (refer to the researcher's contact details below). Please contact me on the number below, if you have any questions.

APPENDIX E

Letter of request to approach the branches of Interface

Kind regards

_____

Charuna Kistasamy

Researcher

B. Comm Path (SLP) (UKZN)

Contact details

Contact number: 076 538 9668

Fax: 086 667 6206

Email: charuna.kistasamy@gmail.com

Postal address: P.O. Box 2105,

Umhlanga Manors, 4021

_____

Saira Karrim

Research supervisor

Lecturer: Speech-Language Pathology

B. Comm Path (SLP) (UKZN)

M. Comm Path (SLP) (UKZN)

Contact details

Work: 031 260 7550

Email: Karrimsb@ukzn.ac.za

_____

Jenny Pahl

Research supervisor

Senior Lecturer: Speech-Language Pathology

B.Sc(Log) (UCT), MA (Stellenbosch), DipEd (Natal)

Contact details

Work: 031 260 7624

Email: pahlj@ukzn.ac.za

Research office

Phindile Nene

Postgraduate Officer

Contact details

Work: 031 260 8280

Email: nenep1@ukzn.ac.za

APPENDIX E

Letter of request to approach the branches of Interface

PLEASE RETURN THIS PAGE

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
SCHOOL OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

I, (full name and surname) _____ am a (position) _____ at Interface (branch name) _____. I grant the researcher, Charuna Kistasamy, to access Interface for the study "The integration of multilingualism and culture into augmentative and alternative communication services provided to children in KwaZulu-Natal and Gauteng, South Africa."

The researcher can access Speech-Language Therapists by: (please tick the appropriate option)

☐ Using the contact details of Speech-Language Therapists provided by Interface

☐ Interface sending a letter to Speech-Language Therapists who provide AAC services to school-aged children

☐ Other method: _____

_____

Conditions of permission (if any):

_____

_____

_____

_____

_____

Signature: _____ Date: _____

APPENDIX F

Letter of request to school principals to recruit Speech-Language Therapists

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
SCHOOL OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

The Principal

(Date)

Dear Sir/Madam

Re: Permission to access Speech-Language Therapists at schools for learners with special educational needs in order to conduct a research study

Title of study:

"The integration of multilingualism and culture into augmentative and alternative communication services provided to children in KwaZulu-Natal and Gauteng, South Africa."

I am a Speech-Language Therapist and am currently completing my masters research at the University of KwaZulu-Natal (protocol reference number HSS/1278/013M). The aim of my research study is to explore how multilingualism and culture are integrated into augmentative and alternative communication (AAC) services provided to school-aged children in the provinces of KwaZulu-Natal and Gauteng, South Africa. AAC offers individuals with severe speech and/or language disorders a means to communicate by using their own skills or items provided to them. AAC can range from pointing to pictures on a page to using electronic devices.

This area of research is important in the field of AAC as little research has been produced about how multilingualism and culture are taken into account when managing individuals who require this intervention. As South Africa is a diverse nation in terms of culture and language, this is a critical area for Speech-Language Therapists who provide these services. The results of this study may assist Speech-Language Therapists to complete management in a holistic way, using

APPENDIX F

Letter of request to school principals to recruit Speech-Language Therapists

methods which have been used by Speech-Language Therapists working in the field of AAC. This will facilitate better outcomes for the client receiving the service as well as their family.

This research study requires Speech-Language Therapists to provide information about their current practices, experiences and challenges in working with children between the ages of five to twelve years who use AAC only and not about services in the institution at which they are based. Speech-Language Therapists will also be asked to provide the researcher with the names and contact details of parents whose children are receiving AAC services. The children of these parents must be exposed to two or more languages so parents' responses are relevant for the study. Speech-Language Therapists who participate in the study will be asked to write a journal over two weeks with preferably two entries or more. Following this, the Speech-Language Therapists will interact with the researcher in an audio recorded individual interview for approximately one hour. This interview will be conducted after working hours, at a time and venue which will be arranged with relevant management and participants', therefore the school routine will not be disrupted. In the final stage of the study the researcher will contact and hand out questionnaires to parents' of children who are receiving AAC services. The identities of schools, Speech-Language Therapists', parents' and children will remain confidential throughout the study. The total period of time over which information will be collected from Speech-Language Therapists and parents will be about two months. Throughout all stages of the research study, ethical principles and professional standards will be upheld.

As per the university protocol, permission from the Department of Education will be sought as soon as access to schools are confirmed and a list can be forwarded to them. Please sign the attached consent form if you will grant me access to your school and return it preferably via email or fax by (date) (refer to the researcher's contact details below). Once permission is granted from the Department of Education, you will be sent their letter of approval. Please contact the researcher on the number below, if you require more information.

Kind regards

APPENDIX F

Letter of request to school principals to recruit Speech-Language Therapists

Charuna Kistasamy
Researcher
B. Comm Path (SLP) (UKZN)

Contact details
Contact number: 076 538 9668
Fax: 086 667 6206
Email: charuna.kistasamy@gmail.com
Postal address: P.O. Box 2105,
Umhlanga Manors, 4021

Saira Karrim
Research supervisor
Lecturer: Speech-Language Pathology
B. Comm Path (SLP) (UKZN)
M. Comm Path (SLP) (UKZN)

Contact details
Work: 031 260 7550
Email: Karrimsb@ukzn.ac.za

Jenny Pahl
Research supervisor
Senior Lecturer: Speech-Language Pathology
B.Sc(Log) (UCT), MA (Stellenbosch), DipEd (Natal)

Contact details
Work: 031 260 7624
Email: pahlj@ukzn.ac.za

Research office
Phindile Nene
Postgraduate Officer

Contact details
Work: 031 260 8280
Email: nenep1@ukzn.ac.za

APPENDIX F

Letter of request to school principals to recruit Speech-Language Therapists

PLEASE RETURN THIS PAGE

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
SCHOOL OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

I, (full name and surname) _____ am a (position) _____ at (name of school) _____. I grant the researcher, Charuna Kistasamy, access to the before mentioned school to conduct the study "The integration of multilingualism and culture into augmentative and alternative communication services provided to children in KwaZulu-Natal and Gauteng, South Africa."

