FIRST TEN WORDS EXPRESSED BY CHILDREN ACQUIRING EWE FROM 12- 18 MONTHS

GODWIN TETTEVI
(10337776)

THIS THESIS/DISSERTATION IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON

IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF MSc IN SPEECH AND LANGUAGE THERAPY DEGREE

JULY 2018

DECLARATION

I, **GODWIN TETTEVI** do hereby declare that this thesis which is being submitted in fulfillment of the requirements for the Master of Science degree in Speech and Language Therapy is the result of my own research performed under supervision, and that except where otherwise other sources are acknowledged and duly referenced, this work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

I hereby give permission for the Department of Audiology, Speech and Language Therapy to seek dissemination/publication of the dissertation in any appropriate format. Authorship in such circumstances to be jointly held between me as the first author and the project supervisors as subsequent authors.

Signed ……..... Date……

(10337776)

Signed …… Date……

Dr. Fusheini A. Hudu

Signed ……..……. Date……..

Dr. George Akanlig-Pare

Signed …… Date……

Dr. Neal Boafo

Head of Department

DEDICATION

The work is dedicated to the Almighty God who has been gracious to me. The dedication is also extended to my parents especially my dad, Mr. Edward-Crown Tettevi for everything he has done for me.

ACKNOWLEDGEMENTS

Firstly I would like to acknowledge the Almighty God for his immense grace towards this project. Secondly to my supervisors, Dr. Fusheini Hudu and Dr. George Akanlig-Pare both of the Department of Linguistics for their incalculable intellectual contributions throughout the thesis process. I would also like to thank Karen Wylie and Nana Akua Victoria Owusu for their time and contribution towards this research work.

Thanks to all the lecturers and tutors of the Department of Audiology, Speech and Language Therapy, University of Ghana for their time and support. I acknowledge all my colleagues for their support in various ways towards the completion of this dissertation.

A special thanks to the parents who availed themselves to be participants of the study together with their children from the Keta Municipality.

Finally, a special thanks to my dad, Edward-Crown Tettevi, siblings and friends, your care and support in spirit, physical and financially has been really appreciated. It broke many barriers and obstacles.

ABSTRACT

Background: Language is a social tool which shows the collective thinking of people in a particular area. Language acquisition is an important aspect of human development. Children acquire language to communicate with their surroundings.

There has been a wide research conducted on first language acquisition in the world but not so many in Sub- Saharan Africa. There have not been a lot of researches conducted on the first words acquisition of children in Ghana. In a quest to develop language assessment tools to meet the Ghanaian context, this research was conducted to find out the ten of first words of children acquiring Ewe between the ages of 12-18 months.

Aim: The aim of this study was to find ten of the first words expressed by children acquiring Ewe.

Method: A cross-sectional mixed study on 69 children acquiring Ewe from the ages of 12-18 months in 3 rural areas in the Keta Municipality of the Volta Region. The study was conducted from April to June 2018. Mothers and caregivers responded to a questionnaire, a word checklist and completed a word record form by the help of the researcher. Data was analyzed using a statistical software SPSS version 20.

Results: The 69 children had 36 words in common. Out of these, 17 of the words are in the semantic category based on the MacArthur Bates Communication Development Inventories (MBCDI). The MBCDI was used because it is a worldwide accepted communication development inventory to know the levels of language and speech development of children.

The occupations of mothers and caregivers impacted the kind of words the children said as first words. Children who spend much time with their mothers and grandmothers had a lot of words in their corpus.

Conclusion: The children had 36 Ewe words in common. Out of these words, ten of the first words are in the category of nouns. This confirms the noun bias in the first words acquisition stated in other studies. This is an exploratory study and there is enough room to improve this current study.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

SLT	Speech and Language Therapy
MBCDI	MacArthur Bates Communication Development Inventory

CHAPTER ONE

INTRODUCTION

1.1 Background

Typical early language development is formed on the foundation of how communication is developed. Thus, the social well-being and the child's success in school is determined by their language skills (Mcgillion et al., 2017). Any impediment to the acquisition of language skills affects literacy, academic success and social development. These language skills the children develop are important stages that must be attained at a point in their life. Research conducted in Lenneberg, (1967); Owen, (2016) has deduced that typically developing children all over the world begin to develop language at about the same time. Children begin to express themselves using vocabulary from the age of ten months. From then on, they add words to their vocabulary slowly (Hoff, 2009).

First words are generally acquired slowly over a period of many months. After this period, words develop at astronomical stages. This is referred to as vocabulary spurt or naming explosion. What could be accountable for this phenomenon? A possible reason could be that the children are beginning to understand that words may act as verbal parts of specific situations, actions and routines rather than verbal terms or names that refer to the objects or events. It also connotes a new level of referential understanding of the new words (Kelly et al., 2015).

1.2 Research Problem Statement

The need for research into the first words of Ghanaian children cannot be overemphasized. Currently, most of the assessment tools used in the speech and language therapy clinic to assess the language of Ghanaian children are built on normative data on children in the western countries. Objects and words on which the assessment tools were designed are not

culturally appropriate which makes it very difficult for the indigenous children acquiring Ewe and any other Ghanaian language to respond appropriately to tasks given to them during language assessment.

The first words were explored to aid the areas of language difficulty which hitherto was tested by contemporary standardized language tests (Echols & Newport, 1992). This will help streamline and focus intervention in speech and language therapy clinics in Ghana.

1.3 Aim of the Study

The aim of this study was to find ten of the first words expressed by children acquiring Ewe.

1.4 Objectives of the Study

The following were the specific objectives in this study.

- To determine common words that Ewe children acquire
- To look for semantic categories of words used by children acquiring Ewe

1.5 Research questions

- What are the ten of the first words spoken by children acquiring Ewe?
- Do children show word class bias in acquiring first words in Ewe?
- What types of words by semantic category are used by children acquiring Ewe according to the McArthur Bates Communication Development Inventory (MBCDI) framework?

1.6 Significance of this Study

There is a need to understand patterns of language acquisition within and across languages, in order to know what is universal and what is language-specific. This is also very important in order to understand the relationship that exists between the acquisition of linguistic forms,

the semantic perceptions embedded in language and the development of cognition (Kelly et al., 2015).The study of first language acquisition is good for the preservation of indigenous languages.

Research into the words of Ghanaian children will help provide baseline information for speech and language assessments for children with communication disorders (McGillion et al., 2017).

1.7 Scope of Work

The project was aimed at exploring the ten of first words of children acquiring Ewe between the ages of 12 to 18 months. Sixty-nine children from rural areas in the Keta Municipality where the Ewe language is the predominant language were chosen for the project.

This project used the following methods to acquire data:

1. Questionnaire
2. Word record form
3. Word checklist
4. Field observation of children

1.8 Organization of Work

The research work in this volume has been arranged as follows:

1. In Chapter One, introductory notes on communication, first words acquisition and the significance of the research work.
2. Chapter Two serves as a foundation for the research and provides critical evaluation and interpretation of relevant literature to the research.
3. Chapter Three gives a summary of the methodology and how data was collected.
4. The results are analyzed in Chapter Four

5. A discussion of the results is presented in Chapter Five
6. The conclusions and recommendations are presented in Chapter Six

1.9 Summary

The importance of this research to the profession of speech and language therapy in Ghana is enormous. It will set the tone for further research in child language acquisition in the country and also help speech and language therapists in clinic when assessing the expressive language skills of children acquiring Ewe.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

Language is an abstract symbol used to represent concepts and thoughts. Language is generative, creative and productive tool used by a group of people in a particular society or community (Owens, 2015). There are four major areas that make up language according to Rice (1989). These major areas are:

- Phonology -the sound system of a language
- Morphology- this deals with the rules of word formation in a language
- Syntax- the rules of sentence formation in a language
- Semantics- the meaning system of language. This brings out the various meaning in words

Research on the first language of children plays an important role in the preservation of indigenous languages (Lenneberg, 1967; Owens, 2016). Children are able to learn how to communicate by interacting with their teachers, friends, and family (Australian Speech Pathology, 2017).

The development of the language of a child comes in different stages. There is the receptive and expressive language skill. Children's ability to acquire language is challenging (Bishop & Leonard, 2000).Children appear to imitate greater chunks of language and only understand the regularities in underlying structure such as language schemas when the language is fully acquired.

Currently, the grammatical categories/ class of words are debatable. Extensive literature points to nouns as the first words children say, noting that concrete 'nouns' are learned earliest because they are matched onto the ability to perceive categories that are connected (Bateman, 1917). The ability to learn words is done with general cognitive processes and

universals of linguistic structure and everybody has the same cognitive processes (Tomasello, 2003).

2.2 Biological and Cognitive bases for Language Development

Cognition is made up of mental activities which entail the acquisition, organization, understanding and storage of information. This consists of series of things that happen such as thought, learning and problem solving (Owens, 2016) which goes to address the fact that children build their language by depending on their cognitive skills (Tomasello, 2003).

In light of this, deductions have been made in the field of research which goes to say that children all over the world typically acquire language around the same age (Lenneberg, 1967). In countries where research on children's first words have been conducted, it is estimated that typically developing children from 12-18 months begin to use three to fifty words (Owens, 2016).

