

**SCREENING TEST FOR THE ACQUISITION OF SYNTAX IN  
TELUGU: AN ADAPTATION OF STAS-K**

**Project funded by All India Institute of Speech and Hearing Research Fund  
(ARF)**

(2010-2011)

Sanction Number: SH/CDN/ARF/3.67/2010-11

Total grants: Rs. 3, 01,000.00

Total Duration of the project: 12 months

**Principal Investigator**

Mr. Gopi Kishore Pebbili  
Lecturer in Speech Pathology  
Department of Speech Language Pathology

**Co-investigators**

(Late) Dr. Vijaylakshmi Basavaraj  
Former Director  
AIISH, Mysore.

Dr. S. P. Goswami  
Professor, Department of SLP  
AIISH, Mysore.

**Research Officer**

Ms. M. Sri Pallavi  
Department of Speech Language Pathology

**All India Institute of Speech and Hearing  
Manasagangothri, Mysore-570006**

## **Acknowledgments**

The investigators would like to thank Director, All India Institute of Speech and Hearing, Mysore, for funding the project and providing the infrastructure to carry out the project work. Authors deeply acknowledge the heads, teachers and parents of the children, for the co-operation extended during data collection. A sincere appreciation to the children for their enthusiastic participation during data collection. Special thanks to Dr. M.S. Vasanthalakshmi, Lecturer in Bio-statistics, Mr. C.D. Santhosha, Lecturer in Bio-statistics AIISH, Mysore, for the statistical analysis.

<b>(Late) Dr Vijayalakshmi Basavaraj</b>	<b>Dr S.P.Goswami</b>	<b>Mr. Gopi Kishore</b>
Co-Investigator	Co-Investigator	Principal Investigator

## TABLE OF CONTENTS

<b>Chapter</b>	<b>Title</b>	<b>Page No.</b>
I	Introduction	01
II	Review of Literature	05
III	Method	49
IV	Results	58
V	Discussion	133
VI	Summary and Conclusion	142
	References	
	Appendix I	
	Appendix II	
	Appendix III	

## LIST OF TABLES

<b>Table No.</b>	<b>Title</b>	<b>Page No.</b>
1	Piaget's stages of development	09
2	Brown's stages for Mean Length of Utterance	18
3	Development of sentence forms within Brown's Stages	19
4	Development of pronouns within Brown's Stages	20
5	Development of negative sentences	21
6	Developmental four phases of the ability to formulate questions	22
7	Order of acquisition of Wh-questions	23
8	Stages of syntax development	24
9	Studies done on the Negation	34
10	Studies done on the Wh questions	35
11	Studies done on the Yes-No questions	36
12	Studies done on the Person	37
13	Studies done on Tenses	38
14	Indian Studies on tests of language abilities of children	46
15	Age group and the corresponding age range of the participants	49
16	Number of items under each grammatical structure	51
17	Mean and standard deviation (SD) scores for comprehension of simple sentences in males and females	74
18	Mean and standard deviation (SD) scores for expression of simple sentences in both males and females	74
19	Mean and standard deviation (SD) scores for comprehension of persons in both males and females	75
20	Mean and standard deviation (SD) scores for expression of persons in both males and females	75
21	Mean and standard deviation (SD) scores for comprehension of case markers in both males and females.	76
22	Mean and standard deviation (SD) scores for expression of case markers in males and females	76
23	Mean and standard deviation (SD) scores for comprehension of adjectives in males and females	77

24	Mean and standard deviation (SD) scores for expression of adjectives in males and females	77
25	Mean and standard deviation (SD) scores for comprehension of post positions in both males and females	78
26	Mean and standard deviation (SD) scores for expression of post positions in both males and females	79
27	Mean and standard deviation (SD) scores for comprehension of definite determiner in both males and females	80
28	Mean and standard deviation (SD) scores for expression of definite determiner in both males and females	80
29	Mean and standard deviation (SD) scores for comprehension of tense markers in both males and females	81
30	Mean and standard deviation (SD) scores for expression of tense markers in both males and females	81
31	Mean and standard deviation (SD) scores for comprehension of number markers in both males and females	82
32	Mean and standard deviation (SD) scores for expression of number markers in both males and females	82
33	Mean and standard deviation (SD) scores for comprehension of Wh-Questions in both males and females	83
34	Mean and standard deviation (SD) scores for expression of Wh-Questions in both males and females	83
35	Mean and standard deviation (SD) scores for comprehension of Yes/No-Questions in both males and females	84
36	Mean and standard deviation (SD) scores for expression of Yes/No-Questions in both males and females	85
37	Mean and standard deviation (SD) scores for comprehension of Negatives in both males and females	85
38	Mean and standard deviation (SD) scores for expression of Negatives in both males and females	86
39	Mean and standard deviation (SD) scores for comprehension of embedded sentences in both males and females	86
40	Mean and standard deviation (SD) scores for expression of	87

	embedded sentences in both males and females	
41	Mean and standard deviation (SD) scores for comprehension of coordinated sentences in both males and females	88
42	Mean and standard deviation (SD) scores for expression of coordinated sentences in both males and females	88
43	Mean and standard deviation (SD) scores for Narration in both males and females	89
44	Mean (%) and Standard deviation (SD) for grammatical categories comprehension across age groups in females	90
45	Mean (%) and Standard deviation (SD) for grammatical categories expression across age groups in females	91
46	Mean (%) and Standard deviation (SD) for grammatical categories comprehension across age groups in males	92
47	Mean (%) and Standard deviation (SD) for grammatical categories comprehension across age groups in males	93
48	Mean percentage scores for simple sentences expression in females	97
49	Mean percentage scores simple sentences expression in females	97
50	Mean percentage scores for person marker comprehension in males	98
51	Mean percentage scores for person marker comprehension in females	98
52	Mean percentage scores for person marker expression in males	99
53	Mean percentage scores for person marker expression in females	99
54	Mean percentage scores for case marker comprehension in males	100
55	Mean percentage scores for case marker comprehension in females	100
56	Mean percentage scores for case marker expression in males	100
57	Mean percentage scores for case marker expression in females	101
58	Mean percentage scores for adjective comprehension in males	101
59	Mean percentage scores for adjective comprehension in females	102
60	Mean percentage scores for adjective expression in males	102
61	Mean percentage scores for adjective expression in females	102

62	Mean percentage scores for post-position comprehension in males	103
63	Mean percentage scores for post-position comprehension in females	103
64	Mean percentage scores for post-position expression in males	104
65	Mean percentage scores for post-position expression in females	104
66	Mean percentage scores for definite determiner comprehension in males	105
67	Mean percentage scores for definite determiner comprehension in females	105
68	Mean percentage scores for definite determiner expression in males	106
69	Mean percentage scores for definite determiner expression in females	106
70	Mean percentage scores for tense marker comprehension in males	107
71	Mean percentage scores for tense marker comprehension in females	107
72	Mean percentage scores for tense marker expression in males	107
73	Mean percentage scores for tense marker expression in females	108
74	Mean percentage scores for number marker comprehension in males	108
75	Mean percentage scores for number marker comprehension in females	109
76	Mean percentage scores for number marker expression in males	109
77	Mean percentage scores for number marker expression in females	109
78	Mean percentage scores for Wh-question comprehension in males	110
79	Mean percentage scores for Wh-question comprehension in females	110
80	Mean percentage scores for Wh-question expression in males	111
81	Mean percentage scores for Wh-question expression in females	111
82	Mean percentage scores for Yes-No question comprehension in males	112
83	Mean percentage scores for Yes-No question comprehension in females	112

	females	
84	Mean percentage scores for Yes-No question expression in males	112
85	Mean percentage scores for Yes-No question expression in females	113
86	Mean percentage scores for negatives comprehension in males	113
87	Mean percentage scores for negatives comprehension in females	114
88	Mean percentage scores for negatives expression in males	114
89	Mean percentage scores for negatives expression in females	114
90	Mean percentage scores for embedded sentences comprehension in males	115
91	Mean percentage scores for embedded sentences comprehension in females	115
92	Mean percentage scores for embedded sentences expression in males	116
93	Mean percentage scores for embedded sentences expression in females	116
94	Mean percentage scores for coordinated sentences comprehension in males	117
95	Mean percentage scores for coordinated sentences comprehension in females	117
96	Mean percentage scores for coordinated sentences expression in males	118
97	Mean percentage scores for coordinated sentences expression in females	118
98	Normative scores for comprehension of grammatical structures in males	119
99	Normative scores for expression of grammatical structures in males	120
100	Normative scores for comprehension of grammatical structures in females	121
101	Normative scores for expression of grammatical structures in females	122



## LIST OF FIGURES

<b>Figure No.</b>	<b>Title</b>	<b>Page No.</b>
1	Comprehension and expression scores for simple sentences in males	58
2	Comprehension and expression scores for simple sentences in females	59
3	Comprehension and expression scores for person marker in males	59
4	Comprehension and expression scores for person marker in females	60
5	Comprehension and expression scores for case marker in males	60
6	Comprehension and expression scores for case marker in females	61
7	Comprehension and expression scores for adjectives in males	61
8	Comprehension and expression scores for adjectives in females	62
9	Comprehension and expression scores for post positions in males	62
10	Comprehension and expression scores for post positions in females	63
11	Comprehension and expression scores for definite determiner in males	64
12	Comprehension and expression scores for definite determiner in females	64
13	Comprehension and expression scores for tense markers in males	65
14	Comprehension and expression scores for tense markers in females	65
15	Comprehension and expression scores for number markers in males	66
16	Comprehension and expression scores for number markers in females	66
17	Comprehension and expression scores for Wh-questions in	67

	males	
18	Comprehension and expression scores for Wh-questions in females	67
19	Comprehension and expression scores for Yes-No questions in males	68
20	Comprehension and expression scores for Yes-No questions in females	68
21	Comprehension and expression scores for negatives in males	69
22	Comprehension and expression scores for negatives in females	69
23	Comprehension and expression scores for embedded sentences in males	70
24	Comprehension and expression scores for embedded sentences in females	70
25	Comprehension and expression scores for co-ordinated sentences in males	71
26	Comprehension and expression scores for co-ordinated sentences in females	71
27	Comprehension and expression scores for narration in males	72
28	Comprehension and expression scores for narration in females	72

## CHAPTER I

### INTRODUCTION

Language is defined as “a socially shared code or conventional system for representing concepts through the use of arbitrary symbols and rule-governed combinations of those symbols” (Owens, 1996). The shared code is a device that enables each “to represent an object, event or relationship without reproducing it” (Bloom and Lahey, 1978). Language can also be defined as a social behavior, as a complex learned behavior, or a system of mental rules (McLaughlin, 1998, 2006).

Though language development is a process that starts early in human life, several processes it takes for a child to acquire the various aspects of language. The language development during childhood moves from simple to complex. Infants use vocal cries and other preverbal vocalizations to communicate their needs. The language development starts as a recall of simple words without associating meaning, but as the child grows, the words are associated with meaning and the child learns the connection between the words. Gradually, the child starts speaking in sentences. The task of learning language grows difficult with age, but a typically developing child is biologically and socially capable to learn language. The most important period of language development in a child’s life is between zero and five years of age and is called as ‘*critical period*’. It is considered critical because, more the language exposure during this period, faster the child will be able to learn the language.

The way a child acquires his/her first language has perplexed researchers for decades. There have been many studies and theories as well as arguments on this subject, but this question keeps fascinating people and the research in this area continues till date. On the basis of conclusions drawn from various studies, it can be said that children really do not just imitate what they hear, but that they try to

construct their own simplified grammatical (syntactic) rules which they use to form sentences. These rules get modified as the child grows; the child's increasing vocabulary and intellectual processes also play an important role in this process. This allows the child to gradually start using more and more complex structures until the language they use is syntactically similar to adult like language. Thus, syntax of a language plays a very crucial role in providing the necessary structure to the language that the child acquires in his/her early years.