Conditions of permission (if any):

_____

_____

_____

_____

_____

Signature: _____ Date: _____

APPENDIX G

Letter of request to hospital managers to recruit Speech-Language Therapists

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
SCHOOL OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

The Hospital Manager

(Date)

Dear Sir/Madam

Re: Permission to access Speech-Language Therapists at health institutions to conduct a research study

Title of study:

"The integration of multilingualism and culture into augmentative and alternative communication services provided to children in KwaZulu-Natal and Gauteng, South Africa."

Dear Sir/Madam

I am a Speech-Language Therapist and am currently completing my masters research at the University of KwaZulu-Natal (protocol reference number HSS/1278/013M). The aim of my research study is to explore how multilingualism and culture are integrated into augmentative and alternative communication (AAC) services provided to school-aged children in the provinces of KwaZulu-Natal and Gauteng, South Africa. AAC offers individuals with severe speech and/or language disorders a means to communicate by using their own skills or items provided to them. AAC can range from pointing to pictures on a page to using electronic devices.

This area of research is important in the field of AAC as little research has been produced about how multilingualism and culture are taken into account when managing individuals who require this intervention. As South Africa is a diverse nation in terms of culture and language, this is a critical area for Speech-Language Therapists who provide these services. The results of this

APPENDIX G

Letter of request to hospital managers to recruit Speech-Language Therapists

study may assist Speech-Language Therapists to complete management in a holistic way, using methods which have been used by Speech-Language Therapists working in the field of AAC. This will facilitate better outcomes for the client receiving the service as well as their family.

This research study requires Speech-Language Therapists to provide information about their current practices, experiences and challenges in working with children between the ages of five to twelve years who use AAC only and not about services in the institution at which they are based. Speech-Language Therapists will also be asked to provide the researcher with the names and contact details of parents whose children are receiving AAC services. The children of these parents must be exposed to two or more languages so parents' responses are relevant for the study. Speech-Language Therapists who participate in the study will be asked to write a journal over two weeks with preferably two entries or more. Following this, the Speech-Language Therapists will interact with the researcher in an audio recorded individual interview for approximately one hour. This interview will be conducted after working hours, at a time and venue which will be arranged with relevant management and participants', therefore Speech-Language Therapists work commitments will not be disrupted. In the final stage of the study the researcher will contact and hand out questionnaires to parents' of children who are receiving AAC services. The identities of hospitals, Speech-Language Therapists', parents' and children will remain confidential throughout the study. The total period of time over which information will be collected from Speech-Language Therapists and parents will be about two months. Throughout all stages of the research study, ethical principles and professional standards will be upheld.

As per the university protocol, permission from the Department of Health will be sought as soon as access to hospitals are confirmed and a list can be forwarded to them. Please sign the attached consent form if you will grant me access to your hospital and return it preferably via email or fax by (date) (refer to the researcher's contact details below). Once permission is granted from the Department of Health, you will be sent their letter of approval. Please contact the researcher on the number below, if you require more information.

Kind regards

APPENDIX G

Letter of request to hospital managers to recruit Speech-Language Therapists

_____

Charuna Kistasamy

Researcher

B. Comm Path (SLP) (UKZN)

Contact details

Contact number: 076 538 9668

Fax: 086 667 6206

Email: charuna.kistasamy@gmail.com

Postal address: P.O. Box 2105,

Umhlanga Manors, 4021

_____

Saira Karrim

Research supervisor

Lecturer: Speech-Language Pathology

B. Comm Path (SLP) (UKZN)

M. Comm Path (SLP) (UKZN)

Contact details

Work: 031 260 7550

Email: Karrimsb@ukzn.ac.za

_____

Jenny Pahl

Research supervisor

Senior Lecturer: Speech-Language Pathology

B.Sc(Log) (UCT), MA (Stellenbosch), DipEd (Natal)

Contact details

Work: 031 260 7624

Email: pahlj@ukzn.ac.za

Research office

Phindile Nene

Postgraduate Officer

Contact details

Work: 031 260 8280

Email: nenep1@ukzn.ac.za

APPENDIX G

Letter of request to hospital managers to recruit Speech-Language Therapists

PLEASE RETURN THIS PAGE

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
SCHOOL OF AUDIOLOGY & SPEECH-LANGUAGE PATHOLOGY
COLLEGE OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

I, (full name and surname) _____ am a (position) _____ at (name of hospital) _____. I grant the researcher, Charuna Kistasamy, access to the before mentioned hospital to conduct the study "The integration of multilingualism and culture into augmentative and alternative communication services provided to children in KwaZulu-Natal and Gauteng, South Africa."

Conditions of permission (if any):

_____

_____

_____

_____

_____

Signature: _____ Date: _____

APPENDIX H

Letter of request to private practitioners to participate in the research study

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
SCHOOL OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

Speech-Language Therapist

(Date)

Dear Sir/Madam

Re: Participation in a research study

Title of study:

"The integration of multilingualism and culture into augmentative and alternative communication services provided to children in KwaZulu-Natal and Gauteng, South Africa."

I am a Speech-Language Therapist and am currently completing my masters research at the University of KwaZulu-Natal (protocol reference number HSS/1278/013M). The aim of my research study is to explore how multilingualism and culture are integrated into augmentative and alternative communication (AAC) services provided to school-aged children in the provinces of KwaZulu-Natal and Gauteng, South Africa.

