

**Vocabulary used by toddlers who attend
ethnolinguistically diverse nursery schools: a parent
report.**

Aurellia Gonasillan

Submitted in partial fulfilment of the requirements for the degree Masters
in Augmentative and Alternative Communication
Faculty of Humanities
University of Pretoria

Pretoria
January 2011

Acknowledgements

I would like to express my sincere appreciation to the following people who contributed to the completion of this study:

- My supervisor, Professor Juan Bornman for her endless amounts of energy, patience and guidance.
- My co-supervisor, Dr. Michal Harty, for her willingness to help, intuitive insight and invaluable suggestions.
- Ms Rina Owen, for her guidance with the statistical analysis procedures.
- Mrs. Erika Bostock for undertaking the language edit of the study.
- Ms Karen Harty for ensuring the references were correct.
- To all the parents and principals who gave so generously of their time; this study would have been impossible without you.
- To my dear friends, Carrie Hopkins and Marjan Middeljans for their tireless support and encouragement; nothing was ever too big to ask.
- To my amazing family - dad, mom and Nevan – thanks for singing my praises without stopping to take a breath.
- To my love, Nev, thank you for printing the final document and for your unwavering love and support.
- And lastly, to my Father above, for being my eternal source of strength.

Abstract

The primary aim of the study was to verify vocabulary on the Language Development Survey, for typically developing toddlers who attend ethnolinguistically diverse nursery schools. This was investigated through parent report. The need for exploration of the vocabulary of this population stems from the diverse linguistic context to which toddlers are exposed on a day-to-day basis in South Africa. Many parents prefer English as the language of learning for their child, irrespective of whether or not their first language is an alternative vernacular. Thus, toddlers interact with ethnolinguistically diverse peers from a young age, usually within their nursery school. An adapted version of the Language Development Survey was presented to forty middle-class parents within the Emalahleni area. Vocabulary commonly used by toddlers was determined and a comparison of parent responses between the present study and the original American-based survey were drawn. As expected, results revealed that nouns were used most often by toddlers, in keeping with research on vocabulary acquisition. Comparisons drawn between parent responses from the two studies showed highly similar results. Parents reported that nouns, verbs, adjectives and other vocabulary were used similarly by toddlers, despite differences in their linguistic exposure. These findings verify the Language Development Survey as a valuable clinical resource for speech and language therapists managing toddlers within the South African context. Suggestions for future research are provided.

Key terms:

- Ethnolinguistically diverse
- Language development
- Parent report
- Toddlers
- Vocabulary

Opsomming

Die primêre doel van die studie was om die woordeskat wat in die Language Development Survey gebruik word te bevestig vir tipies ontwikkelende twee-jaar oue kleuters wat etnolinguisties diverse kleuterskole bywoon. Dit is ondersoek deur middel van ouer terugvoer. Die behoefte vir 'n woordeskat ondersoek van hierdie populasie spruit uit die diverse linguistiese konteks waaraan kleuters op 'n dag-tot-dag basis in Suid-Afrika blootgestel word. Baie ouers verkies Engels as die taal van onderig vir hul kind, ongeag of hulle moedertaal daarvan verskil of nie. Dit het die gevolg dat kleuters van jongs af met etnolinguisties diverse ouderdomsgenote interaksie het, gewoonlik in die kleuterskool. 'n Aangepaste weergawe van die Language Development Survey is aan veertig middel-klas ouers in die Emalaheni area voorgelê. Daar is vasgestel watter woordeskat oor die algemeen deur die kleuters gebruik word, en 'n vergelyking tussen die ouers se terugvoer in die huidige en die oorspronklike Amerikaanse studie is getref. Soos verwag, het die resultate gewys dat selfstandige naamwoorde die mees algemeen deur kleuters gebruik word, wat ooreenstem met navorsing in verband met die aanleer van woordeskat. Vergelykings tussen ouer terugvoer van die twee studies het hoogs ooreenstemmende resultate gelewer. Uit ouer terugvoer kon dit ook afgelei word dat selfstandige naamwoorde, werkwoorde, byvoeglike naamwoorde en ander woordtipes ooreenstemmend deur kleuters gebruik word, afgesien van verskille in linguistiese blootstelling. Hierdie bevindinge bevestig die Language Development Survey as 'n waardevolle kliniese hulpbron vir spraak- taaltherapeute wat in die Suid-Afrikaanse konteks met kleuters werk. Voorstelle vir moontlike toekomstige navorsing word in die studie verskaf.

Sleutel terme:

- Etnolinguisties divers
- Taalontwikkeling
- Ouer terugvoer
- Kleuters
- Woordeskat

Table of Contents

CHAPTER 1	1
INTRODUCTION TO THE STUDY	1
1.1 Problem Statement	1
1.2 Definition of Terms	3
1.3 Abbreviations	4
1.4 Outline of the Chapters	4
CHAPTER 2	6
LITERATURE REVIEW	6
2.1 Introduction	6
2.2 The Language Development Process	6
2.3 Additional Factors that Impact Language Development.....	12
2.4 Parent Report.....	14
2.5 The Language Development Survey.....	15
2.6 Summary of Literature.....	17
CHAPTER 3	19
RESEARCH METHODOLOGY	19
3.1 Introduction	19
3.2 Aims.....	19
3.2.1 Primary research aim.....	19
3.2.2 Secondary research aims.....	19
3.3 Research Design	19
3.4 Overview of the Research Process.....	20
3.5 Material Development.....	21
3.5.1 Adaptation of material	21
3.5.2 Pilot study	23
3.5.3 Participant description for pilot study.....	24
3.6 Data Collection (Main Study).....	26
3.6.1 Recruitment procedure.....	26
3.6.2 Selection criteria of participants.....	27
3.6.3 Descriptive criteria of participants	27
3.6.4 Materials	30
3.7 Ethical Considerations	31
3.8 Data Analysis.....	31
3.8 Summary of Methodology.....	32

CHAPTER 4	33
RESULTS	33
4.1 Introduction	33
4.2 Reliability of the Data	33
4.3 The Most Commonly Used Vocabulary Items as Reported by Parents	34
4.4 A Comparison Between Parent Responses from the LDS-SA and the LDS	36
4.4.1 Overview of parent’s responses	36
4.4.2 Actions category	38
4.4.3 Modifiers category	39
4.4.4 Personal category	40
4.4.5 Body Parts, household, clothes and other categories	40
4.4.6 People category	42
4.4.7 Vehicles category	42
4.4.8 Food category	43
4.4.9 Outdoors, Animals and Places categories	44
4.4.10 Toys category	45
4.5 Summary of Results	45
CHAPTER 5	47
DISCUSSION	47
5.1 Introduction	47
5.2 A Discussion of Vocabulary Items Used Most Commonly by South African Toddlers	47
5.3 A Discussion of Parent Responses from the Two Studies	49
5.4 Summary of Discussion	54
CHAPTER 6	55
CONCLUSION AND RECOMMENDATIONS	55
6.1 Introduction	55
6.2 Summary and Integration of Results	55
6.3 Critical Evaluation of the Study	56
6.4 Implications of the Study	57
6.5 Recommendations for Future Research	58
6.6 Summary of Conclusion and Recommendations	59
REFERENCE LIST	60
APPENDICES	68

List of Figures

Figure 1 A schematic overview of the research design and data collection procedures

List of Tables

Table 3.1	Adapted vocabulary items for South African toddlers
Table 3.2	Modified LDS-SA used for data capturing
Table 3.3	Descriptions of participants recruited for pilot study
Table 3.4	Aims, materials, methods, results and recommendations following the pilot study
Table 3.5	Selection criteria for participants
Table 3.6	Descriptive information of participants
Table 4.1	Vocabulary commonly used by South African toddlers (n = 40)
Table 4.2	Overall differences between categories for the LDS-SA and LDS
Table 4.3	Pearson product-moment correlation values for the 14 semantic categories
Table 4.4	Summary table of differences between parent responses on the LDS-SA and LDS
Table 4.5	Overall parent responses for the actions category
Table 4.6	Overall parent responses for the modifiers category
Table 4.7	Overall parent responses for the personal category
Table 4.8	Overall parent responses for the body parts, household, clothes and other categories
Table 4.9	Overall parent responses for the people category
Table 4.10	Overall parent responses for the vehicles category
Table 4.11	Overall parent responses for the food category
Table 4.12	Overall parent responses for the outdoors, animals and places categories
Table 4.13	Overall parent responses for the toy category
Table 5.1	P-values for parent responses

List of Appendices

- Appendix A: Letter of ethical approval and Letter of title registration
- Appendix B: Parent recruitment forms
- Appendix C: Written instructions to parents for completion of checklist
- Appendix D: Parent demographic questionnaire
- Appendix E: Language Development Survey – South Africa
- Appendix F: Table of results – percentage values for vocabulary items within the 14 semantic categories
- Appendix G: List of additional vocabulary items used by toddlers

CHAPTER 1

INTRODUCTION TO THE STUDY

1.1 Problem Statement

For generations, the process of language development in young children has been a topic of much discussion. Skinner, Chomsky, Piaget and Vygotsky have argued the association between human behaviour and language acquisition for many years (Skinner, 1957; Chomsky, 1981; Piaget, 1926; Vygotsky, 1978). Skinner developed a theory that sought to identify the variables in the environment that controlled and determined verbal behaviour (Skinner, 1957). He argued that the verbal behaviour of a person could be predicted and controlled by manipulating the environment of the speaker (Skinner, 1957). His theory did not consider cognition or information processing though and was strongly criticised by Noam Chomsky. Chomsky argued that language – although a complex process - is a constituent of cognition and is genetically determined (Chomsky, 1981). He emphasized the importance of the contextual environment for language development. Piaget argued that cognition and language develop gradually as a result of the maturation process but do not serve a cognitive or social function (Piaget, 1926). Piaget's argument was rebutted by Vygotsky, who strongly emphasized the importance of the social environment for language development (Vygotsky, 1978). He believed it to be both a socially and culturally driven process and viewed the family as the most important learning environment for language (Vygotsky, 1978). Although Skinner, Chomsky, Vygotsky and Piaget differed to a degree in their ideals, their insight was fundamental in steering the exploration of the complex yet gradual process of language development.

Universally, children move through the same general stages of language development irrespective of ethnic or linguistic background (Gerber & Kraat, 1992; McLean, 1999). Individual variations in the rate and style of language development (for example, early vocabulary preferences) may occur though (Gerber & Kraat, 1992). The development that occurs from birth through the preschool years moves from pre-intentional, pre-symbolic interactions through the development of intentionality and symbolic language, to a point where children use language in sophisticated ways to interact with others (Light, 1997). The

language development process for young children with impaired language occurs in much the same way, although the process may take longer (Gerber & Kraat, 1992). Their development represents a variation of the typical process. Many have suggested that children who demonstrate language impairment should be taught language “in essentially the same order that normal children acquire language” (Winitz, 1983, p. 26). The language acquisition process can best be facilitated by increasing their participation in natural contexts (Calculator, 1997; Light, 1997; Ronski, Sevcik & Adamson, 1997). Bedrosian (1997) suggests these natural contexts should incorporate daily activities in the home, school and community. This agrees with the theories of Vygotsky and Chomsky which emphasized the importance of the communication context. Additional factors within the child’s environment may impede language acquisition and should, therefore, be considered (Vygotsky, 1973). These factors may include ethnolinguistically diverse contexts, socioeconomic status (SES) and parent education (Screen & Anderson, 1994). Despite possible barriers, parents who are initially the child’s sole communication partners, remain the experts when describing their child’s language. For this reason, interventionists rely extensively on parent report in directing their understanding of language acquisition (Dale, Bates, Reznick & Morisset, 1989).

Parent report is seen to be a highly valuable source of information for documenting children’s communicative behaviours (Rosetti, 2001). Although parents may not know how to interpret their child’s language, the information they provide can assist interventionists in making judgements concerning the child’s communicative abilities (Rosetti, 2001). Parent diary studies were used previously to explore the gradual development of child vocabulary (Berko, 1958). Due to the impracticality of these studies however, they were replaced with methods that were more structured such as vocabulary checklists (Rescorla, Alley & Christine, 2001). The value of using checklists such as the Language Development Survey (LDS) is reinforced by their practicality as a measurement instrument and their usefulness for populations who speak a language other than English (Rescorla, 1989). The majority of existing literature regarding checklists is seemingly exclusive to white English-speaking, middle-class families (Dollaghan, Campbell, Paradise, Feldman, Janosky, Pitcairn & Kurs-Lasky, 1999). Consequently, concerns are raised about the validity of these checklists for ethnolinguistically diverse groups, as less attention has been given to documenting language development amongst these populations (Screen & Anderson, 1994). This is of particular importance for South Africa, as it holds eleven official languages within its constitution (Maartens, 1998). Multilingualism and ethnological diversity is therefore a reality in many South African

households, with approximately thirty-six percent of homes being bilingual and often using a combination of languages (PANSALB, 2001). One way to explore this is to investigate the applicability of checklists, such as the LDS, within diverse populations, as are present in South Africa (Payne, 1986). In addition, investigating vocabulary used by typically developing toddlers within these diverse contexts will assist in teaching vocabulary to toddlers with impaired language.

1.2 Definition of Terms

Ethnolinguistically diverse: The word *ethno* indicates race, people and culture; *linguistic* pertains to language and *diverse* means different (Geddes & Grosset, 1999). Jessel (1978) states that diverse populations differ in linguistic and/or cultural practices and in this study *ethnolinguistically diverse* will refer to a group of people who differ in terms of language, ethnicity and/or cultural practices.

Language development: *Language development* is the ability to comprehend and use linguistic forms and structures and is an important part of children's gradual mastery of their world (von Tetzchner, Brekke, Sjothun & Grindheim, 2005). It is a result of interactions between biology and experiences of a child and involves a wide range of parallel and integrated processes (von Tetzchner et al., 2005). For the present study, language development refers to both biological processes as well as to additional factors that may impact on language development.

Language impairment: *Language impairment* refers to speech and language skills that are under-developed due to motor, language, cognitive, and/or sensory perceptual impairments that may result from cerebral palsy, autism, Down Syndrome or other developmental disabilities (Light & Drager, 2007). Children with language impairment typically experience restricted access to the environment, limited interactions with their communication partners and few opportunities for communication (Light, 1997). For the present study, children with language impairment are discussed according to the definition above.

Parent report: To *report* means to give an account of or to account the facts (Geddes & Grosset, 1999). In this study, parent report is the focus and is used to describe the vocabulary of toddlers. Other studies have found this to be a reliable method of data collection for this population (Rescorla, 1989).

Socioeconomic status: According to Hollingshead (1975), the primary factors indicative of *socioeconomic status* are the individual's occupation, the number of years of completed schooling, gender and marital status. These factors are useful in providing a reliable and meaningful estimate of the status position an individual occupies in society. In the present study, the factors highlighted above were used to describe demographic information of parents. Due to the nature of the study, parents were not allocated specific social categories.

Toddler: *Toddler* is defined as a young child (Geddes & Grosset, 1999). In this study, it will include those between the ages of 2;0 years to 2;11 years. *Young child* and *toddler* will be used interchangeably throughout the thesis.

Vocabulary: *Vocabulary* pertains to a list of words, or words of a language (Geddes & Grosset, 1999). For the present study, vocabulary refers to the list of words presented on the Language Development Survey. It also refers to terms, for example, a,b,c or 1,2,3. *Vocabulary*, *vocabulary items* and *words* will be used interchangeably within the text.

1.3 Abbreviations

AAC: Augmentative and alternative communication

CDI: Communicative Development Inventory

LDS: Language Development Survey (original survey)

LDS-SA: Language Development Survey – South Africa (present study)

MLU: Mean length of utterance

SES: Socioeconomic Status

1.4 Outline of the Chapters

Chapter 1 provides a brief introduction to the problem statement that led to the study. Terminology and abbreviations used are defined. The chapter concludes with an outline of the chapters.

Chapter 2 describes the theories surrounding language development and the language development process of typically developing toddlers. The information that informs these processes is applied to toddlers with language impairment. Thereafter additional factors that confound the language learning environment are explored, followed by the usefulness of

parent report for describing child language. A critical evaluation of the Language Development Survey is then provided, followed by a chapter summary.

Chapter 3 outlines the methodology used in the study. It starts by describing the primary and sub-aims followed by the research design. An overview of the research process precedes explanation of adaptation of materials. Discussion of the pilot study and data collection procedures are followed by an explanation of materials used and data analysis procedures. The chapter is concluded by a chapter summary.

Chapter 4 provides the results for the study in the context of the aims of the study. The most commonly used words by South African toddlers are shown, followed by an overview of parent responses from the present study and the original survey. The similarities and differences between parents' responses from the two studies are then highlighted. The chapter concludes with a chapter summary.

Chapter 5 provides a theoretical discussion for the results described in Chapter 4 in accordance with the sub-aims of the study. Firstly, words most commonly used by South African toddlers are described in the context of previous research. This is followed by discussion around parent responses from the two studies in an attempt to determine the applicability of parent report tools, such as the LDS, in an ethnolinguistically diverse setting. Lastly, a summary of the chapter is provided.

Chapter 6 presents the conclusion to the research with reference to parent report of vocabulary used by toddlers within an ethnolinguistically diverse context. A critical evaluation of the study is discussed followed by its implications. Recommendations for future research are also provided. Chapter 6 is followed by a reference list as well as appendices used for the study.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The literature included in this chapter provides background information that led to the present study. Knowledge regarding typical language development of young children has expanded since the initial theories of language acquisition were formed. This is partly due to the involvement of parents in the information-sharing process. Most findings, however, pertain to ethnolinguistically homogenous groups from a first-world western society. Thus questions are raised about the application of this information to ethnolinguistically diverse contexts like South Africa. Alluding to these aspects, the literature focuses on, firstly, the theoretical arguments surrounding language development and the language development process of toddlers. Literature pertaining to both typical and atypical language development in the early years is examined. Secondly, the impact that additional factors have on language development is highlighted, followed by a discussion of the usefulness of parent report for describing child language. Lastly, a critical review of the LDS precedes a summary of the chapter.

2.2 The Language Development Process

Learning language is an accomplishment any toddler may achieve; discovering how they do this has however eluded generations of philosophers and linguists (Bruner, 1983). Saint Augustine believed language acquisition was a simple process of merely hearing, seeing and doing (Bruner, 1983). His view was closely linked to learning theory where principles were not derived from the phenomenon of language but from general behaviour (Bruner, 1983). Skinner shared views that were characterized as behaviouristic (Skinner, 1957). His aim was declared to be the “prediction and control of verbal behaviour” (Skinner, 1957, p.12). Skinner’s analysis surrounding thought was a critical point for behaviourists. It was his analysis of thinking that showed one of the most characteristic features of his approach. He regarded thinking to be “simply behaviour – verbal or nonverbal, covert or overt” (Skinner, 1957, p. 449). He stressed that speech was merely traces of verbal behaviour. The persistence

of the behaviouristic theory set the stage for the Chomskyan revolution, which brought with it its share of controversy around psycholinguistic issues (Chomsky, 1981). Noam Chomsky, Jean Piaget and Lev Semenovich Vygotsky were instrumental in shaping the field of psycholinguistics. Their theories are briefly explored in the context of language development and cognition.

Chomsky's view on psychology became known through his critical review of Skinner's *Verbal Behaviour* (Chomsky, 1965). He argued that language was one of many cognitive systems which could be observed as a child developed through childhood (Chomsky, 1965). Chomsky believed that the basic properties of language were genetically determined and emphasized consideration of its structural and functional properties as it grew and matured (Chomsky, 1981). He introduced the concept of a Language Acquisition Device to develop a connection between language and the theory of grammar (Chomsky, 1957; 1965). Chomsky stressed the importance of the environment as fundamental to language development and theorized that before young children referred to an object they had to identify it within a context (Chomsky, 1965). Piaget described his theory, by considering all cognitive acquisition, including language, to be a gradual process starting with evolutionary forms of biology and ending with modern scientific ideas (Piaget, 1952). Piaget was the first to observe and define children's egocentric (*asocial*) speech and to identify its theoretical significance (Piaget, 1926). He stressed the importance of inter-individual factors for mastery and development of language and emphasized the relationship between thought and language (Piaget, 1971). Piaget believed that a child began life within a private universe where language merely accompanied affect and action, serving neither a cognitive nor a social function (Piaget, 1952).

Contrary to this view, Vygotsky believed that a child was born a social being and relied on others from the very beginning (Vygotsky, 1962). While Vygotsky retained Piaget's term *egocentric speech*, he believed that much of a child's early speech was not merely an accompaniment to action (Vygotsky, 1962). Vygotsky and Luria (1930) proposed that egocentric speech was internalized as inner speech. When the parent, for example, was psychologically close to the child, speech took an implicit form. When the young child believed he was understood (whether this were true or not) the message approached egocentric speech and thus reflected the ability to take the other's perspective into account (Vygotsky & Luria, 1930). Although different, the fundamentals of Chomsky, Piaget and

Vygotsky's theories, agree that the acquisition of language requires children having a wide range of skills not solely related to language.

The ability to use and understand language, are essential to life in any culture and its members are responsible for assisting young children in acquiring them (McLean, 1999). Toddlers must be taught the function of language and how to produce and use it in ways that other members of the culture do. Parents therefore prepare them for learning language by first assisting infants (0–12 months) in experiencing and appreciating the pleasure, knowledge and security that emanate from their social world (McLean, 1999). This preparation begins immediately after birth and perhaps even before that. McLean (1999) describes the natural progression of language development: the distinctive nature of talking to infants before birth, which naturally increases after birth when the mother is able to interact with her baby face-to-face, has been termed motherese or parentese. Parents, adults and siblings expose infants to turn-taking patterns of conversation months before they are able to participate themselves. They talk to infants as if expecting a response and assign meaning to the infant's non-linguistic behaviours and states. Thus; everyone, not just mothers begin to demonstrate conversational patterns for their infants from a very early age. Parents create and maintain non-linguistic, social interactions with their infants and through these interactions teach two important social behaviours: joint attention and turn-taking. These behaviours are repeated naturally in parents' interactions with infants in joint attention routines. During these routines, the parents' language is simplified for the infant and focuses more on the here-and-now, rather than the past or future. As the infant continues to develop, parents use more words to describe and control their infants' behaviour. As parents use more words to affect behaviour, infants and toddlers learn that words can affect others' behaviour and actions. Before infants and young children can use language, they reach a crucial stage of development in which they produce behaviours that are intended to obtain a response from people in their environment. This basic, non-linguistic, intentional communication develops further into communicative gestures (McLean, 1999).

When a young child intentionally gestures, he/she has reached an important milestone in communicative interaction (McLean, 1999). At this stage, the ability of the child is now within their zone of proximal development (Renner, 2003). Children have some understanding of how to realize their wants/needs, but remain reliant on more competent interactive partners for support. The process of partner support has been termed scaffolding

(Wood, Bruner & Ross, 1976). Scaffolding occurs when parents are no longer solving the problem for the child, but are guiding the child's own problem solving skills. Literature on typical language development suggests that parents and other adult mediators provide a scaffold to support their child's language learning experiences (Bruner, 1983; Cazden, 1983). Initially, the adult plays all roles within the interaction, responding to any attempts by the child to participate and attributing intention and meaning to these attempts (Nelson, 1973). Gradually, parents give more control to their children and expect greater participation, encouraging them to develop and demonstrate their own growing language competencies (Nelson, 1973). The parent gradually reduces the scaffolding support as their child develops his/her language skills. An example of this is the way parents use situational cues by following children's attention and interests when they name objects and events. Parents often direct children to culturally significant objects and events and help them to construct utterances that are appropriate (Hart & Risley, 1995). At this stage, children are beginning to use more communicative acts while combining gesture with vocalizations (McLean, 1999). When these modes of expression no longer suffice however, the child begins to move toward a more effective and efficient way of communicating, that is, towards the use of spoken language.