Language is a complex system and could be understood well by breaking it into its functional components. Components of language include form, content and use (Bloom & Lahey, 1978). Form includes phonology, morphology and syntax, the components that connects sounds and symbols in order. Content includes the meaning or semantics. The Use is termed as pragmatics. These five components phonology, morphology, syntax, semantics and pragmatics are basic rule systems found in any language.

Language is used to code ideas i.e., one uses symbols – a sound, a word etc; to stand for an event, object, or relationship. In order to communicate these ideas to others, certain forms are used, which include appropriate sound units (phonology), the appropriate word order (syntax), and the appropriate words and word beginnings and endings (morphology) to clarify meaning more specifically. Speakers use these components of language to achieve certain communication needs, such as gaining information, questioning, greeting or responding.

The word syntax originates from the Greek words *syn*, meaning 'together' and *taxis*, meaning 'sequence/order'. Syntax refers to the rules that govern the way words combine to form phrases, clauses, and sentences. Syntax specifies which word combinations are acceptable or grammatical, and which are not (Owens, 1996). There

have been various studies on the acquisition of syntax across various languages over the past (*English* language: Klima & Bellugi, 1966; Bellugi, 1967; Carrow, 1973; Gazdar, 1981; Bloom, Merkin, and Wooten, 1982; Haas and Owens, 1985; Duncan and Gibbs, 1987; Tomasello, 1987; Crystal, Fletcher and Garman, 1989; Bloom, 1991; Drozd, 1995; Stromswold, 1995; O'Grady, 1997; Blackwell, 1998; Wexler, & Hershberger, 1998 Pecci, 1999; Seymour & Roeper, 1999; Goffman & Leonard, 2000; Befi-Lopes, Rodrigues, Puglisi, 2009; Rispoli, Hadley and Holt, 2009; Rice, *Mandarin*, *Cantonese* and Korean languages: Lee, 1982; Choi and Gopnik, 1995; Tam and Stokes, 2001; *Spanish* language: Lust, 1999; Felix-Brasdefer and Cesar, 2006; Italian language: Guasti, 1993; *German* language: Poeppel & Wexler, 1993; *Tamil* language: Murthy, 1981; *Kannada* language: Sreedevi, 1976; Prema, 1979; Roopa, 1980; Vijayalakshmi, 1981). These studies have succeeded to provide with the essential information regarding the developmental pattern of various aspects of syntax of the particular language.

The speech and language development follows a predictable sequence. However, there is a great deal of variation in the age at which children reach a certain milestone (Owens, 1987). Understanding of this acquisition pattern in typically developing children and children with developmental delays is essential to provide efficient methods of rehabilitation.

In India, there have been very few attempts to study the acquisition of syntax (Sreedevi, 1976; Prema, 1979; Roopa, 1980; Murthy, 1981; Vijayalakshmi, 1981; Santhi, 2008; Basavaraj, Goswami, & Priyadarshi, 2011). Therefore, there is a great requirement for a standardized measure, as it can prove very helpful in evaluating the level of syntactic development in typically developing children and as well as in language deficient children. From such a measure, information about the lagging

areas can be obtained. Attempts in this direction have been made only in English (Quigley et al, 1978), Kannada (Basavaraj, 1981), Tamil (Murthy, 1981), Malayalam (Santhi, 2008), and Hindi (Basavaraj et al., 2011) languages.

Telugu is the language spoken in the south Indian state of Andhra Pradesh. Over 75 million people, over the world, speak Telugu, and it is second to Hindi in India as to the number of native speakers. According to linguists, typically Telugu is a Dravidian language; however, it is heavily influenced by Sanskrit.

Thus, it is necessary to develop an assessment material which can analyze the acquisition of syntactic elements in Telugu speaking children. As from birth to 5 years of age, marks the critical period and this is the duration when a child acquires most of the elements of his/her native language, thus it makes it crucial to test their syntactic development particularly in this age range. The test in Telugu would be helpful in obtaining the information about different aspects of syntax development in Telugu speaking children. The test would also help in evaluation and planning therapy for Telugu speaking children with language disorders.

The present study is an adaptation of Screening test for the acquisition of syntax in Kannada' (STASK) developed by Basavaraj (1981) to Telugu language and aims to serve as a screening tool to assess acquisition of comprehension and expression abilities of various syntactic categories in Telugu speaking children in the age range of 1-5 years. The cultural and linguistic backgrounds have been kept in mind while preparing the test material.

## CHAPTER II

### REVIEW OF LITERATURE

Human communication is a complex, systematic, collaborative, context-bound tool for social action (Owens, 1996, 2005). It is a highly complex and dynamic phenomenon whereby the sender and receiver of the message are continuously coordinating and modifying their present and anticipated actions according to other signals (Fogel, 1993).

Language is a socially shared code, or conventional system, that represents ideas through the use of arbitrary symbols and rules that govern combinations of these symbols (Owens, 2005). It includes complex rules that govern the formation of sounds, words, sentences, meaning and use. These rules in turn enhance an individual's ability to comprehend and express the language.

Overall, language reflects the collective thinking of its social base, or culture, and influences that thinking. Language is a rule governed system. These systems of rules are called grammar. Language has been defined by various authors in many ways, Austin, (1962) and Searle, (1969) defined language as a social tool, language as a learned behavior by Skinner, (1957) and language as a system of mental rules by Chomsky, (1957), Hockett., (1960), Bloom & Lahey (1978), Berko and Gleason, (2001).

Language is a multifaceted combination of several component rule systems. Bloom and Lahey (1978) have divided language into the following three components.

#### **FORM**

Form contains the rules that govern (It is the system of rules that govern sounds and their combination), morphology (It is the internal organization of words),

and syntax (It specifies how words should be ordered to produce a variety of grammatically correct sentences). The syntactic element helps an individual to form the appropriate structure of the sentences. Hence, one can further combine words into phrases and sentences and transform sentences into other sentences. Knowledge of the grammatical rules of a language allows a speaker to generate an infinite number of sentences and recognize which sentences follow the syntactic rules and which do not. As mean length of utterance (MLU) of a child increases, she/he begins to build sentences according to syntactic rules. They learn how to construct other sentence types such as negative sentences, questions, and imperatives. In the later years, complex structures such as compound sentences and embedded forms are added upon to their production.

## **CONTENT**

This component of language deals with the meaning of words. It maps knowledge about objects, events, and people, and the relationship among them. These rules governing the meaning of words are otherwise known as semantics.

## **USE**

Pragmatics of a language encompasses rules that govern the use of language in social contexts. It gives an individual reason(s) for communicating, as well rules that govern the choice of codes to be used when communicating (Bloom and Lahey, 1978).

The interaction of these three components leads to language development in children. Every factor i.e., morphology, syntax, pragmatics, etc., is an important contributor and needs to be tested individually in order to study the developmental trends of language and contribute to research.



The first paper on language was published by Dietrich Tridemann, a German philosopher in 1787. Almost a century later, the modern study of child language, with exact recording of observations began. Sigismund (1856), Kussmaul (1859), Schleicher (1861), Preyer (1889) and Stern (1907) made some notable contributions to the study of child language.

Bloom & Lahey (1978) proposed that prelinguistic behaviors provide the foundation for more complex forms of language. They suggested that language use originates in infancy and that certain infant behaviors are precursors to later language skills. Phonology is the component of language deals with the rules governing the structure, distribution and sequencing of speech sounds and the shape of syllables. Each language consists of a variety of speech sounds called phonemes. A phoneme is the smallest linguistic unit of sound that can signal a difference in meaning. Durand (1990) defines phonemes as “sounds whose function is to distinguish words from one another”.

Morphology deals with the internal organization of words. Words consist of smaller units called morphemes. A morpheme is the smallest grammatical unit. Morphology is also influenced and related to syntax (Brown, 1973; Russell, Quigley and Power, 1976; deVilliers, 1978; and Crystal, 1987).

Syntax is concerned with rules based on which the sentences are formed. These rules indicate the word order, sentence organization and the relationships between words, word classes and other sentence elements. Sentences are organized according to their overall function. The constituent parts of a sentence are noun and verb phrases, each composed of various word types such as nouns, verbs, adjectives.

Semantics is concerned with the governing the meaning or content of words and word combinations. It deals with the relationship of language form to our

perceptions of objects, events, and relationships or to cognition and thought (Bowerman, 1978). Semantics is defined as the study of meaning in language (Bohannon & Warren-Leubecker, 1985; Crystal, 1987). It comprises meanings conveyed by individual words and the speaker's or listener's mental dictionary (called a lexicon).

Pragmatics is a set of rules related to the use of language within a social context. It is concerned with the way language is used to communicate rather than the structure of the language. Language helps us to achieve communicative or social functions (McLean & Snyder-McLean, 1978). This aspect of language is referred to as pragmatics. According to Bloom & Lahey (1978) pragmatics include rules that govern the reasons for communicating (called communicative functions or intentions) as well as rules that govern the choice of codes to be used during communication.

## **LANGUAGE DEVELOPMENT**

Many language acquisition studies have been conducted in the past. Studies before 1950s were of descriptive type (Tiedman, 1787; Darwin, 1877; Traine, 1877; Preyer, 1882; Sully & Sinn, 1893; Leopold, 1949). It has been noted that Piaget (1936, 1937, 1945 & 1964) described the all round development of a child and put forth the concept of language acquisition. According to Piaget (1971), all the mental development, including that of language, is an extension of the biological organization and adaptation and he did not assume an innate basis for language. He described the processes of assimilation and accommodation in his studies. In assimilation, reality is modified to match the internal organization of the brain, for e.g., Symbolic Play, whereas in accommodation, the internal structures are modified according to the environmental influences, for e.g., Imitation.

Piaget (1971) also stated that structural reorganization of the cognitive processes occurs through the processes of assimilation, accommodation and self regulation, wherein each stage incorporates the previous stage being qualitatively different from it. Piaget postulated these stages as universal and described four stages of development, beginning from infancy and extending through 12-14 years of age, the same is depicted in Table-1. Piaget's work has received wide recognition and there have been many studies that have supported (Sinclair, 1971; Tremaine, 1975) and some studies that have criticized his viewpoints (Bower, 1971; Bruner, 1975a; 1975b).

Table 1. *Piaget's (1971) stages of development.*

Stage	Characterized by
<b>Sensori-motor</b> (Birth-2 yrs)	<ul style="list-style-type: none"> <li>• Differentiates self from objects</li> <li>• Recognizes self as agent of action and begins to act intentionally: e.g. pulls a string to set mobile in motion or shakes a rattle to make a noise</li> <li>• Achieves object permanence: realizes that things continue to exist even when no longer present to the sense (pace Bishop Berkeley)</li> </ul>
<b>Pre-operational</b> (2-7 years)	<ul style="list-style-type: none"> <li>• Learns to use language and to represent objects by images and words</li> <li>• Thinking is still egocentric: has difficulty taking the viewpoint of others</li> <li>• Classifies objects by a single feature: e.g. groups together all the red blocks regardless of shape or all the square blocks regardless of color.</li> </ul>
<b>Concrete operational</b> (7-11 years)	<ul style="list-style-type: none"> <li>• Can think logically about objects and events</li> <li>• Achieves conservation of number (age 6), mass (age 7), and weight (age 9)</li> <li>• Classifies objects according to several features and can order them in series along a single dimension such as size.</li> </ul>
<b>Formal operational</b> (11 years and above)	<ul style="list-style-type: none"> <li>• Can think logically about abstract propositions and test hypotheses systematically</li> <li>• Becomes concerned with the hypothetical, the future, and ideological problems</li> </ul>

Many studies investigating the language acquisition have been undertaken since 1950. Many views and models have been proposed to explain the process of acquisition. Skinner (1957) explained language acquisition in operant conditioning paradigm using the behaviouristic approach. Operant (the unit of behavior) is primarily given importance in analyzing verbal behavior. It consists of responses of identifiable form, functionally related to one or more independent variables.