This area of research is important in the field of AAC as little research has been produced about how multilingualism and culture are taken into account when managing individuals who require this intervention. As South Africa is a diverse nation in terms of culture and language, this is a critical area for Speech-Language Therapists who provide these services. The results obtained may assist you to manage multilingual children who require AAC in a holistic way, using methods which have been used by Speech-Language Therapists working in the field of AAC. This will facilitate better outcomes for the client receiving the service as well as their family.

APPENDIX H

Letter of request to private practitioners to participate in the research study

This research study will require you to provide information about your current practices, experiences and challenges in working with children between the ages of five to twelve years who use AAC only and not about services in your practice. You will also be asked to provide the researcher with the names and contact details of parents whose children are receiving AAC services. The children of these parents must be exposed to two or more languages so parents' responses are relevant for the study. If you participate in the study you will be asked to write a journal over two weeks with preferably two entries or more. Following this, you will interact with the researcher in an audio recorded individual interview for approximately one hour. This interview will be conducted after working hours at a time and venue which will be arranged with you, therefore your work routine will not be disrupted. If convenient and available, your place of work will be used to conduct the interview otherwise another suitable venue will be arranged with your agreement. In the final stage of the study the researcher will contact and hand out questionnaires to parents' of children who are receiving AAC services. The identities of you the Speech-Language Therapist, parents' and children will remain confidential throughout the study. The total period of time over which information will be collected from you and parents will be about two months. Throughout all stages of the research study, ethical principles and professional standards will be upheld.

I would like to request your participation in this research study. Please sign the attached consent form to obtain more information about the study and return it via email or fax by (date) (refer to the researcher's contact details below). Please contact the researcher or research supervisors on the number below if you require more information.

Kind regards

_____

Charuna Kistasamy
Researcher
B. Comm Path (SLP) (UKZN)

Contact details
Contact number: 076 538 9668
Fax: 086 667 6206
Email: charuna.kistasamy@gmail.com
Postal address: P.O. Box 2105,
Umhlanga Manors, 4021

APPENDIX H

Letter of request to private practitioners to participate in the research study

Saira Karrim

Research supervisor

Lecturer: Speech-Language Pathology

B. Comm Path (SLP) (UKZN)

M. Comm Path (SLP) (UKZN)

Contact details

Work: 031 260 7550

Email: Karrimsb@ukzn.ac.za

Jenny Pahl

Research supervisor

Senior Lecturer: Speech-Language Pathology

B.Sc(Log) (UCT), MA (Stellenbosch), DipEd (Natal)

Contact details

Work: 031 260 7624

Email: pahlj@ukzn.ac.za

Research office

Phindile Nene

Postgraduate Officer

Contact details

Work: 031 260 8280

Email: nenep1@ukzn.ac.za

APPENDIX H

Letter of request to private practitioners to participate in the research study

PLEASE RETURN THIS SLIP

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
SCHOOL OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

I, (full name and surname) _____ am a Speech-Language Therapist working in private practice, in the field of augmentative and alternative communication. I am interested in possibly participating in the research study "The integration of multilingualism and culture into augmentative and alternative communication services provided to children in KwaZulu-Natal and Gauteng, South Africa", and require further information.

I prefer to receive communication via:

Email ☐ Email address: _____

Post ☐ Postal address: _____

Signature: _____ Date: _____

APPENDIX I

Letter to inform parents about the study and request their contact details

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
SCHOOL OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

(Date)

Dear Sir/Madam

Re: Provide information to parents about being contacted about participating in a research study

Title of study:

"The integration of multilingualism and culture into augmentative and alternative communication services provided to children in KwaZulu-Natal and Gauteng, South Africa."

I am a student completing a Masters Research project at the University of KwaZulu-Natal[1]. My research study explores how culture and understanding and speaking two or more languages are included in augmentative and alternative communication (AAC) services provided to school-aged children in KwaZulu-Natal and Gauteng. AAC are methods of communicating when speaking is difficult and includes pointing to pictures on a page, using hand movements and using electronic devices. This research study may provide valuable answers about how Speech-Language Therapists work with children who are from different backgrounds and speak languages that are different from the Speech-Language Therapist. This will make Speech-Language Therapists more aware of how to work with these children in the future.

This letter was provided to you by your child's Speech-Language Therapist as she or he is also participating in my research study. You were identified as being someone likely to participate in my study as you have a child who is using AAC to communicate and is between 5-12 years of age. You have experience in knowing the techniques or items that help your child communicate

[1] Protocol reference number HSS/1278/013M

APPENDIX I

Letter to inform parents about the study and request their contact details

and have assisted your child to use these methods to communicate. This understanding of your child's manner of communicating is what is required for my study.

I would like to contact you to provide you with more specific information about my research study and what is required of you. If you take part in my project, you will need to answer a few questions given to you on a page that will take you about 15 minutes to complete. These questions will be written in a language that you can read and write in.

Kindly allow your Speech-Language Therapist to provide me with the following details so I can provide you with more information about my study.

Your name
Your work number
Your cell phone number
Your home number
Your email address (if you have one)
The area you live in
The address where post can be delivered to
The language you read and write in best

If you decide not to provide your contact details to the Speech-Language Therapist, there will not be any negative effects against you or your child.

I hope to speak with you soon.