The use of spoken words usually starts between twelve to eighteen months (McLean, 1999). At this stage, another level of communicative competence is reached between the child and the adults within his/her environment. The child's world now becomes primarily a verbal one. In his study, Brown (1973) traced the development of grammar and expression of meaning in child language. He defined language acquisition in five stages according to the mean length of utterance (MLU). Stage 1 MLU 1.0 -2.0; Stage 2 MLU 2.0 – 2.5; Stage 3 MLU 2.5 – 3.0; Stage 4 MLU 3.0 – 3.5; Stage 5 3.5 – 4.0 (Brown, 1973). He further proposed that nouns and verbs were the predominant word classes used in early vocabulary development (Brown, 1973). Nelson (1973) investigated the different expressive language learning strategies employed by children and proposed that there are different styles in first word development. A child who learns language with a referential style begins to use object-orientated language (for example, "ball", "bottle") whereas, the child who learns language with an expressive style uses an initial vocabulary largely in a personal-social sense for feelings, needs and social phrases ("hi", "sleepy"). Nelson (1973) found that most toddlers used vocabulary items representative of both styles and suggested that lexical style might be related to functional style, that is, to the different ways the child used language to

communicate. Regardless of style however, as children begin to use spoken words both parent and toddler gain more confidence in the others' ability using spoken language.

Toddlers with impaired language develop language in much the same way, although the language development process may take longer (Gerber & Kraat, 1992). This implies that the development of a child with language impairment represents a variation of the typical process (Gerber & Kraat, 1992). Interventionists working with language impaired children have been encouraged to use the ever-increasing body of information about typical language acquisition as a framework for the development of intervention programmes (Cress & Marvin, 2003). This has led to considerable debate amongst interventionists who raised concerns regarding the differences between typical and impaired language development (von Tetzchner & Grove, 2003). For example, some toddlers' with language impairment stay in linguistic stages longer than typically developing children do while others show gaps between cognitive skills and language ability (Johnston & Schery, 1976; Stark & Tallal, 1981). These differences have led to apprehension regarding the usefulness of a language model which is then applied to a child who is developing language atypically (von Tetzchner & Grove, 2003).

Applying developmental information to young children who use a variety of augmentative and alternative communication (AAC) techniques adds yet another set of complexities to the process. In this situation, toddlers with impaired language are expected to develop language through modes and systems that have their own unique properties (Light & Drager, 2007). In general, AAC systems do not have the same flexibility as natural speech. This invariably impacts on and changes the communication behaviours of persons using AAC systems as well as their communication partners (Ferm, Ahlsen & Bjorck-Åkesson, 2005). Research suggests that similarities to, as well as differences from typical development may be found in the communication development of children using AAC systems (Gerber & Kraat, 1992). Furthermore, application of information based on typical language development to toddlers with impaired language may be used directly to guide intervention planning (Ross & Cress, 2006). This would be appropriate when young children's cognitive, social and language profiles are similar to those of typically developing peers. Direct application might be seen at very early stages of development (e.g. the single-word stage) for a young child with physical disabilities and typical cognitive abilities. Branson and Demchak (2009) suggest that AAC use with infants and toddlers can be a crucial component in early intervention and should be implemented at the earliest stage. The realities of developmental asynchronies in the

language acquisition of toddlers with language impairment must be considered prior to application of typical language development information (Blau, 1983). There are unique challenges that are not replicated in typical language development, for example, typically developing children *acquire* language whereas toddlers with impaired language are *taught* it. Teaching vocabulary to toddlers with impaired language is based primarily on clinical experience and parental intuition (Blau, 1983; Carlson, 1981). Toddlers have minimal control over the acquisition of new vocabulary and instead, are provided with vocabulary deemed necessary and appropriate by adults around them (Light, 1997). This forms a direct contrast to vocabulary acquisition of toddlers who use natural speech. They have autonomy over their expressive vocabularies and capture and encode vocabulary that is of interest to them (Light, 1997).

Researchers, interventionists and parents have attempted to identify words that could be included in core vocabulary for toddlers using AAC systems (Cress & Marvin, 2003). Often, vocabularies focus mainly on providing means to communicate wants and desires to the neglect of other important communication purposes such as developing social closeness with others and seeking and providing information about experiences and events (Ross & Cress, 2006). Toddlers need to be given ways to ask for *biscuits*, *juice* and their favourite *toy* but ways that allow them to tease their brothers and sisters or to ask questions are also important. Vocabulary like this allows toddlers to actively engage with communication partners in their social environment. Through interaction with adults, young children acquire new concepts about the world which form the foundation for lexical development (von Tetzchner et al., 2005). This is similar to the theory of Vygotsky who emphasizes the importance of the social context for language learning (Vygotsky, 1978). This applies to both typically developing toddlers and to those with impaired language. Thus, young children rely substantially on support from the environment to experience social efficacy and to intentionally achieve reactions (von Tetzchner et al., 2005). With this in mind, additional factors in the communication context that may impact on successful interaction should be considered. These may include aspects such as ethnolinguistic diversity, parent education and socioeconomic status (SES) (Hurtado, Marchman & Fernald, 2007). Together these factors further influence the language development process (Hernandez, 1997; Hoff-Ginsberg & Tardiff, 1995; Taylor, 1986).

2.3 Additional Factors that Impact Language Development

This section explores additional factors present in the toddlers' language learning environment which may impact language development. Issues of ethnolinguistics, parents' level of education and SES are often found to correlate with vocabulary acquisition of toddlers (Screen & Anderson, 1994). Consideration of ethnolinguistics in South Africa for example, sees people speaking five or more languages in the course of daily life. Numerous languages are used at home, one or two at school, another for communication among people of different ethnic backgrounds and yet another for social interactions with peers (Taylor, 1986). English particularly, is viewed as the language of economic advancement - a status symbol that sees African parents attempting to make English their home language (Lafon & Webb, 2008). Parents encourage its use to showcase their modern South Africanness which could be attributed to factors such as slavery, colonialism and in South Africa, apartheid (Erickson & Iglesias, 1986). While the Bantu languages are used widely for personal and domestic communication as well as cultural and religious expression, they are viewed as having low public status in general (Webb & Sure, 2000). An increasing number of South African parents choose to enrol their toddler to English-based nursery schools as they prefer English as the language of learning. The ability to speak English is held in such high esteem that parents feel the need to expose their child to it at the youngest possible age, usually nursery school. Toddlers therefore interact with ethnolinguistically diverse peers from a young age. A practical need for exploring the vocabulary acquired by South African toddlers exposed to English, irrespective of whether or not their first language is an alternative vernacular, is therefore warranted. These findings will in turn inform intervention efforts for young children with impaired language and/or who use AAC as they too belong to different ethnic groups. Information that is culturally appropriate is needed to shape culturally sensitive intervention strategies (Hetzroni & Harris, 1996). In this way, the language impaired toddler is given access to culturally appropriate ways of behaving and thinking (Goodnow, 2002; Hetzroni & Harris, 1996). Interventionists cannot begin to adequately serve toddlers from diverse ethnic backgrounds without considering ethnic and linguistic differences (Anderson & McNeilly, 1992; Cole, 1989).

In addition to ethnolinguistic factors, parents' education levels influence toddlers' vocabulary size and lexical production (Bornstein, Haynes & Painter, 1988; Pan, Rowe, Spier & Lemonda, 2004). Dollaghan et al. (1999) found a trend across three education levels for the

number of different words young children produced spontaneously across ethnolinguistically diverse groups. Young children whose parents had less education, tended to speak slower and with less accuracy than children of comparable age whose parents had more schooling (Hurtado et al., 2007). Hoff-Ginsberg (1991) observed differences between high school-educated working-class and college-educated upper-middle class parents. It was found that college educated, upper-middle class parents talked more and sustained longer verbal interaction (Hoff-Ginsberg, 1991). Hoff-Ginsberg and Lerner (1999) reported that children of high school educated parents produced fewer different words in conversations than children of tertiary educated parents. Rowe (2008) found that better educated and advantaged parents tended to have toddlers with greater vocabulary skills and faster vocabulary growth during early childhood than less educated and disadvantaged parents. Research has also shown a connection between SES and child vocabulary (Hart & Risley, 1995; Hoff, 2003; Huttenlocher, Vasilyeva, Waterfall, Vevea & Hedges, in press). Research conducted by Hoff (2003) showed that mothers with high SES tend to use longer utterances and different words when they talk to their toddlers than mothers with low SES and in turn, their toddlers' tend to have larger vocabularies (Hoff, 2003). Mothers with low SES are found to talk less and use less varied vocabulary during interaction with their toddlers than mothers with high SES (Hart & Risley, 1995; Hoff, 2003; Hoff-Ginsberg, 1991; Lawrence & Shipley, 1996). Ninio (1980) reported that upper-middle class parents talked labelled and asked "what" questions more often than parents from low SES. Differences between the two SES groups are so great that Hart and Risley (1995) estimated approximately 11 000 utterances per day from a high SES family compared to 700 utterances for a toddler from a low SES family.

Rowe (2008) proposed several possible explanations for why parents from different SES backgrounds differ in their communicative interactions with their young children. One possibility is that parents from different SES groups have different knowledge or beliefs about child development which leads to different ways of communicating with their toddler. This contributes to differences in parenting practices as well as to young children's developmental outcomes (McGillicuddy-DeLissi & Siegel, 1995). Secondly, differences in the verbal abilities of parents may also contribute to the relation between SES and child-directed speech (Rowe, 2008). Several studies have shown that language and literacy skills relate to the vocabulary mothers use with toddlers (Borduin & Henggeler, 1981; Bornstein et al., 1988; Rowe, Pan & Ayoub, 2005). Parents who come from more educated and advantaged backgrounds may have greater language skills and more verbal abilities to draw

on than parents from less educated and disadvantaged backgrounds (Rowe, 2008). Despite possible explanations as to why parents differ in their interactions with young children, they are integral communication partners to the developing child. For this reason, parents remain the expert when reporting the language abilities of their toddler (Pan et al., 2004).

2.4 Parent Report

Various researchers have demonstrated that parental report of toddlers' behaviour is generally accurate, although their interpretation of behaviour may lack validity (Coplan, 1982). More recently, the American Academy of Paediatrics has advised physicians that they should pay particular attention to parent report regarding their toddler's development, suggesting that parent report is as accurate as formal developmental screening (Rossetti, 2001). Parents have more experience than other observers in describing their child's language abilities (Dale et al., 1989). As already discussed, they observe and interact with their child on a daily basis in a variety of contexts and they understand their child's less than perfect speech (Pan et al., 2004). Dale (1997) noted that in some instances, parent report may be superior to direct language assessment where the child is shy or where the presence of an examiner may distort typical communicative patterns. Bishop (2003) stated that parental report may be more accurate than formal testing to detect communication problems that are rare or difficult to elicit in a standardized setting. It provides a valid representation of emerging language skills and is cost effective (Bates, Dale & Thal, 1995; Bornstein & Haynes, 1998; Fenson, Dale, Reznick, Bates, Thal & Pethick, 1994). For these reasons, parent report is an important source of information in understanding the language abilities of toddlers. The usefulness of parent report does warrant a note of caution. Parents lack specialized training in understanding the theoretical principles which underlie language development. They also have a natural pride in their child, which may introduce bias in their report (McMillan & Schumacher, 2001). In addition, studies that investigate children's comprehension of language are likely to benefit from more structured assessments (Bishop & McDonald, 2009). Normative data available in these assessments assist with determining a child's level of communicative competence. This in turn informs the level at which intervention should occur.

Nevertheless, parent report remains valuable for an overall evaluation of child language either for screening purposes in clinical or educational settings, or for research studies

investigating language development (Dale et al., 1989). Research in early lexical development has relied substantially on parental report in the form of diary studies (Rescorla, 1980). Parent language diaries indicate the gradual development of children's expressive vocabulary and provide information on word frequency and use. Although diary studies are prone to errors of omission, its comprehensive nature is more likely to approximate a child's actual vocabulary than a checklist or other form of language sampling (Robinson & Mervis, 1999). Given the impracticality, high cost and time required to administer parent diary studies however, alternative methods of estimating language function of children were warranted (Robinson & Mervis, 1999). Diary studies therefore paved the way for the development of more structured elicitation tasks like vocabulary checklists (Rescorla et al., 2001).

2.5 The Language Development Survey

Vocabulary checklists are usually based on the language inventories of typically developing toddlers and include the number of words and word forms that these children use (Banajee, Dicarlo & Stricklin, 2003). Two such checklists were developed in the mid-1970's, the MacArthur Communicative Developmental Inventory (CDI) (Fenson, Dale, Reznick, Thal, Bates, Hartung, Pethick & Reilly, 1993) and the Language Development Survey (LDS) (Rescorla et al., 2001). Both checklists yield information regarding word frequencies of children, yet the CDI is substantially longer than the LDS. The MacArthur CDI: Toddlers, contains a vocabulary checklist of 680 words and was normed on a cross-sectional sample of 1130 children, ranging in age from 1;4 to 2;6 years (Bates, Marchman, Thal, Fenson, Dale, Reznick, Reilly & Hartung, 1994). On the other hand, the LDS which contains a checklist of 310 words, has been used in numerous community samples of toddlers in the 2;0 age range. It has been proven to have high concurrent validity with object and picture naming on various standardized instruments and has good sensitivity and specificity for the identification of toddlers developing language typically or those with language-delay (Rescorla, 1989; Rescorla, Hadicke-Wiley & Escarce, 1993). Inspection of the individual words on the two checklists indicates that 280 of the 310 LDS words appear on the CDI. In addition, the CDI contains 400 other words not found on the shorter LDS. These additional words give the CDI a higher ceiling, allowing toddlers with large vocabularies to obtain high scores (Rescorla, Mirak & Singh, 2000). Despite these differences however word frequencies for 280 of the words on both the CDI and LDS obtained highly similar parent responses. Thus, for words

common to the two checklists, the LDS and the CDI yield similar patterns of use according to parent report.

Generally, checklists such as these rely on parents using recognition memory when identifying vocabulary items (Dale et al., 1989). Although recognition memory appears to be more useful than recall memory, a number of omission errors are expected under these conditions (Robinson & Mervis, 1999). In addition, although both checklists follow a simple procedure, parents require literacy skills to complete the forms independently (Rescorla et al., 2001). This has implications for developing countries like South Africa, where adult literacy levels are low (Lafon & Webb, 2008). The checklists are also not useful where parents do not have an understanding of English. The instruments were developed using vocabulary from English speaking participants without consideration of differences that may occur in other languages. The checklists were also not designed to assess a child's receptive language. Research shows however, that accuracy of maternal report of language comprehension is very difficult to ascertain (Rescorla, 1989). Mothers almost invariably say their child understands everything making little distinction between pure language comprehension and comprehension assisted by gestural cueing or situational context.

The LDS, which was used in the present study, was developed primarily to identify children with an expressive language delay and was designed to be completed by a parent in a paediatric waiting room, in the home or in a variety of other settings (Rescorla et al., 2001). The survey was tested on children from a wide socioeconomic spectrum. To demonstrate the validity of the LDS with low income minority toddlers, validation was collected on 58 children in an inner-city medical clinic to examine the usefulness of the instrument as an epidemiological tool (Rescorla, 1989). The LDS combines a vocabulary checklist that enquires about the child's production of words while providing quick, reliable and valid language information for two-year-old toddlers (Rescorla, 1989). The words on the LDS were chosen on the basis of data drawn from studies of early lexical development (Nelson, 1973; Rescorla, 1980). For each semantic category, a core set of high-frequency words used by most toddlers as well as a variety of other words less common in early vocabularies, were selected. All words within the categories can be classified as nouns (nominals) except those within the *action* ('give', 'go', etc.), *modifiers* ('big', 'mine', etc.) and *other* categories (animal sounds, greetings, social phrases, numbers, letters, prepositions and interrogative forms) (Rescorla et al., 2000). Words that can be viewed as either nouns or verbs were

categorized according to the form that they are most often used; for example, ‘kiss’ and ‘throw’ are classified as actions, whereas ‘brush’ and ‘watch’ are considered as nouns. According to this classification system, the LDS contains 191 nominals and 119 non-nominals, with nominals constituting 62% of total words on the survey (Rescorla et al., 2000). Since its inception, the LDS has undergone continuous revision with the goal of maximizing coverage of important vocabulary items and minimizing redundancy (Rescorla, 1989). The most recent revision contains 309 different words arranged in 14 semantic categories. This length seems sufficient to cover a range of early vocabulary without being overwhelming.

To compensate for limitations of the checklist mentioned earlier, parents who are illiterate may have the LDS read aloud to them for completion (Dale et al., 1989). If parents speak a foreign language but are fluent in English, the checklist may also be completed by marking off English equivalents of the child’s words and writing in foreign words not present on the checklist (Rescorla, 1989). This is particularly significant for South Africa as recent statistics reveal that people in approximately 36% of homes are bilingual and often combine languages (PANSALB, 2001). The major alternate languages involved in code-mixing are English (32%), Afrikaans (13%), isiZulu (10%) and Sesotho (9%) (PANSALB, 2001). The remaining seven official languages of the country include Sepedi, Setswana, siSwati, Tshivenda, Xitsonga, isiNdebele and isiXhosa (Maartens, 1998). This study therefore represents an initial attempt to explore the vocabulary used by toddlers developing within an ethnolinguistically diverse context. This is investigated using parent report and the LDS. In turn, the results of the study may be used in future for teaching vocabulary to toddlers with impaired language.

2.6 Summary of Literature

The literature included in this chapter formed the theoretical framework for the present study. It explored the theories of three prominent theorists, namely Chomsky, Piaget and Vygotsky with regards to their ideas surrounding language and thought. These theories paved the way for discussion of language development of typically developing toddlers and application of such information to toddlers developing language atypically. Additional factors including ethnolinguistics, parent education and socioeconomic status were explored in light of the impact they have on language development. The chapter then addressed the usefulness of parent report for describing child language, followed by a critical review of the Language

Development Survey. Emphasis was placed on the applicability of this checklist to toddlers developing within an ethnolinguistically diverse context like South Africa.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides a description of the methods used in answering the primary and sub-aims of the study. The research design and criteria for participant selection are discussed and participants are described. Modified materials and procedures are represented schematically and discussed in-depth. The pilot study is elaborated on and precedes discussion of materials used in the study. The chapter concludes with a discussion of data collection and analysis procedures.

3.2 Aims

3.2.1 Primary research aim

The primary aim of the study was to verify vocabulary on the Language Development Survey for typically developing two-year-old toddlers who attend ethnolinguistically diverse nursery schools through parent report.

3.2.2 Secondary research aims

The sub-aims below informed the primary aim of the study, namely:

- i. To describe what parents report as the most commonly used vocabulary items by toddlers using the Language Development Survey.
- ii. To compare similarities between parents' "yes" responses using the LDS-SA (present study) and the LDS (original survey).
- iii. To compare differences between parents' "yes" responses using the LDS-SA (present study) and the LDS (original survey).

3.3 Research Design

A comparative survey design was used for the study. This allowed the investigator to draw comparisons between parent responses from the present study and the American-based survey, through application of an existing checklist (Language Development Survey (LDS)

(McMillan & Schumacher, 2001). Pearson-product moment correlations were used in the Results Chapter (Chapter 4), to determine differences between the two studies. Comparisons were made using descriptive data as parents were described according to a demographic questionnaire, while their responses on the LDS verified the checklist for toddlers developing within an ethnolinguistically diverse context in South Africa. Although simple to administer, application of a comparative survey meant the investigator had to employ correct data collection procedures to ensure reliability and validity of results.

3.4 Overview of the Research Process

Figure 1 illustrates the steps taken during the research process.

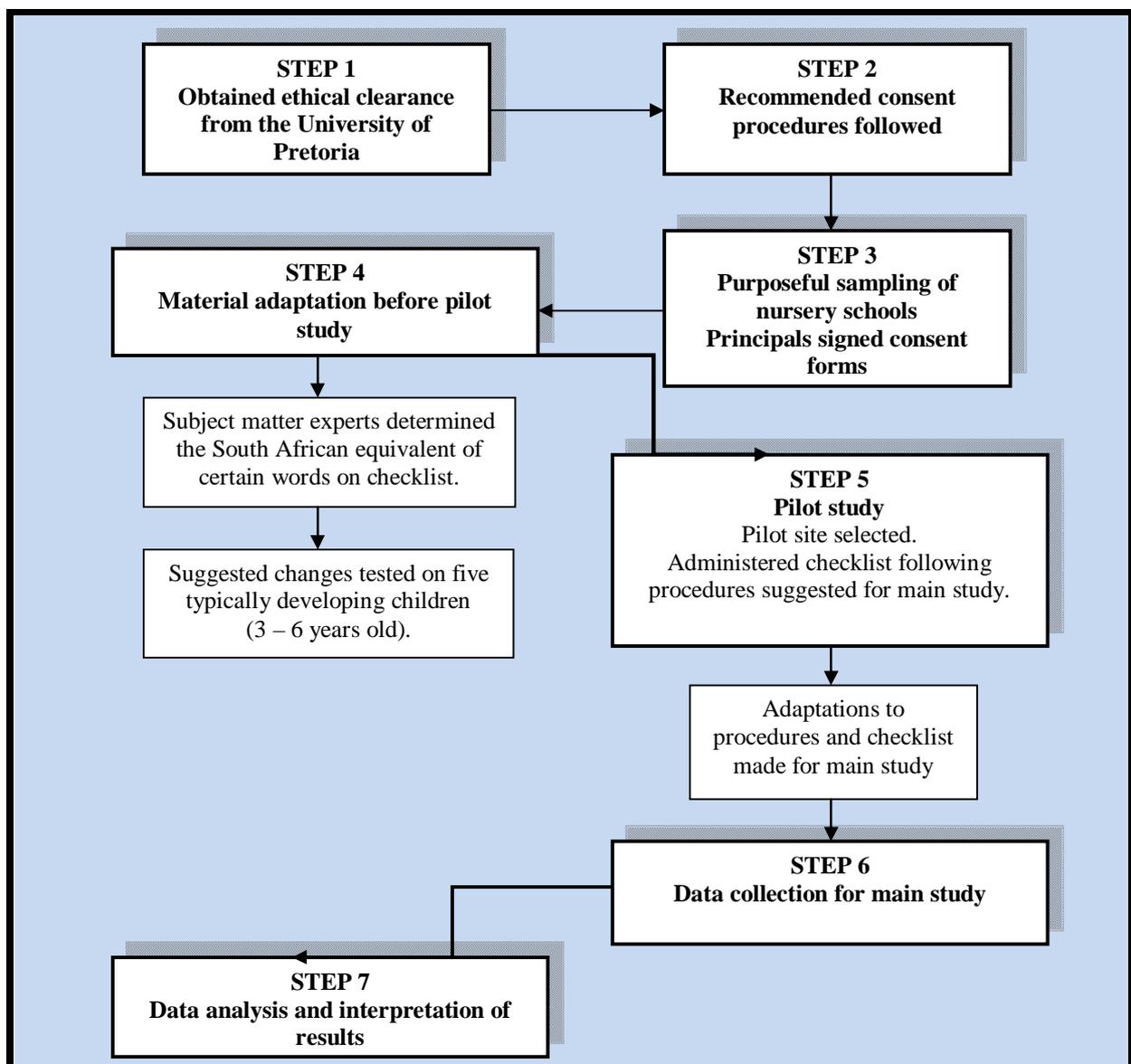


Figure 1: A schematic overview of the research design and data collection procedures

As shown in Figure 1, the following process was followed:

- i. Ethical approval was obtained from the Ethics Committee of the University of Pretoria (see Appendix A for letter of ethical approval and letter of title registration).
- ii. Recommended consent procedures were followed and the methodology for conducting research with human subjects was informed by the Declaration of Helsinki (1964).
- iii. Principals for the main study were contacted telephonically and administrative issues regarding distribution of forms to parents were discussed. Written consent forms were signed and stamped with the official nursery school stamp.
- iv. Before selecting a pilot site, vocabulary items on the checklist were scrutinized by subject matter experts. Vocabulary was adapted to be applicable to South African toddlers. Suggested changes were then tested on five typically developing children to ensure the suitability of the words for the study.
- v. A pilot site was selected and the checklist was distributed according to the procedures of the study. The checklist and procedures were then refined according to parent suggestions.
- vi. Forms for the main study were dispersed to the remaining seven schools and collected as for the pilot study. Parents both willing and unwilling to participate in the study returned forms within a week of receiving them (see Appendix B for parent recruitment forms and Appendix C for the written instructions to parents for completion of the checklist).
- vii. Completed data were analysed according to statistical measures for the study.