Skinner's views were criticized by Chomsky (1959). He postulated the theory of generative grammar and it had great impact on the language research. Chomsky (1957) considered language as a system consisting of infinite number of sentences and thus considered sentence as a unit of analysis. He gave importance to novelty and creativity for understanding the nature of language. The theory of generative grammar recognizes the hierarchy of grammatical categories in any language (Chomsky, 1957, 1965). According to this, language consists of a base component and a set of transformations. The base component produces a set of deep structures; the transformations are performed on the deep structure and obtain the surface structure from the lexical elements. Chomsky (1957, 1965) mentioned that grammar consists of three major elements namely phonological, syntactic and semantic.

Chomskian theory gives explanation for the remarkable speed with which language is acquired. He says that the acquisition of language is the result of the interaction between the innate linguistic capacities of the child and the linguistic experiences that the child gains as he/she is growing up and by all means the language acquisition is mastered by the age of 4 years.

Chomsky also proposed the presence of a hypothetical language acquisition device (LAD) and explained its role in the acquisition of language. He reported that the child is of a nature to acquire language naturally due to the presence of this

device. The linguistic abstractions of the universal categories are present to the child as innate ideas. Along with the innate ideas, contact to real life situations is also very important as only then the LAD is set into action. Thus, he described the language acquisition process based on the child's discovery of the generative principles with the help of LAD.

Chomskian model has been criticized by Staats (1968, 1971a and b). He considered language as composed of some essential repertoires of skills which one must learn. Further, he said that in order to learn those skills, different principles are followed to learn these repertoires. Staats (1968, 1971a and b) stated that it is very important to identify with the causative conditions which result in the language development. He disproved the claim that the language is innate and that the universal aspects of human language are due to common innate ideas. Instead, he stated that these aspects are due to the fact that language is learnt in response to the features of the world in which the individual lives. The language acquisition events follow the same physical, chemical, biological and psychological laws everywhere. Staats (1968, 1971a and b) suggested the presence of Stimulus-Response (SR) mechanism as the first step in language learning. Later, higher order conditioning is required to assign proper grammatical categories to the novel items encountered by the child. Such conditioning helps in the generic classification of the categories. Thus, this proves that the child's system consists of the S-R mechanism like that of adults.

According to Staats (1968, 1971a and b) child begins to learn to name objects with the help of association with the objects or events. Such preparation helps the child in acquiring the repertoire of the basic words before he goes over to the acquisition of the other types of words. The development from single word utterance to standard sentence production is achieved through training and is characterized by

telegraphic speech type of utterances in the intermediate stage. The production of sentences is controlled by a number of events like word associations and the words that the child has already produced as part of an utterance.

Braine (1971) also argued the Chomskian view and commented that it does not give explanation for the child's ability to differentiate between the correct and incorrect sentences. Braine considered language acquisition as an important process of formulating and testing hypotheses about the language being learned. The model that he proposed consists of two components namely Scanner (it receives the input sentences) and the Memory component (it accumulates the features of the sentences noted by the scanner). This model builds up a small vocabulary first and then begins to register the structure of short strings containing the elements that are already familiar to it. Then, the model begins to analyze the longer strings into the shorter ones. Thus, the base unit of acquisition according to Braine is single lexical items and short phrases. This model thus, assumes that a wide range of properties of sentences may be built directly into the scanning mechanism itself. These properties include temporal and semantic relations linked with the child's perceptual and concept learning mechanism. The scanner marks the properties as phonological, semantic etc and ensures the combination of rules according to levels. Scanner also provides cross reference between the rules (Thirumalai, 1977).

Schlesinger (1971) also criticized the Chomskian model. He commented that Chomskian model only accounts for the production of the grammatical sentences but not for the appropriateness of the sentences to the occasion. To overcome this limitation, Schlesinger (1971) put forward the Performance model. According to this model, child has an innate cognitive ability which remains the same whether the child learns to speak or fails due to some handicapping conditions. Linguistic abilities are

not required for this capacity. Input markers are only the concepts that fall within the capacity and are not specified for the grammatical category. This model emphasizes on the realization rules which determine the category to which the class in which the concept appears. This model demands that the child learns the correspondence between input markers and the utterances of the child in his environment.

All these models attempt to explain how language is acquired by a child and what the nature of the input is. However, these models explain the process of acquisition to an abstract level only. Output is of immediate reference to us in the process of language acquisition i.e. the observable stages that the child goes through during the mastering of a language.

According to many authors, children are biologically equipped to learn language. However, they are not passive (Hirsh-Pasek & Golinkoff, 1997). The review of literature indicates that active learning begins early in children's development. For example, infants detect intonational changes in speech patterns by the age of 1 to 4 months (Jusczyk, 1992). By 18 to 20 months they become capable of recognizing the connection between mouth movements and the sounds connected with these (Kuhl & Meltzoff, 1997). There are a several factors which play an important role in language development such as care taker input, social interaction, play, and cognitive development.

The preschool period, from 2 to 5 years, embarks a period of rapid growth in all areas of language. Children develop in their language skills from two word utterances at two years of age to producing lengthy sentences that contain information about the past and the future by five years of age. At around 24 months, a child's vocabulary consists of approximately 200- to 300-word and grows to be 2,000 words by 5 years of age. They master most sounds by 4 years of age. By 3 to 4 years,

children are seen to develop pre-suppositional knowledge and are able to adjust their messages accordingly (Owens, 2009)

According to Wood (1997), language acquisition takes place in six consecutive stages; these stages are as follows:

**i. The Pre-linguistic Stage**

The pre-linguistic stage starts from birth till the first year of life. The children learn to use gestures for communication, making adequate eye contact, sound repartee between infant and caregiver, cooing, babbling and crying. Examples of such sounds include *babaabaa*, *daadaada*, etc.

**ii. The Holophrase or One-Word Sentence**

Children usually reach this phase between the age of 10 and 13 months. They use a single word to express a complete sentence. However, the meaning is supplemented by the context in which it takes place, as well as by non-verbal cues. *For Example: Situation: Mother and child are in the kitchen and mother is working. Child (looking at a cookie jar): Bikki.....Mother's interpretation: Child is asking biscuit to eat and she hands over one to eat.*

**iii. The Two-Word Sentence**

Children start using two-word utterances by 18 months of age, i.e., 1<sup>1/2</sup> years. The utterances mostly comprises of a noun or a verb plus a modifier. In this stage, children formulate various sentence types such as declarative, negative, imperative or interrogative sentences. Examples of such "sentences" are: "*Papa big*" (*declarative*); "*Where mummy*" (*interrogative*); "*No water*" (*negative*).

In this stage also, the context and the non-verbal cues play a role in decoding the meaning of the utterances and can also add complexity to it.



#### iv. **Multiple-Word Sentences**

By the age of 2-2 ½ years the Children start using multi-word utterances. Grammatical morphemes in the form of prefixes or suffixes are used when changing meanings or tenses. The sentence structure that develops during this stage comprises of a subject and a predicate. *Examples: "Doggy is big"; "Where is ball?"* They do not yet use the correct syntactic rules and the speech appears to be telegraphic in nature.

#### v. **More Complex Grammatical Structures**

In this stage, the children use more intricate and complex grammatical structures, such as conjunctions, prepositions, embedded sentences, etc. They reach this stage roughly between two and half and three years of age. *Examples: "Read it, my book" (conjunction); "Where is Daddy?" (embedding)*

#### vi. **Adult-Like Language Structures**

The five to six-year-old children reach this developmental level. Complex structural distinctions can be made, such as by using the concepts "ask/tell" and "promise" and changing the word order in the sentence accordingly. *Examples: "Ask her what time it is."; "He promised to help her."*

Thus, it can be concluded that the child passes through various stages of development like infancy, toddler, preschool, school, etc. to develop adult like language.

### **Preschool Language Development**

As children progress from simple one and two-word utterances, their utterances become longer and more complex. They gradually expand their utterances by adding more detail. Around the age of one to one and half years, children's speech is mostly predominated by one word utterances and further on as their language

abilities grow, their language samples consists of two- and three- word utterances that include articles, prepositions, pronouns, auxiliary verbs, noun and verb endings.

Vocabulary continues to grow in the preschool period, and children learn many new word meanings. They learn new concepts and also learn to code these concepts linguistically. As children develop cognitively, they begin to refer to objects, actions, people, and events that are displaced in terms of time and place, and they transform their ideas into sentences by using a variety of sentences.

Children learn to use language socially and begin to develop discourse skills, such as participating in conversations, giving instructions; providing descriptions about objects, events and people and relating personal experiences and simple stories. Lastly, during this period, they learn about the nature of the print. The emergence of pre-literacy skills during the preschool years lays the foundation for their development of reading and writing.

All the components of language, i.e., syntax, morphology, pragmatics, semantics, begin to be acquired as a child turns one year of age, with a burst in language development during the preschool years and continues to develop language through adulthood.

### **The Development of Syntax and Morphology**

At about 18 months of age, children start producing remarkably accurate syntactic form. As children advance from simple two-word utterances by adding more details, such as words and suffixes that were missing in their early utterances. By the age of 24-36 months, children start using articles, prepositions, pronouns and auxiliary verbs. Inflectional morphemes such as the plural, possessive marker, present progressive marker and past tense marker begin to emerge. The inclusion of these forms acts to expand young children's utterances, making their utterances more adult

like and less telegraphic. They progress from producing utterances such as ‘more milk’ at 12 to 18 months to utterances such as “ I want more chocolate milk” at 24-36 months.

By age 4, most children’s syntax is adult-like (Gopnik, 1997), however language continues to develop and is refined throughout childhood and adulthood. Children transform their ideas into sentences and begin to use a variety of sentence types. They use utterances that contain expanded noun and verb phrases. Utterances also contain of negative sentences, yes/no questions, and wh- questions. Casual constructions, conditional constructions, and temporal constructions are also evident.

The morphosyntactic acquisition has been discussed in detail by many authors. Few of their studies are discussed in detail below:

**1) Brown’s Stages of morphological Development.**

Brown’s pioneering work, *A First Language* (1973), demonstrated that children’s acquisition of syntactic structures is related to the average number of morphemes per utterance that they produce than their chronological age. Brown (1973) conducted a longitudinal study of three children, and found that utterance length and the mastery of grammatical forms varied greatly with age and suggested six stages.

*Stage I* is characterized by single-word utterances and early multiword combinations that follow semantic rules.

*Stage II* is distinguished by the emergence of grammatical morphemes. Children increase and alter their linguistic productions by incorporating morphological endings such as –ing, the plural –s, and the prepositions in and on. Grammatical morphemes emerge at stage II, but many are not mastered (used correctly 90 percent of the time) until after stage V.

The fourteen morphemes are considered to be obligatory, indicating that their use is required. The absence of a particular morpheme in a child's utterance at a certain stage implies that either it has not yet been acquired or it may indicate a developmental delay.