The acquisition of language happens early in life with a restricted comprehension of the world by children. Language is learnt faster than cognitive representations (Perlovsky, 2009a). Infants begin to use the language of the people around them who have an established communication system and cognitive skills. This is possible because children have a linguistic nature that aids language learning. Language can be learned without any formal training but practically needs the language-rich environment to develop (Perlovsky, 2009a). While the development of language in children occurs, cognition is as well developing(Swingley, 2012). Research posits that, the connection between the linguistic forms and concepts give rise to the foundation of language comprehension. Every infant can learn the language at a faster rate before comprehension of full cognitive events and their

meanings (Perlovsky, 2009a). An advanced level of abstract thinking is impossible without language (Perlovsky and Ilin, 2012).

There are specific parts of the brain dedicated to linguistic functions. The left hemisphere of the brain is the specific area dedicated to linguistic functions. Areas such as Broca's and Wernicke's help humans to acquire and use language. Recent research by Murdoch, (2010) also has it that the hindbrain which is known as the cerebellum also supports linguistic functions. There are very important stages that children must attain to be fluent users of a language. There are ways that children demonstrate this ability of attaining the required stage for language skills.

2.3 Receptive and Expressive Language Skills of Children

The progress of children in speech and language development is an important developmental indicator.

Receptive language is one of the very important stages in the child's communicative development which develops before expressive language (Mundy, Sigman, & Kasari, 1990). Less research has been conducted in the area of lexical comprehension of children but it is, however, generally accepted that children begin to understand words prior to their production (Goodman et al., 2008). The understanding of concepts and categories is very important for a child developing language for the first time. A comprehension assessment organized for girls and boys put the girls ahead of boys. This shows that the comprehension of concepts and categories in girls develops faster than that of boys(Roulstone, Loader, Northstone, & Beveridge, 2002).

Before children begin to speak, many pre-linguistic skills are developed such as turn taking, joint action, gesture and vocalization to request objects (Michael Morales, 2000; Tsugawa, 2004). This enables them to talk about concepts and categories they understand. In a research

conducted by Roulstone et al., (2002), girls again were discovered to be ahead of boys in the expressive language levels.

2.4 First Language Acquisition

For children to progress in their first language acquisition, they have to move beyond the motherese that soothes them to break down language into components (Swingley, 2008).

According to Rice (1989), language acquisition is made up of three major parts. These are:

- The language that needs to be acquired. This explains the task that the child has to perform in order to master the rules and grammar of the language to be acquired.
- The child's capacities and biological make-up that makes it possible for the child to acquire language.
- The environmental setting: The language environment that the child is exposed to and the speaking context play a major role in the acquisition of language.

Children are able to uncover the complex structure of language and use it to communicate. Infants as young as seven months of age are able to detect and use properties of syllable co-occurrence to divide new word from fluent speech(Saffran, 2001). According to B.F Skinner, children acquire language through the influences of the environment they find themselves in (Boundless, 2016). This assertion by Skinner was opposed by Noam Chomsky who said children have the biological predisposition to acquire language by the use of Language Acquisition Device (LAD) (Chomsky, 1969),(Zahradníková, 2011).

The period between birth and linguistic maturity is a stage where children uncover the components of sounds or gesture of their language to determine how these words are put together to make meaning(Saffran, 2001). For a language to be meaningful to the hearer, there are individual components of the language that is used and how these components are acquired.

2.5 Units of Language Acquisition

Language is acquired by children as a means of what they know and this is evident from the emergence of it from the child's explorations of the world in a rich communicative environment (Rice, 1989). There are two approaches that children use to acquire language. They are the analytic and the gestalt approaches.

The analytic approach is where the child learns in parts before acquiring the whole. For example, for a child to learn a language, the sounds in the language must first be learned. This has been extensively studied by researchers of child language (Peters, 1977).

Gestalt approach shows how a child learns the whole before the parts. This has not been used so much in the child language acquisition researches. Peters (1983), quizzed whether it was some kind of deviation from the norm or it was ignored due to theoretical biases of child language researchers.

It is imperative for child language researchers to understand the language units that children are using rather than looking out for distinctive features in phonology and morphemes and syntax (Peters, 1983).

Acquisition of language by a child focuses on the raw data (speech) that the child has been exposed to and has to work hard to capture some of it to make meaning. The child must perform this action in real time as the utterances are being uttered by the communicative partner. In the process of determining all the units in the stream of utterances, the child is seen using formulaic utterances. This is necessary for the child because, the child does not know all the units in the language they are acquiring (Peters, 1983).

According to Clark (1982), most child language researchers assume that one aspect of linguistic skill must develop before the other. The author later proposed three areas to debunk the assumption. They are:

- Children have syntactic knowledge long before they are able to express it in spontaneous speech
- Children's use of certain formal devices shows evidence that they intend to express newly attained meaning
- Children's grasp of semantic relations is ahead of their ability to express them verbally.

This allows the researcher to interpret word combinations fully when they occur.

2.6 First Words Acquisition

The acquisition of a lot and different vocabularies is one of the greatest achievements by children in their first language acquisition journey (Goodman et al., 2008). To uncover the words of a language and its meaning is the first major task for the language learner (Rice, 1989).

According to research, the identification of continuous sound patterns plays an important role in child sound stratification and children can identify and use statistics of syllable co-occurrence to differentiate new words (Saffran, Senghas, & Trueswell, 2001). Children begin to say their first words usually around age 1.0 year. Children around the ages of 18-24 months are tipped to learn on the average nine words a day before they reach kindergarten in order to have an average vocabulary (Samuelson & McMurray, 2016). The words are then added to their vocabulary slowly each month. Between 18 and 24 months, there is a sharp increment in the acquisition of words (Goodman et al., 2008; Samuelson & McMurray, 2016) and this is referred to as the lexical spurt or noun explosion. The expressed words are added

at a speed as high as 10 new words every 2 weeks (Samuelson & McMurray, 2016). Children can learn words not because they have innate abilities to learn new words but because they are able to easily assemble a set of simple processes as suggested by Samuelson and McMurray (2016).

The production of first words is the beginning of the building of the representations for speech. For most children, babbling co-exists with their first words for up to four or five months (de Boysson-Bardies & Vihman, 1991).

2.7 Category of Words Acquired

This describes the class of the words acquired and if there is any special reason why those words were acquired. There has been a debate on the category of words that children acquire first.

A research on the English language revealed that within a lexical category, words that are used in frequent speech are likely to develop first (Goodman, Dale, & Li, 2008). Nouns are believed to be learned through frequent co-occurrence (Gleitman, 1990). If more nouns were used with the child, the child will acquire those words early and likewise, if verbs were used more with the child, the child will acquire verbs first (Goldfield, 1993).

A view shared by most researchers put nouns as common words to be acquired by children. This was because nouns are connected with things and the biological makeup of children is to learn the names of objects, people, and animals (Hollich, 2000). Nouns must be learned early in language development in order to show relativity, properties, and other meanings (Tardif et al., 2008; Hollich et al., 2000). In a study conducted on English speaking children, aged between 8 and 14 months, 80% of the lexicon of the children comprised of nouns (Bateman, 1917).This confirms the view that proper and concrete nouns are learned earliest because they are matched onto perceptual categories of individual concepts.

Other studies have also confirmed noun bias across languages but only in later stages of vocabulary development, that is, after the first fifty (50) words (Tardif et al., 2008).

Researchers such as Getner (1982) and Gleitman (1990) suggested that the noun bias must be generally applicable and present in the early stages of vocabulary acquisition and that it was a universal predisposition rather than an input from the child.

Until recently, nouns were thought to be earliest words acquired by children. There are researches that also showed that some children acquire verbs quite early in their first words acquisition (Tardif et al., 1997). Evidence of this claim was drawn from Mandarin and Korean, children who were learning these languages used more verbs over nouns in their spontaneous speech. The noun bias is usually in English and it is a non-pro-drop language which means subjects are not usually omitted in sentences (Tardif et al.,1997).

Mandarin and Korean are pro-drop languages; they usually can omit the subject in a sentence but rarely omit verbs. These may be as a result of fewer noun phrases and common nouns that are required for communication in those languages (Tardif et al., 1997). A research conducted by Goldfield (1993) reported that Korean caregivers used verb tokens more with the children.

2.8 Socio-Economic Status of Parents or Caregivers of the Children's LanguageAcquisition

The educational level of parents and caregivers play an important role in the rate at which children acquire their first words and also it impacts on the category of the word that is acquired and used (Fernald, Marchman, & Weisleder, 2013). Research has shown that there is a significant influence on developmental performance based on the family income and educational level (Dollaghan, 1999). The socio-economic status of a family has been

attributed to contribute to a variance of 40% in the rate of vocabulary development of children(Fernald et al., 2013).

There is also a significant difference between language exposure and the rate and extent to which vocabulary is acquired and used among children whose parents are professionals and hold white collar jobs(Dollaghan, 1999).