3.5 Material Development

3.5.1 Adaptation of material

A demographic questionnaire was developed to obtain biographical data from parents. It was designed according to the Hollingshead (1975) four-factor index of social status and included gender, marital status, education level and occupation of parents. Parents were also requested to disclose their monthly income (greater or less than R4500). A monthly income less than R4500 is not taxable according to the South African Revenue Service (SARS) (Tax statistics, 2008). For the present study, these parents were placed in a lower social income bracket. See Appendix D for the complete parent demographic questionnaire.

Together with the demographic questionnaire, the LDS formed the main instrument used during data collection (see Appendix E for the Language Development Survey – South

Africa). Vocabulary on the original checklist was based on data drawn from studies of early lexical development as described in Chapter 2 (Rescorla, 1980). It consists of 14 semantic categories containing core vocabulary that most toddlers use, as well as less common words in early vocabularies (Rescorla, 1980). Before distribution of the checklist to participants in the pilot study, a subject matter expert panel was used to determine the suitability of vocabulary to the South African context. The panel consisted of two teachers, one occupational therapist, four speech therapists, two AAC specialists and the mother of a child with language impairment. The duration of their experience of working with children ranged from six to 24 years. It was agreed that certain vocabulary items on the original checklist be replaced by the South African equivalents to ensure cultural and metric equivalence (Bornman, Sevcik, Ronski & Pae, 2010). Consideration of these measures enables people from different cultural or linguistic groups to have the same understanding of a given concept (Bornman et al., 2010). Adapted vocabulary in the study was categorised according to these measures as shown in Table 3.1. The word “Ernie etc.” was excluded from the checklist as it was deemed culturally inappropriate for South African participants. Vocabulary adaptations were verified by five typically developing children who had the verbal skills to participate. Parents of the children were approached directly by the investigator and the activity was explained. Verbal consent was given by each parent. The children were then asked if they would like to participate in the activity of which all agreed to. Their ages ranged from 3:0 years to 6:11 years but other characteristics for example home language were similar to toddlers for the main study.

Table 3.1 Adapted vocabulary items for South African toddlers

CULTURAL EQUIVALENCE		METRIC EQUIVALENCE	
<i>LDS</i>	SA Equivalent	<i>LDS</i>	SA Equivalent
soda	coke	penny	money
pretzel	chips		
candy	sweets		
sweater	jersey		
sneakers	takkies		
diaper	nappy		
bottom	bum		
peepee	weewee		
nap	sleep		
belly	tummy		
cracker	cookie		
gum	bubblegum		
cookie	biscuit		
mittens	gloves		
trash	rubbish		
stroller	pram		

CULTURAL EQUIVALENCE	
sidewalk	pavement
crib	cot
store	shop
bath tub	bath
turtle	tortoise

METRIC EQUIVALENCE	

The original checklist (LDS) consisted of two columns for parents to mark either yes or no responses, indicating their toddlers' use of the target words. This was easily done, as parents from the original study were all English-speaking. Parents from the present study, however, were ethnolinguistically diverse; a third column was therefore drafted into the modified checklist to account for vocabulary variations that parents may report. The original idea was that inclusion of an additional column would assist with more comprehensive data capturing. Parents were required to place a cross in one of three columns. If the toddler used the precise target word, the first column was marked. If a variation of the target word was used, for example *crayola* for crayon, the second column was marked and parents were required to write in the alternative word. If the toddler did not use the target word or a variation of it, parents marked the last column. All five participants from the pilot study (n = 5) utilised the additional column by either translating the target word into their respective home language or writing in an alternative word for the target word. As parents from the pilot study used the second column, it was decided that it would remain for the main study. Table 3.2 illustrates the response format of the modified checklist (LDS-SA).

Table 3.2 Modified LDS-SA used for data capturing

Target Word	Yes, uses EXACT word	Yes, but has a DIFFERENT name for it (write word)	No, doesn't use word AT ALL		<i>For official use only</i>
FOOD					
blocks	X			F1	
teddy bear			X	F2	
crayon		X <i>crayola</i>		F3	

3.5.2 Pilot study

A pilot study was conducted to ensure the materials and procedures were accurate before execution of the main research project. The aims below informed the validation of forms and procedures:

To determine:

- i. The clarity of written instructions to assist parents in completing the demographic questionnaire and checklist (LDS-SA).
- ii. The appropriacy of visual layout for the demographic questionnaire and checklist (LDS-SA).
- iii. The suitability of the data collection method.
- iv. The accuracy of data capturing procedures for future data analysis.

3.5.3 Participant description for pilot study

One of the eight nursery schools was selected as a pilot site by the investigator. The nursery school selected was situated on the outskirts of the city in a poorer socioeconomic area and appeared to be the most challenging for the pilot study. Ten parents, who had toddlers between the ages of 2:0 to 2:11 years, were invited to participate in the pilot study. Six parents returned the forms (demographic questionnaire and checklist). Information from one parent was discarded as not all the necessary forms were submitted. Data was therefore used from five participants (n = 5). Table 3.3 describes parents according to information obtained from the demographic questionnaire.

Table 3.3 Description of participants recruited for pilot study

Category	Parent 1	Parent 2	Parent 3	Parent 4	Parent 5
Parent completing forms	30 years	36 years	26 years	37 years	35 years
	Father completed forms		Mother completed forms		
Marital status	Married		Single parent		
Home language	isiZulu/English	Sepedi	Sepedi	Sepedi	isiZulu/Afrikaans
English spoken at home	Yes			No	
Education level	Obtained a college degree		Partial college/specialised training		Obtained a college degree
Employment status	Part time employment	Full time employment	Full time employment	Full time employment	Unemployed
Type of employment	Fitter and turner	Safety officer	Emergency care practioner	Clerk	–
Household income	More than R4500 p/m			Less than R4500 p/m	
No. of other children	0	2	1	3	2

None of the toddlers from the pilot study had any established developmental delays according to the parent and principal. The average age of parents was 33 years old. Of the five participants, three were single mothers and the remaining two were married fathers'. All parents reportedly used more than one language in the household. Three parents spoke Sepedi as their home language, whilst two used two different home languages namely isiZulu and English or isiZulu and Afrikaans. These languages were used when conversing with their toddler. English was used as an additional language by three of the five parents. The level of parents' education ranged from partial fulfilment of a college qualification to attainment of a college/university degree. Three parents were employed full time. Their jobs included a fitter and turner, a safety officer and an emergency care practitioner. They generated a monthly household income greater than R4500. Of the remaining two participants, one worked part time as a clerk and the other was unemployed. Both these parents obtained a monthly income less than R4500. Table 3.4 stipulates the aims of the pilot study, the methods and materials used, results obtained and recommendations of change for the main study.

Table 3.4 Aims, materials, methods, results and recommendations following the pilot study

Aims	Materials	Methods	Results	Recommendations
1. To determine the clarity of written instructions for parents completing the demographic questionnaire and checklist (forms).	<ul style="list-style-type: none"> - Instruction sheet to parents - Pilot feedback questionnaire 	Parents were expected to read the instruction sheet before completing the demographic form and checklist. Once completed, question 2 of the feedback questionnaire requested parents to comment on specific improvements needed to enhance the clarity of instructions.	Parents found the written instructions to be comprehensive and clear.	No modifications were made to the written instructions for the main study.
2. To determine the appropriacy of visual layout for the demographic questionnaire and checklist.	<ul style="list-style-type: none"> - Demographic questionnaire - Checklist - Pilot feedback questionnaire 	Question 4 of the feedback questionnaire requested parents to suggest improvements to enhance the visual layout of the forms.	Parents found the visual layout and font size of the demographic questionnaire and checklist to be clear.	No modifications were made to the visual layout of the forms for the main study.
3. To determine the suitability of the data collection method.	<ul style="list-style-type: none"> - Initial letter requesting parent permission for participation - Information sheet - Informed consent form - Letter of instruction for completion of forms - Demographic questionnaire 	All forms were sent home together in a sealed envelope. A badge was pinned to the toddler requesting parents to look in the child's school bag. Parents were requested to return forms to the principal within the week of receiving it. The toddlers were rewarded with a packet of sweets on	Parents returned forms to the nursery school following a verbal reminder from the principal and occasionally, a sms reminder from the investigator. Parents were contacted if forms were incomplete. Missing data was	It was decided that parents should receive a verbal reminder from the principal and a sms reminder from the investigator if forms were not returned within the week of receiving them.

Aims	Materials	Methods	Results	Recommendations
	<ul style="list-style-type: none"> - Checklist - Pilot feedback questionnaire 	return of the forms regardless of whether parents consented to participate or not.	filled in telephonically by the investigator according to information provided by the parent.	
4. To determine the accuracy of data capturing procedures for future data analysis.	<ul style="list-style-type: none"> - Initial letter requesting parent permission for participation - Information sheet - Informed consent form - Letter of instruction for completion of forms - Demographic questionnaire - Checklist 	Demographic information was originally intended for categorising parents into group 1 or group 2 according to Hollingshead four factor index of social status (Hollingshead, 1975). Demographic information was used only to describe biographic data of parents.	Demographic information was allocated a variable and analysed accordingly. The additional word column drafted onto the checklist was useful and parents suggested words they felt required inclusion on the checklist. Data obtained from the demographic questionnaire and checklist was captured in an Excel spreadsheet.	The investigator decided to number variables on the demographic questionnaire to better assist with data capturing. Questions pertaining to the spouse's level of education and occupation were added to allow for more accurate description of parents. Formulating a list of additional words suggested by parents was also necessary for later coding and analysis purposes. Parents were contacted telephonically by the investigator if data was incomplete. No further modifications were made for the main study.

3.6. Data Collection (Main Study)

3.6.1 Recruitment procedure

Eight privately owned nursery schools were recruited from the phone directory and by word of mouth within the Emalahleni area. Emalahleni, also known as Witbank, is a growing metropolis within the Mpumalanga province. It is a mining community and boasts within it diverse ethnic and linguistic groups. Nursery schools were recruited on the basis that they had to have two-year-old toddlers, were within the specified demographic area and were willing to assist the investigator in recruiting parents from their school. The principals of those nursery schools which met these criteria were contacted telephonically, with written follow up to establish their willingness to participate. Following the principals' agreement, the investigator determined the number of two-year-old toddlers within each nursery school.

The toddlers were an ethnolinguistically diverse group consisting of: first language English, Afrikaans, isiZulu, Sesotho, Siswati, Sepedi and Setswana speakers. According to the principals, the nursery schools did not have any children with established disabilities. The total number of two-year-old toddlers within the nursery schools ranged from four to thirty-one children. Each nursery school had at least one toddler’s class with one teacher allocated per class. At one of the nursery schools a teacher assistant helped the teacher with her daily activities while another school’s principal acted as both teacher and principal of the school.

3.6.2 Selection criteria of participants

All parents who met the specified selection criteria were invited to participate in the study. This resulted in a total of 80 possible participants. Table 3.5 outlines the inclusion criteria for parents and the methods used for recruitment purposes.

Table 3.5 Selection criteria for participants

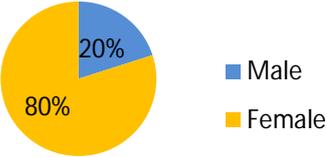
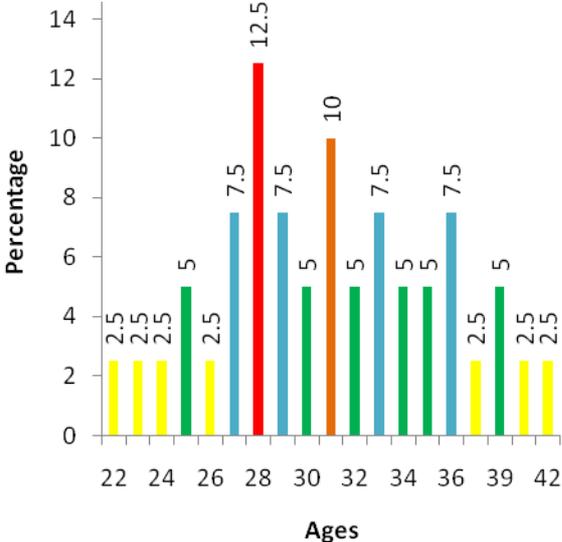
Inclusion Criteria	Rationale	Method
Parents had to have a typically developing toddler between the ages of 2:0 – 2:11 years.	The LDS was designed for children that are two years of age (Rescorla, 1989). In keeping with the original study, the age requirements were adhered to.	Principals provided a list of parents who had a typically developing toddler in the required age category.
Parents had to be able to understand written English.	Parents were required to read and complete the demographic questionnaire and LDS-SA checklist (Rescorla et al., 2001). Both forms were presented in English. Thus, comprehension of written English was necessary to ensure reliable results (Rescorla et al., 2001).	Principals provided the investigator with information pertaining to the parents’ literacy abilities. All nursery schools had English as one of the mediums of instruction. Communication between teachers and parents was done either in English or Afrikaans. It was therefore evident that parents’ comprehension of written English would suffice.
The parent had to be in daily contact with the toddler and have an understanding of the toddler’s expressive language abilities.	Parents tend to understand their child’s verbal utterances better than those unfamiliar with the child (Pan et al., 2004).	Parents completing the demographic questionnaire were requested to describe their relationship to the child, e.g. mom or dad and state if they were in daily contact.

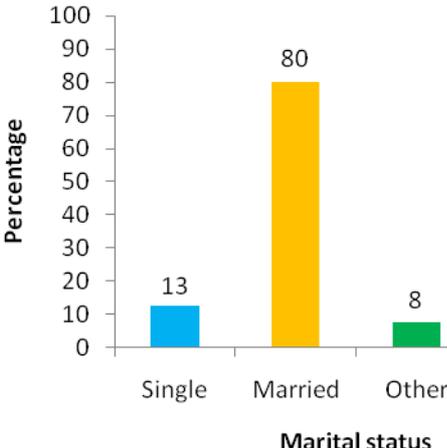
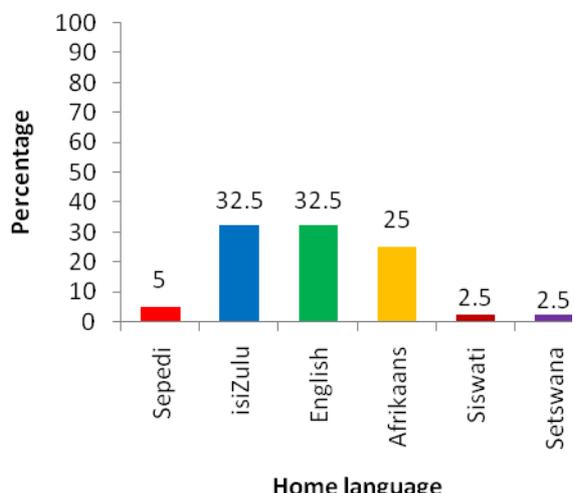
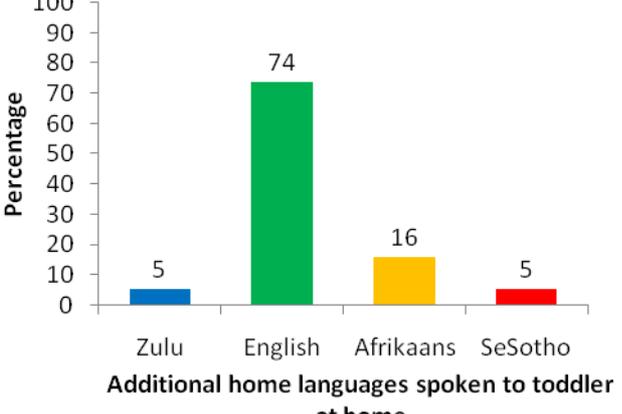
3.6.3 Descriptive criteria of participants

A total of eighty forms were distributed by principals (excluding the pilot site) and sixty forms were returned. Of the sixty forms, forty parents agreed to participate in the study (n = 40), fifteen did not wish to participate and four parents committed to the study but did not return their forms before the specified cut-off date. Only one of the sixty parents’ data was

excluded from the study as the toddler did not meet the study’s required age specification. Therefore a response rate of 50% was obtained (40/80 parents participated in the study). Table 3.6 describes the forty participants according to the information obtained from the demographic questionnaire (See Appendix D). Percentages used for describing parents, were rounded off to the nearest decimal point. Parents disclosed their gender, marital status, relationship to the toddler and chronological age in years. Information pertaining to the family’s home language and the use of additional languages in the household were also investigated. Additionally, monthly household income and the number of children other than the toddler were captured on the demographic questionnaire.

Table 3.6 Descriptive information of participants

Description	Results (n = 40)																																												
<p>The pie chart indicates the gender of parents completing the forms. As indicated, 80% of parents who completed the checklist were mothers, while the remaining 20% were fathers.</p>	<p style="text-align: center;">Gender</p>  <p style="text-align: right;"> ■ Male ■ Female </p>																																												
<p>The graph illustrates the age range of the parents. The percentage axis is at 14% and not 100%, in order to illustrate the age more clearly. The age range fell between 22 and 42 years. Almost half of the parents were within the 27 – 32 year old range (49%).</p>	 <table border="1" style="margin-left: auto; margin-right: auto;"> <caption>Age Distribution Data</caption> <thead> <tr> <th>Age</th> <th>Percentage</th> </tr> </thead> <tbody> <tr><td>22</td><td>2.5</td></tr> <tr><td>23</td><td>2.5</td></tr> <tr><td>24</td><td>2.5</td></tr> <tr><td>25</td><td>2.5</td></tr> <tr><td>26</td><td>5</td></tr> <tr><td>27</td><td>7.5</td></tr> <tr><td>28</td><td>12.5</td></tr> <tr><td>29</td><td>7.5</td></tr> <tr><td>30</td><td>5</td></tr> <tr><td>31</td><td>5</td></tr> <tr><td>32</td><td>10</td></tr> <tr><td>33</td><td>7.5</td></tr> <tr><td>34</td><td>5</td></tr> <tr><td>35</td><td>5</td></tr> <tr><td>36</td><td>7.5</td></tr> <tr><td>37</td><td>2.5</td></tr> <tr><td>38</td><td>5</td></tr> <tr><td>39</td><td>2.5</td></tr> <tr><td>40</td><td>2.5</td></tr> <tr><td>41</td><td>2.5</td></tr> <tr><td>42</td><td>2.5</td></tr> </tbody> </table>	Age	Percentage	22	2.5	23	2.5	24	2.5	25	2.5	26	5	27	7.5	28	12.5	29	7.5	30	5	31	5	32	10	33	7.5	34	5	35	5	36	7.5	37	2.5	38	5	39	2.5	40	2.5	41	2.5	42	2.5
Age	Percentage																																												
22	2.5																																												
23	2.5																																												
24	2.5																																												
25	2.5																																												
26	5																																												
27	7.5																																												
28	12.5																																												
29	7.5																																												
30	5																																												
31	5																																												
32	10																																												
33	7.5																																												
34	5																																												
35	5																																												
36	7.5																																												
37	2.5																																												
38	5																																												
39	2.5																																												
40	2.5																																												
41	2.5																																												
42	2.5																																												

Description	Results (n = 40)														
<p>The majority of parents (80%) were married while 13% were single. The remaining 8% of parents either did not disclose their marital status or were divorced.</p>	 <p>A bar chart titled 'Marital status' showing the percentage of parents in different marital categories. The y-axis is labeled 'Percentage' and ranges from 0 to 100. The x-axis is labeled 'Marital status' and has three categories: 'Single', 'Married', and 'Other'. The bars are colored blue, yellow, and green respectively. The values are 13 for Single, 80 for Married, and 8 for Other.</p> <table border="1"> <thead> <tr> <th>Marital status</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Single</td> <td>13</td> </tr> <tr> <td>Married</td> <td>80</td> </tr> <tr> <td>Other</td> <td>8</td> </tr> </tbody> </table>	Marital status	Percentage	Single	13	Married	80	Other	8						
Marital status	Percentage														
Single	13														
Married	80														
Other	8														
<p>An equal percentage of parents spoke isiZulu or English at home (33%), with 25% speaking Afrikaans, 5% Sepedi and 3% speaking either Siswati or Setswana. A total of 6 of the 11 official languages were reported as being spoken at home.</p>	 <p>A bar chart titled 'Home language' showing the percentage of parents who speak various languages at home. The y-axis is labeled 'Percentage' and ranges from 0 to 100. The x-axis is labeled 'Home language' and has six categories: 'Sepedi', 'isiZulu', 'English', 'Afrikaans', 'Siswati', and 'Setswana'. The bars are colored red, blue, green, yellow, red, and purple respectively. The values are 5 for Sepedi, 32.5 for isiZulu, 32.5 for English, 25 for Afrikaans, 2.5 for Siswati, and 2.5 for Setswana.</p> <table border="1"> <thead> <tr> <th>Home language</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Sepedi</td> <td>5</td> </tr> <tr> <td>isiZulu</td> <td>32.5</td> </tr> <tr> <td>English</td> <td>32.5</td> </tr> <tr> <td>Afrikaans</td> <td>25</td> </tr> <tr> <td>Siswati</td> <td>2.5</td> </tr> <tr> <td>Setswana</td> <td>2.5</td> </tr> </tbody> </table>	Home language	Percentage	Sepedi	5	isiZulu	32.5	English	32.5	Afrikaans	25	Siswati	2.5	Setswana	2.5
Home language	Percentage														
Sepedi	5														
isiZulu	32.5														
English	32.5														
Afrikaans	25														
Siswati	2.5														
Setswana	2.5														
<p>The graph illustrates additional home languages used by parents to converse with their toddler or other family members in the household. English was spoken as an alternate language by almost three quarters of the participants (74%), while 16% of parents spoke Afrikaans. A further 5% of parents spoke either isiZulu or SeSotho to their toddler.</p>	 <p>A bar chart titled 'Additional home languages spoken to toddler at home' showing the percentage of parents who use various languages to converse with their toddler. The y-axis is labeled 'Percentage' and ranges from 0 to 100. The x-axis is labeled 'Additional home languages spoken to toddler at home' and has four categories: 'Zulu', 'English', 'Afrikaans', and 'SeSotho'. The bars are colored blue, green, yellow, and red respectively. The values are 5 for Zulu, 74 for English, 16 for Afrikaans, and 5 for SeSotho.</p> <table border="1"> <thead> <tr> <th>Additional home languages spoken to toddler at home</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Zulu</td> <td>5</td> </tr> <tr> <td>English</td> <td>74</td> </tr> <tr> <td>Afrikaans</td> <td>16</td> </tr> <tr> <td>SeSotho</td> <td>5</td> </tr> </tbody> </table>	Additional home languages spoken to toddler at home	Percentage	Zulu	5	English	74	Afrikaans	16	SeSotho	5				
Additional home languages spoken to toddler at home	Percentage														
Zulu	5														
English	74														
Afrikaans	16														
SeSotho	5														