*Stage III* is differentiated from the other stages by a burst of syntactic development. Children use different sentence types such as simple declarative, imperatives, wh-questions and simple negative sentences. The mean length of utterance continues to grow.

*Stage IV* is marked by the emergence of complex construction, although mastery continues beyond this stage. Children exhibit the use of noun and verb phrase elaborations as well as compound and complex sentences.

*Stage V and VI:* Almost all the grammatical forms of language are being mastered during these two stages.

Table 2: *Brown's stages for mean length of utterance (Brown, 1973).*

<b>Linguistic stage</b>	<b>MLU</b>	<b>Approximate chronological age (months)</b>	<b>Characteristics</b>
Stage I	1.0 – 2.0	12 – 26	Use of semantic rules
Stage II	2.0 – 2.5	27 – 30	Morphological development
Stage III	2.5 – 3.0	31 – 34	Development of variety of sentence types: negative, imperative, interrogative
Stage IV	3.0–3.75	35 – 40	Emergence of complex constructions: coordination, complementation, relativization.
Stage V	3.75– 4.5	41 – 46	Joining of clauses
Stage VI	4.5+	47+	Combining the content of two sentences into one and further linguistic modifications.

Table 3: Showing the acquisition of sentence forms within Brown's (1973) stages of development

Stage	Negative	Interrogative	Embedding	Conjoining
Early-I (MLU:1-1.5)	Single word – <i>no</i> , <i>all gone</i> , <i>gone</i> ; negative + X	Yes/No asked with rising intonation on a single word; <i>what</i> and <i>where</i>		Serial naming without <i>and</i>
Late-I (MLU:1.5-2.0)	<i>No</i> and <i>not</i> used interchangeably	<i>That</i> + X; <i>what</i> + noun phrase + (doing)?	Prepositions <i>in</i> and <i>on</i> appear	<i>And</i> appears
Early-II (MLU:2.0-2.25)		<i>Where</i> + noun phrase + (going)?		
Late-II (MLU:2.25 – 2.5) Early-III (MLU: 2.5-2.75)	<i>No</i> , <i>not</i> , <i>don't</i> and <i>can't</i> used interchangeably; negative element placed between subject and predicate.	<i>What</i> or <i>where</i> + subject + predicate	<i>Gonna</i> , <i>wanna</i> , <i>gotta</i> , etc; appear	<i>But</i> , <i>so</i> , <i>or</i> and <i>if</i> appear
Late-III (MLU: 2.75 - 3.0) Early-IV (MLU: 3.0 – 3.5)	<i>Won't</i> appears; auxiliary forms <i>can</i> , <i>do</i> , <i>does</i> , <i>did</i> , <i>will</i> and <i>be</i> develop	Auxiliary verbs begin to appear in questions ( <i>be</i> , <i>can</i> , <i>will</i> , <i>do</i> )	Object noun phrase complements appear with verbs like <i>think</i> , <i>guess</i> , <i>show</i>	Clausal conjoining with <i>and</i> appears (some children cannot produce this form until late V); <i>because</i> appears
Late-IV (MLU: 3.5 – 3.75)	Adds <i>isn't</i> , <i>aren't</i> , <i>doesn't</i> , and <i>don't</i>	Begins to invert auxiliary verb and subject; adds <i>when</i> , <i>how</i> , <i>why</i>		
Stage-V (MLU: 3.75 – 4.5)	Adds <i>wasn't</i> , <i>wouldn't</i> , <i>couldn't</i> , and <i>shouldn't</i>	Adds modals; stabilizes inverted auxiliary	Relative clauses appear in object position; multiple embeddings by late V; infinitive phrases with same subject as the main verb	Clausal conjoining with <i>if</i> appears
Post-V (MLU: 4.5+)	Adds indefinite forms <i>nobody</i> , <i>no one</i> , <i>none</i> and		Relative clauses attached to the	Clausal conjoining with <i>because</i>

	<i>nothing</i> ; has difficulty with double negatives		subject; embedding and conjoining appear within same sentence above an MLU of 5.0	appears with <i>when, but, and so</i> beyond MLU of 5.0; embedding and conjoining appear within same sentence above an MLU of 5.0.
--	---	--	---	--

### The Acquisition of the 14 Grammatical Morphemes

The acquisition of these 14 obligatory grammatical morphemes starts beginning at stage II. Children begin to expand their short immature utterances by inclusion of these morphemes.

*Pronoun Acquisition:* Learning the English pronominal system is a very complex process (Haas & Owens, 1985). A child needs to understand that one word, i.e., the pronoun is equivalent to a word or a group of words previously mentioned.

The pronouns start appearing in Stage II, and others continue to emerge much later. The earliest pronouns to emerge usually involve the child as subject (I, mine, my, me) followed by subjective pronouns (he, she, they), objective pronouns (him, her, them), possessive pronouns (his, her, theirs) and reflexive pronouns (himself, herself, themselves) in the order. Table 4 shows the development of pronouns within Brown's Stages

Table 4: *Development of Pronouns within Brown's Stages*

Brown's Stages	Pronouns
I	I, mine
II	My, me
III	He, she, we, you, your
IV	They, his, hers
V	Their, our, ours, theirs
V+	Herself, himself, themselves

*Adjective and Noun Suffixes:* During the preschool years, children acquire additional suffixes to form new words. The adjectival comparative –er and the superlative form –est are mastered during this period. The superlative is understood by children by 3.5 years of age and the comparative at about age 5 (Carrow, 1973). Children start comprehending derivational noun suffixes by age 5. However, production appears later.

*Sentence development:* The basic syntactic rule states that every sentence must contain a noun phrase and a verb phrase. Hence, the child needs to acquire and use a subject and a predicate in order to formulate a simple sentence. By the end of Brown’s Stage II or early Stage III, children master this rule and can comprehend and express simple, active declarative sentences. Further, they modify these basic sentence patterns to form complex structures. The emergence of the adult like form of sentence forms within Brown’s stage III.

a) *The development of negative sentence forms:*

Bloom (1991) found that children at one- and two-word utterance stage express three types of negation: (1) nonexistence (All gone juice-when there is no more juice in the cup), (2) rejection (No milk-as the child rejects the offer of milk), and (3) denial (Not a book-as mother points to a truck and says, “This is a book”).

Table 5: *Development of negative sentences.*

<b>Phase</b>	<b>Description</b>	<b>Example</b>
I	The negative marker appears outside the sentence	<i>No</i> the girl running
II	The negative marker occurs before the verb	The girl <i>not</i> running
III	The auxiliary is added and completes the transformation to the adult form	The girl is <i>not</i> running

In Lee’s (1982) study of a Mandarin-speaking child aged 1. 5 - 1. 11years, it is found that the child develops negation in the order that is similar to Vaidyanathan’s

study. Tam and Stokes (2001) studied eight Cantonese-speaking children aged 1; 5 to 3; 8 and concluded that the order is nonexistence, rejection and denial. Three phases of negative construction development have been described (Bellugi, 1967; Bloom, 1991; Pecci, 1999). Table-5 illustrates the development of the negative sentence form.

Table 6: *Children go through four phases as they develop the ability to formulate questions (Bloom, 1991; Klima & Bellugi, 1966).*

<b><i>Phase I</i></b>	<ul style="list-style-type: none"> <li>✓ Use of rising intonation and some wh-forms</li> <li>✓ The child has a MLU of 1.75-2.25.</li> <li>✓ Children typically ask yes/no questions by adding a rising intonation to the end of their utterances.</li> <li>✓ While using wh-questions young children simply attach a wh-word to an assertion and produce questions. These wh-questions are used in routine in which children generally ask for the names of objects, actions, or locations, such as the location of an object that has disappeared. Where and what questions are most predominately used.</li> </ul>
<b><i>Phase II</i></b>	<ul style="list-style-type: none"> <li>✓ Use of a greater variety of wh-questions</li> <li>✓ MLU of 2.25 to 2.75.</li> <li>✓ They continue to ask yes/no questions by rising intonation.</li> <li>✓ They add the wh-form at the beginning of the question but fail to use the auxiliary verb.</li> <li>✓ Children are able to provide appropriate answers to what, who and where questions.</li> </ul>
<b><i>Phase III</i></b>	<ul style="list-style-type: none"> <li>✓ Limited use of inversion</li> <li>✓ MLU is 2.75 to 3.5.</li> <li>✓ Auxiliary verb inversion appears when children's MLU is at 3.5 morphemes (O'Grady, 1997).</li> <li>✓ In this phase, children regularly invert the subject and verb to produce yes/no questions but fail to do so in all wh-questions.</li> </ul>
<b><i>Phase IV</i></b>	<ul style="list-style-type: none"> <li>✓ Use of inversion in positive wh-questions</li> <li>✓ MLU 3.5+.</li> <li>✓ Children invert the subject and the auxiliary verb when asking positive wh-questions but still have difficulty with negative wh-questions.</li> </ul>

In *Phase I*, the negative element is placed out of the sentence. Drozd (1995) described the use of pre-sentence *no* as a metalinguistic exclamatory negation. In this case, the child responds to the question along with repeating most of the adult utterance. O'Grady (1997) proposes a trigger for the child's utterance. When the



parents use sentences like “No, don’t touch that,” the position of the negative (*no*) cues the child to produce this element in sentence-initial position and the child generalizes it to all contexts.

In *Phase II*, children start using the *no* marker in the correct position, i.e., before the verb (“I no want dress”). The negative form *not* also appears in this phase (“Mama not good”). In *Phase III*, when MLU is greater than 4.0, the negative contractible forms *can’t* and *don’t* emerge (“I don’t want cookie”).

Indefinite negative words such as *nobody*, *no one*, and *nothing* are learnt at a later stage of language development. Young children often say “I want anything,” when they mean “I want nothing” (Seymour & Roeper, 1999).

b) *The development of interrogative sentence form*

There are two types of questions: yes/no and wh-questions (which begin with who, what, when, where, why or how). The former requires that the listener simply answer the question with either yes or no word. Whereas, the later are more complex as they require additional information. For example, *where* questions demand information about location, *when* questions demand temporal information, and *who* questions demand information about people. What, where, and who questions are mastered before why, how, and when questions (Ervin-Tripp, 1970; Bloom, 1991).

The order of acquisition of questions is summarized as follows:

Table 7: *Order of acquisition of wh-questions*

<i>Type</i>	<i>Example</i>
What	What is the boy doing?
Where	Where is the apple?
Who	Who is eating food?
When	When will you go?
Why	Why is it dark?
How	How did it fall?

Bloom, Merkin, and Wooten (1982) studied that children in the age range of 22 and 36 months use questions with the verbs go, do, and happen. These verbs have a general use within a wide range of activities, such as doing things, going places, and things that are happening. In contrast, the later-occurring ‘*why*’ and ‘*wh*’-questions are used with descriptive verbs like *sing* and *fix*.