APPENDIX I

Letter to inform parents about the study and request their contact details

Sincerely

_____

Charuna Kistasamy

Researcher

B. Comm Path (SLP) (UKZN)

Contact details

Contact number: 076 538 9668

Email: charuna.kistasamy@gmail.com

Postal address: P.O. Box 2105,

Umhlanga Manors, 4021

_____

Saira Karrim

Research supervisor

Lecturer: Speech-Language Pathology

B. Comm Path (SLP) (UKZN)

M. Comm Path (SLP) (UKZN)

Contact details

Work: 031 260 7550

Email: Karrimsb@ukzn.ac.za

_____

Jenny Pahl

Research supervisor

Senior Lecturer: Speech-Language Pathology

B.Sc(Log) (UCT), MA (Stellenbosch), DipEd (Natal)

Contact details

Work: 031 260 7624

Email: pahlj@ukzn.ac.za

Research office

Phindile Nene

Postgraduate Officer

Contact details

Work: 031 260 8280

Email: nenep1@ukzn.ac.za

APPENDIX J

Letter of information and informed consent to Speech-Language Therapists

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
SCHOOL OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

Speech-Language Therapist

(Date)

Dear Sir/Madam

Re: Information letter and consent form to participate in a research study

Title of study:

"The integration of multilingualism and culture into augmentative and alternative communication services provided to children in KwaZulu-Natal and Gauteng, South Africa."

I am a Speech-Language Therapist (SLT) and am currently completing my masters research at the University of KwaZulu-Natal (protocol reference number HSS/1278/013M). The aim of my research study is to explore how a school-aged child's culture and speaking two or more languages are integrated into augmentative and alternative communication (AAC) services provided in KwaZulu-Natal and Gauteng. You were identified through the settings you work in or through organizations which have your contact details (e.g. SASLHA[1]).

This area is important in the field of AAC as little research has been completed about how multilingualism[2] and culture are taken into account when managing individuals who require AAC. As South Africa has a diversity of cultures and languages, this is a critical area for SLTs who provide AAC services. The results of this study may assist SLTs to use methods other SLTs

[1] SASLHA: South African Speech-Language Hearing Association

[2] Multilingualism refers to understanding and producing two or more languages using speech, writing or gestures.

in the field of AAC use to provide more holistic services. This will facilitate better outcomes for the client receiving services as well as their family.

This research study will explore your current AAC practice, experiences and challenges in working with children between the ages of five to twelve years who require AAC services.

SLTs who participate in the study will be asked to write a journal over two weeks making two entries or more preferably. Following this, the SLT will interact with the researcher in an audio recorded interview for approximately one hour. This interview will be conducted after working hours, at a time and venue which will be arranged with relevant management and participants', therefore SLTs work commitments will not be disrupted. In the final stage of the study the researcher will contact and hand out questionnaires to parents' of children who are receiving AAC services. In order to contact parents, SLTs will be asked to provide the researcher with the names and contact details of parents whose children are receiving AAC services. The children of these parents must be exposed to two or more languages. You will be provided with a letter translated to a few of the commonly spoken official languages to give parents so they can decide if they want their details to be passed on to the researcher.

A total of eleven Speech-Language Therapists will be required for the study, one of whom will participate in a pilot study. The total period of time over which information will be collected from SLTs and parents will be about three weeks. The identities of SLTs', parents' and children will remain confidential throughout the study. Throughout all stages of the research study, ethical principles and professional standards will be upheld. Due to this, the results of the study will not cause you a risk of job loss or other penalties. Your participation in the research study is voluntary and therefore you will not receive benefits from the study. You will be allowed to leave the study at any stage and for any reason without penalties.

Information collected by SLTs and parents will be analyzed, then stored in a locked cupboard at UKZN for five years. Research records will be accessible by the researcher, research supervisors and individuals who obtain prior permission from the researcher or supervisors. Audio

recordings and written and electronic data will be deleted off a computer or destroyed by shredding after five years.

As a token of my appreciation for participating in the study, a resource disc with the study results as well as a resource book for practice with children will be given to you at the end of the study. Parents of children you see who participate in the study will not receive direct feedback about the study results but will be asked that they approach you for a verbal summary. This is asked as some parents may not want feedback about the study and it is unknown from which language background these parents will originate, thereby making translation of a summary difficult. If you do not consent to participate in this research study, it will not cause you to be disadvantaged in any form.

If you require more information about the research study, please contact the research supervisors on 031 260 7147 or email Saira Karrim- Karrimsb@ukzn.ac.za. Please complete the consent form and question sheet below if you would like to participate in the research study and return these documents via email or fax by __(date)__ (refer to the researcher's contact details below). Keep this information letter for yourself and if you do consent to participate in the study, a copy of the consent letter will be sent to you at a later time.

Kind regards

_____

Charuna Kistasamy
Researcher
B. Comm Path (SLP) (UKZN)

Contact details
Contact number: 076 538 9668
Fax: 086 667 6206
Email: charuna.kistasamy@gmail.com
Postal address: P.O. Box 2105,
Umhlanga Manors, 4021

APPENDIX J

Letter of information and informed consent to Speech-Language Therapists

Saira Karrim

Research supervisor

Lecturer: Speech-Language Pathology

B. Comm Path (SLP) (UKZN)

M. Comm Path (SLP) (UKZN)

Contact details

Work: 031 260 7550

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Jenny Pahl

Research supervisor

Senior Lecturer: Speech-Language Pathology

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Contact details

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HSSREC Research Office

Ms P Ximba

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APPENDIX J

Letter of information and informed consent to Speech-Language Therapists

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
SCHOOL OF AUDIOLOGY & SPEECH-LANGUAGE PATHOLOGY
COLLEGE OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

CONSENT FORM

I, _____ (full name and surname of participant) have been informed about the study entitled "The integration of multilingualism and culture into augmentative and alternative communication services provided to children in KwaZulu-Natal and Gauteng, South Africa."

I understand the contents of this document and the purpose and procedures of the study.

I declare that my participation in the study is voluntary and understand that I may withdraw at any time without consequences or penalties for my withdrawal.

Please place a tick in the yes or no box for each of the questions below.