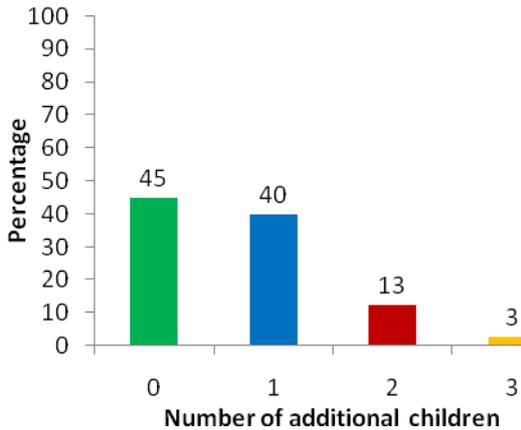
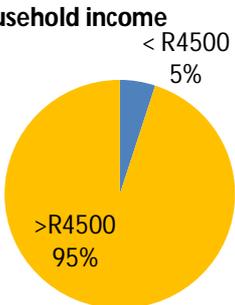
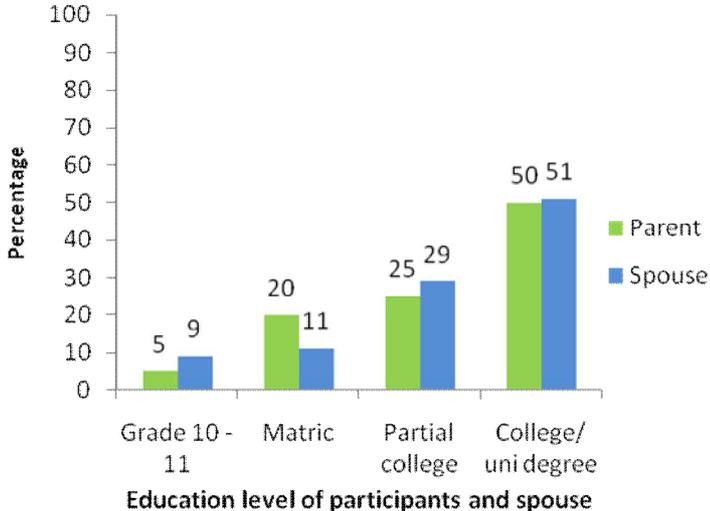
Description	Results (n = 40)															
<p>This graph illustrates the number of children parents had in addition to the toddler. A little less than half of parents (45%) did not have any additional children implying that the toddler was an only child and parents were first time parents. 40% of parents had one other child while 13% had two more children. Only 3% of parents had more than two other children.</p>	 <table border="1"> <caption>Number of additional children</caption> <thead> <tr> <th>Number of additional children</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>45</td> </tr> <tr> <td>1</td> <td>40</td> </tr> <tr> <td>2</td> <td>13</td> </tr> <tr> <td>3</td> <td>3</td> </tr> </tbody> </table>	Number of additional children	Percentage	0	45	1	40	2	13	3	3					
Number of additional children	Percentage															
0	45															
1	40															
2	13															
3	3															
<p>This pie chart shows the monthly household income as disclosed by parents. 95% of parents earned a household income of more than R4500 per month. The remaining 5% earned an income less the R4500. This occurred mostly in single parent households.</p>	 <table border="1"> <caption>Household income</caption> <thead> <tr> <th>Household income</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>< R4500</td> <td>5</td> </tr> <tr> <td>> R4500</td> <td>95</td> </tr> </tbody> </table>	Household income	Percentage	< R4500	5	> R4500	95									
Household income	Percentage															
< R4500	5															
> R4500	95															
<p>The last column on the graph indicates college or university degree. In most instances, spouses seemed to have a higher education level than the parent participating in the study. Thus it appears that fathers were better qualified than mothers, with 80% of respondents being mothers.</p>	 <table border="1"> <caption>Education level of participants and spouse</caption> <thead> <tr> <th>Education level</th> <th>Parent (%)</th> <th>Spouse (%)</th> </tr> </thead> <tbody> <tr> <td>Grade 10 - 11</td> <td>5</td> <td>9</td> </tr> <tr> <td>Matric</td> <td>20</td> <td>11</td> </tr> <tr> <td>Partial college</td> <td>25</td> <td>29</td> </tr> <tr> <td>College/ uni degree</td> <td>50</td> <td>51</td> </tr> </tbody> </table>	Education level	Parent (%)	Spouse (%)	Grade 10 - 11	5	9	Matric	20	11	Partial college	25	29	College/ uni degree	50	51
Education level	Parent (%)	Spouse (%)														
Grade 10 - 11	5	9														
Matric	20	11														
Partial college	25	29														
College/ uni degree	50	51														

Table 3.6 shows that 80% of participants were mothers’ of the toddler, with half of them having obtained a college or university degree. English and isiZulu were the predominant languages spoken at home with 74% of parents using English as an additional language.

3.6.4 Materials

The following materials were modified as necessary from the results obtained from the pilot study:

3.6.4.1 Parent demographic questionnaire

The demographic questionnaire included information pertaining to the parents' biographical data. See 3.6.3 for discussion of the demographic questionnaire and Table 3.6 for detailed demographic information disclosed by parents. The final version can be viewed in Appendix D.

3.6.4.2 Language Development Survey – South Africa

Adaptation of materials was discussed in 3.5.1. Written instructions to parents for completion of the LDS-SA can be seen in Appendix C and the final version of the LDS-SA can be viewed in Appendix E.

3.7 Ethical Considerations

As stated earlier in the chapter, ethical approval was obtained from the Ethics Committee of the University of Pretoria (see Appendix A for letter of ethical approval and letter of title registration). Recommended consent procedures were followed and the methodology for conducting research with human subjects was informed by the Declaration of Helsinki (1964). These included the principles of Non-maleficence, Justice, Autonomy and Beneficence, which were upheld by the investigator for the duration of the research study (Jenkins, Price & Straker, 1998).

3.8 Data Analysis

In keeping with the selected research design, descriptive statistics formed the basis of the data analysis procedure (McMillan & Schumacher, 2001). Information from the demographic questionnaire and LDS-SA were assigned variables and coded in an Excel spreadsheet while frequencies, percentages and means, were calculated thereafter for analysis purposes. Inferential statistics were applied to the data and comparisons were drawn between the present study (LDS-SA) and the original survey (LDS). Pearson product-moment correlations were computed for each semantic category and the level of agreement between categories for both studies was determined (McMillan & Schumacher, 2001).

3.8 Summary of Methodology

This chapter discussed the methods used in answering the aims of the study. The research design and criteria for participant selection were discussed while participants were described according to their demographic information. Materials and adaptation thereof were explored in light of results from the pilot study and analytical procedures in accordance with the selected research design were further described.

CHAPTER 4

RESULTS

4.1 Introduction

This chapter explores the results obtained in the study and is done according to the sub-aims described in Chapter 3. Firstly, the reliability of the data is described. Secondly, the vocabulary found to be most commonly used by toddlers, as indicated by their parents, is reported. These results are based on the Language Development Survey – South Africa (LDS-SA) and include vocabulary items whose reported percentage use by South African parents are equal to or greater than 90%. Vocabulary is described according to their respective word classes, for example nouns and verbs. Thirdly, an overview of parent responses from the two checklists is provided, followed by a more detailed examination of individual semantic categories. Pearson product-moment correlations (represented by r) indicate the correlations between the present study and the original survey (LDS) for each semantic category. Similarities and differences between parents’ “yes” responses from the two studies are also explored using the following five numerical categories: very small difference = 0% – 20%; small difference = 21% – 40%; medium difference = 41% – 60%; large difference = 61% – 80% and very large difference = 81% - 100%. A 20% increment is sufficient to portray accurately the detail found within the data. As no vocabulary items fell within the very large difference category (81% – 100%), it was not included in the detailed table of results. Parents’ “no” responses were also not included in light of the studies aims. A summary table of the total number of vocabulary items per semantic category – and in keeping with the five categories mentioned above - is used for exploration of individual categories, while more detailed information of vocabulary items is provided in Appendix F. The 14 semantic categories are arranged in descending order according to overall differences between parent responses and are discussed in this manner. The chapter concludes with a chapter summary.

4.2 Reliability of the Data

The LDS-SA used in the present study is based on the LDS developed in America. The original checklist (LDS) has received substantial credibility as a screening tool as described

in Chapter 3 (Rescorla, 1989). In the present study, the pilot study ensured that the materials and procedures were accurate before data collection commenced. The fact that a wide range of parent responses fell across the five numerical categories, pointed to the reliability of the data (see Appendix F). The completeness of data also strengthened the reliability of the study, as parents took their time in completing the checklist, resulting in no data being missing. The majority of parents used the additional column (“yes, but uses a different word for it”) to translate the target word into their respective home language. Variations of the target word were therefore idiosyncratic to the respective parent-toddler dyad. Following consultation with a statistician, it was decided that these responses would be added to the “no” response column. Adding these to the “yes” responses would elevate the results substantially causing parent responses (or the toddler’s expressive English vocabulary) to appear “better” than it necessarily was. This would have implications when drawing comparisons between parent responses from the present study and original survey. Finally, parents engaged in the research process by commenting and adding additional vocabulary that they felt could have been included in the checklist (see Appendix G).

4.3 The Most Commonly Used Vocabulary Items as Reported by Parents

Parents were asked to complete the checklist by marking one of three columns according to their toddlers’ use of the target word. The LDS-SA, which is an adapted version of the American-based LDS (see Chapter 3), consists of various word classes and is divided into 14 semantic categories. Of the total vocabulary items included on the checklist, 61% were classed as nouns and fell within the places, vehicles, toys, outdoor and personal categories as well as the people, clothes, animals, body parts, food, and household categories (see Table 4.1). The remaining 39% of the LDS-SA consisted of word classes other than nouns and fell within the actions, modifiers and other categories. The actions category contained 54 verbs, modifiers contained 31 adjectives and the other category contained 31 vocabulary items, which consisted of animal sounds (onomatopoeia), greetings, social phrases, numbers, letters, prepositions and interrogative forms (see Table 4.1).

Parent responses that fell in the 90% – 100% category range were regarded as “vocabulary most commonly used by South African toddlers.” Of the total 298 vocabulary items, only 24 (8%) were used within the 90% – 100% category range by the majority of the toddlers; 13 of these items were nouns. These included the following: "car, ball, book, daddy, mommy,

shoes, fish, eye, juice, chips, tea, sweets and bed.” Four of these were words related to food (see Table 4.1). Two other commonly used words, “daddy” and “mommy” formed part of the people category. “Daddy” obtained a slightly higher score (93%) than “mommy” (90%), which was interesting, considering that 80% of participants were, in fact, mothers. Within the actions category, 15% of verbs were used commonly by toddlers and included “sit, come, eat, bath, go, kiss, open and see” (see Table 4.1). The 1% of vocabulary from the other category that was commonly used included social phrases (“hi/hello” and “no”) and numbers (“1, 2, 3, etc.”). Parents did not report any vocabulary items within the modifiers category that could be classified as “most commonly used”. Similarly, three of the smaller noun categories (places, outdoors and personal) did not contain commonly used items.

Table 4.1 Vocabulary commonly used by South African toddlers (n = 40)

Total no. of items per word class	Semantic categories	Vocabulary items	Percentage use for items in the 90%-100% category range
Nouns			
182 items	Places	-	-
	Vehicles	car	90 %
	Toys	ball	90 %
		book	90 %
	Outdoor	-	-
	Personal	-	-
	People	daddy	93 %
		mommy	90 %
	Clothes	shoes	90 %
		fish	90 %
	Animals	eye	90 %
	Body Parts	juice	95 %
		chips	93 %
	Food	tea	93 %
		sweets	90 %
Household		bed	95 %
Verbs			
54 items	Actions	sit	95 %
		come	93 %
		eat	93 %
		bath	90 %
		go	90 %
		kiss	90 %
		open	90 %
		see	90 %
		Adjectives	
31 items	Modifiers	-	
Other			
31 items	Prepositions	-	
	Onomatopoeia	-	
	Social phrases	no	93 %
	Numbers Greetings	1,2,3, etc.	93 %

Total no. of items per word class	Semantic categories	Vocabulary items	Percentage use for items in the 90%-100% category range
	Letters Interrogatives	hi/hello - -	90 %

The 24 commonly used vocabulary items mentioned above, as well as the remaining parent responses for words on the LDS-SA were very similar to the parent responses obtained from the original survey (LDS). These similarities are explored in more detail in the subsequent section.

4.4 A Comparison Between Parent Responses from the LDS-SA and the LDS

In order to answer the second and third sub-aims, parents' "yes" responses from the present study (LDS-SA) were compared to those from the American-based study (LDS). An overview of parent responses for all 14 semantic categories is explored first; secondly, Pearson correlation values for each semantic category are provided and lastly, a detailed description of parent responses for the categories, pertaining to the two studies is investigated.

4.4.1 Overview of parent's responses

Generally, parent responses from the present study using the LDS-SA were similar to parents' "yes" responses from the American-based study using the LDS. As evident in Table 4.2, parent responses across most of the categories showed only small differences between them with one category indicating no difference at all (toys). Besides the actions and modifiers categories, which obtained response differences of 10% and 11% respectively, the remaining 12 categories showed differences of less than 10%, highlighting the similarity of parent responses across the two studies. The actions category was the only category that indicated a large difference for any word, this being "eat" (see Appendix F).

Table 4.2 Overall differences between categories for the LDS-SA and LDS

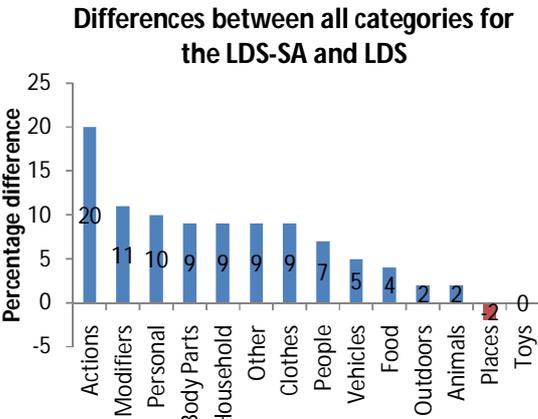
Discussion	Result																														
<p>The bar graph shows that the largest difference between parents' "yes" responses was found in the actions category (20%). This was also the largest individual semantic category on the LDS-SA. The modifiers and personal categories followed with remaining categories showing differences of less than 10%. The toys category showed no difference at all between parent responses from the two studies. Places, was the only category where parents from the original study reported higher use of vocabulary items than those parents who formed part of the present study.</p>	 <table border="1"> <caption>Differences between all categories for the LDS-SA and LDS</caption> <thead> <tr> <th>Category</th> <th>Percentage difference</th> </tr> </thead> <tbody> <tr><td>Actions</td><td>20</td></tr> <tr><td>Modifiers</td><td>11</td></tr> <tr><td>Personal</td><td>10</td></tr> <tr><td>Body Parts</td><td>9</td></tr> <tr><td>Household</td><td>9</td></tr> <tr><td>Other</td><td>9</td></tr> <tr><td>Clothes</td><td>9</td></tr> <tr><td>People</td><td>7</td></tr> <tr><td>Vehicles</td><td>5</td></tr> <tr><td>Food</td><td>4</td></tr> <tr><td>Outdoors</td><td>2</td></tr> <tr><td>Animals</td><td>2</td></tr> <tr><td>Places</td><td>-2</td></tr> <tr><td>Toys</td><td>0</td></tr> </tbody> </table>	Category	Percentage difference	Actions	20	Modifiers	11	Personal	10	Body Parts	9	Household	9	Other	9	Clothes	9	People	7	Vehicles	5	Food	4	Outdoors	2	Animals	2	Places	-2	Toys	0
Category	Percentage difference																														
Actions	20																														
Modifiers	11																														
Personal	10																														
Body Parts	9																														
Household	9																														
Other	9																														
Clothes	9																														
People	7																														
Vehicles	5																														
Food	4																														
Outdoors	2																														
Animals	2																														
Places	-2																														
Toys	0																														

Table 4.3 specifies Pearson correlation values for each semantic category between the present study and the original survey (LDS). All values indicated positive correlations with 12 of the 14 semantic categories showing values that were significant at the 10% level. This shows that parent responses from the two studies, were similar. Table 4.3 is referred to in the subsequent sections.

Table 4.3 Pearson product-moment correlation values for the 14 semantic categories

Variable	Pearson coefficient (r)	P-value
Actions	.35	0.0080*
Modifiers	.41	0.0195*
Personal	.74	0.0054*
Body parts	.75	0.0001*
Household	.39	0.0284*
Other	.63	0.0001*
Clothes	.43	0.1030
People	.58	0.0265*
Vehicles	.51	0.1277
Food	.47	0.0082*
Outdoors	.62	0.0408*
Animals	.40	0.0735*
Places	.76	0.0284*
Toys	.82	0.0016*

*Significant at the 10% level

Table 4.4 below provides a summary of the data reported within the 14 semantic categories and is referred to in the following section. It includes the total number of vocabulary items within each of the 14 semantic categories and the total number of "yes" responses that fell within each of the 4 numerical categories indicating difference between the two studies. Each

semantic category is discussed according to overall similarities and differences between parent responses from the two studies and the most interesting findings within each are highlighted. For a more detailed description of the results, refer to Appendix F.

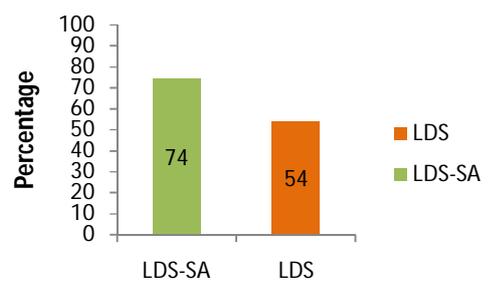
Table 4.4 Summary table of differences between parent responses on the LDS-SA and LDS

Category	Total No. of items	Very Small Difference (0% – 20%)	Small Difference (21% – 40%)	Medium Difference (41% – 60%)	Large Difference (61% – 80%)
Actions	54 items	26 items	23 items	4 items	1 item
Modifiers	31 items	20 items	10 items	1 item	-
Personal	12 items	11 items	1 items	-	-
Body Parts	20 items	17 items	2 items	1 item	-
Household	31 items	19 items	12 items	-	-
Other	31 items	20 items	10 items	1 item	-
Clothes	15 items	9 items	6 items	-	-
People	14 items	10 items	4 items	-	-
Vehicles	10 items	6 items	4 items	-	-
Food	30 items	21 items	8 items	1 item	-
Outdoors	11 items	10 items	1 item	-	-
Animals	20 items	18 items	2 items	-	-
Places	8 items	4 items	4 items	-	-
Toys	11 items	11 items	-	-	-

4.4.2 Actions category

The actions category showed the largest overall difference in parents “yes” responses between the two checklists (20%) as seen in Table 4.2 and Table 4.5. This could possibly be attributed to the number of items within the category. The actions category consisted of 54 vocabulary items which may have led to the greater overall difference between parent responses.

Table 4.5 Overall parent responses for the actions category

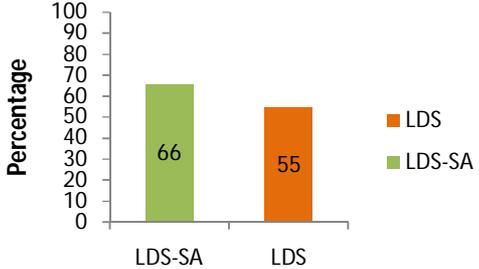
Description	Result						
A 20% difference was found between parents’ “yes” responses from the two checklists. From the present study, 74% of parents reported that their toddlers’ used some of the verbs on the LDS-SA. From the American-based study (LDS), only 54% of parents reported their toddlers’ use of the same items.	<p style="text-align: center;">Actions</p>  <table border="1"> <caption>Data for Actions Category Bar Chart</caption> <thead> <tr> <th>Study</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>LDS-SA</td> <td>74</td> </tr> <tr> <td>LDS</td> <td>54</td> </tr> </tbody> </table>	Study	Percentage	LDS-SA	74	LDS	54
Study	Percentage						
LDS-SA	74						
LDS	54						

As shown in Table 4.5 parent responses between the two studies were similar for vocabulary items used, although a 20% overall difference was noted. These findings are supported by Table 4.3 where $r = .35$ and a statistically significant correlation is evident between the results of the two studies. Table 4.4 further indicates that the majority of parent responses for the actions category, showed differences that fell either within the “very small” or “small difference” categories. In contrast, one item “eat” showed a large difference of 65% between parent responses with a further four items, “close”, “take”, “make” and “finish” showing medium differences. Furthermore, only 28% of parents from the present study perceived the word “pattycake” to be used often compared to 40% of parents’ from the original study (see Appendix F). Apart from these differences, the remaining parent responses for this category were similar as supported by the Pearson correlation computations.

4.4.3 Modifiers category

Parents’ “yes” responses for the modifiers category showed an 11 % overall difference, as shown in Table 4.6 This is viewed as a very small difference according to the five numerical categories used in this study.

Table 4.6 Overall parent responses for the modifiers category

Description	Result						
66% of parents from the LDS-SA study reported use of vocabulary items in this category. Parents from the American-based study, however, reported that only 55% of their toddlers used the same items. Thus an 11% difference was evident between parents’ “yes” responses from the two studies.	<p style="text-align: center;">Modifiers</p>  <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Study</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>LDS-SA</td> <td>66</td> </tr> <tr> <td>LDS</td> <td>55</td> </tr> </tbody> </table>	Study	Percentage	LDS-SA	66	LDS	55
Study	Percentage						
LDS-SA	66						
LDS	55						

Parents from both studies responded similarly for the use of vocabulary items as shown in Table 4.6. Table 4.3 supports the similarities found and shows a Pearson value of $r = .41$ indicating a significant correlation between parent responses from the two studies. Table 4.4 shows that 30 of the 31 items fell within the “very small” or “small difference” categories, with only one word “white” showing a medium difference of 42% between parent responses. Interestingly, 58% of parents from both studies responded in the same way for the adjective

“pretty” (see Appendix F). The similarity of parent responses for the two studies was also apparent for this category.

4.4.4 Personal category

The noun category (personal) consisted of only 12 items, which is relatively small in comparison to the actions and modifiers categories. Small differences between parent responses for this category seemed to have greater effect on the overall differences between parent responses (10%).