Table 8: *Development of syntax has been outlined by Crystal, Fletcher and Garman (1978).*

<b>STAGE</b>	<b>AGE</b>	<b>DEVELOPMENT</b>
Stage I	0.9-1.6 years	Chronological norms for this stage are from 0.9 years to 1.6 years. Comprehension of “where”, “what” questions, use of commands and expression of minor sentences are observed in this stage. This stage is commonly called as “Syntactic Turning Point” and coincides with the end of Piagetian sensori-motor intelligence. A great deal of intonational and phonetic preparation takes place at this stage. This preparation reflects the onset of syntactic development at nine months.
Stage II	1.6-2 years	<p><b>Two element sentences</b></p> <p>All patterns at this stage contain two element structures like “kick ball”. Occasionally some grammatical modifications of elements are seen. The development of hierarchy of levels of sentence structure is observed at this stage. The child uses the whole noun phrase for the pronoun and this would suggest that the child is operating in terms of two levels of syntactic organization.</p> <p>It may well be noted that, in the changeover from Stage I to Stage II, children pass through a period of two-word collocations, learned as a whole. The elements are abstract units and the measure is thus more to do with cognitive, linguistic complexity than anything else. There will, however, always be an increase in the number of stressed syllables as one move from Stage I to Stage IV. Negation (not), Questions (what, where) and command patterns are used by the child in his spontaneous speech.</p>
Stage III	2-2.6 years	<p><b>Three element sentences</b></p> <p>The chronological age of this stage is 2 years to 2.6 years. Two distinct processes of sentence formation account for the production of three element sentences. One is the blending of the patterns of clause and phrase structure, which were separate from each other at Stage II; the other is the development of new patterns of clause structure.</p> <p>During the stages III and IV most of the inflections are introduced and most of the correct patterns are established. The child has the (-ing), plural (-s) marker, past tense (-ed) marker, past participle (-en) marker, third person singular (-he), possessive (s) marker, contracted negative (n’t), contracted form of the copula (he’s), superlative forms (-est) marker, comparative marker (-er) and adverbial suffix (-ly) marker.</p>
Stage IV	2.6-3 years	<p><b>Sentences of four elements or more</b></p> <p>The chronological range of this stage is 2.6 years to 3.0 years.</p>

		By three years, the child has come to use all the types of clause constructions. All the elements of structures have been acquired and their pattern of distribution is well established. Phrase structure is not fully developed but the main elements are present and there has been some expansion, particularly in the post verbal position. All the main sentence functions have been established with the possible exception of exclamatory patterns. The child uses regular word morphology.
Stage V	3-3.6 years	<p><b>Recursion</b></p> <p>Essentially what the child has to learn here is the set of connecting devices which can be used to interrelate clauses, the transformational processes where by one can be used within ('embedded within') another. Once these devices have been learned, the processes can continue indefinitely, longer and more complex sentences being built up a result.</p> <p>It is the feature of language to take a basic structure and use it repeatedly to produce extensive sequences which is the primary characteristic of the 'creativity aspect' of language use. It is accordingly a stage of great significance in normal development, as at this stage the range of expression available to the child is enormously increased. This stage is termed as the "stage of recursion". The first recursive process that emerges at clause level is the use of co-ordinating conjunction. The first really productive use of 'and' occurs at around the age of 3 years. Three other clausal developments emerge strongly at stage IV. The noun clauses emerge in post verbal positions before pre-verbal ones. Comparative clauses begin to be used. A number of relative clauses and non-infinite clause types emerge within the noun phrase. Development of tag questions and use of patterns of inversion and negation in the verb phrase is a characteristic of stage IV (Mc Grath &amp; Kunze, 1973).</p>
Stage VI	3.6-4 years	<p><b>System Completion</b></p> <p>The pattern of error is one of the characteristic features of this stage. There are frequent errors in pronouns; there is corresponding development in the use of reflexives and other pronominal and not previously used. Determiners have been presented at the end of Stage II, but errors in some of the distinctions are still common at 3.6 years. Most of the noun inflections are stabilized during this stage. These are usually no adjective sequence pattern errors. Even though child uses the auxiliary verbs around the age of two years, but is stabilized at this stage.</p>
Stage VII	4.6 years onwards	<p><b>Discourse Structures</b></p> <p>Syntactic comprehension and style by 4.6 years the spontaneous speech of normal children displays fluency and grammatical accuracy in its surface structure. There are few actual grammatical mistakes that can be heard in a child's speech at this stage. Even though a five year old child can produce a syntactic pattern, there is no guarantee that he understands what he says. Chomsky (1969) has illustrated the kind syntactic awareness that needs to develop.</p> <p>In Stage VII, an important development is the child becoming aware that the meaning or 'deep' analysis of a sentence is not always obvious from a consideration of its 'surface' pattern.</p>

*a) The development of imperative sentence forms*

The imperative sentence requests, demands, commands, or insists that a listener perform some action. At the prelinguistic level, infants request and demand by pointing and gesturing. As they develop into toddlers, they begin to employ the imperative form to request, demand, and command. At Brown's stage I, children produce forms that sound like imperatives because they often omit the subject even when it is required. True imperatives begin to appear at Brown's stage III, when the omission of the subject in the surface form reflects the mastery of the rule of subject deletion in imperatives.

**Factors Governing the Acquisition of Semantic and Syntactic Relations**

The language acquisition in children is influenced by several biological and environmental factors. Researchers have been investigating these factors, postulated theories and formulated several hypotheses that explain the process of language acquisition. Several factors such as Internal language acquisition system, imitation, learning strategies, practicing, cognitive development, surface complexity of the language, environment, neurophysiologic constraints influence language development in children Ekmekci (1991).

Usually in the latter half of the second year, children reach the important milestone of beginning to put words together to form the first sentences. This new stage marks the crucial turning point for even the simplest two word utterances and shows the evidence of syntax; i.e., the child combines words in a systematic way to create sentences that appear to follow rules rather than combining words in random fashion. Research on the timing of first word combinations has found that it is related to several developmental factors like timing of children's first words, the time at which they understand about 50 words, and the responsiveness of the mothers to their

children's communications at around their first birthday (Tamis-Lemonda, Bornstein, Kahana-Kalman, Baumwell, & Cyphers, 1998).

The acquisition of the grammatical structures is regulated by a number of internal and external factors. Some studies support the presence of an innate device in the child and few are of the view that environment and exposure to the language has a major role to play. Any deviance in these factors can lead to delayed or deviant syntactic development.

### **Syntactic Development in Linguistically Deviant Children**

The first systematic attempt to compare normal and deviant children was done by Menyuk (1964). She matched two groups of normal and linguistically deviant children in terms of age, IQ and socio-economic status. She found that the utterances of linguistically deviant children were qualitatively different from those of normal children. The deviant group used fewer transformations and produced more restricted or ungrammatical forms than did the normal groups.

A method was designed by Lee (1966) for comparing syntactic development of normal and linguistically deviant children sampled a group of normal three year old and deviant four and a half year old children. On comparison of samples, qualitative differences between the groups were noticed.

Muma (1971) found that disfluent children make use of simple transformations in their speech compared to a matched group of fluent children. The development of base syntax in normal and deviant children was compared by Morehead and Ingram (1973). Onset and acquisition time for learning base syntax was late in deviant children. There was significant difference in the performance of two groups as construction types.

In the process of acquisition, the order of acquisition were found to be quite similar to that of hearing children but the rate of acquisition was found to be much slower as stated by Wilbur, Quigley and Montanelli (1975).

Goda (1964) found that there was a predominance of nouns and verbs in deaf speech. 75% of the output was composed of nouns and verbs as compared to 60% for the normal hearing children and 69% for the retarded. Adjectives, adverbs and function words were not used often. Simmons (1962) found that deaf children used an inflexible word order. Quigley et al (1974) reported that they had a tendency to impose a Subject-verb-object (SVO) pattern on sentences. Relativized sentences were thus difficult to comprehend. Brannon and Murray (1966) found general retardation in spoken language among the hearing impaired.

Quigley, Smith and Wilbur (1974) found that the deaf generate the same structure as the hearing individuals but at a slower rate. Quigley et al (1974), Power and Quigley (1973) found similar results. It was also found that a deaf, partially sighted girl had difficulty in answering questions without a referent. Language is a referent system, and the hard of hearing have difficulty in perceiving this. For eg: to understand a 'wh' question, the child must recognize that the 'Wh' word signals a question as well as stands for another word. Brannon and Murray (1966) found a high correlation between the hearing loss and measures of syntax.

The importance of a thorough understanding of syntax acquisition by normal children is emphasized by this review of literature on syntactic development in deviant children.

### **Comprehension versus Production**

Most authors agree that comprehension of specific linguistic unit precedes the ability to produce the same unit (Menyuk, 1964; McNeil, 1966; Taylor & Swinney,

1972; deVilliers & deVilliers, 1973; Bloom, Miller & Hood, 1975; Dale, 1976; Shipley, Smith & Gleitman, 1978; Vijayalakshmi, 1981).

While comprehension is the knowledge or understanding of an object, situation, event or verbal statement, production is the physical execution of the phonological and grammatical rules for actual surface structures. Production is primarily dependent upon an intact physiological mechanism.

The comprehension is thought to remain superior to production throughout life. McNeil (1966) explains that this phenomenon as passive control of a given linguistic unit (comprehension) has less distorting factors separating it from competence than active control required for expression. Fraser, Bellugi and Brown (1963) observed that imitation skill exceeds comprehension which in turn exceeds production. There has been work in acquisition of vocabulary comprehension (Templin, 1957; Dunn, 1959) and the comprehension of grammatical form classes. Gaer (1969) studied comprehension in terms of modern grammatical theory. He reported that the children's relative abilities to comprehend certain transformations differ as a function of age. At age three, they understand active, passive, question and negative transformations at about 58% accuracy. By age four, active sentences are better understood than passives and negatives. Five and six year old children understand active, passive sentences, different question forms with equal performance whereas adults understand all these forms at about 95% accuracy. Chomsky (1968) conducted an experiment on late grammatical acquisition which focused primarily on comprehension. He concluded that syntactic development continues until at least ninth year of life.

### **Acquisition of language by males and females**

Popular belief and scholarly opinion have generally maintained that girls are more advanced in language development than boys. Jespersen (1922) reported that ‘little girls’ on the average, learn to speak at an early age compared to than boys. McCarthy (1954) consistently found a faster development of language in girls than in boys. Maccoby (1966) reported girls responses to pronunciation, mean length of utterance and vocabulary comprehensibility at an early age. In addition, language disorders are reported to be more frequent in boys.

Templin (1957) in a large scale found that girls tend to exceed performance in articulation of sounds at the older ages and the boys in the word knowledge, however, the differences between the genders are somewhat less pronounced than is frequently stated. Garai and Schlenfield (1968) reported that “studies of verbal ability have shown that girls and women surpass boys and men in verbal fluency, correct language usage, sentence complexity, grammatical structure, spelling and articulation while males tend to excel in verbal reasoning and comprehension”. Hutt (1972) found that girls talk earlier than boys and acquire a more extensive vocabulary than boys of an equivalent age.

Winitz (1959) conducted a study on kindergarten children and found that girls were significantly superior to boys on three to twelve measures, however, Winitz pointed out that these measures were not those generally regarded as of importance. No significant differences in speech of boys and girls were found by O’Donnell, Griffin and Norris (1967). Only one out of the twenty one measures was found to have significant differences in the performance of boys and girls (Moore, 1967).

Graves and Koziol (1971) found no significant differences in the performance of boys and girls in their study. Bliss, Allen and Wrasse (1977) found that males and



females perform alike, holding age constant but the males require more prompting and structuring before they produce the correct response. Macaulay (1978), has reviewed most of the studies which have considered gender as a variable in their study. He concludes that the female superiority of language might be more of an apparent nature than a real one. If any difference exists, it is only of transient nature in language acquisition. Females performed better than males only in one of the groups (3-3.6 years), in the study, Test for acquisition of Syntax in Kannada (TASK), conducted by Vijayalakshmi (1981).