	Yes	**No**
I agree to complete a journal.		
I agree to take part in an interview which will be audio recorded.		
I agree to ask parents of children I provide AAC services to, between the ages of five to twelve years, to read a letter requesting their participation in the current research study.		
I agree to provide the researcher with parents' contact details, if parents allow this to be shared with the researcher.		

_____ _____

Signature of participant Date

_____ _____

Witness 1 Date

_____ _____

Witness 2 Date

APPENDIX J

Letter of information and informed consent to Speech-Language Therapists

If you would like to participate in the study, please complete the following details so I may provide you with further information during the research study:

Cell phone number: _____

Work number: _____

Email address: _____

Would you like to receive a resource disc and book at the end of the study? (Circle your selection)

Yes No

PLEASE TURN OVER TO ANSWER FURTHER QUESTIONS IF YOU WOULD LIKE TO PARTICIPATE IN THE ABOVE RESEARCH STUDY

APPENDIX J

Letter of information and informed consent to Speech-Language Therapists

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
SCHOOL OF AUDIOLOGY & SPEECH-LANGUAGE PATHOLOGY
COLLEGE OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

Questions

Please answer the following questions by filling in the answer or place a cross over your selection.

1. Are you a qualified Speech-Language Therapist, registered with the Health Professionals Council of South Africa? **Yes** **No**
2. How many years experience do you have providing AAC services? **_____ years**
3. What language/s are you proficient in? _____

> *Language proficiency is defined as very good understanding and production of a language in spoken and written forms with the ability to problem solve in the language.*

4. The following questions are asked to gain insights into your cultural background. This information will be used as part of the criteria to select SLTs for the study. Please write or select your answers in the table.

a. What is your gender?	M F	
b. What is your religion?		
c. Do your cultural practices effect how at ease you are when asking family about personal or emotional information?	Y N	
d. Based on your culture, what term of address would you use to address parents you are meeting for the first time? **Please tick one of the options alongside.**	Use first names	
	Use title and surname	
	Terms based on family structure (e.g. mother, uncle etc…)	

5. Do you provide AAC services to clients who are multilingual? **Yes** **No**

> *Multilingualism is defined as being able to understand and produce "two or more languages in oral, manual, or written form" irrespective of their proficiency, use, and age at which they learnt the languages (Grech & McLeod, 2012, p. 121).*

6. Are multilingual children you are providing AAC services to currently between 5-12 years of age? **Yes** **No**
7. Do you provide AAC services to children in a language which is not a language you speak proficiently? **Yes** **No**
8. Are you currently providing AAC services to at least one child who is multilingual and between 5-12 years of age? **Yes** **No**
9. What method do you choose to write a journal? Approximately two journal entries over a two week period is to be written. Please mark your choice in the first column.

Option	Mark one block	Other
Write journals electronically on a computer and send via email		.
Write journals manually in a book which will be provided		**If this option is selected, mark one item below:** Completed journal entries will be posted ☐ Completed journal entries will be scanned and sent via email to the researcher ☐

10. Do you consent to allowing the researcher access to parents of clients' you are seeing? The identities of parents will remain confidential. **Yes** **No**

11. Are multilingual children you provide AAC services to diagnosed with the following conditions? **Yes** **No**

    If yes, please tick in the block that is applicable.

Cerebral Palsy	Autism Spectrum Disorder	Cognitive impairment

12. What languages do parents of children between 5-12 years you are providing AAC services to read in? Please **select the languages and write the number** of parents who read in this language, in the block next to the language.

English		seTswana		isiZulu		Xitsonga	
Afrikaans		seSotho		isiXhosa		sePedi	

13. Please complete the table on the next page with the details of a maximum of **four** parents who:
    - Has a child between 5-12 years of age diagnosed with Cerebral Palsy, Autism Spectrum Disorder and/or Cognitive Impairment
    - Has a child exposed to two or more languages
    - Has a child receiving any type of AAC management from you (this can range from using visual schedules, a gesture system, picture symbols to electronic devices).
    - Can read and write in one of the languages in the above table well in order to answer a questionnaire.

Please return the consent form and question sheets via email or fax by __(date)__ using:

Fax: 086 667 6206

Email: charuna.kistasamy@gmail.com

APPENDIX K

Letter of information and informed consent to parents

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY

SCHOOL OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

(Date)

Dear Sir/Madam

Re: Information letter and consent form to participate in a research study

Title of study:

"The integration of multilingualism and culture into augmentative and alternative communication services provided to children in KwaZulu-Natal and Gauteng, South Africa."

I am a Speech-Language Therapist and am currently completing a research study at the University of KwaZulu-Natal[1]. My research study explores how culture and understanding and speaking two or more languages are included in augmentative and alternative communication (AAC) services provided to school-aged children in KwaZulu-Natal and Gauteng. AAC are methods of communicating when speaking is difficult and includes pointing to pictures on a page, using hand movements and using electronic devices. You were identified through the Speech-Language Therapist who is providing therapy to your child and who is taking part in this study.

This area is important to study as there is little research available about how culture and two or more languages are considered when providing services to children who use AAC. As South Africa is a country where people speak different languages and come from various backgrounds, this is an important area for Speech-Language Therapists to consider. The results will be useful in helping Speech-Language Therapists to provide services to families in a way which best helps them and their child.

[1] Protocol reference number HSS/1278/013M

APPENDIX K

Letter of information and informed consent to parents

This study requires your Speech-Language Therapist to provide information about the ways they provide services, and the positive and negative experiences they have had when working with children of school going age who use AAC. The final stage of the study I will give you a short questionnaire to complete. The questions will allow me to explore how services are currently provided by Speech-Language Therapists in the field of AAC. The questions you will be asked do not indicate how your Speech-Language Therapist should be providing services.