Table 4.7 Overall parent responses for the personal category

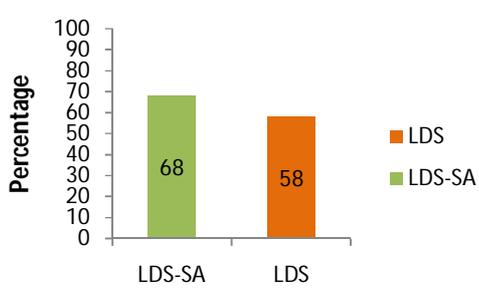
Description	Result						
68% of parents from the LDS-SA study reported their toddlers’ use of nouns compared to the original survey’s 58%. Parents “yes” responses differed overall by 10% when comparing the two checklists.	<p style="text-align: center;">Personal</p>  <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Study</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>LDS-SA</td> <td>68</td> </tr> <tr> <td>LDS</td> <td>58</td> </tr> </tbody> </table>	Study	Percentage	LDS-SA	68	LDS	58
Study	Percentage						
LDS-SA	68						
LDS	58						

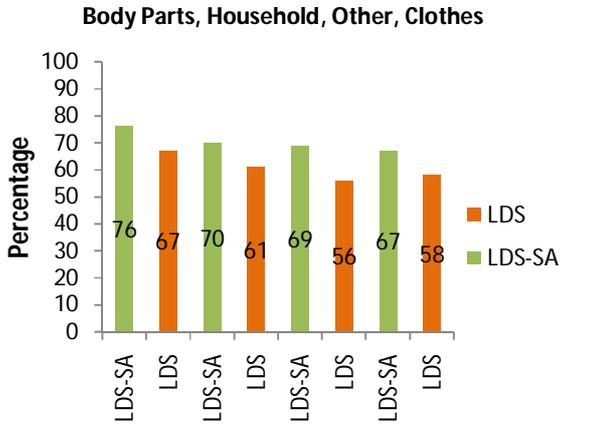
Table 4.7 supports the Pearson values shown in Table 4.3 for the present study and the original survey ($r = .74$) which indicates a strong correlation. Table 4.4 shows that only one noun fell within the “small difference” category with the remaining 11 items falling within the “very small difference” category. There was therefore, close similarity in the parent responses across the two studies for all 12 vocabulary items. Eighty percent of parents from both studies also provided the same response for the noun “key”. The item “pocketbook” was used the least amongst South African toddlers (23%) compared to 43% of toddlers from the original study. Overall, parents from both studies responded similarly to vocabulary used in this category.

4.4.5 Body Parts, household, clothes and other categories

The following four categories, namely body parts, household, clothes and other showed the same overall difference between parents’ “yes” responses for the two studies (9%) as shown in Table 4.8. This is interesting considering the variability in size and word classes amongst

them. Pearson values for the body parts, household and other categories were significant, showing agreement in parent responses between the two studies. Values for the clothes category however were not significant (p value = 0.1030) but still positive. Body parts, household and clothing consisted of nouns only, whereas the other category consisted of several word classes, as described earlier. The household and other categories consisted of 31 items each, body parts consisted of 20 nouns and clothing consisted of 15 nouns.

Table 4.8 Overall parent responses for the body parts, household, clothes and other categories

Description	Result															
<p>There was a 9% difference between parent responses for each of the four categories. The first two columns represent the body parts category, the second two represent the household category, the third two columns represent the other category and the final two columns represent the clothes category. Higher “yes” responses from parents in the LDS-SA study for all four categories compared to those from the original survey were directly related to the usefulness of vocabulary items within each of the four categories.</p>	 <table border="1"> <caption>Body Parts, Household, Other, Clothes</caption> <thead> <tr> <th>Category</th> <th>LDS-SA (%)</th> <th>LDS (%)</th> </tr> </thead> <tbody> <tr> <td>Body Parts</td> <td>76</td> <td>67</td> </tr> <tr> <td>Household</td> <td>70</td> <td>61</td> </tr> <tr> <td>Other</td> <td>69</td> <td>56</td> </tr> <tr> <td>Clothes</td> <td>67</td> <td>58</td> </tr> </tbody> </table>	Category	LDS-SA (%)	LDS (%)	Body Parts	76	67	Household	70	61	Other	69	56	Clothes	67	58
Category	LDS-SA (%)	LDS (%)														
Body Parts	76	67														
Household	70	61														
Other	69	56														
Clothes	67	58														

As shown in Table 4.8 it is clear that parent responses were similar for the two studies, as their overall difference amounted to only 9%. These findings are supported by the data in Table 4.4. Parent responses appeared similar for all four categories across the two studies, although Pearson computations for the clothes category (p value = .1030) indicates no significant correlation. Interestingly, none of the parents from the present study reported use of the item “belt” by their toddler. The items “booboo and excuse me” within the other category also obtained low parent responses from the LDS-SA (23%). More than half of total parent responses fell within the very small difference category however. Parents from both studies also responded in the same way for certain items, for example “ear”, “cup”, “stairs” and bowl” (see Appendix F). In general, the body parts category showed higher parent responses than the household, clothes and the other categories. Although percentages differed between parent responses from the LDS-SA and LDS, the pattern between them was the same.

4.4.6 People category

The people category, also classed as a noun category, consisted of two proper nouns and 12 common nouns. Parents’ “yes” responses from the LDS-SA study and original study (LDS) were similar.

Table 4.9 Overall parent responses for the people category

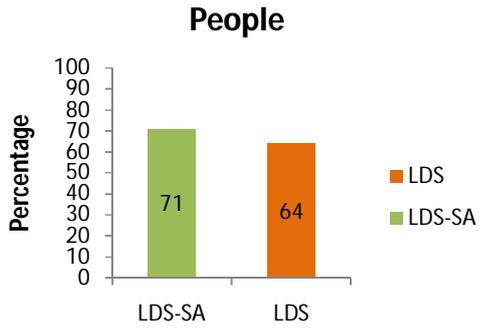
Description	Result						
<p>Parents using the LDS-SA in the present study confirmed their toddlers’ use of nouns for the category in 71% of cases in comparison to 64% of parents from the American-based study. Thus, a 7% difference was evident between the two studies.</p>	 <table border="1"> <caption>People Category Data</caption> <thead> <tr> <th>Study</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>LDS-SA</td> <td>71</td> </tr> <tr> <td>LDS</td> <td>64</td> </tr> </tbody> </table>	Study	Percentage	LDS-SA	71	LDS	64
Study	Percentage						
LDS-SA	71						
LDS	64						

Table 4.9 indicates that parent responses showed a small overall difference of 7%. This is supported by the correlation values shown in Table 4.3, where $r = .58$ and the p value for this category is 0.0265, indicating a significant positive correlation between parent responses from the two studies. The detail found in Table 4.4 also shows that all 14 vocabulary items fell either within the “small” or “very small difference” categories. This follows a similar trend to previous semantic categories, highlighting the similarity between parents’ “yes” responses across both studies.

4.4.7 Vehicles category

The vehicles category consisted of ten nouns and showed an overall difference of 5% between parent responses from the two studies. Unlike the personal category which consisted of 12 items but showed an overall difference of 10%; differences between parent responses for individual vocabulary items within this category, resulted in only a 5% overall difference.

Table 4.10 Overall parent responses for the vehicles category

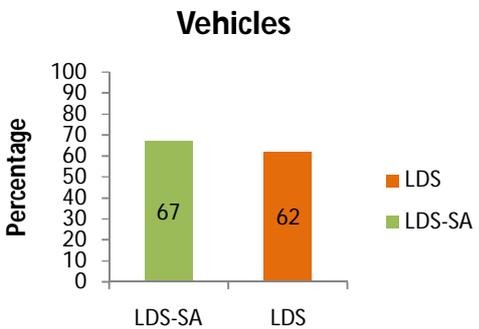
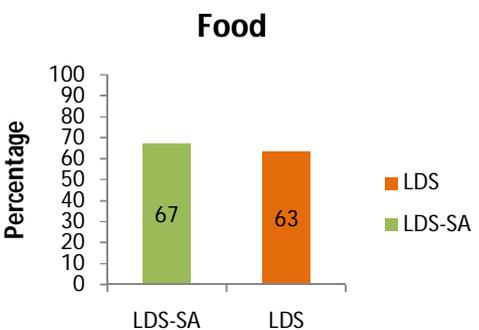
Description	Result						
<p>67% of parents from the LDS-SA study reported their toddlers’ use of nouns within the vehicles category. This was slightly higher than parents’ “yes” responses from the American-based survey (62%). A 5% difference was evident between parent responses.</p>	 <table border="1"> <caption>Vehicles</caption> <thead> <tr> <th>Study</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>LDS-SA</td> <td>67</td> </tr> <tr> <td>LDS</td> <td>62</td> </tr> </tbody> </table>	Study	Percentage	LDS-SA	67	LDS	62
Study	Percentage						
LDS-SA	67						
LDS	62						

Table 4.10 supports the detail found in Table 4.4 where parent responses showed either small or very small differences between the two studies. Parents’ responded in the same way for the noun “train” (68%). Although, parent responses from the present study were similar to those of their American-based counterparts, based on data presented in Table 4.10, the correlation is not significant (p value = 0.1277) as seen in Table 4.3.

4.4.8 Food category

The food category was the third largest individual category of the LDS-SA and consisted of 30 nouns. Despite the large number of vocabulary items in this category, only a 4% overall difference was noted between parents’ “yes” responses from the present study (LDS-SA) and original survey (LDS). This is interesting considering that the modifiers category, for example, consisted of 31 vocabulary items but showed an overall difference of 11%.

Table 4.11 Overall parent responses for the food category

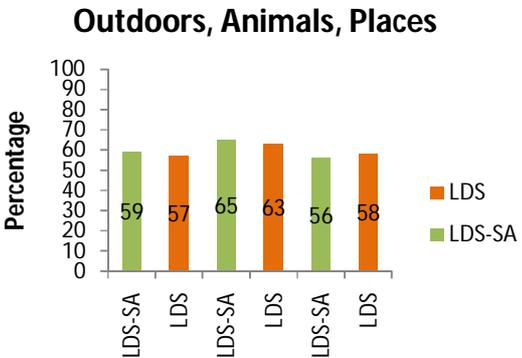
Description	Result						
<p>Responses from the LDS-SA study showed that 67% of toddlers used vocabulary items within this category. Similarly, 63% of parents from the original study (LDS) reported their toddlers’ use of the items. Overall, parent responses from the two studies differed by 4%.</p>	 <table border="1"> <caption>Food</caption> <thead> <tr> <th>Study</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>LDS-SA</td> <td>67</td> </tr> <tr> <td>LDS</td> <td>63</td> </tr> </tbody> </table>	Study	Percentage	LDS-SA	67	LDS	63
Study	Percentage						
LDS-SA	67						
LDS	63						

As shown in Table 4.11, parent responses between the two studies differed by only 4% thus the majority of parent responses for vocabulary items within this category were similar. There was also a significant positive correlation ($r = .47$; p value = 0.0082) between parent responses as shown in Table 4.3. Table 4.4 supports these findings and shows that 29 of the 30 items fell within either the “small” or “very small difference” categories. The remaining word “tea” showed a medium difference between parent responses while parents from the LDS-SA study indicated that the words “raisins” and “bubblegum” were used the least by their toddlers (25%) (see Appendix F). It is evident that generally, responses from both sets of parents for the food category were similar due to the small differences between them for individual vocabulary items. This is particularly interesting considering the large size of the category.

4.4.9 Outdoors, Animals and Places categories

The following three noun categories, namely, outdoors, animals and places, yielded a small difference (2%) for overall parent responses when comparing parent responses in the present study (LDS-SA) to those from the original survey (LDS). The size of these categories differed and the animals’ category consisted of 20 nouns, outdoors 11 nouns and the places category only eight nouns. As discussed previously, the small difference between parent responses for these categories is indicative of the similarity in parent responses for individual vocabulary items.

Table 4.12 Overall parent responses for the outdoors, animals and places categories

Description	Result												
<p>The first two columns of the graph represent the outdoors category; the second two represent the animals’ category and the final two columns represent the places category. Within the outdoors and animals categories, 59% and 65% of parents from the LDS-SA reported their toddlers’ use of vocabulary items from these categories. Within the places category, 58% of parents from the original study reported their toddlers’ use of items compared to 56% of parents from the present study. Overall, a 2% difference was evident between parent responses from the two studies.</p>	 <table border="1"> <caption>Outdoors, Animals, Places</caption> <thead> <tr> <th>Category</th> <th>LDS-SA (%)</th> <th>LDS (%)</th> </tr> </thead> <tbody> <tr> <td>Outdoors</td> <td>59</td> <td>57</td> </tr> <tr> <td>Animals</td> <td>65</td> <td>63</td> </tr> <tr> <td>Places</td> <td>56</td> <td>58</td> </tr> </tbody> </table>	Category	LDS-SA (%)	LDS (%)	Outdoors	59	57	Animals	65	63	Places	56	58
Category	LDS-SA (%)	LDS (%)											
Outdoors	59	57											
Animals	65	63											
Places	56	58											

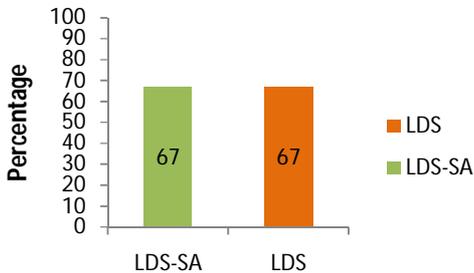
As shown in Table 4.12 there was very little difference in parent responses for the majority of vocabulary items within the outdoors, animals and places categories. Correlation values as

shown in Table 4.3, were also positive, indicating statistical significance for all three categories ($r = .62$; $r = .40$; $r = .76$). Table 4.4 supports these findings and reveals that the majority of parent responses fell within the small or very small difference categories. More specifically, only 5% of parents from the present study (LDS-SA) indicated the use of the word “library” compared to 21% of parents from the American-based study (LDS). Overall, parent responses appeared very similar for all three categories.

4.4.10 Toys category

The toys category consisted of 11 nouns, and showed exactly the same responses between parents from the present (LDS-SA) and American-based studies (LDS). It is clear that for the present study, parents reported their toddlers’ use of the same nouns related to toys as those by their same age peers in the original survey. These findings are supported by the correlation values ($r = .82$; p value = 0.0016) shown in Table 4.3 above.

Table 4.13 Overall parent responses for the toy category

Description	Result						
Overall parents’ “yes” responses from the two studies were exactly the same for the toys category. Both sets of parents responded the same to their toddlers’ use of vocabulary items within the category (67%).	<p style="text-align: center;">Toys</p>  <table border="1" style="margin-left: auto; margin-right: auto;"> <caption>Data for Toys Category Bar Chart</caption> <thead> <tr> <th>Study</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>LDS-SA</td> <td>67</td> </tr> <tr> <td>LDS</td> <td>67</td> </tr> </tbody> </table>	Study	Percentage	LDS-SA	67	LDS	67
Study	Percentage						
LDS-SA	67						
LDS	67						

As evident in Table 4.13, parents overall responses did not differ between the two studies. Table 4.4 supports these findings as it shows that responses fell only within the very small difference category. Thus, nouns present within the toy category seemed to be directly applicable to participants from both studies, as the degree to which toddlers used them was the same.

4.5 Summary of Results

This chapter described the results of the study according to the sub-aims. Parents reported that 12% of the total vocabulary items on the LDS-SA were commonly used by their toddlers

and consisted predominantly of nouns. Comparisons drawn between parents' "yes" responses from the present study (LDS-SA) and the American-based study (LDS) were also similar. Pearson product-moment correlation values showed no significant difference for 12 of the 14 semantic categories, although the clothes and vehicles categories showed differences of 9% and 5% respectively, as seen in Table 4.2. These correlations, although positive, were not statistically significant. Overall, parents from both studies showed that their toddlers' used similar vocabulary, regardless of their linguistic background. The LDS-SA therefore proved reliable in capturing the vocabulary used by South African toddlers, obtaining even higher responses than those from the original survey.

CHAPTER 5

DISCUSSION

5.1 Introduction

This chapter provides the discussion for the results portrayed in Chapter 4. Vocabulary items commonly used by toddlers from the South African-based study (LDS-SA), as reported by their parents, is described first, and followed by a comparative discussion of parents' "yes" responses from the present study (LDS-SA) and the American based survey (LDS). Table 5.1 provides the p-values for parent responses and is arranged in ascending order. It is used to support the discussion in section 5.3. Finally, a summary of the chapter is provided.

5.2 A Discussion of Vocabulary Items Used Most Commonly by South African Toddlers

Parent report, using the Language Development Survey-South Africa (LDS-SA), was used to capture words used most commonly by South African toddlers. Research shows that toddlers' vocabularies grow at remarkable rates as they learn to use and recognize various words, primarily objects and actions that occur around them (McLaughlin, 2006). This growth generally consists of new nouns, verbs and adjectives. The LDS-SA used in the present study contained the above mentioned word classes, as well as several smaller word classes. Nouns comprised 61% of the total checklist, verbs 18%, adjectives 10% and the other category, 10%. Vocabulary items that fell within the 90% - 100% category range were regarded as "vocabulary items most commonly used by toddlers." Twenty-four words were found to be commonly used by toddlers from the present study, 13 of which were nouns. Nelson (1973) found that the majority of early words of 18 toddlers consisted of nouns. These included family members, toys, food items, parts of the body, and items of clothing. Similarly, results obtained on the LDS-SA checklist revealed that the vocabulary items "car", "ball", "book", "daddy", "mommy", "shoes", "fish", "eye", "juice", "chips", "tea", "sweets", and "bed" were used commonly by toddlers. These fell within the vehicles, toys, people, clothes, animals, body parts, food and household categories similar to results reported by Nelson (1973). In the earliest stages toddlers' language development is tied to the here-and-now with little or no

reference to past, future or hypothetical events (De Villiers & De Villiers, 1979). Although toddlers initially produce common nouns, these are typically based on narrow and isolated experiences (McLaughlin, 2006). As a result toddlers are initially producing nouns in response to the unique, individual word, for example the family pet, as opposed to an entire group (all pets). Similarly, more specific nouns such as “mommy” and “daddy” which were also commonly used by South African toddlers, are usually produced by toddlers as proper nouns. In this sense, toddlers are indicating that their parents’ names are “Mommy” and “Daddy” (McLaughlin, 2006). The predictable and familiar routines of daily life, such as bathing, feeding and travelling provide further event knowledge (Makin, Campbell & Diaz, 1995). According to Nelson (1991) children are disposed to learning words that are embedded in significant events. Parents assist this process by using familiar phrases for regular routines such as sleeping, eating, drinking, getting dressed and so on. This is noticeable in the nouns suggested by parents from the present study, all of which were related to routine activities in the toddlers’ lives.

Although there is a considerable increase in the use of nouns by toddlers, there is simultaneously a large increase in words related to actions (Makin et al., 1995). Toddlers’ early vocabularies consist of words pertaining to actions which are of immediate importance to their life (Anisfeld, 1984). In the present study, 3% of words within this category were commonly occurring. These included the words “sit”, “come”, “eat”, “bath”, “go”, “kiss”, “open” and “see”. As toddlers are building their vocabulary in their second year, they are simultaneously very active (Anisfeld, 1984). Their words therefore reflect all the important aspects of daily life, including those for touching, tasting, climbing, falling, exploring, getting hurt, seeking comfort, turning away, rejecting food or attention as well as getting and giving kisses and cuddles (Makin et al., 1995). The most commonly used vocabulary items found in the present study are reflective of these findings and highlight the explorative nature of toddlers. De Villiers and De Villiers (1979) suggest that many of the early single word utterances of toddlers do not merely serve to label objects or to describe actions, but also to serve social interaction. Nelson (1973) suggests that at first, some toddlers are primarily referential, learning and using words that label objects. Others, however, are expressive and first learn words for personal desires or for aspects of social interaction (Nelson, 1973). Most toddlers tend to have a combination of both types in their early vocabulary which is evident in their expanding sentence structures (Nelson, 1973). According to Brown’s (1973) five stages of language development, Stage 1 marks the toddler’s move from one-word speech

into combinatory speech (MLU 1.5-2.0). Later in Stage 1, the child uses nouns in new combinations, for example, “ball mommy” or “see ball” which reiterates the toddlers association with the here-and-now (Brown, 1973). Initial sentences usually consist of noun-verb combinations (Fry, 1977). Brown defines Stage 2 as consisting of a MLU of 2.5 including the span of 2.0-2.5. Many grammatical morphemes emerge at this stage but not necessarily in all contexts (Lindfors, 1980). It becomes increasingly difficult to use a stage-by-stage description of the toddler’s developing language at this level. Moving beyond Stage 2 however, shows the development of more complex aspects of language, one of which is the development of negatives (Lindfors, 1980). One of their first negative words toddlers use is “no.” In the present study, the social phrases “hi/hello” and “no” were reported by parents as being used by their toddlers. Toddlers seem to understand the fundamental aspect of negation from the very beginning (De Villiers & De Villiers, 1979). The word “no” suffices in communicating the toddler’s intent more than use of a two-word sentence (Bloom, 1970). Parents reported numbers (“1, 2, 3, etc.”) were also used commonly by toddlers from the present study. This was possibly a result of the toddlers’ attendance at nursery schools thus enhancing their exposure to numeracy/counting on a daily basis. Research also indicates that literacy is a highly valued part of the cultural context and therefore numbers are given social significance for many things such as letter boxes, telephone numbers and birthdays (Makin et al., 1995).

Vocabulary items found to be commonly used by toddlers from the present study correlate with research regarding early acquisition of vocabulary (Nelson, 1973). It also consolidates theories by Chomsky and Vygotsky who both emphasise the importance of the social context. A comparison of parents’ “yes” responses for remaining vocabulary items on the LDS-SA to those from the original survey (LDS), revealed close similarities between the two studies. This is interesting considering the diversity of the linguistic context for toddlers from the present study compared to those from the original survey. These results are discussed in the section below.

5.3 A Discussion of Parent Responses from the Two Studies

Table 5.1, shows the p-values for parent responses in the present study and the original survey (LDS) and is referred to in the section below.

Table 5.1 P-values for parent responses

CATEGORY	P-VALUE
Actions	0.0080*
Personal	0.0054*
Body Parts	0.0001*
Other	0.0001*
Food	0.0082*
Toys	0.0016*
Modifiers	0.0195*
Household	0.0284*
People	0.0265*
Places	0.0284*
Outdoors	0.0408*
Animals	0.0735*
Clothes	0.1030
Vehicles	0.1277

*Significant at the 10% level

Results from the present study suggest that although toddlers were from ethnolinguistically diverse contexts compared to their monolingual peers from the original survey, the acquisition of vocabulary followed the same trend due to close similarity of parent responses. As shown in Table 5.1, the clothes and vehicles categories, were the only two categories where the positive correlations were not statistically significant (p value 0.1030 and p value 0.1277 respectively). When considering responses for the remaining noun categories however, toddlers showed similar use of vocabulary items. The Toys category in fact, showed no difference at all between parents' overall "yes" responses. Some have theorized that the prevalence of nouns stems from the frequency that adults use them with their toddler (McLaughlin, 2006). Although nouns occur less often in adult speech generally, they are more frequent when parents talk to their toddlers (Goldfield, 1993). The frequency of nouns and verbs in parents' speech is influenced by the context. Nouns occur more often when toddlers are attending to an object; they occur less frequently in social interactions not involving objects. Although parents may not consciously set out to teach specific words, they do make a number of significant modifications in how they talk to their children. Parents' simplified speech that is part of their interaction, may account for the prominence of nouns in toddlers' first lexicons. Clark (1993) suggests that globally, toddlers tend to talk about similar things that are people (e.g. dada / papa, mama / mommy, baby), animals (e.g., dog, cat/kitty and bird), food (e.g., juice, milk and cookie), body parts (e.g. eye and nose) and clothing (e.g., nappy, shoe and sock). They also talk about vehicles (e.g., car, boat and train), toys (e.g., ball, block and doll) and household items (e.g., cup, spoon, bottle and light) as well as space and motion (e.g., up, off and open) and routines such as "bye-bye" for departures, or

“peek-a-boo” at playtime. This is true for the present study where parents responded in a similar way to parents from the original study for certain items, for example, “key” in the Personal category; “ear,” “cup,” “stairs” and “bowl” within the Body Parts and Household categories; “train” within the Vehicles category and “juice,” “apple,” “cake” and “cookie” within the Food category. The close agreement of parent responses for these categories is supported by the p-values shown in Table 5.1. Clark (1993) suggests that articulatory factors might contribute to the use of certain words by children and to the avoidance of others. Words avoided are usually those that are difficult to articulate. In the present study, the noun items “pocketbook”, “belt”, “raisins”, “bubblegum” and “library” were reported by parents as the least used words by South African toddlers. This could be attributed to word avoidance, the child’s preference for shapes that end in the *i* sound (such as “doggie” and “mommy”) or preferences for consonant-vowel (CV) words such as “see” and “hi” (Clark, 1993). It could also be that the South African toddlers’ were unfamiliar with these words due to the nature of their nursery school or home environment. This might also explain the differences found between parent responses for the clothes and vehicles categories. Interestingly, certain words within both categories were exchanged with the South African equivalent to ensure cultural equivalence. These included: sweater for jersey, sneakers for takkies, diaper for nappy and mittens for gloves within the clothes category and stroller for pram within the vehicles category. Additional factors such as parental differences in knowledge or beliefs or differences in the verbal abilities of parents may also have contributed to this finding (Rowe, 2008).