Variables such as poverty may lead to poor performance in relation to vocabulary acquisition of the children due to physiological and neurological deficits resulting from inadequate nutrition and exposure to environmental hazards and maternal deprivation (Fernald et al., 2013). There is a need to critically look at the impact of maternal education and other factors on all measures of child language acquisition that is, language comprehension and language production (Dollaghan, 1999).

According to the behaviorist principles espoused by Skinner and others (Owens, 2016), the physical environment impacts greatly on the language development of children. In a finding from an unfortunate situation which described the case of a child who was left among goats with no human environment for language stimulation for a period of time, the child developed bleating rather than speech (Yule, 2016). This supports B.F Skinner's assertion that the environment is a key factor in the language development of children(Wilkinson, Dube, & McIlvane, 1996).

Children who live in bilingual and multilingual communities are also affected by the languages of those communities. These communities determine the kind of words they use depending on the majority language of that community(Genesee, Lindholm-Leary, Saunders, & Christian, 2005).Language development is influenced by many factors. One of these factors is multilingualism. Multilingualism is the use of more than one language by an individual or a society (Gorter, 2006). This reflects the Ghanaian community where there is more than a language spoken around the child. Minority language speakers in a multilingual

environment have no option than to use the language of the majority speakers for their day to day activities. This situation influences the young language learner who learns the majority language easily because they have enough exposure to it. This assertion has not been proven but enough literature has hinted that it is true based on the total words and learning of single categories of new words (Goodman et al., 2008).

Another research conducted posits that the more regular a word is used with a child, the more likelihood the child will acquire it earlier. This may be surprising at the first instance but there is evidence that parents frequently use non-nouns with a mean frequency of 16,116 in the total corpus. This meant that the non-nouns occurred 16,116 times but was learned late.

The figure below was adapted from Goodman et al., (2008) to show the class of words that children acquire early and later in life.

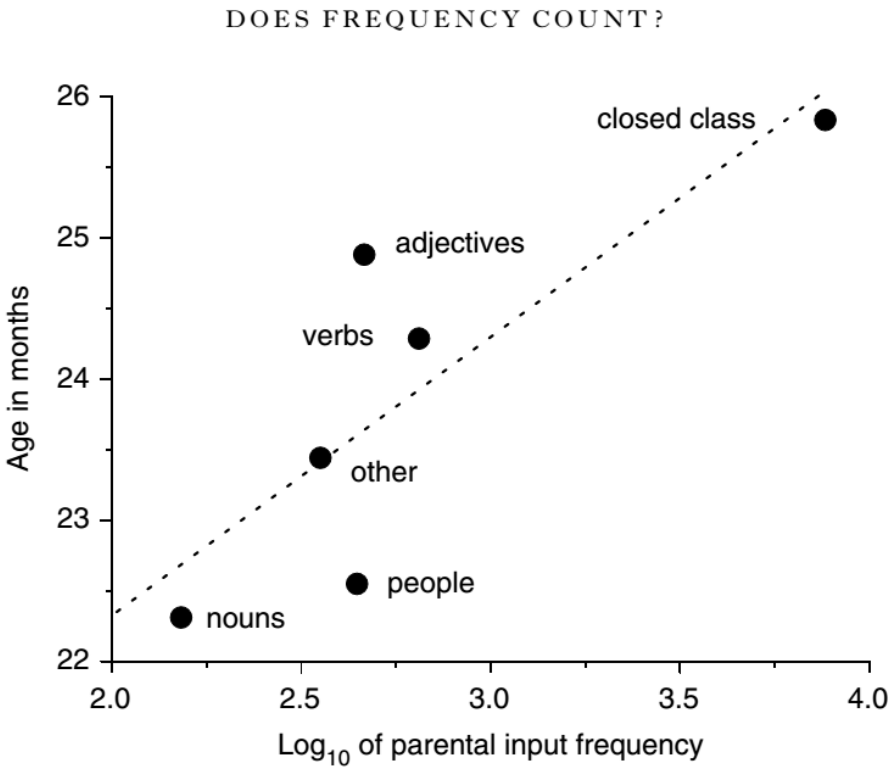

Figure 2.1: Parental frequency and mean age of acquisition

It is evident from the figure above that non-nouns that are frequently used by parents develop at the age of 26 months. In contrast, nouns that on the average that was least used with a mean of 309 of the totals of 562 words developed earlier (Goodman et al., 2008).

2.9 Usage-Based Theory

The main principle underlying this theory is that, meaning is use and structure comes from use. The theory posits that, structure of language stems from its use.

The usage-based theory pays attention to the particular communicative environment that people acquire and use language. The theory openly recognizes that humans learn and use fixed expressions such as '*could you please…', 'you keep out of this…'* These expressions are usually used as single units. A very important point in the theory is that psycholinguistic units which people use are seen from how they use language (Tomasello, 2000).

Children at the pre-linguistic level are able to differentiate between sounds and give meaning to them but are unable to understand and produce them until they are 12 months old. Children who have the best pre-linguistic skills have their languages emerging very early in life likewise children with poor pre-linguistic skills also have poor language skills. An example is a child with autism who does not have a good pre-linguistic skill such as joint attention and have poor language skills. Children must be able to extract from large chunks of adult utterances and combine it with the joint attention scheme they share with the communicative partner(adult) in order to learn a new word (Tomasello, 2008).

Children in an attempt to speak like adults try to reproduce whole utterances by an adult but end up producing a single linguistic element. For example, a child may say '*that'* to refer to '*I want that ball'*. These are called "holophrases". This means it is a single linguistic unit that

has been used as a full utterance (Tomasello, 2000). This occurs around 18 months of age (Tomasello, 2003).

According to Tomasello (2003), children are equipped with two sets of cognitive skills that help them in the language acquisition processes. These are:

- Intention-reading(functional dimension)
- Pattern-finding(grammatical dimension)

Intention- reading is what must be done by children in order to decipher the communicative intent of a matured speaker.

Pattern-finding is what children have to do beyond the utterances in the communicative environment by creating abstract linguistic schemas or constructions (Tomasello, 2008). Children need to extract a new word from a chunk of utterances and map it with the relevant joint attention frame they share with an adult (Tomasello, 2003).

Children do not just communicate what they know about the world, but about the similar understanding of what they know by their potential communicative partner.

2.10 Summary

The development of language comes in different stages. The development of comprehension as one of the fundamentals of language precedes the development of production of words by children. Children all over the world typically acquire and use language around the same age of 12 months. Child language acquisition is based on three important areas which the child has to master. These are the tasks that the child must master in order to acquire language, the child's ability and biological predisposition that will make it possible to acquire the language and finally, the rich-language environment that the child is exposed to.

The acquisition of words of children is one of the major milestones achieved by typically developing children. They acquire their first words slowly until the rate at which they acquire the rest of the words increases astronomically. This increment usually happens with nouns. Child language development researchers posit that nouns are the common words that are first acquired by children as it is a universal predisposition rather than an effort from the child.

Finally, how children understand and use the words they acquire in the appropriate communicative environment is important. This is espoused in the usage-based theory by Tomasello (2003). Children must be able to differentiate between sounds and give meaning to the utterances they have been exposed to in order to learn and use a new word.

CHAPTER THREE
DESIGN AND METHODS

3.1 Introduction

This chapter addresses the description of the methods and methodology used in achieving the stated objectives and which includes the research design used, research setting, target population, sample and sampling method used. It also looked at the tools used, the data collection procedure, data analysis and data management. It also contains information on how ethical requirements were met and trustworthiness of the research.

3.2 Study Design

This research used a cross-sectional mixed study design. Cross-sectional studies are carried out at one time or over a short period of time. It is normally undertaken to estimate the outcome of interest for a given population (Levin, 2006).

Cross-sectional mixed study design is used when the aim of the study is descriptive, usually in the form of survey. There is no hypothesis in this current study. This is because it is an exploratory study with research questions.

Some advantages of using this design are that, it is short in study duration, it is easier and faster to undertake and also very easy to replicate. Many outcomes and risk factors can be assessed. It also helps in public health planning and for the generation of hypotheses for future studies.

Some disadvantages of using this study design are that; it is difficult to make causal reference and the situation may provide a different result if another time frame had been chosen (Levin, 2006).

It was good for this research because it helped to extensively describe the first words produced by children acquiring Ewe. Parents of children from the ages of 12-18 months were given questionnaires to fill. (See Appendix 3).

This is a qualitative research in nature. This involves the act of perceptually putting pieces of information together to make wholes. When meaning is derived from varied individuals, who have varied perception, it becomes possible for many different and comprehensive meanings to be derived concerning the phenomenon in question.

In a qualitative study, the researcher apart from being involved in the planning through to data collection to analysis and discussion is also a data collecting instrument. The ability of the researcher to interpret, make meaning of what is seen and heard during data collection forms part of the data collection tools. Here, that role can be equated to a video recorder and this is critical for understanding the phenomenon.

An exploratory qualitative study is carried out when little is known about a phenomenon, a situation or a problem (Polit & Beck, 2008).

Qualitative exploratory study is conducted in natural setting hence the communities and the homes of the participants in the Keta Municipality which constituted the natural setting. The researcher placed emphasis on understanding the participants' words, gestures and expressions.