### **Studies Related to Acquisition of Different Grammatical Elements**

Felix-Brasdefer and Cesar (2006) studied the acquisition of functional structure in early Spanish using longitudinal data from three Spanish speaking children as early as nineteen months. The study provided empirical evidence in favor of the strong continuity hypothesis (SCH) (Lust, 1999) regarding the availability of agreement phrase, tense phrase and complimentizer phrase and negation phrase in Spanish early grammar. The data also revealed that principles of Universal Grammar (UG) are available from the onset of language acquisition and are held constant across language development. With respect to the availability of tense, it was found that the children in the current study used atleast one form in the past tense in contrastive ways in the present ways singular inflection forms as early as 1.7 years, and with higher frequencies in the subsequent months. The findings of the study revealed that the position of a negative marker is the same both in adult and child grammar. The complimentizer phrase is available as early as 1.9 years. Cruttenden (1979) noted that there is later acquisition of morphological features in highly inflected languages.

When compared to English, Dutch, German and Italian are languages with rich morphological paradigms. The research on acquisition of these languages

renounced the claim that children's initially generate only partial syntactic representations. Children learning these languages also make errors of omission like their English speaking counterparts, however, children learning these languages use inflection markers correctly for majority of the time.

Guasti, (1993), studied the grammatical feature 'person inflection' in three Italian speaking children under 2.6 years and found that they used it correctly for 97-99% of the time Similarly, a study of a German speaking child (2.1 years) revealed only 3% agreement errors (Poeppel & Wexler, 1993). Stromswold (1995) reports the early production of wh questions by twelve children in the CHILDES database. The general pattern that she observed was that object WH-questions were acquired earlier than subject WH-questions.

Blackwell (1998) studied the acquisition of English adjectives in three children and the analysis revealed that children's adjectival vocabularies develop horizontally (different semantic categories appear concurrently) and vertically (several adjectives of a given semantic type appear concurrently) from as early as 20 months. Early lexicons include adjectives belonging to several semantic categories which follow a certain order of acquisition (temporal<configuration<consistency) and general to specific growth pattern. Temporal adjectives are absent in the child language before the age of 5. The development of syntactically complex adjective phrases begins early.

Murthy (1981) studied the pattern of acquisition of adjectives in typically developing Tamil speaking children in the age range of 2-5 years. She concluded that adjectives of size and quantity develop by 3.6-4 years and adjectives of color by 4 years. Rispoli, Hadley and Holt (2009) studied the growth of tense markers in children younger than 36 months using a type-based productivity measure. Caregiver-

child language samples were obtained from twenty typically developing children with three month intervals from 21 to 33 months of age. The result showed that average development was characterized by slow linear growth of less than one morpheme per month at 21 months and acceleration overall.

It has been opined that vast changes occur in children's grammatical development between 21 and 48 months (Bloom, 1970; Brown, 1973). For the average English speaking child, tense morphemes are absent in spontaneous speech before age 2 (Radford, 1990; Stromswold, 1990; Hadley & Rice, 1996), and the percentage of sentences marked for tense and agreement morphemes increase gradually until they are produced accurately in most obligatory contexts by the age of 4 years (Rice, Wexler, & Hershberger, 1998; Goffman & Leonard, 2000;).

Befi-Lopes, Rodrigues, and Puglisi (2009) studied about the number morpheme acquisition in normal children. Participants ranged from the age group of 3.6-11 years. These results showed that there was an increase of correct answers with age. The production of the plural form received the lower scores, but presented a significant enhancement from 3.0 to 5.0 years. This ability improved with development and was considered productive after 5.0.

Tomasello (1987), studied prepositions and reported that it starts appearing in a child's language by the age of two years. The spatial oppositions up-down, on-off, in-out and over-under were first to be learned. These words were all used initially in non-prepositional senses prior to prepositional usage. It has been noted that children in the age of 3-3.6 years have confusion in understanding post-positions. However, by 5 years they develop the skill of using it correctly and efficiently in their communicative utterances.

Table 9: *Studies done on the 'negation' grammatical element.*

<b>Author's name and (Language)</b>	<b>year</b>	<b>Age of the subjects tested</b>	<b>Comprehension task</b>	<b>Expression task</b>
Menyuk, (English)	1969	2-2.6 years	Not studied	Uses negation constructions
Brown and Bellugi, (English)	1964	2 years	-	Uses 'no' and 'not'
Bloom, (English)	1970	22 months	-	Uses 'no' for all types of negation
		24 months	-	Uses 'not'
		26 months	-	Uses can't and don't
		28 months	-	Uses 'could not'
Owing, (English)	1972	4 years	Understands negative and affirmative sentences	-
De Villiers and De Villiers, (English)	1973	2-4 years	Understands plausible negation earlier than non-plausible negation	-
Sreedevi, (Kannada)	1976	2+ years	-	Uses 'illa, illa and beda
Prema, (Kannada)	1979	5-6 years	Understands negative suffixes and modal auxiliaries	Uses 'alla, illa, be:da'
Roopa, (Hindi)	1980	4-5 years	-	Uses 'nahi'
Vijayalakshmi, (Kannada)	1981	2-2.6 years	Understands 'be:da'	Uses 'illa'
		2.6-3.0 years	Understands 'illa/alla', 'a:gde:' and 'kolde'	-
		3.6-4 years	-	Uses 'be:da'
		4-4.6 years	-	Uses 'kolde' and 'a:gde'
Murthy, (Tamil)	1981	2-2.6 years	Understands 'illa' marker	Uses 'illa'. Ceiling effect attained and maintained was by higher age groups

Choi and Gopnik (1995) investigated the semantic development of nine Korean children in the age range of 1.2 to 1.10 years through monthly visits and maternal reports. They found that Korean children as young as 1.3 years used verbs productively with appropriate inflections. Seven of the nine children showed a verb spurt at around 1.7 years; for six of these children the verb spurt occurs before the noun spurt. Korean children expressed language-specific distinctions of locative

actions with verbs. They proposed that verbs are accessible to children from the starting, and that they may be acquired early in those children who are encouraged to acquire them by their language-specific grammar and input.

Duncan and Gibbs (1987) studied the acquisition of syntax in Punjabi and English in 99 bilingual children with Punjabi being their mother tongue while English as a second language in three age groups between 6½ and 8½ years. They reported that first language acquisition influences the second language acquisition. Specifically, they found that second language acquisition follows first language acquisition patterns.

Table 10: *Studies done on the 'Wh questions' grammatical element.*

<b>Author's name and year (Language)</b>	<b>Age of the subjects tested</b>	<b>Comprehension task</b>	<b>Expression task</b>
Smith, 1933 (English)	1.6-6 years	-	<b>Order of development</b> What,Where,How,Why,When, Others
Erwin-Tripp, 1970 (English)	2 years	What, Where	-
	2.6-3.9 years	Why, Who, How, Where from	-
Tyack and Ingram, 1977 (English)	2-3.11 years	Where, Why, When, Who, How, What	What,Where,How,Why,When,Who, When, Others
McGrath and Kunze, 1973 (English)	5-11 years	-	Uses all forms of WH questions by age of 5.6 years
Quigley et al, 1975 (English)	10 years	-	100% correct use of all WH questions
Sreedevi, 1976 (Kannada)	4 years	-	Elli, ya:ke, ya:ru Present in spontaneous speech sample
Cairns and Hsu, 1978 (English)	3.6-5.6 years	'why' is acquired before 'when'	Complete use of all WH forms by the age of 5 years
Prema, 1979 (Kannada)	5-6 years	-	Uses basic interrogative markers in WH questions
Murthy, 1981 (Tamil)	2-2.6 years	Comprehends 'enga' and 'eppadi'	Uses 'enna' and 'yaru' What, When, Where,How,Who
	2.6-3 years	84% correct responses on all Wh-questions	

Table 11: *Studies done on the 'Yes-No questions' grammatical element.*

<b>Author's name and year (Language)</b>	<b>Age of the subjects tested</b>	<b>Comprehension task</b>	<b>Expression task</b>
Menyuk, 1964 (English)	2-3 years	-	Uses yes-no questions of most kind
Bellugi, 1967 (English)	2 years	-	Uses yes-no questions without intonation
	3 years	-	Uses yes-no questions with intonation
Ervin-Tripp, 1970 (English)	2-5 years	Understands yes-no questions	-
Bloom, 1970 (English)	25 months	-	Infrequent use of yes-no questions
Quigley, 1976 (English)	10 years	-	100% correct use of yes-no questions
Dale, 1976 (English)	3 years	-	Uses yes-no questions beginning with 'You'
Sreedevi, 1976 (Kannada)	4 years	-	Uses yes-no questions correctly
Prema, 1979 (Kannada)	5-6 years	-	Uses basic interrogative markers of yes-no questions
Roopa, 1980 (Hindi)	4-5 years	-	Uses the /ho/ marker or adds /kya/ participle to the end of the sentence
Vijayalakshmi, 1981 (Kannada)	2-2.6 years	A few action or object questioned type of yes-no questions	-
	4-4.6 years	A few subject questioned type of yes-no questions	
Murthy, 1981 (Tamil)	2.6-3.6 years By 5 years		57-93% correct usage 100% use

Table 12: *Studies done on the 'Person' grammatical element*

<b>Author's name and year (Language)</b>	<b>Age of the subjects tested</b>	<b>Comprehension task</b>	<b>Expression task</b>
Menyuk, 1964 (English)	2-3 years	Understands gender number pronoun except for 'she', 'he' and 'they'	-
Carrow, 1968 (English)	4 years	-	Uses 'me' and 'my'
Bloom, 1970 (English)	21-22 months	-	Uses 'I' and 'it'
Huxley, 1970 (English)	3.3 years	-	Uses 'I'
	3.6 years	-	Use of 'he', 'she', 'they'
	3.9 years	-	Use of 'we'
Bellugi, 1971 (English)	2.4 years	-	Use of 'I' in initial position
	3.6 years	-	Uses reflexive pronouns
	4-5 years	-	Use of conjoined pronouns
Sreedevi, 1976 (Kannada)	2.6 years	-	Uses first person singular and second person singular and third person neuter
	2.8 years	-	Uses third person singular
Miller, 1979 (English)	18-24 months	-	Use of 'me' and 'my'
	3-3.6 years	-	Use of 'he', 'she'
Vijayalakshmi, 1981 (Kannada)	2-2.6 years	Understands Avanu, Ivanu, Avalu, Ivalu, Avaru, Ivaru	-
	2.6-3.0 years	Understands Na:nu, Ni:nu	Use of Na:nu, Ni:nu
	3.6-4.0 years	-	Use of Avanu, Ivanu
	4-4.6 years	Understands 'ni:vibiru'	Use of Avalu, Ivalu
Murthy, 1981 (Tamil)	2-4.6 years		Use first person singular

Table 13: *Studies done on the 'Tenses' grammatical element.*

Author's name and year (Language)	Age of the subjects tested	Comprehension task	Expression task
Berko, 1958 (English)	5.6 years	-	Uses the present tense 97% of the time correctly. Uses the past tense 25-85% of the times correctly
	4-5 years	-	Children use the present progressive tense 72% of the times correctly and uses past tense 73% of the times correctly
Sreedevi, 1976 (Kannada)	2+ years	-	Uses present and past forms. These are acquired earlier than the future tense forms.
Miller, 1979 (English)	2.6 years	-	Uses present progressive tenses
Vijayalakshmi, 1981 (Kannada)	3-4 years	Understands simple present and future tenses	Uses simple future and present tenses
	4-4.6 years	Understands simple past and past continuous tenses	Uses simple past and past continuous tenses
Murthy, 1981 (Tamil)	4.6-5 years	Distinction of past/non-past tenses	99% correct use

### Language Tests

There are various kinds of language tests reported. Most of the intelligence tests include a few language tasks. These tests do not yield much information regarding language acquisition. There are achievement tests to assess second language learning and language achievement. Various tests of language function have been produced to assess language disorders.