Within the Actions category the word “eat” saw parents differ in their responses. 93% of parents from the present study reported their toddlers’ use of the word compared to the original survey’s 28%. This is interesting considering that toddlers acquire verbs in a similar way to nouns and since the act of eating is an everyday occurrence, it should develop similarly across toddlers (Tomasello & Kruger, 1992). Therefore, a possible explanation is that toddlers from the original survey used “hungry” (43%) instead of “eat” or more specific words like “apple” (83%), “cheese” (82%), “cookie” (87%), “banana” (87%) or “biscuit/cracker” (87%) (see Appendix F). The vocabulary items “close,” “take,” “make” and “finish” also showed medium differences between parent responses and could be attributed to differences in the number of participants between the two studies. The present study had only 40 parents compared to the 758 parents who participated in the original study. “Pattycake” was used the least by toddlers from the South African based study (28%) and could be a

result of the unfamiliarity of the word to both parent and toddler. The game “pattycake” is most often modelled or taught by parents’ prior to the child learning it, thus parents’ understanding of the game is important (Tomasello & Kruger, 1992). The remaining 49 words within the Actions category, showed close similarity between parent responses demonstrating the applicability of vocabulary items to both groups of participants. These findings were supported by the p-values shown in Table 5.1 (p-value 0.0080).

While verbs are used to describe actions (e.g. “run”) and states (e.g. “rest”), states are also described by adjectives (modifiers) for example “tired” (Anisfeld, 1984). In the present study, 30 of the 31 items within the Modifiers category showed close similarity between parent responses (p-value 0.0195). The word “white” however showed a medium difference between the two studies with only 26% of parents from the original survey reporting its use. The remaining colour items included on the LDS-SA were used frequently by the South African toddlers. Research states that toddlers tend to demonstrate their recognition of colour firstly, as part of an object (McLaughlin, 2006). In Western cultures children are continuously exposed to a broad range of colours amongst their toys, clothing, story books and even eating utensils (McLaughlin, 2006). Adjectives are used less frequently than verbs or nouns, however, and are initially related mostly to the properties of an object (for e.g. “hot”, “big”, “dirty”) (McLaughlin, 2006). In spite of this, 66% of parents from the present study reported their toddlers’ use of adjectives within the category, indicating their applicability to toddler vocabulary. Parents from both studies also responded the same for the word “pretty” (58%). Within the other category, small differences were found between parent responses with one medium difference for the word “booboo”. As with the Modifiers category, toddlers from both studies used prepositions, onomatopoeia, social phrases, numbers, greetings, letters and interrogatives similarly. These findings for the other category, are strengthened by the p-value 0.0001, shown in Table 5.1.

Chomsky (1965) proposed that, despite diversity across individual languages, all human language is based on shared principles. He therefore proposed the idea of Linguistic Universals (Chomsky, 1981). Features universal to all human languages suggested to Chomsky that language was an innate, species-specific capacity of humans (Chomsky, 1981). Lenneberg (1967) proposed a number of statements supporting this ideology; firstly, that the onset of language in children coincided with other physiologic occurrences, namely, their first step. Secondly, that development of language followed a fixed sequence and that all

children learnt language in the same order (McLaughlin, 2006). Chomsky proposed that if there was a biologically endowed universal grammar, it would make the language learning task much easier for children. It would also explain why early grammar in different languages of the world are similar in many respects and why there was close similarity of results between the present study (LDS-SA) and the American-based survey (LDS) (Mitchell & Myles, 2004). Research suggests that bilingual children acquire single words in both languages (Mitchell & Myles, 2004). Some researchers deduce from this that children treat language experiences as if they were all to do with the same language system (Volterra & Taeschner, 1978). When a range of concepts is already developed in the home language, it is learnt more easily in the second language, as it entails merely learning new labels for already familiar concepts (Anisfeld, 1984). That is, if a word is learned in one language, it usually carries over to the corresponding word in the other language (McLaughlin, 2006). Others have questioned this theory and have suggested that bilingual children develop differentiated systems right from the start (Lee, 1979). Wode (1981) points out though; that the more balanced the input is, the more likely both languages will develop in much the same way as one language would.

In South Africa, many toddlers grow up exposed to diverse languages (Makin et al., 1995). On a daily basis toddlers from the present study were exposed to languages other than English, within either their home or nursery school environment. Parents seemed to have a general ambition for educating their child in English despite there being an alternative home language, for example isiZulu or Afrikaans. This is not unusual in South Africa, as more than one language is often spoken at home and yet another at school. The parents may have different first languages and may use another to converse with the grandparents (McLaughlin, 2006). Most research indicates that children in such circumstances learn languages with equal facility (Cunningham-Anderson & Anderson, 1999). The rates and sequences of language development tend to be similar, regardless of how different the languages may be. There are apparently three stages that children pass through as they learn two languages simultaneously (Volterra & Taeschner, 1978). Initially, younger children's vocabularies are a mixture of individual, non-overlapping words from both languages. That is, if a word is learned in one language, it prevails over the corresponding word in the other language (McLaughlin, 2006). At this early stage, words are used without regard to the situation or audience. Later, children begin to organise the words belonging to each language. Although they may not yet be conscious of two separate languages, they tend to use words from each more distinctly in the

situations where they originally experienced them (McLaughlin, 2006). Finally the child organises both the vocabulary and the grammatical systems for the two languages. By their early school years children are frequently bilingual, appropriately switching from one language to the other automatically (McLaughlin, 2006). Traditionally there has been concern about the overall impact of exposure to ethnolinguistically diverse contexts. Interventionists have feared that conflict between different languages would disrupt the overall language development of a child. This did not appear to be the case in the present study, where a comparison of results with the monolingual participants from the original survey revealed similar trends in vocabulary acquisition. Generally, it seems that more positive effects might be observed, including enhanced awareness of language, greater flexibility in using language and certainly a better understanding of cultural diversity (McLaughlin, 2006). Parents' level of education and SES also did not impact on the findings of the study, as most parents were educated and could afford to send their child to a nursery school.

Overall, although only a small sample of the larger South African community, results from the present study confirm the vocabulary on the LDS-SA as useful for toddlers developing within the South African context. More importantly, the LDS-SA may assist interventionists and parents in future with teaching vocabulary that is appropriate to young children who are developing language atypically within an ethnolinguistically diverse context. In this way, toddlers with language impairment will have the opportunities to acquire vocabulary, whilst engaging with people in their communicative environment.

5.4 Summary of Discussion

This chapter explained the results portrayed in Chapter 4 and was discussed according to the sub-aims for the study. Nouns, verbs and words within the other category were found to be commonly used by South African toddlers. It was evident that these findings followed similar trends to previous research. Overall, the close similarity of parent responses between the present study (LDS-SA) and the original survey (LDS) highlighted the uniformity of early vocabulary acquisition across toddlers from diverse and non-diverse linguistic backgrounds. It was evident that the LDS-SA, although developed abroad, was applicable to toddlers from the ethnolinguistically diverse, South African context. In that, the LDS-SA may be used to inform the intervention efforts of children with impaired language in future.

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter serves as the conclusion of the research by integrating all aspects of the preceding discussion. A critical evaluation of the study is provided and implications are investigated. Areas for future research are explored thereafter.

6.2 Summary and Integration of Results

The purpose of the study was to explore the vocabulary used by two-year-old South African toddlers, based on an existing checklist (LDS). These toddlers were from ethnolinguistically diverse nursery schools. The demographic questionnaire and LDS-SA served as the main source of data collection. Parents reported words used most often by toddlers' and parents' "yes" responses were compared to those obtained in the original study.

Theories of early child language development from prominent theorists such as Chomsky, Piaget and Vygotsky were fundamental in forming the theoretical discussion for the study. The natural progression of communication development from infancy to toddlerhood emphasized the interwoven link between parent and child in the move towards spoken language (McLean, 1999). Toddlers developing language in an atypical manner was addressed in light of the typical language process and the usefulness of AAC (Branson & Demchak, 2009). As with typically developing children, the importance of the communicative context was emphasised as essential for toddlers with language impairment (von Tetzchner et al., 2005). Additional factors present in the language learning environment were therefore explored. Literature indicates that variables such as ethnolinguistics, parental level of education and socioeconomic status (SES) were seen to influence the pattern of language development in young children (Screen & Anderson, 1994). Undoubtedly these variables are viewed as essential components in South Africa, as its diverse population continues to challenge interventionists today. Although these factors were not directly analysed in the present study, they did not seem to influence the findings, as parent responses remained similar to those from the original survey. Although the home languages of the

parents included isiZulu, Afrikaans Sepedi, SiSwati and Setswana, parents preferred to send their toddlers to English-based nursery schools, exposing them to the language that is seen as one of economic advancement. A lack of knowledge concerning the vocabulary used by typically developing toddlers growing up in South Africa was seen to be sorely lacking from literature. More specifically, research informing the vocabulary needs of toddlers with impaired language within the South African context was needed. For this reason, the LDS-SA served as a starting point in exploring vocabulary used by typically developing toddlers within an ethnolinguistically diverse context in the hope of informing intervention for toddlers with impaired language in South Africa. Although the original survey was developed abroad and tested on monolingual English speaking participants, the South African version was found to accurately reflect the vocabulary of toddlers within the South African context. Toddlers from both studies in fact, showed very similar use of vocabulary items despite differences in linguistic backgrounds. Variations in the total number of vocabulary items within each of the semantic categories, also did not impact the level of agreement between parent responses. The similarity of parent responses from both studies, is supported by the p-values shown in Table 5.1. The predominant use of nouns by toddlers from the present study agreed with findings from previous research and the idea of universal grammar proposed by Chomsky (1981) strengthened the results of the study.

Although interventionists rely on research on toddlers with typical language development to guide their intervention strategies, they should also be mindful that language development of young children with impaired language may not always resemble the patterns of language acquisition we see in typically developing children (von Tetzchner & Grove, 2003). What remains though, is to provide the language impaired child with access to communication at the earliest possible age to avoid the negative effects of communication disabilities (Light & Drager, 2002). The results from the present study thus serve as initial data for intervention targeting vocabulary development of toddlers with impaired language, within the ethnolinguistically diverse South African context.

6.3 Critical Evaluation of the Study

Both positive and negative aspects of the study are discussed below:

- The LDS proves to be an invaluable instrument, useful for both monolingual and/or ethnolinguistically diverse populations. As indicated by the results, vocabulary items are

highly applicable to participants in the present study and possibly for a wider group of participants within the South African context. Vocabulary items on the LDS may therefore serve as a starting point for teaching vocabulary to preliterate toddlers with impaired language. Parents and interventionists alike are able to target vocabulary that is validated on an ethnolinguistically diverse population which increases its usefulness for toddlers' representative of this context.

- The additional column added to the checklist (LDS-SA) was initially regarded as useful for data collection purposes, considering the ethnolinguistically diverse participants. Following completion of the main study however, it was found to be unnecessary, as most parents used the additional column to *translate* the target word into their respective home language. Thus, the South African version of the checklist may be used in its original format (LDS) including only a “yes” and “no” response column. This appears to be sufficient for South African participants and will make completion of the checklist simpler.
- To ensure cultural and metric equivalence of the vocabulary for South African parents, certain words on the checklist were substituted with the South African equivalent. Parents, therefore, had a clear understanding of the target word before reporting their toddlers' use of it. This ensured that the data were collected accurately and reflected the language abilities of the toddler without being confounded by parents' misunderstanding of the target word.
- A methodological limitation of the study was the relatively small number of participants (n = 40) compared to that of the original survey. This may have impacted on the comparisons drawn between the two studies. Participants' only fell within the middle-class group according to their disclosed biographical information. This was not a true reflection of the South African population. Results should therefore be seen as an initial reflection.

6.4 Implications of the Study

Based on the present study, the following implications may be drawn:

- The most important clinical implication of the study was confirming that the LDS-SA is applicable for use with a small group of preliterate toddlers from ethnolinguistically diverse backgrounds in South Africa.
- The literature included in the study alluded to aspects of ethnolinguistics, parental level of education and socioeconomic status (SES), which impacts on the language development process of toddlers. Participants from the present study consisted mostly of middle-class parents that earned a monthly income greater than R4500 and who were all literate. Factors such as SES and parental level of education were not directly analyzed and thus the impact that these factors may have on language development, was not determined.
- The additional column drafted into the LDS for the present study, was unnecessary. The original format of the checklist (LDS) would have sufficed in adequately capturing the vocabulary abilities of ethnolinguistically diverse toddlers, within the South African context.
- Adaptations to vocabulary on the LDS ensured word equivalency, more specifically cultural and metric equivalency. In this way, all participants had an understanding of the target word and were given equal opportunity to determine their toddler's use of it. Failure to consider equivalences that focus on language, function, culture and metrics, may have resulted in an inaccurate portrayal of the vocabulary abilities of the toddler (Pena, 2007).
- The results of the study provide insight into understanding the vocabulary used by typically developing toddlers who are acquiring English as either their home language or as an additional language. This may be useful when teaching vocabulary to South African toddlers with impaired language. Early intervention, irrespective of ethnolinguistics, is imperative to a child's early learning experiences, as it lays the foundation for later brain development (National Scientific Council on the Developing Child, 2007). Teaching vocabulary that is relevant to South African toddlers with language impairment, takes them a step closer to further language development.

6.5 Recommendations for Future Research

Directions for future research in South Africa include the following:

- Toddlers growing up in South Africa are exposed to languages in addition to their home language from a young age. Exploration of early lexical acquisition of typically developing children growing up within an ethnolinguistically diverse context is therefore needed for more accurate portrayal of child language development.
- The relationship between child language development, parental level of education and socioeconomic status in South Africa, is another area of enquiry. Many South African toddlers with impaired language are from a low socioeconomic background, where literacy levels are low. Information on the language acquisition process and challenges likely to be experienced by this group, is currently lacking.
- Toddlers, developing language, have previously been considered too young to benefit from AAC systems. Thus, therapists' and parents' unfamiliar with early AAC options may not recognize the advantages of introducing this form of early intervention with young children. Research and theories regarding early communication development, have challenged this perception (Cress & Marvin, 2003). Research is still needed, however, particularly with South African speech and language therapists, to determine their perception and attitude towards introducing AAC systems with pre-literate, language impaired, toddlers'.

6.6 Summary of Conclusion and Recommendations

This chapter concluded the research by summarizing the results found, in light of the aims of the study. A critical evaluation of the study including both positive and negative aspects, was discussed, while the implications thereof were also addressed. Lastly, recommendations for future research within the South African context were suggested.

REFERENCE LIST

- Anderson, N. B., & McNeilly, L. G. (1992). Meeting the needs of special populations. In M. Bender & C. A. Baglin (Eds.), *Infants and toddlers: a resource guide for practioners* (pp. 49-68). San Diego: Singular Publishing Group.
- Anisfeld, M. (1984). *Language development from birth to three*. Hillsdale, New Jersey: Lawrence Erlbaum Associates Inc.
- Banajee, M., Dicarolo, C., & Stricklin, S. B. (2003). Core vocabulary determination for toddlers. *Augmentative and Alternative Communication, 19*, 67-73.
- Bates, E., Marchman, V., Thal, D., Fenson, L., Dale, P. S., Reznik, J. S., Reilly, J., & Hartung, J. (1994). Developmental and stylistic variation in the composition of early vocabulary. *Journal of Child Language, 21*, 85-123.
- Bates, E., Dale, P., & Thal, D. (1995). Individual differences and their implications for theories of language development. In P. Fletcher & B. MacWhinney (Eds.), *Handbook of child language*. London: Blackwell.
- Bedrosian, J. L. (1997). Language acquisition in young AAC system users: issues and directions for future research. *Augmentative and Alternative Communication, 13*, 179-185.
- Berko, J. (1958). The child's learning of English morphology. In O. L. Taylor (Ed.), *Nature of communication disorders in culturally and linguistically diverse populations* (pp. 150-177). San Diego: College-Hill Press.
- Bishop, D. V. M. (2003). *The Children's Communication Checklist, Version 2 (CCC-2)*. London: Psychological Corporation.
- Bishop, D. V. M., & McDonald, D. (2009). Identifying language impairment in children: combining language test scores with parental report. *International Journal of Communication Disorders, 44*, 5600-5615.
- Blau, A. F. (1983). Vocabulary selection in augmentative communication: where do we begin? In H. Winitz (Ed.), *Treating language disorders: For clinicians by clinicians* (pp. 205-234). Baltimore: University Park Press.
- Bloom, L. (1973). *One word at a time*. The Hague: Mouton.

- Borduin, C. M., & Henggeler, S. W. (1981). Social class, experimental setting, and task characteristics as determinants of mother-child interaction. *Developmental Psychology, 17*, 209-214.
- Bornman, J., Sevcik, R., Ronski, M. A., & Pae, H. K. (2010). Successfully translating language and culture when adapting assessment measures. *Journal of Policy and Practice in Intellectual Disabilities, 7*, 111-118.
- Bornstein, M. H., & Haynes, O. M. (1998). Vocabulary competence in early childhood: measurement, latent construct and predictive validity. *Child Development, 69*, 654-671.
- Bornstein, M. H., Haynes, M. O., & Painter, K. M. (1988). Sources of child vocabulary competence: a multivariate model. *Journal of Child Language, 25*, 367-393.
- Branson, D., & Demchak, M. (2009). The use of alternative and augmentative communication with infants and toddlers with disabilities: a research review. *Augmentative and Alternative Communication, 25*, 274-286.
- Brown, R. (1973). *A first language*. Cambridge, Massachusetts: Harvard University Press.
- Bruner, J. (1983). *Child's talk: learning to use language*. New York: Norton.
- Calculator, S. N. (1997). Fostering early language acquisition and AAC use: exploring reciprocal influences between children and their environments. *Augmentative and Alternative Communication, 13*, 149-157.
- Carlson, F. (1981). A format for selecting vocabulary for the nonspeaking child. *Language, Speech and Hearing Services in Schools, 12*, 240-248.
- Cazden, C. B. (1983). Adult assistance to language development: scaffolds, models, and direct instruction. In R. P. Parker & F. A. Davis (Eds.), *Developing literacy: young children's use of language* (pp. 3-18). Newark, DE: International Reading Association.
- Chomsky, N. A. (1957). *Syntactic structures*. The Hague: Mouton.
- Chomsky, N. A. (1965). *Aspects of the theory of syntax*. Cambridge: MIT Press.
- Chomsky, N. A. (1981). *Lectures on government and binding*. Dordrecht, The Netherlands: Foris.
- Clark, E. V. (1993). *The lexicon in acquisition*. Cambridge: University Press.
- Cole, L. T., (1989). A pluribus pluribus: multicultural imperatives and the 1990's and beyond. *ASHA, 31*, 65-70.
- Coplan, J. (1982). Parental estimate of child's developmental level in a high risk population. *American Journal of Disorders in Childhood, 136*, 101.

- Cress, C. J., & Marvin, C. A. (2003). Common questions about AAC services in early intervention. *Augmentative and Alternative Communication, 19*, 254-272.
- Cunningham-Anderson, U., & Anderson, S. (1999). *Growing up with two languages: a practical guide*. New York: Routledge.
- Dale, P. S. (1997). Parent report assessment of language and communication. In K. N. Cole, P. S. Dale and D. J. Thal (Eds.), *Assessment of Communication and Language* (pp. 161-182). Baltimore, MD: Paul H. Brookes.
- Dale, P. S., Bates, E., Reznick, J. S., & Morisset, C. (1989). The validity of a parent report instrument of child language at twenty months. *Journal of Child Language, 16*, 239-249.
- Declaration of Helsinki (1964). *BMJ*, 1996; 313, 1448-1449. Retrieved 11 November, 2008, from <http://www.bmj.com/cgi/content/full/313/7070/1448/a>.
- De Villiers, J. G., & De Villiers, A. (1979). *Early language*. London: Billing & Sons, Ltd.
- Dollaghan, C. A., Campbell, T. F., Paradise, J. L., Feldman, H. M., Janosky, J. E., Pitcairn, D. N., & Kurs-Lasky, M. (1999). Maternal education and measures of early speech and language. *Journal of Speech, Language, and Hearing Research, 42*, 1432-43.
- Erickson, J. G., & Iglesias, A. (1986). Assessment in communication disorders in non-English proficient children. In O. L. Taylor (Ed.), *Nature of communication disorders in culturally and linguistically diverse populations* (pp. 150-177). San Diego: College-Hill Press.
- Fenson, L., Dale, P. S., Reznick, J. S., Bates, E., Thal, D. J., & Pethick, S. J. (1994). Variability in early communicative development. *Monographs of the Society for Research in Child Development, 59*, 1-173.
- Fenson, L., Dale, P. S., Reznick, J. S., Thal, D., Bates, E., Hartung, J. P., Pethick, S., & Reilly, J. (1993). *The MacArthur Communicative Development Inventories: user's guide and technical manual*. San Diego: Singular Publishing Company.
- Ferm, U., Ahlsen, E., & Bjorck-Akesson, E. (2005). Conversational topics with a child with complex communication needs and her caregiver at mealtime. *Augmentative and Alternative Communication, 21*, 19-40.
- Fry, D. (1977). How did we learn to do it? In V. Lee (Ed.), *Language Development* (pp.17 - 35). New York: John Wiley & Sons Inc.
- Geddes & Grosset (1999). *English Dictionary*. Scotland: David Dale House.