3.3 Sampling Method

A purposive sampling method (Etikan et al., 2016) was applied to recruit participants from Keta Municipality for the study.This type of sampling technique is also known as the judgmental sampling method. Participants were selected based on the special characteristics of meeting the inclusion criteria. The willingness and availability of the participants were also

taken into consideration in the selection process. It also focused on the similarity of the participants in terms of job, age, and location, in this case, rural areas (Etikan et al., 2016).

3.4 Study Sites

The study site is the Keta Municipality with the following selected towns: Kodzi, Anloga, Dzelukope. These towns were chosen due to time constraints and willingness and accessibility of the participants to the researcher. The major occupations of the residents of these communities are fishing, farming, and general trading. These towns are located along the coast in the Keta Municipality. Keta Municipal Assembly is one of the municipalities in the Volta Region of Ghana. This area is in the southern part of the Volta Region. The major dialect used is Anlo, which is a variety of Ewe spoken in the Volta Region.

These areas were suitable for the research because, the researcher found people who spoke solely Anlo Ewe to their children. This met the major criteria to be included in the study.

3.5 Study Population and Size

All children aged 12 to 18 months who met the inclusion criteria were included in the study after their parents or caregivers had consented to participate in the study. The children were recruited from child welfare clinics in their communities. All children spoke Ewe as their native language and none of the parents reported that their children had a history of speech and language impairment. The sample size was generated from OpenEpi, an open source sample size calculator with a population of 51,000 children from 0 to 14 years based on the 2010 Ghana population census from the Ghana Statistical Service. The age range of 0-14 years was chosen because it is the only available data that included children from ages 12 months to 18 months in the Keta Municipality.

Sample Size for Frequency in a Population

Population size(for finite population correction factor or fpc)(*N*):	51000
Hypothesized % frequency of outcome factor in the population (*p*):	95%+/-8.7
Confidence limits as % of 100(absolute +/- %)(*d*):	8.7%
Design effect (for cluster surveys-*DEFF*):	1

Sample Size(*n*) for Various Confidence Levels

Confidence Level(%)	**Sample Size**
95%	25
80%	11
90%	17
97%	30
99%	42
99.9%	68
99.99%	95

Equation

Sample size $\boldsymbol{n = [DEFF*Np(1-p)]/ [(d^2/Z^2_{1-\alpha/2}*(N-1)+p*(1-p)]}$

Power analysis:

The sample size was calculated with a population size of 51, 000 children from 0-14 years from the Keta Municipality based on the 2010 population census of Ghana. The researcher explored a varying power of 80 to arrive at the needed sample size. The confidence limit was 8.7% and the design effect for the survey was 1.

The researcher explored different confidence levels to arrive at the desired sample size. The resultant sample size of 95 with a confidence level of 99.99%.

3.5.1 Inclusion criteria:

Inclusion criteria is used to select samples from the collection of possible units of the general population, it decides who qualifies to be in the target population. They are the characteristics that restrict the population to a homogenous group of participants; where homogeneity is not ensured in a study, the ability to interpret finding meaningfully is challenged and likewise the act of transferability. They are also put in place to control biases.

The eligible participants in this study are those whose:

- Parents and caregivers who have consented to this study are included.
- Children have not been exposed to a second language
- Children have not yet been put in school
- Children were in the catchment areas of the research

3.5.2 Exclusion criteria:

These criteria stipulate who does not qualify to be recruited for the research. The following were the exclusion criteria to study:

- Children with any form of Developmental Language Impairments.
- Parents or caregivers who do not consent to participate.
- Bilingual and multilingual families.

3.6 Data Collection Material

A close-ended questionnaire (Appendix 3) designed for the purpose of providing a general description of the children.

A word checklist was used to compare the words the children produce against what other children at their age produced. This checklist was generated by selecting parents who have

children between the ages of 2- 3 years to recall any words their children produced at the age of 12 months to 18 months (Henrichs et al., 2010).

A word record form was used to record the words produced by the children at the specific ages of 12 to 18 months.

3.7 Data Collection Procedure

Data was collected from April 4th, 2018 to June 16th, 2018 making a total of 72 days. The purpose of the study and procedure were explained to parents and caregivers who were at the child welfare clinic at the times of the research. Parents or caregivers who expressed interest in the research were individually contacted at the child welfare clinic. Later, a follow up visit was made to the homes of those who consented to the study.

The questionnaire and the checklist were administered and collected immediately at the child welfare clinic. The questionnaire was administered to capture the parent's or caregiver's biodata and that of the children. The questionnaire also captured details about pregnancy and delivery of the children. It also sought to find out the communicative environment created for the child. The communicative environment is a language-rich environment where the child is exposed to the language of the family. The questionnaire also helped with the inclusion and exclusion criteria (this was because the developmental stages of children were obtained which indicated whether the child qualified for the research or not).

A structured face to face meeting was held with parents or caregivers to compile the words said by the children using the word record form. Those who were unable to record the words had the researcher do the writing. This meeting aided the researcher to get the words from the parents and as well observe the children in their natural environment, that is an environment that is not set up for the purpose of the research. The observation became part of the data collection because at the time of recording words from the parents, the children who were

around produce some words spontaneously. These words confirmed what their parents said for most of the words.

3.8 Data Management Plan

Data collected was kept confidential and protected with passwords in all electronic devices used and all real names were replaced with pseudonyms. Accessibility to the data lies in only the researcher and no other person. The data were managed by the author and the results made public for academic and clinical purposes only.

3.9 Ethical Consideration

The research had an ethical approval from the Ethics and Protocol Review Committee of School of Biomedical and Allied Health Sciences (see Appendix 6). The researcher provided both a Participant Information Sheet and a Consent Form which was read to the participant and they agreed (see Appendices 1 and 2). The researcher explained to the participant that partaking in the research was voluntary and the decision to withdraw at any point was accepted. This was also captured clearly on the participant information sheet.

The researcher explained to the participants the period of the research. It was explained to the participant that, in exception of the time that will be required of them, there was no danger in taking part in the research.

3.10 Summary

The study is a cross-sectional study. The participants numbering 69 out of aninitial sample size of 95 were available and selected based on the demands of the inclusion criteria using a homogeneous purposive sampling technique.

Data was collected over a period of three months. A face to face meeting was held with the parents and caregivers where the researcher wrote the words of the children as recalled by them and also observed the children talk in their natural linguistic environment.

Finally, data collected was kept confidential in all electronic devices and pseudonyms used in place of real identities. The research has an ethical clearance from the University of Ghana with Ethics identification number: SBAHS –ASLT./10337776/SA/2017-2018 (see Appendix 6).

CHAPTER FOUR
RESULTS

4.1 Introduction

This chapter of the study provides the descriptive analysis and results. The results are presented in both tables and figures.

The analyses covered words for individual children, the most common grammatical and semantic categories of the first words. It also addresses whether there were variations in these categories of words across ages for children who had different number of words in their vocabularies.

4.2 Statistical analysis

The results were analyzed using Statistical Package for Social Sciences (SPSS version 20). This was used to find out the frequency of occurrence of words. The most occurred words that the children said. It was also applied in calculating the mean, mode, median and standard deviation of the words.

4.2.1 Statistics of the Ages of the children

Table 4.1 summarizes the ages of the children in months and how many children at a particular age were recruited as captured under the frequency. This is made up of both males and females.

The table also shows the cumulative percentage of the ages that were used for the research. It also shows the number of words that were produced by the children at the ages under consideration.

Table 4.1: Age of children in months

Ages of the children in months					
	Age	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	12	11	15.9	15.9	15.9
	13	8	11.6	11.6	27.5
	14	10	14.5	14.5	42.0
	15	9	13.0	13.0	55.1
	16	7	10.1	10.1	65.2
	17	7	10.1	10.1	75.4
	18	17	24.6	24.6	100.0
	Total	69	100.0	100.0	

4.2 Descriptive statistics of the ages

Table 4.2 summarizes the mean, mode, median and standard deviation of the ages of the children.

Table 4.2: Statistics of age of children

Age of the children		
N	Valid	69
	Missing	0
Mean		15.19
Median		15.00
Mode		18
Std. Deviation		2.191
Range		6
Minimum		12
Maximum		18

4.3 Frequency of occurrence of words

This explains the number of times a word occurred (N) and response percentage in relation to the total number of words. The words that occurred most and common regardless of the gender and ages of the children become the ten of the first words. The most frequent word 'mama' occurred 66 times with a percentage of 95.7%. The least occurred words are seen

from number 42 to 60 in the table with a percentage occurrence of 1.4% for each of the words. The least occurred words are: daddy (daddy), dada (father), maama (grandmother), awu (shirt), Ɔku (eye), ŋɔtsi (nose), zikpui (stool), bɛbɛvi (toddler), dzokpo (jump), lakpatɔ (liar), grandma (grandmother), tɔɖia (paternal uncle), ta (head), tɔ (wait), dadi (cat). In all, 19 words least occurred of which 14 nouns and 5 are verbs.