Information will be collected from you and your Speech-Language Therapist over about three weeks. Questionnaires collected from you will be analyzed then stored in a locked cupboard for five years at UKZN. All the information collected from Speech-Language Therapists will be available to the researcher, research supervisors and individuals who receive permission from the researcher or supervisors. Taped audio recordings, information on computer and written on paper will be deleted off a computer or destroyed by shredding after five years.

Ethical principles will be upheld throughout the study. The names and personal information of schools, hospitals, Speech-Language Therapists, parents and children will remain unknown throughout the research project by unofficial people, including when results are written. Questionnaires you complete will remain sealed in the envelope you place it in until the researcher receives it. Therefore you should not be concerned about being disadvantaged by your Speech-Language Therapist because of the answers you provide. Your participation in the research study will be voluntary and therefore you will receive no benefits from the study. You may leave the study at any stage, for any reason with no negative consequences. If you do not consent to participate in this research study, it will not cause you any form of disadvantage.

You will not receive feedback from me about the study results once the study is completed. But your child's Speech-Language Therapist has been asked to provide you with a summary of the results of the study verbally. A written summary of the results is difficult to provide as some parents' may not want feedback about the study and translation of a summary is therefore difficult.

APPENDIX K

Letter of information and informed consent to parents

If you need more information about the research study, please contact the research supervisors on 031 260 7147 or email Saira Karrim- Karrimsb@ukzn.ac.za. Please complete the consent form and question sheet below if you would like to participate in the research study and return it to me via post, fax or email by ___(date)___. Keep this information letter for yourself and if you do consent to participate in the study, a copy of the consent letter will be sent to you at a later time.

Kind regards

_____

Charuna Kistasamy

Researcher

B. Comm Path (SLP) (UKZN)

Contact details

Contact number: 076 538 9668

Fax: 086 667 6206

Email: charuna.kistasamy@gmail.com

Postal address: P.O. Box 2105,

Umhlanga Manors, 4021

_____

Saira Karrim

Research supervisor

Lecturer: Speech-Language Pathology

B. Comm Path (SLP) (UKZN)

M. Comm Path (SLP) (UKZN)

Contact details

Work: 031 260 7550

Email: Karrimsb@ukzn.ac.za

_____

Jenny Pahl

Research supervisor

Senior Lecturer: Speech-Language Pathology

B.Sc(Log) (UCT), MA (Stellenbosch), DipEd (Natal)

Contact details

Work: 031 260 7624

Email: pahlj@ukzn.ac.za

APPENDIX K

Letter of information and informed consent to parents

Research office

Phindile Nene

Postgraduate Officer

Contact details

Work: 031 260 8280

Email: nenep1@ukzn.ac.za

HSSREC Research Office

Ms P Ximba

Contact details

Work: 031 260 3587

Email: ximbap@ukzn.ac.za

APPENDIX K

Letter of information and informed consent to parents

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
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COLLEGE OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

CONSENT FORM

I have been informed about the study entitled "The integration of multilingualism and culture into augmentative and alternative communication services provided to children in KwaZulu-Natal and Gauteng, South Africa."

I understand the contents of this document and the purpose and procedures of the study.

I declare that my participation in the study is voluntary and understand that I may withdraw at any time without consequences or penalties for my withdrawal.

_____ _____

Signature of parent Date

_____ _____

Witness 1 Date

_____ _____

Witness 2 Date

APPENDIX K

Letter of information and informed consent to parents

Please answer the following question by placing a cross over your answer.

What language do you read and write best in? **Please select or write one language only.**

This question will allow the researcher to provide you with a questionnaire which is in a language you understand best. With this questionnaire, you will be able to answer questions easily and be able to write openly, in detail and without difficulty in understanding or writing your responses.

English	seTswana	isiZulu	Xitsonga
Afrikaans	seSotho	isiXhosa	sePedi

Write the name of another language you would like the questionnaire in, which is not listed above:

_____

Please return the consent form and question sheet via email, post or fax by __(date)__ using:

Postal address: P.O. Box 2105, Umhlanga Manors, 4021

Fax: 086 667 6206

Email: charuna.kistasamy@gmail.com

APPENDIX L

SLT pilot study: Evaluation letter

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
SCHOOL OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

Speech-Language Therapist

Please complete the tables below.

1. JOURNAL WRITING

Area	Good	Needs to be changed	Explanation
	PLEASE MARK ONE		
The time and frequency of writing journal entries			
The appropriateness of the areas of discussion in journals			
The ease of completing journals			
The process of sending completed journals to the researcher			
Are there gaps in the areas of discussion which the researcher should address?			

Additional comments:

_____

_____

_____

_____

APPENDIX L

SLT pilot study: Evaluation letter

2. INDIVIDUAL INTERVIEW

Area	Good	Needs to be changed	Explanation
	PLEASE MARK ONE		
How were the clarity of the questions you were asked?			
How was the interview setting?			
How was the researcher's manner of conducting the interview?			
How was the time in which the interview was conducted?			
Are there additional areas which should be asked about in the interview			

Additional comments:

_____

_____

_____

_____

_____

_____

APPENDIX M

Parent pilot study: Evaluation letter

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
SCHOOL OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

Dear Parent

Please complete the table below.

1. PARENT QUESTIONNAIRE

Area	Good	Needs to be changed	Explanation
	PLEASE MARK ONE		
The ease of answering questions			
Were questions easy to understand?			
The presentation of instructions and questions			
The amount of time to answer the questions			
The appropriateness of questions			

Please suggest ways the questionnaire can be improved to make it easier for other parents to complete the questionnaire.