- Gerber, S., & Kraat, A. (1992). Use of a developmental model of language acquisition: Applications to children using AAC systems. *Augmentative and Alternative Communication*, 8, 19-32.
- Goldfield, B. A. (1993). Noun bias in maternal speech to one-year-olds. *Journal of Child Language*, 20, 85-99.
- Goodnow, J. J. (2002). Parents' knowledge and expectations: using what we know. In M. H. Bornstein (Ed.), *Handbook of parenting* (Vol. 3, 439-460). Mahwah, NJ: Lawrence Erlbaum Associates.
- Hart, B., & Risley, T. (1995). *Meaningful differences in the everyday experience of young American children*. Baltimore: Brookes.
- Hernandez, D. J. (1997). Child development and the social demography of childhood. *Child Development*, 68, 149-169.
- Hetzroni, O. E., & Harris, O. L. (1996). Cultural aspects in the development of AAC users. *Augmentative and Alternative Communication*, 12, 52-58.
- Hoff, E. (2003). The specificity of environmental influence: socioeconomic status affects early vocabulary development via maternal speech. *Child Development*, 74, 1368-1378.
- Hoff-Ginsberg, E. (1991). Mother-child conversation in different social classes and communicative settings. *Child Development*, 62, 782-796.
- Hoff-Ginsberg, E., & Lerner, S. (1999). *The nature of vocabulary differences related to socioeconomic status at two and four years*. Poster presented at the Biennial Meeting of the Society for Research in Child Development, Albuquerque, NM, April, 1999.
- Hoff-Ginsberg, E., & Tardif, T. (1995). Socioeconomic status and parenting. In M. H. Bornstein (Ed.), *Handbook of parenting* (Vol. 2, 161-188). Mahwah, NJ: Erlbaum.
- Hollingshead, A. B. (1975). *The four-factor index of social status*. Unpublished manuscript, Yale University.
- Hurtado, N., Marchman, V. A., & Fernald, A., (2007). Spoken word recognition by Latino children learning Spanish as their first language. *Journal of Child Language*, 34, 227-249.
- Huttenlocher, J., Vasilyeva, M., Waterfall, H. R., Vevea, J. L., & Hedges, L. V. (in press). The varieties of speech to young children. *Developmental Psychology*.
- Jessel, L. (1978). *The ethnic process: an evolutionary concept of languages and peoples*. United Kingdom: Mouton Publishers.

- Jenkins, S., Price, C. J. & Straker, L. (1998). *The researching therapist: a practical guide to planning, performing and communicating research*. New York, U.S.A.: Pearson Professional Limited.
- Johnston, J., & Schery, T. (1976). The use of grammatical morphemes by children with communication disorders. In D. Morehead & A. Morehead (Eds.), *Normal and deficient child language* (p. 239). Baltimore, MD: University Park Press.
- Lafon, M., & Webb, V. (2008). The standardisation of African languages: language political realities. (Les Nouveaux Cahiers de l'IFAS) IFAS Working Paper Series, No. 11, August 2008.
- Lawrence, V., & Shipley, E. F. (1996). Parental speech to middle and working class children from two racial groups in three settings. *Applied Psycholinguistics*, 17, 233-256.
- Lee, V. (1979). *Language development*. New York: John Wiley & Sons.
- Lenneberg, E. (1967). *Biological foundations of language*. New York: John Wiley.
- Light, J. (1997). "Let's go star fishing": reflections on the contexts of language learning for children who use aided AAC. *Augmentative and Alternative Communication*, 13, 158-171.
- Light, J., & Drager, K. (2002). Improving the design of augmentative and alternative communication technologies for young children. *Assistive Technology*, 14, 17-32.
- Light, J., & Drager, K. (2007). AAC technologies for young children with complex communication needs: state of the science and future research directions. *Augmentative and Alternative Communication*, 23, 204-216.
- Lindfors, J.W. (1980). *Children's language and learning* (2nd ed.). New Jersey: Prentice-Hall Inc.
- Maartens, J. (1998). Multilingualism and language policy in South Africa. In G. Extra & J. Maartens (Eds.), *Multilingualism in a multicultural context: case studies on South Africa and Western Europe* (pp. 15-36). Tilburg University Press.
- Makin, L., Campbell, J., & Diaz, C. J. (1995). *One childhood many languages: guidelines for early childhood education in Australia*. Australia: Harper Educational.
- McLaughlin, S. (2006). *Introduction to language development* (2nd ed.). New York: Thomson.
- McLean, J. (1999). The role of parents and other adults in the early socialization and cognitive development of very young children. In J. McLean & L. Snyder-McLean, *How children learn language* (pp. 25-74). San Diego: Singular Publishing Group, Inc.

- McGillicuddy-DeLissi A. V., & Siegel, I. E. (1995). Parental beliefs. In M. H. Bornstein (Ed.), *Handbook of parenting* (Vol. 3, 333-358). Hillsdale, NJ: Lawrence Erlbaum Associates.
- McMillan, J. H., & Schumacher, S. (2001). *Research in education: a conceptual introduction* (5th ed.). USA.: Addison Wesley Longman, Inc.
- Mitchell, R., & Myles, F. (2004). *Second language learning theories* (2nd ed.). London: Oxford University Press Inc.
- National Scientific Council on the Developing Child (2007). The timing and quality of early experiences combine to shape brain architecture: working Paper #5. Retrieved 12 February 2009 from: <http://www.developingchild.net>
- Nelson, K. (1973). Structure and strategy in learning to talk. *Monographs of the Society for Research in Child Development*, 38 (1-2, Serial No. 149).
- Nelson, K. (1991). Concepts and meaning in language development. In N.A. Krasnegor, D.M. Rumbaugh, R.L. Sciefelbusch & M. Studdert-Kennedy, Lawrence Erlbaum (Eds.), *Biological and Behavioural Determinants of Language Development*. Hillsdale, New Jersey: University Press.
- Ninio, A. (1980). Picture-book reading in mother-infant dyads belonging to two subgroups in Israel. *Child Development*, 51, 587-590.
- Pan, B. A., Rowe, M. L., Spier, E., & Lemonda, C. T. (2004). Measuring productive vocabulary of toddlers in low-income families: concurrent and predictive validity of three sources of data. *Journal of Child Language*, 31, 587-608.
- Pan South African Language Board (PANSALB). (2001). Language use and language interaction in South Africa: a national sociolinguistic survey. PANSALB Occasional Papers No.1. Pretoria: PANSALB.
- Payne, K. T. (1986). Cultural and Linguistic Groups in the United States. In O. L. Taylor (Ed.), *Nature of communication disorders in culturally and linguistically diverse populations* (pp. 150-177). San Diego: College-Hill Press.
- Pena, E. D. (2007). Lost in translation: methodological considerations in cross-cultural research. *Child Development*, 78, 1255-1264.
- Piaget, J. (1926). *The language and thought of the child*. New York: Harcourt Brace.
- Piaget, J. (1952). *The origins of intelligence in children*. New York: International Universities Press.
- Piaget, J. (1971). *Structuralism*. London: Routledge & Kegan Paul.

- Renner, G. (2003). The development of communication with alternative means from Vygotsky's cultural historical perspective. In S. von Tetzchner & N. Grove (Eds.). *Augmentative and Alternative Communication developmental Issues* (pp. 67-82). London: Whurr Publishers.
- Rescorla, L. (1980). Overextension in early language development. *Journal of Child Language*, 7, 321-335.
- Rescorla, L. (1989). The Language Development Survey: a screening tool for delayed language in toddlers. *Journal of Speech and Hearing Disorders*, 54, 587-599.
- Rescorla, L., Alley, A., & Christine, J. B. (2001). Word frequencies in toddlers' lexicons. *Journal of Speech, Language and Hearing Research*, 44, 598-609.
- Rescorla, L., Hadicke-Wiley, M., & Escarce, E. (1993). Epidemiological investigation of expressive language delay at age two. *First Language*, 13, 5-23.
- Rescorla, L., Mirak, J., & Singh, L. (2000). Vocabulary growth in late talkers: lexical development from 2;0 to 3;0. *Journal of Child Language*, 27, 293-311.
- Robinson, B. F., & Mervis, C.B. (1999). Comparing productive vocabulary measures from the CDI and a systematic diary study. *Journal of child language*, 26, 177-185.
- Romski, M. A., Sevcik, R. A., & Adamson, L. B. (1997). Framework for studying how children with developmental disabilities develop language through augmented means. *Augmentative and Alternative Communication*, 13, 172-178.
- Romski, M. A., Sevcik, R., Adamson, L. B., & Cheslock, M. (2006). *Toddlers, parent-implemented augmented language interventions, and communication development*. Paper presented at the biennial conference of the International Society for Augmentative and Alternative Communication, Dusseldorf, Germany.
- Rosetti, L. M. (2001). *Communication intervention birth to three (2nd ed.)*. Canada: Singular Thomson Learning.
- Ross, B., & Cress, C. J. (2006). Comparison of standardized assessment for cognitive and receptive communication skills in young children with complex communication needs. *Augmentative and Alternative Communication*, 22, 100-111.
- Rowe, M. L. (2008). Child-directed speech: relation to socioeconomic status, knowledge of child development and child vocabulary skill. *Journal of Child Language*, 35, 185-205.
- Rowe, M. L., Pan, B. A., & Ayoub, C. (2005). Predictors of variation in maternal talk to children: A longitudinal study of low-income families. *Parenting: science and Practice*, 5, 285-310.

- Screen, R. M., & Anderson, N. B. (1994). *Multicultural perspectives in communication disorders*. San Diego, California: Singular Publishing Group, Inc.
- Skinner, B. F. (1957). *Verbal behaviour*. London: Methuen.
- Stark, R., & Tallal, P. (1981). Selection of children with specific language deficits. *Journal of Speech and Hearing Research*, 46, 114-122.
- Taylor, O. L. (Ed.), (1986). *Nature of communication disorders in culturally and linguistically diverse populations*. San Diego: College-Hill Press.
- Tax Statistics (2008). Personal Income Tax. Retrieved on 1 November, 2010, from <http://www.sars.gov.za/home.asp?pid=4557>.
- Tomasello, M., & Kruger, A. C. (1992). Joint attention on actions: acquiring verbs in ostensive and nonostensive contexts. *Journal of Child Language*, 19, 311-333.
- Volterra, V., & Taeschner, T. (1978). The acquisition and development of language by bilingual children. *Journal of Child Language*, 5, 311-326.
- von Tetzchner, S., & Grove, N. (2003). The development of alternative language forms. In S. von Tetzchner, & N. Grove (Eds.), *Augmentative and alternative communication: developmental issues* (pp. 1 – 27). London, UK: Whurr.
- von Tetzchner, S., Brekke, K. M., Sjothun, B., & Grindheim, E. (2005). Constructing preschool communities of learners that afford alternative language development. *Augmentative and Alternative Communication*, 21, 82-100.
- Vygotsky, L., & Luria, A. (1930). The function and fate of egocentric speech. Proceedings of the Ninth International Congress of Psychology, New Haven.
- Vygotsky, L. (1962). *Thought and language*. Cambridge, MA: M.I.T. Press.
- Vygotsky, L. S. (1978). *Mind in society: the development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Webb, V., & Sure, K. (Eds.), (2000). *African Voices: an introduction to the languages and linguistics of Africa*. Southern Africa: Oxford University Press.
- Winitz, H. (1983). Use and abuse of the developmental approach. In H. Winitz (Ed.), *Treating language disorders: For clinicians by clinicians* (pp. 25-42). Baltimore, MD: University Park Press
- Wode, H. (1981). *Learning a second language*. Tübingen, Germany: Narr.
- Wood, D., Bruner, J., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry*, 17, 89-100.

APPENDICES

Appendix A

Letter of ethical approval and Letter of title registration



100
1908-2008



2 April 2009

Dear Prof Bornman,

Project: Caregiver affirmation of words commonly used by toddlers:
comparing how and low socio-economic status groups
Researcher: SA Gonasillan
Supervisor: Prof J Bornman
Department: Centre for Augmentative and Alternative communication
Reference number: 28552122

Thank you for the application you submitted to the Research Proposal and Ethics Committee, Faculty of Humanities.

I have pleasure in informing you that the Research Proposal and Ethics Committee formally **approved** the above study on 26 March 2009. The approval is subject to the candidate abiding by the principles and parameters set out in her application and research proposal in the actual execution of the research.

The Committee requests you to convey this approval to Ms Gonasillan.

We wish you success with the project.

Sincerely

Prof. Brenda Louw
Chair: Research Proposal and Ethics Committee
Faculty of Humanities
UNIVERSITY OF PRETORIA
e-mail: brenda.louw@up.ac.za

Research Proposal and Ethics Committee Members: Prof P Chiroro; Dr M-H Coetzee; Dr JEH Grobler; Prof KL Harris; Ms H Klopper; Prof E Krüger; Prof B Louw (Chair); Prof A Mlambo; Prof G Prinsloo; Mr C Puttergill; Prof H Stander; Prof E Taljard; Dr J van Dyk; Prof C Walton; Mr FG Wolmarans



Our Ref: Ms P Woest / 28552122
Tel: 012 420 2736
Fax: 012 420 2698
E-mail: petru.woest@up.ac.za



Faculty of Humanities

21 April 2009

Ms SA Gonasillan
Suite 31
Private Bag X7924
WITBANK
1035

Dear Ms Gonasillan

TITLE REGISTRATION: FIELD OF STUDY – MA: AUGMENTATIVE AND ALTERNATIVE COMMUNICATION

I have pleasure in informing you that the following has been approved:

TITLE: Caregiver affirmation of words commonly used by toddlers: Comparing high and low socio-economic status groups
SUPERVISOR: Prof J Bornman
CO-SUPERVISOR: Ms M Harty

I would like to draw your attention to the following:

1. **ENROLMENT PERIOD**
 - (a) You must be enrolled as a student for at least one academic year before submission of your dissertation/essay.
 - (b) Your enrolment as a student must be renewed annually before 31 March, until you have complied with all the requirements for the degree. You will only be able to have supervision if you provide a proof of registration to your supervisor.
2. **APPROVAL FOR SUBMISSION**
On completion of your dissertation/essay enough copies for each examiner as well as the prescribed examination enrolment form which includes a statement by your director of studies that he/she approves of the submission of your dissertation/essay, as well as a statement, signed by you in the presence of a Commissioner of Oaths, must be submitted to Student Administration.
3. **NOTIFICATION BEFORE SUBMISSION**
You are required to notify me at least three months in advance of your intention to submit your dissertation/essay.
4. **INSTRUCTIONS REGARDING THE PREPARATION OF THE DISSERTATION/ESSAY AND THE SUMMARY APPEAR ON THE REVERSE SIDE OF THIS LETTER.**

Yours sincerely

for DEAN: FACULTY OF HUMANITIES

GW-505E

Appendix B

Parent recruitment forms



**Centre for Augmentative and Alternative Communication
Sentrum vir Aanvullende en Alternatiewe Kommunikasie
&
INTERFACE**

- 2006 Laureate Award, Education Innovation for the Fofa Project
- 2004 T-Systems Age of Innovation & Sustainability Awards: Excellence in Innovation and Sustainability: Social
- 2003 National Science & Technology Awards: Corporate Organization over the last ten years.
- 2002 Shirley McNaughton Award for Exemplary Communication received from the International Society for Augmentative and Alternative Communication
- 1998 Rolex Award for Enterprise: Associate Laureate
- 1995 Education Africa Presidential Award for Special Needs



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

100 1908 2008

**Faculty of Human Sciences
Fakulteit Geesteswetenskappe**

Dear Caregiver

.....
WITBANK
1035

Request permission for your participation in a research study

I am a Senior Speech Therapist employed by Witbank Hospital. I am also enrolled as a second year masters student for a degree in Augmentative and Alternative Communication (AAC) at the University of Pretoria. As part of my master's degree, we are required to do research.

You have been identified as possible candidate for participating in this research project. You are therefore cordially invited to join in on the research experience which is focused on language development of toddlers. The study aims to investigate caregiver's affirmation of words commonly used by toddlers. Enclosed is a detailed explanation of what the project entails and what would be required of you. Participation is completely voluntary, and neither you, the nursery school nor your child is under any obligation. If you decide not to participate, it will not affect your chance of receiving any current or future services from Witbank Hospital or the Centre for Augmentative and Alternative Communication at the University of Pretoria. You are free to withdraw from the project at any stage even though you may have initially agreed to participate. If you require further information after reading this document, please feel free to contact me on the details below.

- Project Title:** Caregiver affirmation of words commonly used by toddlers.
Principal Investigator: Miss Aurellia Gonasillan (BSc. Speech Language Pathology, University of Cape Town), Postgraduate Student, Centre for Augmentative and Alternative Communication, University of Pretoria.
Contact Details: 083 295 1030 (Cell)
 013 – 653 2180 (Work)
 013 – 656 6976 (Fax)
gonasillan@yahoo.com (email address)
Project Supervisor: Professor Juan Bornman. Acting Director, Centre for Augmentative and Alternative Communication, University of Pretoria.
Contact Details: juan.bornman@up.ac.za (email address)
 012 – 420 2001 (Work)

Centre for Augmentative and Alternative Communication
(CAAC), Communication Pathology Building
University of Pretoria, Lynnwood Road
PRETORIA, 0002
Republic of South Africa

Fax/Faks: +27 12 420 – 4389
Tel: +27 12 420 – 2001

juan.bornman@up.ac.za
www.caac.up.ac.za

Sentrum vir Aanvullende en Alternatiewe Kommunikasie
(SAAK), Kommunikasie Patologie gebou
Universiteit van Pretoria, Lynnwoodweg
PRETORIA, 0002
Republiek van Suid Afrika

- 2 -

I trust you will find this research study an exciting opportunity to learn about the language development of your toddler. Please complete the slip below and return it to your child's principal tomorrow or as soon as possible.

Warm Regards



Aurellia Gonasillan
Principal Investigator



Prof Juan Bornman
Project Supervisor



Here are some questions you may want answers to before agreeing to participate in the study:

1. Why am I doing this study?

A great deal of research has been conducted regarding how two year old toddlers learn language. This has led to the development of a common list of words used internationally by toddlers. This is significant for South Africa as it is a country consisting of eleven official languages, different cultures and ethnic groups. This study therefore aims to affirm the vocabulary of a language development checklist developed abroad, to determine its suitability for the South African population. This will be a useful resource tool for teachers, therapists and caregivers alike in treating toddlers with various expressive language difficulties.

2. What is expected of me as the caregiver?

Because you are most familiar with your child and the language he/she uses, you will be asked to complete a case history form and simple language development checklist for the study. The case history form contains biographical details and personal information while the checklist consists of fourteen different categories with words commonly used by two year old toddlers. Both forms are easy to follow and simple to complete. All forms will be sent home for you to complete. Written instructions are provided to assist you with completing the forms. All data collected will remain strictly confidential and will be viewed only by myself and project supervisor.

1. How will we benefit from this study and will there be any dangers or discomfort for any of us involved?

No harm will be caused to you, as the only requirement involves completion of the case history and checklist form. If you choose to participate, you are likely to learn more about the vocabulary abilities of your child and how you may assist him/her in developing improved communication abilities.

3. How can I be sure our identities will be protected?

Neither you, the nursery school nor your child's name, will be used in any written documentation resulting from this study.

Participants will be discussed generally in a way that you cannot be identified. Your names will be known only to me and the project supervisor. Biographical information, case history forms, written notes and checklists will be stored kept with the investigator for the duration of the project.

4. What will happen should I not wish to participate in the study, or withdraw once I am a part of the project?

You may refuse to participate in the study. If you decide to withdraw once you are already involved in the project you may do so without fear of prejudice towards you, the nursery school, or your child. Failure to participate in the study will not influence the involvement of Witbank Hospital, the Centre for Augmentative and Alternative Communication or the University of Pretoria in future. Information already collected will be destroyed following your withdrawal from the project.

5. Will there be any costs involved if we participate or will we be paid for participating?

No, you will not have to pay towards any part of the study and you will also not receive any monetary payment for participation. Your child however will receive a small prize for returning all forms whether you choose to participate or not. You will also be given a useful information sheet on how to further stimulate your child's language development.

6. You didn't answer all of my questions, may I ask more?

You are encouraged to discuss any concerns or queries regarding this study with me or project supervisor by contacting us at the numbers above.

THANKING YOU IN ADVANCE FOR YOUR COOPERATION!

CAREGIVER CONSENT FORM

Project Title: Caregiver affirmation of words commonly used by toddlers.
Principal Investigator: Miss Aurellia Gonasillan
Contact Details: 083 295 1030 (Cell)
 013 – 653 2180 (Work)
 013 – 656 6976 (Fax)
gonasillan@yahoo.com (email address)
Project Supervisor: Professor Juan Bornman.
Contact Details: juan.bornman@up.ac.za (email address)
 012 – 420 2001 (Work)

I am making a voluntary decision to participate in this research study. My signature certifies that I have decided to participate, having read and understood the information presented. My signature also certifies that I have had an adequate opportunity to discuss this study with the investigator and I have had all my questions answered to my satisfaction. I will be given a copy of this consent form to keep.

I, the undersigned (Caregiver name) _____
 Please PRINT
 of (home address) _____

Postal Code: _____ Contact Tel Numbers: _____ (C)
 _____ (H)

consent to participating in this study and give my permission for results obtained, to be used in any report or research paper on the understanding that my identifying information will not be disclosed. I understand that I may withdraw from this study at anytime without prejudice. If I would like to withdraw from the study after entering voluntarily, I undertake to inform the investigator or the project supervisor at the earliest opportunity.

Signature: _____ Date: _____
 Caregiver

I have explained the nature and the procedures involved in the study to which the participant has consented and have answered all questions. In my judgement the participant is voluntarily and knowingly giving informed consent to take part in this research study.

Investigator: _____ Date: _____

Appendix C

Written instructions to parents for completion of checklist

Dear Caregiver,

Caregiver affirmation of words commonly used by toddlers.

Thank you for agreeing to participate in this study and taking the time to complete the consent form, case history form, checklist and feedback questionnaire. The **case history form** contains questions about your personal background. Please complete all questions. All information will remain strictly confidential and neither your name nor your child’s name will be used. The **checklist** contains words used typically by two year old children and is based on research conducted over the years in other countries. The list consists of fourteen different categories with the most commonly used words within each category. It should take about 10-15 minutes to complete. Lastly, the **feedback questionnaire** will assist me in changing the forms if needed. Your honesty will therefore be greatly appreciated.

INSTRUCTIONS FOR COMPLETING THE CHECKLIST:

As you will see on the checklist, there are three columns. Please make a cross (X) in the first column if your child uses the EXACT target word. Cross the second column if your child uses the target word but has a DIFFERENT NAME for it, for example, if the target word is *biscuit* your child might call it “*bikkie*” instead. Cross the second column and WRITE in the word your child uses. If your child does not use the word AT ALL and doesn’t have any other name for it, make a cross in the last column. Let’s look at the example below:

EXAMPLE:

Target Word	Yes, uses EXACT word	Yes, but has a DIFFERENT name for it (write word)	No, doesn’t use word AT ALL	
FOOD				
juice	X			F1
banana			X	F2
biscuit		X <i>bikkie</i>		F3
apple	X			F4

For official use only

Please try to answer as correctly as possible to ensure the results from the study are also accurate. Also make sure you have made a cross in one of the three columns for *every word* on the list. After you have completed the checklist there is a space where you may fill in five words that your child uses in his daily activities, which does not appear on the checklist already. Additionally, you are most welcome to add any comments once you have completed the form at the back of the last page.

Thank you for your co-operation and participation in this study. I look forward to sharing the results with you. Please don’t forget to return ALL four documents in the envelope to your child’s principal/teacher tomorrow or as soon as possible (**consent form, case history form, checklist** and the **feedback questionnaire**). Your child will be sure to collect his/her prize as soon as the forms are returned! All information will greatly assist me. Please don’t hesitate to contact me on 083 295 1030 should you have ANY further queries.