Table 4:3 Frequency of Occurrence of Words

	Child's words	Intended words(adults words)	transcription of adults words	Number(N)	Responses %	Percent of cases
1.	Mama	Mama(mother)	/màmà/	66	10.2%	95.7
2.	Dada	Dada(father)	/ɖàɖà/	64	9.9%	92.8%
3.	Tsi	Tsi(water)	/tʃì/	61	9.4%	88.4%
4.	Ao	Ao(no)	/àò/	59	9.1%	85.5%
5.	pɔ	kpɔ(see)	/k͡pɔ́/	31	4.8%	44.9%
6.	Ee	ee(yes)	/èé/	26	4.0%	33.3%
7.	eya	elã(fish)	/èlã/	23	3.5%	33.3%
8.	mɔyu	mɔlu(rice)	/mɔ́lù/	23	3.5%	26.1%
9.	ege	egɛ(fallen)	/èɡè/	18	3.5%	26.1%
10.	bebevi	bebevi(toddler)	/bèbeví/	18	2.8%	20.3%
11.	apie	akplẽ(local food)	/àk͡plɔ̃̀/	14	2.8%	15.9%
12.	dzudzo	dzudzɔ(stop)	/dʒùdʒɔ̀/	11	2.2%	14.5%
13.	va	va(come)	/vá/	10	1.7%	13.0%
14.	nuka	nuka(what)	/núkà/	9	1.5%	11.6%

15.	edzo	ɛdzo(gone)	/ə̀dʒǒ/	8	1.4%	10.1%
16.	mango	amaŋgo(mango)	/àmāŋgò/	7	1.2%	10.1%
17.	tivi	tv(television)	/ti:vi/	7	1.1%	10.1%
18.	Kayami	kalãmi(fried fish)	/kálãmĭ/	7	1.1%	8.7%
19.	atsi	atsi(stick)	/àtʃĭ/	6	1.1%	8.7%
20.	dzo	dzó(go)	/dʒǒ/	6	0.9%	7.2%
21.	kokiyo	koklo	/kōklô/	5	0.9%	7.2%
22.	afim	afim(there)	/àfím/	5	0.8%	5.8%
23.	tasi	tási(stop)	/tási/	4	0.8%	2.9%
24.	dada	dàdá(mother)	/dà:dá/	2	0.8%	2.9%
25.	da	da(auntie)	/dá/	2	0.6%	1.4%
26.	si	tsi(water)	/tʃì/	1	0.3%	1.4%
27.	gatsi	gatsi(spoon)	/gàtʃĭ/	1	0.3%	1.4%
28.	awu	awu(shirt)	/àwù/	1	0.2%	1.4%
29.	ɳku	ɳku(eye)	/ŋkú/	1	0.2%	1.4%
30.	ɳɔtsi	ɳɔtsi(nose)	/ŋɔ̀tʃĭ/	1	0.2%	1.4%
31.	zipui	zikpui(stool)	/zìk͡pùí/	1	0.2%	1.4%
32.	Dzopo	dzòkpó(jump)	/dʒòk͡pó/	1	0.2%	1.4%
33.	tɔɖia	tɔɖia(paternal uncle)	/ʈɔ́ɖìá/	1	0.2%	1.4%
34.	ta	ta(head)	/tă/	1	0.2%	1.4%
35.	tɔ	tɔ(wait)	/tɔ́/	1	0.2%	1.4%
36.	dadi	dadi(cat)	/ɖàɖì/	1	0.2%	1.4%

The response percent is calculated based on the number of responses of respondents on an item over the total responses multiplied by 100. The percent case is also calculated based on the number of responses on each item over the total number of responses on each item multiplied by 100. The percent case is usually used in the data. The frequency analysis was done on the group data and not individual data.

4.4 Tones

Ewe is a tonal language. This means that a stress on a word can cause a change in meaning of the word. Example: dzó (to go) and dzò (to fly). The words are spelled the same but the stresses on them bring about the difference. Every word in Ewe must be said with the correct tone. There are high and low tones in Ewe and these do not change in context. Southern Ewe speakers such as the Anlo speakers who are the participants in the study move forward the high part of the tone following a non-high tone. Example abo ta= abota (shoulder) (Duthie, 1996).

Most of the words of the children were given by the parents, tones on those words are difficult to note. It is unclear if the children under study marked tones on their words or not.

4.5 The First Ten Common Words

The table below summarizes ten of first common words of children acquiring Ewe.

It shows the words that occurred most from the sixty-nine participants and their percentages.

Table 4.4: Ten of the First Words

	Child's words	Transcription of children's words	Intended words(adults words)	Transcription of adults words	Number(N)	Responses %	Percent of cases
1.	Mama	/mà:mà/	Mama(mother)	/màmà/	66	10.2%	95.7
2.	Dada	/dà:dà/	Dada(father)	/ɖàɖà/	64	9.9%	92.8%
3.	Tsi	/tʃì:/	Tsi(water)	/tʃì/	61	9.4%	88.4%
4.	Ao	/àò/	Ao(no)	/àò/	59	9.1%	85.5%
5.	pɔ	/pɔ́:/	kpɔ(see)	/k͡pɔ́/	31	4.8%	44.9%
6.	Ee	/èé:/	ee(yes)	/èé/	26	4.0%	33.3%
7.	eɣa	/əɣã/	elã(fish)	/əlã/	23	3.5%	33.3%
8.	mɔyu	/mɔ́ɣù/	mɔlu(rice)	/mɔ́lù/	23	3.5%	26.1%
9.	ege	/ə:gə/	ege(fallen)	/əgə/	18	3.5%	26.1%
10.	bebevi	/bè:beví/	bebevi(toddler)	/bèbeví/	18	2.8%	20.3%

The ten most occurred words fall in different grammatical categories.

Nouns occurred most representing 70% followed by verbs which represent 20% of the most occurred words. There is however, a word **ao (no)** which fell in the category of an adverb, determiner and a noun representing 10% of the most occurred words.

4.6 Category of words based on the McArthur- Bates Communication Development Inventory (MBCDI) framework

The MBCDI came about as a result of observations and laboratory studies in children's early language (Felson et al., 2007). The Gestures and Words form of the MBCDI was adapted for this research. This targets the age range of 8 months to 16 months for boys who say 0-49 words and for girls who say 0-69 words (MBCDI, 2007). The form consists of 396 words which are divided into 20 semantic categories. However, for the purposes of this research, some of the categories have been merged. The researcher tried to keep the semantic categories consistent with the English MBCDI.

The table below shows the semantic categories of the words of the children based on the MBCDI. Number of words on the MBCDI with percentage of total words

Table 4.5: Semantic Categories of the Words of Children

Semantic Category	Number of words	Percentage of total words
Animals	2	3.33
Food and drink	7	11.67
Clothing	1	1.67
Body parts	3	5.0
Furniture and rooms	2	3.33
Small household items	1	1.67
Outside things and places	1	1.67
Total	**17**	**28.34**

The semantic category summarizes the various aspects of the meaning that the children attached to the words. In all there are 17 words of the children which fall in the semantic category which represent 28.38% of the total words in their corpus. The 17 words were arrived at based on the total common words of the children and not on only the first ten words.

4.7 Grammatical category based on the MBCDI

This looks at the total grammatical category of the words said by the children. This is represented in the table below. The words fall in the following categories: Nouns, Verbs, Prepositions and question words. This is according to the classification on the MBCDI.

Table 4.6: Grammatical Category of Words Expressed by the Children

Grammatical Category	Number of words	Percentage of total words
Nouns	40	66.66
Action words (Verbs)	18	30.00
Descriptive words (Adjectives)	NA	00.00
Pronouns	NA	00.00
Prepositions and locations	1	1.67
Question words	1	1.67
Total	**60**	**100**

4.8 Influence of caregivers on the number of words

Children who spend much time with both parents were seen to have the greatest number of words followed by those who spend time with their grandparents. Others in the figure 4.1 represent children who spend time with family friends, aunties, house helps etc.

Grandparents in figure 4.1 represent children who spend time with their parents and any of their grandparents either maternal or paternal. Mother only is about the children who live with their mothers alone. Children who spend most times with their parents (mother and father) have the highest number of words in their corpus.