_____

_____

_____

_____

APPENDIX M

Parent pilot study: Evaluation letter

Additional comments:

_____

_____

_____

_____

APPENDIX N

Guide to journal writing

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
SCHOOL OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

Speech-Language Therapist

(Date)

Dear Sir/Madam

Re: Guide to writing journals

Title of study:

"The integration of multilingualism and culture into augmentative and alternative communication services provided to children in KwaZulu-Natal and Gauteng, South Africa."

Thank you for your assistance with my research project. The first phase of data collection requires you to write in a journal for two weeks.

A book or an email has been sent to you with a template of the information you will be writing about. In this journal you should:

- Write entries as situations occur in your daily practice, which are applicable for the study. More than one entry per day is not required.
- Each journal entry should address all three topic areas.
- Write the date at the beginning of each journal entry.
- Start each journal entry on a new page.

The areas you are asked to write about have been selected as you will have specific insight into them based on your knowledge, experiences and practice. When writing about each area, explain challenges you have faced in the past or are currently facing, solutions you have found,

APPENDIX N

Guide to journal writing

techniques and methods you use as well as other areas which have been significant to your practice in the field of augmentative and alternative communication with multilingual and multicultural children. Names of people, places and client's will remain confidential.

In each journal entry, please write about each of the topics below.

- Experiences of working cross-linguistically
- Management of a client and their family who is of a different cultural and linguistic background to the clinician
- Providing services in two or more languages to children and their families

Definitions

Definitions have been provided to ensure all SLTs involved in the research study share the same understanding of terms used.

Cross-linguistic: Providing services in a language or languages which you are not proficient in.

Cross-cultural: Providing services to a client who comes from a different cultural background to you.

Multilingual: Able to understand and produce "two or more languages in oral, manual, or written form" irrespective of their proficiency, use, and age at which they learnt the languages (Grech & McLeod, 2012, p. 121).

Multicultural: AAC services are provided to children who come from different cultural backgrounds, i.e. more than one culture.

Language proficiency: A very good understanding and production of a language in spoken and written forms, with the ability to problem solve in the language.

Please send completed journals to me at the end of two weeks electronically (where entries are emailed or scanned and emailed) or via post (where journal entries in a book are photocopied) by (date). Kindly let me know via email or phone when you have sent me your completed journals.

APPENDIX N

Guide to journal writing

If you have any questions regarding journal writing or other aspects of this stage of the study, please contact me using my contact details below.

Kind regards

_____

Charuna Kistasamy

Researcher

B. Comm Path (SLP) (UKZN)

Contact details

Contact number: 076 538 9668

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_____

Saira Karrim

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Jenny Pahl

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Contact details

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Email: pahlj@ukzn.ac.za

Research office

Phindile Nene

Postgraduate Officer

Contact details

Work: 031 260 8280

Email: nenep1@ukzn.ac.za

APPENDIX O

Interview schedule for individual interviews with Speech-Language Therapists

PARTICIPANT __ _____/2015

Good afternoon

- *Thank you for meeting with me and taking time to be here today.*
- *The purpose of this interview is to find out more about your experiences and practices with culturally diverse and multilingual children who require AAC.*
- *This interview will take approximately an hour and I will be using an audio recorder so I can analyze our discussion afterward.*
- *Please take your time to answer questions and ask me if you want any questions clarified or repeated.*
- *Try to ensure you do not mention names of specific people or places. This is important to keep the identity of persons in the research study unknown.*
- *Do you have any questions before we start?*

The questions I will be starting with are based on your journal, following which will be general questions.

Questions: SLTs' journals (Examples of individualized questions asked during SLT interviews)

1. With your experience of practicing AAC with multilingual and multicultural learners, how have you been able to facilitate transfer of your therapy goals to the learner's home context?
   Rephrase the question:
   In your experience of working with CLD learners who require AAC, describe the ways you have facilitated the transfer of therapy goals to the learner's home context.

2. Let's talk about your collaboration with educators and how therapy aims are generalized to the classroom context.

APPENDIX O

Interview schedule for individual interviews with Speech-Language Therapists

3. Explain how two or more languages are integrated in your AAC management of multilingual learners.

   Rephrase the question:

   Discuss your AAC management when using two or more languages with multilingual learners.

4. Due to the wide range of languages in which learners at the school you work at communicate, describe the resources you have that assist you with assessing and managing learners with special educational needs who use AAC.

   Rephrase the question:

   Describe the resources you use for learners with special educational needs who use AAC and who have varied linguistic backgrounds?

5. How does the medium of instruction at your school, English, influence the language of therapy when a child is a first language non-English language speaker?

Now let's move onto more general questions.

<u>Set questions</u>

6. Describe how you conduct parent or caregiver interviews when they speak a different language to you and are of a different cultural background.

   Rephrase the question:

   Describe the methods and practices you use to conduct case history interviews with a parent or caregiver when they come from a language and cultural background that is different to you.

APPENDIX O

Interview schedule for individual interviews with Speech-Language Therapists

7. Describe how questions you ask to two families in a case history interview - one who has a SIMILAR and the other a DIFFERENT cultural and linguistic background to you, compare.

   Ways to rephrase the question:

   a) **How would questions you ask during a case history interview compare for a family who has a SIMILAR and the other a DIFFERENT cultural and linguistic background to you?**
   b) **During a case history interview, how would questions you ask**
      i. **a family who has a SIMILAR and the other a DIFFERENT linguistic background to you compare?**
      ii. **a family who has a SIMILAR and the other a DIFFERENT cultural background to you compare?**

8. Describe the adaptations you have made during AAC assessment and intervention for multilingual clients who are from a cultural background that is different from you.

   Rephrase the question:

   Discuss the ways you have adapted AAC assessment and intervention methods and principles for clients who are multilingual and have a cultural background different from you.

9. There are two parts to this next question.

9a) Firstly, describe the types of AAC systems and devices that you have recommended or used with **multilingual** school-aged children.