Kind Regards

Miss Aurellia Gonasillan
Principal Investigator

Appendix D

Parent demographic questionnaire



PARENT DEMOGRAPHIC FORM

Parent's name: _____ Contact No.: _____

For official use only

1. Parent Age	_____ years	V1	<input type="text"/>
2. Gender	Male	1	V2 <input type="text"/>
	Female	2	
3. Marital Status	Single	1	V3 <input type="text"/>
	Married	2	
	Divorced but remarried	3	
	Widow	4	
	Widower	5	
	Other <i>Please Specify</i>	6	
4. Relation to child	Mother	1	V4 <input type="text"/>
	Father	2	
	Granny	3	
	Grandpa	4	
	Aunty	5	
	Uncle	6	
	Brother	7	
	Sister	8	
	Other <i>Please Specify</i>	9	
5. Home language <i>Please specify</i>	<input type="text"/>	V5	<input type="text"/>
6. What language do YOU speak to your child at home?	<input type="text"/>	V6	<input type="text"/>
7. Is more than one language spoken at home? E.g. <i>English and Zulu/Afrikaans</i>	Yes	1	V7 <input type="text"/>
	No	2	
8. Do you speak English at home?	Yes	1	V8 <input type="text"/>
	No	2	
9. Your Level of education:	Less than Grade 7 (Std 5)	1	V9 <input type="text"/>
	Grade 9 (Std 7)	2	
	Partial high school, Grade 10 or 11 (Std 8 or 9)	3	
	Completed high school (Matric)	4	
	Partial college (minimum 1 year) or specialised training	5	
	College or university degree	6	
10. Spouse's level of education If applicable:	Less than Grade 7 (Std 5)	1	V10 <input type="text"/>
	Grade 9 (Std 7)	2	
	Partial high school, Grade 10 or 11 (Std 8 or 9)	3	
	Completed high school (Matric)	4	
	Partial college (minimum 1 year) or specialised training	5	



Cont...10

	College or university degree		6	
11. Your level of employment:	Full-time employment		1	V11
	Part-time employment		2	
	Self-employment		3	
	Unemployed		4	
12. Your job description:				V12
13. Level of employment of your spouse if applicable:	Full-time employment		1	V13
	Part-time employment		2	
	Self-employment		3	
	Unemployed		4	
14. Job description of spouse:				V14
15. Monthly household income:	Less than R4500 per month		1	V15
	More than R4500 per month		2	
16. If your child is sick, do you take him/her to a:	Private doctor/ private hospital		1	V16
	Doctor at the local community clinic/ government Hospital		2	
17. How many bedrooms do you have in your home?	1		1	V17
	2		2	
	3		3	
	4		4	
	More than 4 <i>Please specify</i>		5	
18. How many people stay in your home?	2		1	V18
	3		2	
	4		3	
	More than 4 <i>Please specify</i>		4	
19. How many other children do you have? <i>Please specify</i>				V19
20. Does your child talk like other two year olds?	Yes		1	V20
	No		2	
21. At what age did your child do the following?	Crawling			V21
	Walking			V22
	First Word			V23

Appendix E

Language Development Survey – South Africa



LANGUAGE DEVELOPMENT SURVEY – SOUTH AFRICA: COMMONLY USED WORDS BY TODDLERS

Indicate answers by making a cross in the appropriate column

Target Word	Yes, uses EXACT word	Yes, but has a DIFFERENT name for it (write word)	No, doesn't use word AT ALL		For official use only
1. FOOD					
juice				F1	
banana				F2	
cookie				F3	
apple				F4	
cheese				F5	
milk				F6	
pizza				F7	
water				F8	
cake				F9	
chips				F10	
ice-cream				F11	
hotdog				F12	
sweets				F13	
bread				F14	
cereal				F15	
grapes				F16	
drink				F17	
coke				F18	
orange				F19	
raisins				F20	
butter				F21	
coffee				F22	
soup				F23	
toast				F24	
spaghetti				F25	
hamburger				F26	
bubblegum				F27	

Target Word	Yes, uses EXACT word	Yes, but has a DIFFERENT name for it (write word)	No, doesn't use word AT ALL		For official use only
FOOD					
tea				F28	
food				F29	
biscuit				F30	

2. TOYS					
ball				T1	
book				T2	
balloon				T3	
swing				T4	
doll				T5	
blocks				T6	
teddy bear				T7	
crayons				T8	
slide				T9	
picture				T10	
present				T11	

3. PLACES					
school				P1	
shop				P2	
home				P3	
park				P4	
zoo				P5	
church				P6	
library				P7	
hospital				P8	

4. VEHICLES					
boat				V1	
pram				V2	
motorbike				V3	
car				V4	
truck				V5	



Target Word <u>VEHICLES</u>	Yes, uses EXACT word	Yes, but has a DIFFERENT name for it (write word)	No, doesn't use word AT ALL		<i>For official use only</i>
bike				V6	
plane				V7	
train				V8	
trolley				V9	
bus				V10	

5. ACTIONS					
Target Word	Yes, uses EXACT word	Yes, but has a DIFFERENT name for it (write word)	No, doesn't use word AT ALL		<i>For official use only</i>
bath				A1	
go				A2	
kiss				A3	
up				A4	
down				A5	
sit				A6	
hug				A7	
peekaboo				A8	
sleep				A9	
walk				A10	
open				A11	
stop				A12	
outside				A13	
see				A14	
jump				A15	
help				A16	
run				A17	
read				A18	
clap				A19	
come				A20	
get				A21	
hit				A22	
love				A23	
weewee				A24	
dance				A25	
ride				A26	
dinner				A27	
wash				A28	

Target Word <u>ACTIONS</u>	Yes, uses EXACT word	Yes, but has a DIFFERENT name for it (write word)	No, doesn't use word AT ALL		<i>For official use only</i>
lunch				A29	
look				A30	
tickle				A31	
sing				A32	
throw				A33	
push				A34	
breakfast				A35	
kick				A36	
want				A37	
catch				A38	
give				A39	
shut				A40	
close				A41	
fix				A42	
cough				A43	
have				A44	
cut				A45	
pattycake				A46	
make				A47	
show				A48	
eat				A49	
finish				A50	
doodoo				A51	
bring				A52	
take				A53	
feed				A54	
knock				A55	

6. OUTDOORS					
Target Word	Yes, uses EXACT word	Yes, but has a DIFFERENT name for it (write word)	No, doesn't use word AT ALL		<i>For official use only</i>
tree				O1	
flower				O2	
house				O3	
rain				O4	
moon				O5	
snow				O6	
sun				O7	



Target Word	Yes, uses EXACT word	Yes, but has a DIFFERENT name for it (write word)	No, doesn't use word AT ALL		For official use only
OUTDOORS					
star				O8	
sky				O9	
street				O10	
pavement				O11	

7. ANIMALS					
dog				N1	
cat				N2	
bird				N3	
duck				N4	
bunny				N5	
fish				N6	
bear				N7	
horse				N8	
cow				N9	
pig				N10	
bug				N11	
bee				N12	
puppy				N13	
frog				N14	
elephant				N15	
monkey				N16	
tortoise				N17	
chicken				N18	
tiger				N19	
snake				N20	

8. BODY PARTS					
eye				B1	
nose				B2	
ear				B3	
hair				B4	
teeth				B5	
foot				B6	
hand				B7	
mouth				B8	

Target Word	Yes, uses EXACT word	Yes, but has a DIFFERENT name for it (write word)	No, doesn't use word AT ALL		For official use only
BODY PARTS					
arm					B9
toe					B10
finger					B11
leg					B12
tummy					B13
knee					B14
face					B15
chin					B16
elbow					B17
bum					B18
neck					B19
thumb					B20

9. HOUSEHOLD					
spoon					H1
bed					H2
cup					H3
door					H4
bottle					H5
tv					H6
blanket					H7
telephone					H8
chair					H9
clock					H10
potty					H11
soap					H12
fork					H13
pillow					H14
light					H15
table					H16
bath					H17
cot					H18
rubbish					H19
stairs					H20
bowl					H21



Target Word <u>HOUSEHOLD</u>	Yes, uses EXACT word	Yes, but has a DIFFERENT name for it (write word)	No, doesn't use word AT ALL		<i>For official use only</i>
floor				H22	
towel				H23	
room				H24	
plate				H25	
window				H26	
glass				H27	
knife				H28	
sink				H29	
mirror				H30	
radio				H31	

<u>10. PEOPLE</u>					
daddy				Q1	
mommy				Q2	
baby				Q3	
grandma				Q4	
child's name				Q5	
grandpa				Q6	
boy				Q7	
girl				Q8	
pet's name				Q9	
man				Q10	
uncle				Q11	
aunty				Q12	
lady				Q13	
doctor				Q14	

<u>11. PERSONAL</u>					
key				L1	
toothbrush				L2	
brush				L3	
money				L4	
paper				L5	
pen				L6	
glasses				L7	
watch				L8	

Target Word <u>PERSONAL</u>	Yes, uses EXACT word	Yes, but has a DIFFERENT name for it (write word)	No, doesn't use word AT ALL		<i>For official use only</i>
pencil				L9	
comb				L10	
pocket book				L11	
umbrella				L12	

<u>12. CLOTHES</u>					
shoes				C1	
socks				C2	
nappy				C3	
hat				C4	
coat				C5	
shirt				C6	
pants				C7	
pyjamas				C8	
boots				C9	
takkies				C10	
jersey				C11	
dress				C12	
slippers				C13	
gloves				C14	
belt				C15	

<u>13. MODIFIERS</u>					
hot				S1	
all gone				S2	
cold				S3	
mine				S4	
dirty				S5	
more				S6	
wet				S7	
big				S8	
bad				S9	
broken				S10	



Target Word <u>MODIFIERS</u>	Yes, uses EXACT word	Yes, but has a DIFFERENT name for it (write word)	No, doesn't use word AT ALL		<i>For official use only</i>
good				S11	
pretty				S12	
this				S13	
that				S14	
clean				S15	
happy				S16	
yucky				S17	
blue				S18	
dark				S19	
little				S20	
stinky				S21	
all right				S22	
red				S23	
tired				S24	
hungry				S25	
nice				S26	
heavy				S27	
yellow				S28	
dry				S29	
black				S30	
white				S31	

14. OTHER					
no				R1	
bye bye				R2	
hi/ hello				R3	
yes				R4	
thank you				R5	
please				R6	
out				R7	
off				R8	
booboo				R9	
me				R10	
night night				R11	
on				R12	

Target Word <u>OTHER</u>	Yes, uses EXACT word	Yes, but has a DIFFERENT name for it (write word)	No, doesn't use word AT ALL		<i>For official use only</i>
in				R13	
you				R14	
my				R15	
Takalani Sesame				R16	
what				R17	
here				R18	
there				R19	
excuse me				R20	
where				R21	
why				R22	
away				R23	
yum yum				R24	
under				R25	
shut up				R26	
welcome				R27	
myself				R28	
1, 2, 3 etc				R29	
a,b,c etc				R30	
meow				R31	

EXTRA WORDS USED BY YOUR TODDLER <i>(Optional)</i>		<i>For official use only</i>
1.		
2.		
3.		
4.		
5.		

Please feel free to write any comments on the back of this page

General Comments

THANK YOU!

Appendix F

Table of results – percentage values for vocabulary items within the 14 semantic categories

Table F1 Percentages for vocabulary items within the Actions category

Target Items	LDS-SA	LDS	Very Small Difference (0% – 20%)	Small Difference (21% – 40%)	Medium Difference (41% – 60%)	Large Difference (61% – 80%)
sit	95%	74%		21%		
come	93%	58%		35%		
eat	93%	28%				65%
bath	90%	82%	8%			
go	90%	78%	12%			
kiss	90%	78%	12%			
open	90%	69%		21%		
see	90%	66%		24%		
jump	88%	65%		23%		
dance	88%	57%		31%		
wash	88%	56%		36%		
look	88%	54%		34%		
sing	88%	53%		35%		
close	88%	45%			43%	
down	85%	75%	10%			
hug	85%	70%	15%			
walk	85%	70%	15%			
love	85%	58%		27%		
push	85%	51%		34%		
give	85%	46%		39%		
stop	83%	69%	14%			
up	80%	76%	4%			
sleep	80%	70%	10%			
get	80%	58%		22%		
kick	80%	49%		31%		
take	80%	36%			44%	
outside	78%	68%	10%			
catch	78%	48%		30%		
make	78%	35%			43%	
finish	78%	31%			47%	
read	75%	62%	13%			
clap	75%	58%	17%			
help	73%	63%	10%			
run	70%	63%	7%			
weewee	70%	58%	12%			
cut	70%	42%		28%		
show	70%	30%		40%		
ride	68%	57%	11%			
bring	68%	29%		39%		
knock	68%	35%		33%		
hit	65%	58%	7%			
cough	65%	44%		21%		
throw	60%	53%	7%			
have	60%	43%	17%			
feed	58%	35%		23%		
fix	55%	45%	10%			
tickle	53%	54%	1%			

Target Items	LDS-SA	LDS	Very Small Difference (0% – 20%)	Small Difference (21% – 40%)	Medium Difference (41% – 60%)	Large Difference (61% – 80%)
doodoo	53%	24%		29%		
shut	48%	46%	2%			
peekaboo	43%	70%		27%		
dinner	43%	56%	13%			
lunch	43%	55%	12%			
breakfast	35%	49%	14%			
pattycake	28%	40%	12%			

Table F2 Percentages for vocabulary items within the Modifiers category

Target Items	LDS-SA	LDS	Very Small Difference (0% – 20%)	Small Difference (21% – 40%)	Medium Difference (41% – 60%)	Large Difference (61% – 80%)
mine	88%	76%	12%			
dirty	88%	74%	14%			
cold	85%	76%	9%			
wet	80%	68%	12%			
big	80%	66%	14%			
hot	78%	85%	7%			
good	75%	63%	12%			
clean	75%	54%		21%		
this	73%	58%	15%			
more	70%	72%	2%			
tired	70%	44%		26%		
nice	70%	43%		27%		
that	68%	57%	11%			
happy	68%	54%	14%			
blue	68%	48%	20%			
red	68%	44%		24%		
white	68%	26%			42%	
hungry	65%	43%		22%		
yellow	65%	40%		25%		
dark	63%	47%	16%			
heavy	63%	41%		22%		
dry	63%	37%		26%		
bad	60%	64%	4%			
black	60%	30%		30%		
broken	58%	64%	6%			
pretty	58%	58%	0%			
stinky	55%	46%	9%			
little	53%	46%	7%			
all gone	50%	80%		30%		
yucky	43%	54%	11%			
all right	35%	44%	9%			

Table F3 Percentages for vocabulary items within the Personal category

Target Items	LDS-SA	LDS	Very Small Difference (0% – 20%)	Small Difference (21% – 40%)	Medium Difference (41% – 60%)	Large Difference (61% – 80%)
pen	85%	61%		24%		
brush	83%	67%	16%			
paper	83%	62%		21%		
key	80%	80%	0%			
money	80%	64%	16%			
toothbrush	75%	72%	3%			
glasses	75%	55%	20%			
watch	65%	52%	13%			
pencil	60%	50%	10%			
umbrella	60%	41%	19%			
comb	48%	44%	4%			
pocketbook	23%	43%	20%			

Table F4 Percentages for vocabulary items within the Body Parts, Household, Other and Clothes categories

Target Items	LDS-SA	LDS	Very Small Difference (0% – 20%)	Small Difference (21% – 40%)	Medium Difference (41% – 60%)	Large Difference (61% – 80%)
BODY PARTS						
eye	90%	92%	2%			
nose	90%	86%	4%			
mouth	90%	71%	19%			
teeth	88%	82%	6%			
foot	88%	74%	14%			
hand	88%	72%	16%			
ear	85%	85%	0%			
hair	85%	82%	3%			
face	83%	52%		31%		
finger	80%	67%	13%			
bum	80%	38%			42%	
leg	78%	60%	18%			
tummy	78%	61%	17%			
arm	68%	70%	2%			
toe	68%	69%	1%			
knee	65%	59%	6%			
neck	63%	37%		27%		
chin	53%	46%	7%			
thumb	53%	35%	18%			
elbow	50%	40%	10%			
HOUSEHOLD						
bed	95%	80%	15%			
door	88%	77%	11%			
tv	85%	76%	9%			
light	85%	64%		21%		
chair	83%	73%	10%			
table	83%	62%		21%		



Target Items	LDS-SA	LDS	Very Small Difference (0% – 20%)	Small Difference (21% – 40%)	Medium Difference (41% – 60%)	Large Difference (61% – 80%)
bath	83%	60%		23%		
spoon	80%	81%	1%			
cup	80%	80%	0%			
bottle	80%	76%	4%			
towel	80%	52%		28%		
soap	78%	68%	10%			
fork	75%	66%	9%			
glass	75%	46%		29%		
pillow	73%	66%	7%			
room	73%	51%		22%		
plate	73%	50%		23%		
window	73%	50%		23%		
knife	68%	45%		23%		
blanket	65%	74%	9%			
floor	65%	52%	13%			
mirror	63%	36%		27%		
stairs	58%	58%	0%			
radio	58%	34%		24%		
telephone	53%	74%		21%		
bowl	53%	53%	0%			
potty	50%	68%	18%			
sink	50%	42%	8%			
clock	48%	68%	20%			
cot	48%	60%	12%			
rubbish	45%	59%	14%			
OTHER						
no	93%	94%	1%			
1,2,3 etc	93%	70%		23%		
hi/hello	90%	89%	1%			
yes	88%	83%	5%			
thank you	88%	82%	6%			
you	88%	55%		33%		
bye bye	85%	91%	6%			
please	85%	81%	4%			
out	83%	75%	8%			
my	80%	54%		26%		
what	80%	51%		29%		
me	78%	70%	8%			
on	75%	69%	6%			
why	75%	41%		34%		
meow	75%	68%	7%			
there	73%	45%		28%		
here	70%	49%		21%		
off	68%	73%	5%			
in	68%	56%	12%			
where	68%	41%		27%		
night night	65%	69%	4%			
under	60%	37%		23%		
away	55%	37%	18%			
shut up	53%	26%		27%		
a,b,c etc.	50%	59%	9%			

Target Items	LDS-SA	LDS	Very Small Difference (0% – 20%)	Small Difference (21% – 40%)	Medium Difference (41% – 60%)	Large Difference (61% – 80%)
myself	43%	23%	20%			
Takalani Sesame	35%	51%	16%			
yum yum	35%	33%	2%			
welcome	28%	26%	2%			
excuse me	25%	41%	16%			
booboo	23%	71%			48%	
CLOTHES						
shoes	90%	91%	1%			
socks	83%	82%	1%			
hat	83%	78%	5%			
jersey	80%	40%		40%		
boots	78%	55%		23%		
gloves	75%	35%		40%		
shirt	73%	63%	10%			
pyjamas	73%	57%	16%			
takkies	73%	54%	19%			
nappy	70%	81%	11%			
pants	70%	62%	8%			
dress	70%	51%	19%			
slippers	70%	44%		26%		
coat	43%	70%		27%		
belt	0%	33%		33%		

Table F5 Percentages for vocabulary items within the People category

Target Items	LDS-SA	LDS	Very Small Difference (0% – 20%)	Small Difference (21% – 40%)	Medium Difference (41% – 60%)	Large Difference (61% – 80%)
daddy	93%	97%	4%			
mommy	90%	96%	6%			
Child's name	85%	74%	11%			
baby	80%	94%	6%			
doctor	80%	52%		28%		
boy	73%	56%	17%			
girl	70%	53%	17%			
aunty	70%	42%		28%		
Pet's name	68%	50%	18%			
uncle	65%	44%		21%		
man	63%	49%	14%			
grandma	53%	77%		24%		
grandpa	53%	69%	16%			
lady	50%	37%	13%			

Table F6 Percentages for vocabulary items within the Vehicles category

Target Items	LDS-SA	LDS	Very Small Difference (0% – 20%)	Small Difference (21% – 40%)	Medium Difference (41% – 60%)	Large Difference (61% – 80%)
car	90%	86%	4%			
bus	88%	67%		21%		
bike	73%	79%	6%			
train	68%	68%	0%			
pram	65%	51%	14%			
boat	63%	65%	2%			
truck	63%	80%	17%			
motorbike	60%	34%		26%		
trolley	53%	13%		40%		
plane	50%	73%		23%		

Table F7 Percentages for vocabulary items within the Food category

Target Items	LDS-SA	LDS	Very Small Difference (0% – 20%)	Small Difference (21% - 40%)	Medium Difference (41% – 60%)	Large Difference (61% – 80%)
juice	95%	93%	2%			
chips	93%	72%		21%		
tea	93%	40%			53%	
sweets	90%	67%		23%		
apple	88%	83%	5%			
water	88%	73%	15%			
food	83%	75%	8%			
cheese	78%	82%	4%			
cake	78%	72%	6%			
cookie	75%	87%	12%			
milk	75%	79%	4%			
orange	75%	55%	20%			
coffee	75%	48%		27%		
pizza	73%	75%	2%			
bread	73%	64%	9%			
drink	73%	58%	15%			
coke	70%	58%	12%			
soup	70%	45%		25%		
banana	68%	87%	19%			
ice-cream	65%	70%	5%			
biscuit	63%	87%		24%		
butter	60%	53%	7%			
grapes	55%	60%	5%			
toast	53%	45%	8%			
hotdog	40%	68%		28%		
hamburger	40%	43%	3%			
spaghetti	33%	44%	11%			
cereal	30%	62%		32%		
raisins	25%	55%		30%		
bubblegum	25%	41%	16%			

Table F8 Percentages for vocabulary items within the Outdoors, Animals and Places categories

Target Items	LDS-SA	LDS	Very Small Difference (0% – 20%)	Small Difference (21% – 40%)	Medium Difference (41% – 60%)	Large Difference (61% - 80%)
OUTDOORS						
house	83%	70%	13%			
sun	73%	58%	15%			
rain	65%	69%	4%			
star	65%	51%	14%			
tree	63%	78%	15%			
flower	63%	77%	14%			
moon	60%	63%	3%			
sky	55%	46%	9%			
street	55%	40%	15%			
snow	33%	59%		26%		
pavement	30%	18%	12%			
ANIMALS						
fish	90%	73%	17%			
dog	80%	91%	11%			
cat	78%	88%	10%			
bunny	73%	74%	1%			
chicken	73%	46%		27%		
cow	70%	66%	4%			
pig	70%	64%	6%			
monkey	70%	54%	16%			
elephant	68%	54%	14%			
bird	65%	84%	19%			
duck	65%	81%	16%			
bee	65%	56%	9%			
bear	63%	72%	9%			
snake	63%	33%		30%		
tiger	60%	40%	20%			
horse	58%	67%	11%			
puppy	58%	55%	3%			
frog	55%	51%	4%			
bug	45%	63%	18%			
tortoise	40%	55%	5%			
PLACES						
school	88%	64%		24%		
home	85%	57%		28%		
shop	73%	63%	10%			
church	73%	33%		40%		
zoo	48%	38%	10%			
hospital	40%	16%		24%		
park	35%	44%	9%			
library	5%	21%	16%			

Table F9 Percentages for vocabulary items within the Toy category

Target Items	LDS-SA	LDS	Very Small Difference (0% – 20%)	Small Difference (21% – 40%)	Medium Difference (41% – 60%)	Large Difference (61% – 80%)
ball	90%	95%	5%			
book	90%	89%	1%			
balloon	75%	85%	10%			
swing	65%	69%	4%			
picture	65%	45%	20%			
blocks	63%	62%	1%			
teddybear	63%	62%	1%			
crayons	58%	59%	1%			
present	58%	43%	15%			
doll	55%	67%	12%			
slide	55%	57%	2%			

Appendix G

List of additional vocabulary items used by toddlers

Additional vocabulary items used by toddlers (n = 40)

ballet	friend	piano	vierkant
barney	gown	princess	violin
beautiful/mooi	guitar	saxophone	visit
boss	heater	sirkel	why
butterfly	heidi	skoelapper	work
clay	jigsaw puzzle	small	yoghurt
computer	kinderstories	spot	zeebee
dangerous	light	swim	
delicious	love you	swimming pool	
dinosaur	medisyne	teacher	
disgusting	mommy	tigger	
duke	monkeynastics	tractor	
drums	movie	trailer	
flute	music	trampoline	