The figure below summarizes the number of words said and the total percentages

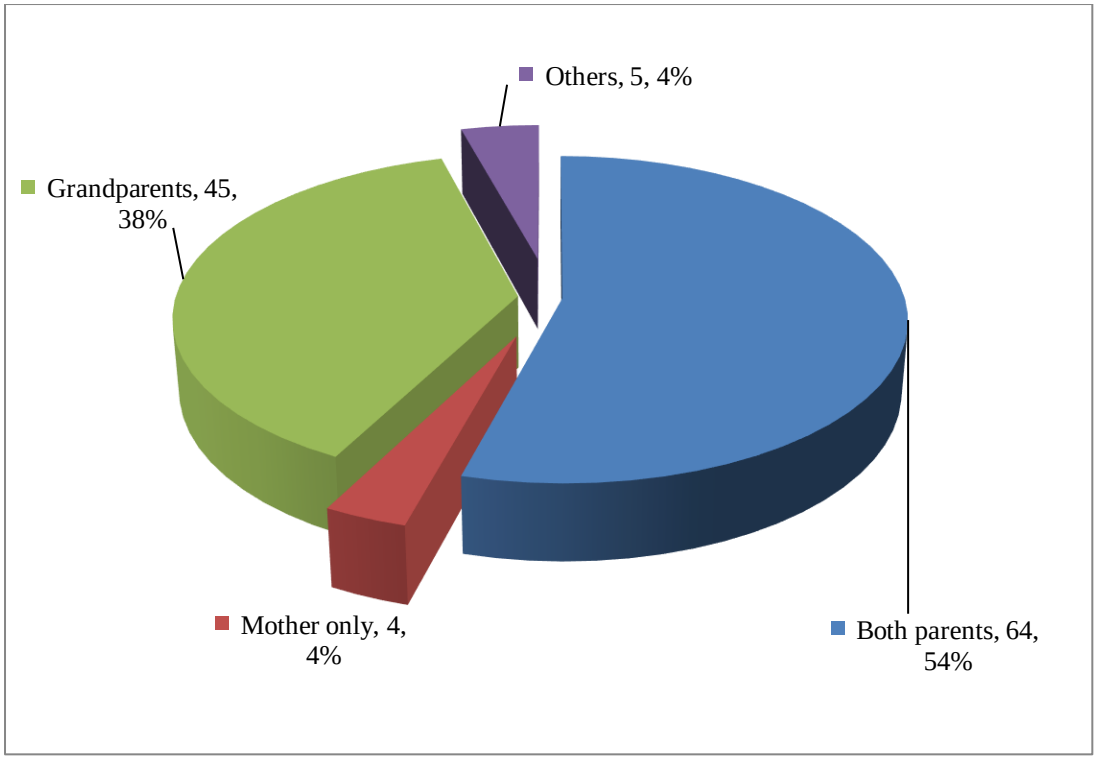

Figure 4.1: Caregivers and their influence on child's first words in percentages

CHAPTER 5
DISCUSSION

5.1 Introduction

This chapter discusses the results and analysis of the data. The results are subsequently discussed by integrating them into the literature and drawing out the significance of the results obtained.

5.2 Demographics

A total of 69 children were recruited out of initial 95 for the research consisting of 30 males and 39 females. The remaining 26 people were unavailable as at the time of compiling the questionnaires for analysis.

There was no specific quota for the various ages. They were recruited as and when they met the inclusion criteria. Per the results, there were more females in the 18 months range hence the many words that can be seen over there.

5.3 Birth Order and Words Expressed

The birth order of the children seemed to have a great influence on the number of words expressed by the individual children. Children who have older siblings tend to have some English words in their vocabulary. Even though they are not in school and their caregivers speak solely Ewe to the children they were able to acquire the English words because they may have heard their siblings use them over time. The English words though part of the children's words, are not the focus of the research and therefore did not have any influence on the final results.

5.4 Caregivers and their influence on the words acquired

The caregivers had an influence on the type of words that the children acquired and expressed. Their occupations determined the kind of words the children said first. For

example, during the data collection process, a child said ‘kalami’ (fried fish) because the grandmother who lives in the same house with them fries fish for sale. There were other examples of children whose parents sold mangoes and the children said mango as part of their first words. This confirms the research conducted by Dollagan (1999) that the occupations of parents and caregivers have an impact on the first words of children.

Figure 4.3 shows the number of children who stay with the respective caregivers. About 92% of the children who spend significant time with both parents and their grandparents expressed more words than those who spend much of the time with their mothers only and others.

The maternal input influenced vocabulary development of the children which calls for the need for parents and caregivers to talk more with their children. This creates a language-rich environment for the children and reduces the risk of any language disorder in children.

5.5 Grammatical categories of words acquired

The McArthur Bates Communicative Development inventories listed these grammatical categories in the words and gestures section. They are nouns, verbs, adjectives, pronouns, preposition, and quantifiers.

The first ten words of Ewe-speaking children fall into the following grammatical categories. This list is in order of most occurred category. They are nouns, verbs, prepositions and question words

5.6 Noun bias

The noun bias is evident in the first words of children acquiring Ewe. About 70% of the words acquired and used were nouns. This affirms the standpoint of researchers in favour of noun bias. It also showed that more nouns were used with the children by their parents or caregivers as was espoused by Gleitman (1990).

5.7 Influence of society on the words acquired by the children

The language environment that the children found themselves in also influenced the words they acquired and used. They used some words such as auntie, mama, daddy, TV, grandpa, grandma etc.

CHAPTER 6
CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

A study of the first ten words of ewe-speaking children between 12-18 months in the Keta Municipality was conducted. In this chapter, conclusions arising from the results as well as limitations encountered in the study are presented. Recommendations for academic and professional considerations for future actions are also indicated.

The empirical study was conducted based on three research questions:

- What are the common words spoken by children acquiring Ewe?
- Do children show word class bias in acquiring first words in Ewe?
- What types of words by semantic category are used by children acquiring Ewe according to the McArthur Bates Communication Development Inventory (MBCDI) framework?

6.2 Conclusion

The participants of the study were parents who have children from the ages of twelve to eighteen (12-18) months. They were recruited from the child welfare centers in their communities.

The study determined ten of the common words of children acquiring Ewe. Among the first ten common words, mama, dada and tsi were the most expressed words across all age groups. Most of the words in the first ten are nouns which answers the research question of noun bias in the ten of the first words of children acquiring Ewe.

Even though most parents spoke Ewe with the children, 15% of the children said other words other than Ewe. This happened as a result of the language communities of the children. About

30% of the children have their older siblings in school and about 20% are exposed to television. The words are found in (Appendix 6) which contains all the words the children said. The non-words or idiomorphs such as naana, hammu etc. were taken out of the analysis. This is because different children used different idiomorphs to represent the actual word.

6.3 Limitations of the research

The sample size limited the generalization of the results since it included Anlo Ewe-speakers from the southern part of the Volta Region. The size of this study was smaller than those in similar studies but good enough for exploratory studies.

The timeframe for the study was very short as compared to the other studies which usually were longitudinal studies. The limitation was due to the limited time and resources available for the study.

6.4 Recommendations for future Research

The results and conclusions drawn from the research indicated several significant aspects that require further investigation. Recommendations for an improved first language research in the Ghanaian context are enumerated below:

- Longitudinal study of first language acquisition should be carried out across all languages in Ghana. This will show the language study patterns of the children and how they learn them.
- The age bracket should be increased to cover a wider age range as is seen in the MBCDI.

Findings from the current study have significant importance for the language assessments of children acquiring Ewe who turn up for speech and language therapy services. This will give the therapists an idea of what to expect during an assessment even though the words may not be standardized. The results will also aid in the development of hypothesis in future research.

References

Bergelson, E., &Swingley, D. (2012). At 6–9 months, human infants know the meanings of many common nouns. *Proceedings of the National Academy of Sciences*, *109*(9), 3253-3258.

Braginsky, M., Yurovsky, D., Marchman, V. A., & Frank, M. C. (2016). From uh-oh to tomorrow: Predicting age of acquisition for early words across languages. In *Proceedings of the 38th Annual Conference of the Cognitive Science Society*.

Chomsky, N. (1969). Knowledge of language. *John Locke Lectures*, London.

Christine A. Dollaghan, T. F. C., Jack L. Paradise, Heidi M. Feldman, Janine E. Janosky, Dayna N. Pitcairn,… Marcia Kurs-Lasky. (1999). Maternal Education and Measures of early Speech and Language. *Journal of Speech, Language and Hearing Research, 42*, 1432-1443. doi:1092-4388/4206-1432

Clark, R. (1982). Theory and method in child-language research: Are we assuming too much. *Language development*, *1*, 1-36.

de Boysson-Bardies, B., & Vihman, M. M. (1991). Adaptation to language: Evidence from babbling and first words in four languages. *Language*, *67*(2), 297-319.

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*(6), 1432-1443.

Duthie, A.S.(1996). Introducing Ewe Linguistic Patterns: A text book of phonology, grammar and semantics. Accra: Ghana Universities Press.

Echols, C. H., & Newport, E. L. (1992). The role of stress and position in determining firstwords. *Language acquisition*, *2*(3), 189-220. Doi: 10.1207/s15327817la0203_1

Fenson, L., Dale, P., Reznick, J. S., Thal, D., Bates, E., Hartung, J., et al. (1993). *MacArthur Communicative Development Inventories: User'sguide and technical manual.* San Diego, CA: Singular.

Fernald, A., Marchman, V. A., & Weisleder, A. (2013). SES differences in language processing skill and vocabulary are evident at 18 months. *Dev Sci, 16*(2), 234-248. doi:10.1111/desc.12019

Genesee, F., Lindholm-Leary, K., Saunders, W., & Christian, D. (2005). English language learners in US schools: An overview of research findings. *Journal of Education for Students Placed at Risk, 10*(4), 363-385.

George Hollich, P. W. J., & Michael R. Brent. (2000). How Infants Use the Words They Know to Learn New Words. *25th Annual Boston University Conference on Language Development*., (35-364). Boston, MA; Cascadilla Press

Gentner, D. (1982). Why nouns are learned before verbs: Linguistic relativity versus natural partitioning. *Center for the Study of Reading Technical Report; no. 257.*

Ghana Statistical Service. (2012). 2010 population and housing census: summary report of final results. Retrieved from http://www.statsghana.gov.gh/docfiles/2010phc/Census2010_Summary_report_of_final_results.pdf

Gleitman, L. (1990). The structural sources of verb meanings. *Language acquisition, 1*(1), 3-55.