The full range picture vocabulary test, developed by Ammons and Ammons (1958) is a short test of verbal comprehension. It is applicable to children from 2 years through adulthood. While testing, the child has to point to the picture which depicts



the word which the examiner utters. The validity and reliability checking of this test has not been done satisfactorily.

In 1958, Leera developed Michigan Picture Language Inventory (MPLI). The inventory aimed at yielding quantitative data concerning the vocabulary and language structures of children between the ages of three and nine years. Pronouns, possessives, comparative forms of adjectives, demonstratives, articles, adverbs, prepositions and three verb tenses were put under test. The test also included a number of different sentence patterns.

The picture vocabulary inventory had the task of naming and pointing pictures. The missing word technique was used in the picture language structure inventory. The examiner first describes every card within a particular class group. This provides the context of the responses which the child would later be required to give. Following this explanation, the examiner attempts to elicit an oral response to the key items on the cards. This test enables one to make a meaningful comparison between comprehension and expression of vocabulary.

The Illinois Test of Psycholinguistic Abilities (ITPA) was developed by McCarthy. It is conceived as a diagnostic rather than a classificatory tool. The theoretical model of ITPA is an adaptation of the communication model of Osgood (1957). The test provides information about,

1. Reception – ability to recognize or understand what is being seen or heard;
2. Expression – ability to disclose ideas either vocally or motorically; and
3. Organization – This assigns meaning to what is spoken, seen or heard.

Performance in each of the three is evaluated at the two levels representation or automatic. Four channels are tapped: two of sensory input (visual and auditory) and two of response output (verbal and motor). The test uses the

procedure of filling up of words in sentences with the help of picture and exemplifying sentences.

ITPA is appropriate for children from 2-10 years of age. From the results, the examiner can obtain a language age based on the total test, as is also possible by obtaining the scaled scores. The main shortcoming of the test is that it has not used examples of word-order, questions, negatives, possessives, or subject-object identifications in their test material.

Peabody Picture Vocabulary Test (PPVT) was developed by Dunn (1965) and revised version by Dunn and Dunn, (1981). It is a vocabulary comprehension test. It tests individuals in the age range 2.6 years - 40.11 years. It was primarily designed as an intelligence test. It consists of one hundred and fifty plates on each of which four pictures appear. The child has to point to the picture which depicts the word uttered by the examiner. It is applicable to subjects in the age range of two years, three months to eighteen years. The test manual provides tables about Mental Age, IQ and percentile rank for different scores vs. ages. PPVT is a vocabulary test and therefore does not tell much about the child's general comprehension of language.

A Test of Auditory Comprehension of Language (TACL) was developed by Carrow in 1968 and later revised in 1973. The test attempts to assess the auditory comprehension of English language structure in children and attempts to determine the sequence in which children comprehend the grammatical and lexical aspects of English. The test consists of a set of plates, each with three black and white drawings, one depicting the 'test' picture and the other two the 'contrasting' ones. The child has to just point to the named referent. He gets a score of one for every correct response. The recent edition of the test (1973) has one hundred and one plates, which test comprehension of selected nouns, morphological structures, and principles of

grammar and syntax. The test items are arranged by grammatical category and not by the level of difficulty. This test is developed for children from 3 years to age 9.11 years.

Norms of each structure were arrived at by calculating the age at which 60% of the sample comprehended the item correctly. Norms are provided for 3-6 years old children who come from middle class backgrounds. Several types of comparison can be made with the child's score and the standard scores. This test is considered a good test of language comprehension.

Assessment of child's language comprehension (ACLC) was developed by Foster, Giddan and Stark (1972). This test also assesses the child's understanding of grammatical units. It is applicable to children in the age range of three years to seven years. The test consists of fifty plates and a recording sheet. Testing is done in four sections. Part A consists of fifty words which require the identification of selected nouns, verb forms, prepositions and modifiers. Parts B, C and D also use these same words but the words are put together as two, three and four critical elements respectively. Each part is progressively more difficult. Normal percentage of correct responses for each section and the age are provided.

Test of syntactic abilities (TSA) is an elaborate test of syntactic structures. It was developed by Quigley et al in 1978. It consists of a battery of twenty individual diagnostic tests, each containing seventy multiple choice items; and a screening test containing 120 items selected from the diagnostic battery. The twenty individual tests of diagnostic battery cover nine of the major structures of English, namely, negation, conjunction, verb processes, question formation, pronominalization, relativisation, determiners, complementation and nominalization.

TSA is both a domain referenced and a normative test. It was initially standardized on profoundly deaf students. It is anticipated that the tests will be useful for the diagnostic and normative assessment of persons with language problems resulting from other causes. The obvious shortcomings of this battery of tests are the techniques used for evaluation and the time it takes for administration i.e. ten hours.

There are many screening tests of language. The following are the most frequently mentioned. Denver Developmental Screening Test (Frankenberg, Dodds and Fandal, 1970) has a 'language part' in it. This is constructed to elicit verbal responses from pre-school children by means of pictures and objects. The comprehension ability is also assessed by asking the child to point to objects and to carry out commands. The test screens children of one month to six years. The child's responses are recorded and evaluated for their age appropriateness. A general language assessment is made on the basis of the child's total number of age appropriate responses.

The North Western Syntax Screening Test (NSST) was developed by Lee (1970) along the lines of Frasier, Bellugi and Brown (1963) technique of testing imitation, comprehension and production. The test was developed as an instrument for speedy identification of children between three and eight years of age sufficiently delayed in syntactic development to warrant consideration for interventional language teaching. It has both expressive and receptive portions. The items under each portion are progressively more difficult.

Prutting, Gallagher, and Mulac (1975) have compared the expressive portion of NSST to a spontaneous language sample. Their results indicate that the expressive portion of NSST does not present an accurate picture of the spontaneous communicative skills of the language delayed child. So, they specify that it cannot therefore be interpreted beyond its stated purpose as a screening instrument.

Ratnsnik, Kles and Ratnsnik (1980) have shortened the NSST using a stepwise multiple regression model. The test was reduced from 20 to 11 items receptively and expressively, while accounting for 955 of total test score variance. Normatives for this test were provided in six month intervals whereas the original NSST uses one year intervals. The authors claim that comparable clinical decisions can be made employing either of the forms. The other screening tests which may be mentioned are

1. Houston test of language development (Crabtree, 1963).
2. Utah test of language development (Mecham, Jex and Jones, 1967).
3. Pre-school language scale (Zimmerman, Steiner and Evatt, 1969).

CELF-4 Screening Test was developed by Semel, Wiig and Secord in 2004. It evaluates the expressive and receptive language including both vocabulary and syntax. It can be used for the age ranging from 5-21 years and takes roughly about 15 minutes to be administered. Joliet 3 minute Preschool Speech and Language Screen was developed by Kinzler (1993). It can be administered on children ranging from 2-4 years of age and takes about 3-5 minutes to administer. It tests the expressive and receptive language vocabulary and syntax of the child and also screens for articulation problems.

Kindergarten Language Screening Test, 2<sup>nd</sup> Edition (KLST-S) was developed by Gauthier and Madison, (1998). It can be administered on children in the age range of 3.6 years-6.11 years and takes roughly about 5 minutes to complete. It tests the child's expressive and receptive language abilities like following directions, repeating sentences, making comparisons between objects etc. The Screening Kit of Language Development was developed by Bliss and Allen in 1984. It tests children in the age 3.1 years-4 years and test their vocabulary comprehension, story completion abilities,

sentence comprehension, paired sentence repetition with pictures, auditory comprehension of commands etc.

The Test of Early Language Development was developed by Hresko, Reid and Hammill in 1981 for the age range 3-8 years. It is a 38 item screening test and includes reception and expression of syntax as a sub section. The Compton Speech and Language Screening Evaluation was developed by Compton in 1978 and tests children in the age range 3-6 years. It tests the child's syntactic abilities along with other abilities like articulation, vocabulary, memory span, morphology, fluency and voice quality.

The Bankson Language Screening Test (BLST) was developed by Bankson in 1977 and test children in the age range of 4.1 years to 8 years. It includes 17 sub domains and includes syntax as well. Carrow Elicited Language Inventory (CELI) was developed by Carrow in 1974. It consists of one phrase and fifty one sentences, ranging from 2 to 10 words. It samples simple clause structures and a few subordinate clauses are included. Negations, Wh-questions, imperatives, pronouns, prepositions and various types of noun phrases are sampled.

The Language Sampling, Analysis and Training (LSAT) was described by Tyack and Gottsleben (1974) and uses 100 sentence sample of spontaneous speech of the child. Various types of clauses are included in analysis and negatives, questions, pronouns, prepositions and conjunctions are also evaluated. As the title implies, the analysis portion of the procedure is designed to lead directly to identifying the therapy goals. The Language Assessment, Remediation and Screening Procedure (LARSP) was developed by Crystal, Fletcher and Garman (1976). It is based on the structural linguistic model of syntax. Several patterns of language disabilities are discussed that correspond to profiles obtained from LARSP but no normative data are represented.

Not much research work has been reported in India, regarding language testing. Some work has been done on articulation testing. Babu, Ratna and Bettagere (1972) developed a picture word articulation test in Kannada. Acquisition of articulatory skills have been studied making use of this test (Nataraja, Bharadwaj & Malini, 1977; Banu, 1977).

Kumudavalli (1975) developed a test making use of picturable words to study the relationship between the acquisition of distinctive feature and auditory discrimination skills. Suri (1973) translated and adopted Porch Index of communicative ability to Hindi. This test has also not been standardized. No further work has been reported regarding this adopted test. Subramaniah (1978) reported a test to assess the acquisition of morphological categories. This test was developed on the lines of Berko (1958) technique. The test has not been standardized.

Various language tests have been developed in Indian languages. The development of morphological rules in children of 6 – 8 years of age was investigated by Subramanyaiah (1978). The development was assessed with the help of the Kannada version of the “Wug Test” (Berko, 1958). However, this test has also not been standardized on a normal population.

A test for assessing syntax in Kannada (TASK) was developed by Vijayalakshmi (1981) for children in the age range of 1-5 years. This is a comprehensive, reliable and valid test which attempts to provide language profiles for different age groups and identifies specific areas of syntactic deficits in language disordered children.

Table 14. Tests of language abilities of children-*Indian Studies*.

Sl. No.	Name of Test	Author	Age Range	Sub Sections
1.	Linguistic Profile Test (LPT) - Kannada	Karant, 1980	>6 years	Assesses Phonology, Syntax and Semantics
2.	A Test for Assessing Syntax in Kannada (TASK)	Vijayalakshmi, 1981	1-5 years	Assesses comprehension and expression of a wide spectrum of grammatical categories and sentence types.
3.	A Syntax Screening Test in Tamil	Murthy, 1981	2-5 years	Assesses negation, definite determiners, Wh-questions, yes/no questions, person, adjectives tenses, post positions, comparatives, superlatives, pronominal terminations etc.
4.	A Language Test in Kannada for Expression in Children	Kanthayani, 1984	5-8 years	Assesses expression of nouns, verbs, gender markers, tense markers etc.
5.	A Screening Picture Vocabulary Test (KPVT) (Kannada)	Sreedevi, 1988	3-6 years	Screens language acquisition of Kannada Speaking children. used as a clinical tool to identify comprehension deficiencies in language disordered population.
6.	A Screening Picture Vocabulary Test in Tamil (TPVT)	Bhuvaneshwari, 1993	3-6 years	Mainly a comprehension test. Helps in identifying children with language delay or language disorders.
7.	Linguistic Profile Test (LPT)-Hindi (Normative data for children Grade I to X)	Sharma, 1995	6-15 years	Assesses Phonology, Syntax and Semantics
8.	Malayalam Language Test (MLT)	Rukmini, 1994	4-7 years	Assesses Syntax and Semantics
9.	Linguistic Profile Test (LPT)-Malayalam (Normative data for children Grade I to X)	Asha, 1997	6-15 years	Assesses Phonology, Syntax and Semantics
10.	Linguistic Profile Test (LPT)- Telugu (Normative data for children Grade I to X)	Suhasini, 1997	6-15 years	Assesses Phonology, Syntax and Semantics



Rukmini (1994) has developed Malayalam Language Test for children in the age range of 4-7 years. The test has two parts- semantics and syntax. Each part has 11 subsections with five items each for expression and reception, except semantic discrimination (only reception) and lexical category (only expression). The test was administered to ninety Malayalam speaking children in the age range of 4-7 years. There were thirty children each in the age groups of 4-5years, 5-6years and 6-7years. The results indicated that the scores increased with increasing age. Children performed better in the reception task than on the expression task. Also, they performed better on syntactic tasks than on semantic tasks.