9b) Now based on your answer, explain the factors which guided you to select these AAC systems and devices for your clients.

Let's talk more about working with multilingual clients.

APPENDIX O

Interview schedule for individual interviews with Speech-Language Therapists

10. Describe how you have **created or adapted** communication systems and devices to be **culturally** appropriate for multilingual clients.

    Rephrase the question:

    Describe the ways you have made or changed communication systems and devices to be <u>culturally</u> appropriate for multilingual clients.

11. Describe how the resources you have in your place of work allow you to provide AAC services effectively to culturally and linguistically diverse school-aged children.

    Prompt:

    Resources in terms of materials, individuals, the environment.

12. Describe the factors that **POSITIVELY influence and facilitate** your management of multilingual clients.

13. Describe the factors that **NEGATIVELY influence** your management of multilingual clients.

14. Describe **how you have developed your skills** in order **to provide AAC services to culturally and linguistically diverse children**.

15. How can AAC courses and speech therapy practice improve to serve culturally and linguistically diverse school-aged children in the future?

APPENDIX O

Interview schedule for individual interviews with Speech-Language Therapists

16. Tell me about some general areas you consider valuable in your experience with working with multilingual children.

17. Discuss how you plan your sessions and manage your time when providing services to culturally and linguistically diverse children.

18. Describe your experiences of working with parents and family who are introduced to using AAC.

19. Describe your experiences of how parents and family members have transferred AAC to their daily contexts and home environment.

20. Describe how you involve parents in therapy and your experiences in carrying this out.

21. Do you have any additional comments you would like to make about what we have discussed or about your practice with children who use AAC?

– *Thank you very much for your participation and taking time to help me conduct this study.*

APPENDIX P

Parent questionnaire

DISCIPLINE OF SPEECH-LANGUAGE PATHOLOGY
SCHOOL OF HEALTH SCIENCES
Tel: 031 260 7147
Fax: 031 260 7622

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

PARENT QUESTIONNAIRE

Parent's name: _____

- Please answer the following questions with as much information as you can.

- **I will keep all information you provide confidential.**

- Write answers as clearly as you can and in the language which you are most comfortable using or read and write in best.

- Note that the questions below do not indicate how a Speech-Language Therapist should provide services. The questions are asked only to allow the researcher to explore the services which are provided by Speech-Language Therapists.

- Your point of view is important in this study as you have been with your child since they started Speech-Language Therapy. You can offer a good understanding of your child's use of the device/s or system/s recommended and implemented by the Speech-Language Therapist.

- **Once you have completed the questionnaire, place it inside the folded envelope which is stamped and addressed. Alternatively, you can email it to me. Please send the questionnaire as soon as possible so I can receive it by _____ 2015.**

Place a cross in the appropriate block to mark:

Which language are you writing in to complete this questionnaire?

isiXhosa	sePedi	seSotho	Afrikaans	English	seTswana	isiZulu	Xitsonga

---

APPENDIX P

Parent questionnaire

1. Describe how the Speech-Language Therapist completed the interview to gather information from you when your child was assessed (that is, how they interacted with you).

_____

_____

_____

_____

_____

2. Please write questions you think Speech-Language Therapists should ask during assessment about a child, their family and everyday life, as well as their language and cultural background.

_____

_____

_____

3. Describe the communication option(s) your child uses at home and school.

_____

_____

_____

4.1 Describe how you were given information about your child's communication option(s).

_____

_____

_____

4.2 Describe the assistance you have been provided to help your child use their communication option(s).

_____

_____

_____

APPENDIX P

Parent questionnaire

4.3 Describe difficulties you have experienced with helping your child use their communication option(s).

_____

_____

_____

4.4 How could the difficulties mentioned above have been reduced to enhance your child's use of their communication option(s)?

_____

_____

_____

5. **EXPLAIN** whether the communication option your child currently uses is appropriate with:

5.1 Languages spoken in your home

_____

_____

_____

5.2 Languages spoken outside of your home, which your child listens to or communicates in

_____

_____

_____

5.3 The cultural practices of your family (e.g. the way children interact with adults and other children, how decisions are made in the family, interaction during family gatherings etc…)

_____

_____

_____

APPENDIX P

Parent questionnaire

6.1 Did your child's Speech-Language Therapist ask you which language you want therapy to be conducted in? Circle your answer. **YES** **NO**

6.2 Does your child use more than one language to communicate with his or her communication option? Circle your answer. **YES** **NO**

6.3 Please explain what features of the communication option **allow your child to be successful or not** when communicating with others.

_____

_____

_____

7. Describe how does your child's communication option helps him or her to function in his or her daily life?

_____

_____

_____

Thank you for completing this questionnaire

Return to the researcher by:

A. Posting: Place the completed questionnaire in the folded envelope which is stamped and addressed and post it to the researcher.

B. Email: Email your questionnaire to the researcher using the following address- charuna.kistasamy@gmail.com

APPENDIX Q

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

07 July 2014

Miss Charun Kistasamy (208503496)
School of Health Sciences
Westville Campus

Protocol reference number: HSS/1278/013M
Project title: The integration of multilingualism and culture into Augmentative and Alternative Communication (AAC) services provided to children in KwaZulu-Natal and Gauteng, South Africa.

Dear Ms Kistasamy,

Full Approval – Expedited Application

With regards to your response to our letter dated 08 November 2013, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol have been granted **FULL APPROVAL.**

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

.....
Dr Shenuka Singh (Chair)

/ms

cc Supervisor: Saira Karim & Jenny Pahl
cc Academic Leader: Professor J van Heerden
cc School Admin: Ms P Nene

Humanities & Social Sciences Research Ethics Committee
Dr Shenuka Singh (Chair)
Westville Campus, Govan Mbeki Building
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