Goodman, J. C., Dale, P. S., & Li, P. (2008). Does frequency count? Parental input and the acquisition of vocabulary. *Journal of child language, 35*(3), 515-531. doi:10.1017/S0305000907008641

Goldfield, B. A. (1993). Noun bias in maternal speech to one-year-olds. *Journal of child language, 20*(1), 85-99.

Gorter, D. (Ed.). (2006). *Linguistic landscape: A new approach to multilingualism*. Multilingual Matters.

Etikan, I., Musa, S.A., & Alkassim, S.R. (2016). Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied StatisticsVol. 5, No. 1, 2016*, pp 1-4. doi: 10.11648/j.ajtas.20160501.11

Jackson-Maldonado, D. (2013). MacArthur-Bates Communicative Development Inventories. *In The Encyclopedia of Applied Linguistics*, Chapelle. C.An (editor), New Jersey: Blackwell Publishing Ltd. doi:10.1002/9781405198431.wbeal0745

Kelly, B. F., Forshaw, W., Nordlinger, R., & Wigglesworth, G. (2015). Linguistic diversity in first language acquisition research: Moving beyond the challenges. *First Language, 35*(4-5), 286-304. doi:10.1177/0142723715602350

Kuczaj, S. A. (Ed.). (1982). *Language development: Syntax and semantics* (Vol. 2). Psychology Press

Lenneberg, E. H. (1967). The biological foundations of language. *Hospital Practice*, *2*(12), 59-67. doi:10.1080/21548331.1967.11707799

Levin, K. A. (2006). Study design III: Cross-sectional studies. *Evidence-based dentistry*, *7*(1), 24.

McGillion, M., Pine, J. M., Herbert, J. S., & Matthews, D. (2017). A randomized controlled trial to test the effect of promoting caregiver contingent talk on language development in infants from diverse socioeconomic status backgrounds. *J Child Psychol Psychiatry, 58*(10), 1122-1131. doi:10.1111/jcpp.12725

McGillion, M., Herbert, J. S., Pine, J., Vihman, M., DePaolis, R., Keren-Portnoy, T., & Matthews, D. (2017). What paves the way to conventional language? The predictive value of babble, pointing, and socioeconomic status. *Child development*, *88*(1), 156-166.

Morales, M., Mundy, P., Delgado, C.E.F., Yale, M., Messinger, D., Neal, R., & Schwartz. H. K. (2000). Responding to Joint Attention Across the 6- Through 24-Month Age Period and Early Language Acquisition. *Journal of Applied Developmental Psychology, 21*(3), 283–298.

Mundy, P., Sigman, M., & Kasari, C. (1990). A longitudinal study of joint attention and language development in autistic children. *Journal of Autism and Developmental Disorders, 20*(1), 115-128.

Murdoch, B. E. (2010). The cerebellum and language: historical perspective and review. *Cortex, 46*(7), 858-868.

Neyman, J. (1934). On the two different aspects of the representative method: the method of stratified sampling and the method of purposive selection. *Journal of the Royal Statistical Society, 97*(4), 558-625.

Owens, Jr., R. E. (2016). An Introduction: *Language Development* (9th edition). USA: Pearson Education, Inc.

Owens Jr, R. E. (2015). *Language development: An introduction*. Pearson.

Pathology, S. (2017). Communication Milestones 12 months to 5 years. In *Speech Pathology*. Australia (Ed.). Australia.

Paul, R., Bishop, D. V. M., & Leonard, L. B. (2000). Predicting outcomes of early expressive language delay: Ethical implications. *Speech and language impairments in children: Causes, characteristics, intervention and outcome*, 195-209.

Perlovsky, L. (2009). Language and cognition. *Neural Networks, 22*(3), 247-257.

Peters, A. M. (1983). *The units of language acquisition* (Vol. 1). Cambridge University Press Archive.

Peters, A. M. (1977). Language learning strategies: does the whole equal the sum of the parts?. *Language*, 560-573.

Rice, M. L. (1989). Children's language acquisition. *American Psychologist*, *44*(2), 149-156.

Roulstone, S., Loader, S., Northstone, K., & Beveridge, M. (2002). The speech and language of children aged 25 months: Descriptive data from the Avon Longitudinal Study of Parents and Children. *Early Child Development and Care*, *172*(3), 259-268. DOI: 10.1080/03004430212126

Rossetti, L.M. (1990).The Rossetti Infant-Toddler Language Scale: *Examiners Manual.* USA: LinguiSystems.

Saffran, J.R., Senghas A., & Trueswell, J.C., (2001). The Acquisition of Language by Children. *PNAS, 98*(23). doi:doi/10.1073/pnas.231498898

Sue Roulstone, Sue Loader, Kate Northstone & Mike Beveridge (2002) The Speech and Language of Children Aged 25 Months: Descriptive Data from the Avon Longitudinal Study of Parents and Children. *Early Child Development and Care*, 172(3), 259-268, DOI: 10.1080/03004430212126

Samuelson, L. K., & McMurray, B. (2017). What does it take to learn a word? *Wiley Interdiscip Rev Cogn Sci, 8*(1-2). doi:10.1002/wcs.1421

Stauffer, R. G. (1965). Concept development and reading. *The Reading Teacher, 19*(2), 100-105. doi: http://www.jstor.org/stable/20195497

Swingley, D. (2012). Cognitive development in language acquisition. *Language Learning and Development, 8*(1), 1-3. doi:10.1080/15475441.2012.631852

Tamis-LeMonda, C. S., Bornstein, M. H., &Baumwell, L. (2001). Maternal responsiveness and children's achievement of language milestones. *Child development*, *72*(3), 748-767

Tardif, T., Fletcher, P., Liang, W., Zhang, Z., Kaciroti, N., & Marchman, V. A. (2008). Baby's first 10 words. *Dev Psychol*, *44*(4), 929-938. doi:10.1037/0012-1649.44.4.929

Tardif, T., Shatz, M., & Naigles, L. (1997). Caregiver speech and children's use of nouns versus verbs: A comparison of English, Italian, and Mandarin. *Journal of Child Language*, *24*(3), 535-565.

Tomasello, M. (2008). Acquiring linguistic constructions. *Child and adolescent development*, 263.

Tomasello, M. (2003). Constructing a language: A usage-based approach to child language acquisition. *Cambridge (MA)*.

Tomasello, M. (2000). First steps toward a usage-based theory of language acquisition. *Cognitive linguistics*, *11*(1/2), 61-82.

Tomasello, M. (1988). The role of joint attentional processes in early language development. *Language sciences*, *10*(1), 69-88.

Tsugawa, L. (2004). *A Childs First Wordsa Tool for Developing an Initial Lexicon*

Wilkinson, K. M., Dube, W. V., & McIlvane, W. J. (1996). A cross-disciplinary perspective on studies of rapid word mapping in psycholinguistics and behavior analysis. *Developmental Review*, *16*(2), 125-148.

Yule, G. (2016). *The study of language*. Cambridge University Press

Zwanziger, E. E., Allen, S. E., & Genesee, F. (2005). Cross-linguistic influence in bilingual acquisition: Subject omission in learners of Inuktitut and English. *Journal of Child Language*, *32*(4), 893-909.

Appendices

Appendix 1

UNIVERSITY OF GHANA

Department of Audiology,Speech
and Language Therapy
School of Allied Health Sciences
College of Health Sciences
The University of Ghana
PO Box KB 143
Korle- Bu

PARTICIPANT INFORMATION SHEET

My name is Godwin Tettevi a graduate student at the University of Ghana. I am inviting you to participate in a research study. Involvement in the study is voluntary and so you may choose to participate or not.

I am interested in knowing the first ten words of Ewe-speaking children in Ghana. You will be asked to answer questions from a questionnaire and fill a word record form. All personal information will be kept anonymous and confidential. You will be given a pseudonym (a fake name) and no one will have access to your answers except me.

The research will help support the work of professionals working in child language development and inform the expectations of parents. By understanding and identifying 'red flags' in early child language development. In the end, you will be given a word certificate containing the picture of your child and words your child said. There will be no payment for participation.

The study has received ethical approval from the University of Ghana. If you start but do not wish to continue you can withdraw from the study without punishment. This form is for you to keep. If you have any concerns please contact me on this number (0270557949/0247920656).

Date: ---------- Name and signature: ----------

Appendix 2

UNIVERSITY OF GHANA

Department of Audiology,Speech and Language Therapy
School of Allied Health Sciences
College of Health Sciences
The University of Ghana
PO Box KB 143
Korle- Bu

VOLUNTEER AGREEMENT FORM

DEPARTMENT OF AUDIOLOGY, SPEECH AND LANGUAGE THERAPY SCHOOL OF BIOMEDICAL AND ALLIED HEALTH SCIENCES COLLEGE OF HEALTH SCIENCES, UNIVERSITY OF GHANA

I, ----------have read and asked relevant questions about the research on the First Ten Words used by Ewe-speaking children from 12-18 months in Ghana. The questions have been answered to my satisfaction and I have agreed to participate.

I certify that nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to me.

_____ _____

Date **Signature and name of person who obtained consent**

Appendix 3

UNIVERSITY OF GHANA

Department of Audiology,Speech
and Language Therapy
School of Allied Health Sciences
College of Health Sciences
The University of Ghana
PO Box KB 143
Korle- Bu

PARENT QUESTIONNAIRE

Important: YOU DO NOT NEED TO WRITE YOUR CHILD'S NAME ON THE QUESTIONNAIRE.

Was there anything unusual about your pregnancy or birth? Yes ------- No-------

If yes, briefly describe.

What is the birth position of your child?

-

Are there any other children beside the immediate family?

-

Are languages other than Ewe spoken to the child?

-

Does your child seem to understand most of what you say?

-

Who does your child occasionally spends time with? (Check all that apply.)

a. Both parents b. Mother only c. Father only

d. Grandparents e. Other ----------

Appendix 4

UNIVERSITY OF GHANA

Department of Audiology,Speech
and Language Therapy
School of Allied Health Sciences
College of Health Sciences
The University of Ghana
PO Box KB 143
Korle-Bu

WORD RECORD FORM

MONTH: ---------- PSEUDONYM----------

DATE OF BIRTH ---------- AGE: ----------

NO.	DATE	WORD
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Appendix 5

UNIVERSITY OF GHANA

Department of Audiology,Speech and Language Therapy
School of Allied Health Sciences
College of Health Sciences
The University of Ghana
PO Box KB 143
Korle- Bu

WORD CHECKLIST

MONTH: ---------- PSEUDONYM----------
--

DATE OF BIRTH ---------- AGE: ----------

NO.	Ewe	English	Response from participant
1.	mama	mummy	
2.	dada	dad	
3.	da	dad	
4.	papa	father	
5.	ao	no	
6.	ee	yes	
7.	tsii	water	
8.	hamuu	food	
9.	naana	fish	
10.	mefoge	I will beat you	

Appendix 6

Word Frequencies table

	Words	transcription	N	Responses %	Percent of Cases
1.	mama (mother)	/mãmà/	66	10.2%	95.7%
2.	dada (father)	/ɖãɖà/	64	9.9%	92.8%
3.	tsi (water)	/tʃì/	61	9.4%	88.4%
4.	ao (no)	/àò/	59	9.1%	85.5%
5.	kpɔ (look or see)	/k͡pɔ́/	31	4.8%	44.9%
6.	me*f*oge (I will beat you)	/məɸògə́/	29	4.5%	42.0%
7.	ee (yes)	/èé/	26	4.0%	37.7%
8.	hamuu (food-motherese)	/hàmùú/	23	3.5%	33.3%
9.	elã (fish)	/əlɜ̃/	23	3.5%	33.3%
10.	mɔlu (rice)	/mɔ́lù/	23	3.5%	33.3%
11.	ege (it has fallen)	/ə́gə́/	21	3.2%	30.4%
12.	naana (fish-motherese)	/nàánà/	18	2.8%	26.1%
13.	akplẽ (local food)	/àk͡plɜ̃/	18	2.8%	26.1%
14.	dzudzɔ (stop)	/dʒùdʒɔ̀/	14	2.2%	20.3%
15.	va (come)	/vă/	11	1.7%	15.9%
16.	nuka (what)	/núkà/	10	1.5%	14.5%
17.	edzo (it is gone)	/ə́dʒó/	10	1.5%	14.5%
18.	ma*f*o (I will beat)	/máɸò/	9	1.4%	13.0%
19.	toffee (toffee)	/tɔ́fì/	9	1.4%	13.0%

20.	amaŋgo (mango)	/àmāŋgò/	9	1.4%	13.0%
21.	tv (television)	/tv/	9	1.4%	13.0%
22.	kalãmi (fried fish)	/kálɐ̃́mĭ/	8	1.2%	11.6%
23.	papa (father or grandfather)	/pàpá/	7	1.1%	10.1%
24.	*auntie (auntie both maternal and paternal)		7	1.1%	10.1%
25.	atsi (stick)	/àtʃĭ/	7	1.1%	10.1%
26.	dzo (go)	/dʒŏ/	7	1.1%	10.1%
27.	koklo (fowl)	/kōklô/	6	0.9%	8.7%
28.	afim (there)	/àfɪ̀ḿ/	6	0.9%	8.7%
29.	tasi (stop)	/tásí/	5	0.8%	7.2%
30.	dada (grandmother)	/d̪àd̪á/	5	0.8%	7.2%
31.	da (mother)	/dă/	4	0.6%	5.8%
32.	*grandpa (grandfather)		4	0.6%	5.8%
33.	manyemi (I will ease myself)	/măɲəmí/	3	0.5%	4.3%
34.	si (water)	/tʃì/	2	0.3%	2.9%
35.	*sister (sister)		2	0.3%	2.9%
36.	*brother (brother)		2	0.3%	2.9%
37.	gatsi (spoon)	/gàtʃĭ/	2	0.3%	2.9%
38.	maɖɔaɖuɖɔ(I will urinate)	/máɖɔ́ àɖùɖɔ́/	2	0.3%	2.9%
39.	*uncle (uncle- both paternal and maternal)		2	0.3%	2.9%
40.	*maɖɔɖɔ (I will urinate)		2	0.3%	2.9%

41.	edzoe (it is gone)	/ɘdʒó/	2	0.3%	2.9%
42.	*daddy (daddy)		1	0.2%	1.4%
43.	*dada (father)		1	0.2%	1.4%
44.	maama (grandmother)	/màmá/	1	0.2%	1.4%
45.	awu (shirt)	/àwù/	1	0.2%	1.4%
46.	Ŋku (eye)	/ŋ̀kú/	1	0.2%	1.4%
47.	ŋɔtsi (nose)	/ŋ̀ɔ̀tʃĩ/	1	0.2%	1.4%
48.	zikpui (stool)	/zìk͡pùí/	1	0.2%	1.4%
49.	kpɔ de (look at that)	/k͡pɔ́ ɖá/	1	0.2%	1.4%
50.	bɛbɛvi (toddler)	/bèběví/	1	0.2%	1.4%
51.	makpɔ de (let me see)	/mák͡pɔ́/	1	0.2%	1.4%
52.	dzokpo (jump)	/dʒòk͡pó/	1	0.2%	1.4%
53.	*dzudzɔ la (stop it)		1	0.2%	1.4%
54.	lakpatɔ (liar)	/làk͡pàtɔ́/	1	0.2%	1.4%
55.	*grandma (grandmother)		1	0.2%	1.4%
56.	tɔɖia (parternal uncle)	/ʈɔ́ɖìá/	1	0.2%	1.4%
57.	namnam (fish-motherese)	/nàmnàm/	1	0.2%	1.4%
58.	ta (head)	/tă/	1	0.2%	1.4%
59.	tɔ (wait)	/tɔ́/	1	0.2%	1.4%
60.	dadi (cat)	/ɖàɖì/	1	0.2%	1.4%

Appendix 7

UNIVERSITY OF GHANA
SCHOOL OF BIOMEDICAL AND ALLIED HEALTH SCIENCES

30th January, 2018.

Mr. Godwin Tettevi,
Dept. of Audiology, Speech and Language Therapy,
SBAHS,
Korle-Bu.

Dear Mr. Tettevi,

ETHICS CLEARANCE

Ethics Identification Number: SBAHS – ASLT./10337776/SA/2017-2018.

Following a meeting of the Ethics and Protocol Review Committee of the School of Biomedical and Allied Health Sciences held on Tuesday 30th January, 2018. I write on behalf of the Committee to approve your research proposal as follows:

TITLE OF RESEARCH PROPOSAL: FIRST TEN WORDS EXPRESSED BY TYPICALLY DEVELOPING EWE-SPEAKING CHILDREN BETWEEN THE AGES OF 12-18 MONTHS IN GHANA.

This approval requires that you submit three-monthly review reports of the protocol to the Committee and a final full review to the Committee on completion of the research. The Committee may observe the procedures and records of the research during and after implementation.

Please note that any significant modification of the research must be submitted to the Committee for review and approval before its implementation.

You are required to report all serious adverse events related to this research to the Committee within seven (7) days verbally and fourteen (14) days in writing.

As part of the review process, it is the Committee's duty to review the ethical aspects of any manuscript that may be produced from this research. You will therefore, be required to furnish the Committee with any manuscript for publication.

This reviewed report is valid till 31st. August, 2018.

Please always quote the ethical identification number in all future correspondence in relation to this protocol.

Thank you.

Yours sincerely,

Dr. S. D. Amanquah
(Chairman, Ethics and Protocol Review Committee)

Cc: Dean
Head, Dept. of Audiology, Speech and Language Therapy,
School Administrator

COLLEGE OF HEALTH SCIENCES
P. O. Box KB 143, Korle Bu, Accra, Ghana
• Telephone: +233 (0) 302 687 975 • Email: sbahs@chs.ug.edu.gh • Website: www.chs.ug.edu.gh