Sudha (1981) has developed a syntax screening test in Tamil for children in the age range 2-5yrs. The test was administered to six groups of 56 typically developing children in the age range of 2-5 years and three children with communication disorders, in the age range of 6-15yrs. The results showed an increase in the overall performance on all the studied grammatical categories that were observed as a function of age. Significant differences in the performance of males and females on the test were not observed in any groups except in 3.6 years to 4years. A significant difference in performance of children on the expression and comprehension items were observed across all groups. The comprehension scores were almost always remained superior to the expression scores for most of the grammatical categories.

Santhi (2008), developed a test for screening syntax in Malayalam, based on STASK in Kannada developed by Vijayalakshmi (1981). The test was administered on 60 children with typical speech and language development between the age range of two to five years, divided into three groups. The results showed no significant difference between the performance of males and females on the test in the groups studied, a significant difference was observed in the performance of children on the

comprehension and expression items across all the age groups. The comprehension scores almost always remained superior to the expression scores for most of the grammatical categories.

Basavaraj, Goswami, and Priyadarshi (2011) developed a test for screening syntax in Hindi, which is an adaptation of STASK in Kannada developed by Vijayalakshmi (1981). The test was administered on 160 children with typical speech and language development between the age range of 1-5 years. The results indicated a developmental pattern of language acquisition. Further, results indicated that regression can occur in few of the grammatical categories during the developmental stages.

Suhasini (1997) developed Linguistic Profile Test (LPT) in Telugu language and the normative data was documented for children between Grade I and X. The test consists of Phonology, Syntax and Semantics sub-sections. It is meant for assessing these sub-sections of language in children in the age range of 6 to 15 years. However, there is no available screening / diagnostic test in the Telugu language that assesses the syntactic development in early developmental age.

To summarize, majority of the developed tests are in English language. In clinical set ups in India, language development is tested either using the tests developed in other languages or adaptation of these tests (in terms of language and materials) are being used. It is necessary to develop tests suitable to specific culture and language. Thus the present study is an attempt to develop a comprehensive syntax screening test in Telugu language.

## CHAPTER III

### METHOD

The aim of the present study was to adapt STASK (Basavaraj, 1981) in Telugu so that it serves as a screening tool to assess the acquisition of syntactic categories in Telugu speaking children in the age range of 1-5 years.

#### Participants

A total of 160 participants (80 males and 80 females) in the age range of 1.0 to 5.0 years were included in the study. The data was collected in Hyderabad, capital of Andhra Pradesh.

#### Age Groups

A total of eight age groups were formed within a range of six months within each group. The groups were divided as follows:

Table 15. *Age group and the corresponding age range of the participants.*

Age Groups	Age Ranges
Group I	1.0-1.6 years
Group II	1.7-2.0 years
Group III	2.1-2.6 years
Group IV	2.7-3.0 years
Group V	3.1-3.6 years
Group VI	3.7-4.0 years
Group VII	4.1-4.6 years
Group VIII	4.7-5.0 years

Each age group consisted of 20 participants.

#### Inclusionary criteria

1. All participants were typically developing children in the age range of 1.0 to 5.0 years.
2. All participants were native speakers of Telugu.
3. All participants belonged to middle socio-economic status.

## **Exclusion Criteria**

1. Any speech and language deficits and delayed milestones.
2. Any past/present history of neurological, psychological and sensory deficits.

## **Ethical concerns**

The caregivers of the children were explained regarding the purpose and procedures of study, and an informed verbal and/ or written consent was taken.

## **Procedure**

### **I. Drafting the test material**

The 50 test items of Screening Test for the Acquisition of Syntax in Kannada (Basavaraj, 1981) were translated into Telugu. A review of the syntactic categories in Telugu language was made by referring to books, journals and web-based sources. The syntactic categories included in STASK in Kannada language was compared with that of Telugu language. The common categories were maintained and the final test material was compiled. The test material comprised of a set of pictures and toys. The pictures required for the test items were drawn by an artist. These were scanned and printed on A4 size paper and were laminated. The required toys were collected and the final kit was prepared.

### **II. Pilot study**

A pilot study was carried out as a preliminary try-out and for familiarization of administration. It was tested on a total of 32 children (four in each of the eight age groups), i.e., 1;0-1;6 years, 1;7-2;0 years, 2;1-2;6 years, 2;7-3;0 years, 3;1-3;6 years, 3;7-4;0 years, 4;1-4;6 years and 4;7-5;0 years. According to the performance of the

children the final test material was designed incorporating the necessary modification to suit to the needs of the children.

### III. Sub-sections

The test material consisted of a total of 61 items divided into 14 sections. Each sub-section was further classified as comprehension and expression sections. The details of the number of items in 14 sub-sections are given in Table 16.

Table 16. *Number of items under each grammatical structure.*

Section	Comprehension	Expression
Simple sentences	2	2
Person	2	2
Case markers	-	*2
Adjectives	2	2
Post-positions	2	2
Definite-determiner	-	*2
Tense markers	-	*2
Number markers	2	2
Wh-questions	-	*2
Yes-no questions	-	*2
Negatives	2	2
Embedded sentences	2	2
Co-ordinated sentences	3	3
Total	17	27
Narration	6	
Total	50	

\* A complete response for these items was given a score of 1 under the comprehension column and 1 score under the expression column. A partial response for these items was given a score of 1 under the respective column (Comprehension/Expression).

#### *Sub test I: Simple sentences*

It has three items for comprehension and three for expression. The questions asked are of such nature, which is often heard by the child during the daily routine. The material used for this sub test is toys like doll and comb.

Examples:

Comprehension: /ni ʃala tʃupitʃu/

Expression: /āme evəru/ (amma)

### ***Sub test II: Person***

This sub test has two items for comprehension and two items for expression. It tests the child's knowledge of first (I, me), second (you, us) and third (we) person in both comprehension and expression categories. The materials used for this sub test are toys like dolls and flowers.

Examples:

Comprehension: /nuvvu a: me tʃei pəttuko/

Expression: /ippudu evəru tʃəpətlu kottəru/

### ***Sub test III: Case markers***

This sub test has two items for comprehension and two items for expression. It tests the child's abilities to comprehend. Flash cards, toys like doll and reinforcers like chocolates are used for this sub test.

Examples:

Comprehension: /nenu evəriṇi koḍuṭuṇṇanu/

Expression: /iḍi evəri tʃira/

### ***Sub test IV: Adjectives***

This sub test has two items for comprehension and two items for expression. The materials used for this sub test are toys like dolls, flowers. Concepts like long-short, fat-thin, less-more and colors are tested.

Examples:

Comprehension: /evəriki peḍḍa dʒəra ũḍi/

Expression: /i bommə kəte i bommə ela ũḍi/

### ***Sub test V: Post positions***

This sub test has two items for comprehension and two items for expression. Post positions like ‘munndu’ (in front), ‘lopala’ (inside), ‘kinda’ (under) etc are tested. Toys like dog, glass, marbles are used for this sub test.

Examples:

Comprehension: /tebəl paina unna glasunu tʃupĩ tʃu/

Expression: /kukkə ekkədə ũḍi/

### ***Sub test VI: Definite Determiner***

This sub test has two items for comprehension and two items for expression. Definite determiners like ‘ikkada’ (this) and ‘akkada’ (that) are tested using flash cards and materials like book and pen.

Examples:

Comprehension: /puʃtəkəmu ekədə ũḍi/

Expression: /əmmaji evəru/

### ***Sub test VII: Tense Markers***

This sub test has two items for comprehension and two items for expression. It tests tenses like present continuous, simple past, simple future and future continuous tense. The materials used for this sub test are flash cards and objects like a book.

Examples:

Comprehension: /təlupu ṭiji / dəbbə ṭiji/

Expression: /əmma e:mi tʃeṣṭũḍi/

### ***Sub test VIII: Number Markers***

This sub test has two items for comprehension and two items for expression. It tests the child's knowledge of singular and plural. The materials used for this sub test are flash cards.

Examples:

Comprehension: /əmmajilu unnə tʃiʔrəm tʃupĩ tʃu/

Expression: /iʔənu əbbaji/, /viləʔta evəru/

### ***Sub test IX: Wh-Questions***

This sub test has two items for comprehension and two items for expression. It tests Wh-question markers like where, what and how. Objects like bag, mat, and chocolates are used in this sub test.

Examples:

Comprehension: /nivu ekkədə kurtʃunavu/

Expression: /i dəbba ela ʔijali/

### ***Sub test X: Yes-No Questions***

This sub test has two items for comprehension and two items for expression. It tests the child's ability to respond to a question in yes or no. Both, single word response or sentential responses are accepted as correct in this section. Comprehension sub section consists of 2 yes/no questions and the child is expected to respond appropriately. In the expression sub test, the child is asked to repeat the same questions.

Examples:

Comprehension: /əmma kurtʃuni ʔɔa/

Expression: repeat the same question



### ***Sub test XI: Negatives***

This sub test has two items for comprehension and two items for expression. This sub test tests the child ability to understand and express the concept of negation. Materials used for this sub test are marbles, book, glass, pens.

Examples:

Comprehension: /e glasulo gólilu levu/

Expression: /nenu mi əmməna/

### ***Sub test XII: Embedded Sentences***

This sub test has two items for comprehension and two items for expression. This sub test tests the child's ability to comprehend and express the feature of embedding by using toys like beads/marbles and glass/boxes. For expression, the child is asked to repeat the same sentence as spoken by the examiner.

Examples:

Comprehension: /ekkuva gólilu unnə dəbbə tʃ upĩ tʃu/

Expression: /nenu emi tʃupĩ tʃəmənnanu/

### ***Sub test XIII: Co-ordinated Sentences***

This sub test has three items for comprehension and three items for expression. It test the child's capability to understand and use forms like 'inka' (and), 'leda:' (or) and complex co-ordinated sentence form. For expressive part, the child is asked to test what the examiner had asked him to do. Toys like doll, dog toy, box and objects like pencil, eraser and book are used in this sub test.

Examples:

Comprehension: /pustəkəmu leđa rəbbər ivvu/

Expression: /nenu emi lvvəmənnanu/

### **Instructions for Administration**

The general instruction for administration of test was prepared based on STASK instruction manual. The specific instructions for each item were incorporated along with the test items for ease of administration.

### **Scoring**

A scoring sheet was designed (Appendix-II). The scoring of the comprehension and expression items was planned as follows:

- a. Comprehension: The responses were scored as correct response (CR) or no/incorrect response (NR). A score of 2 was given for CR and 0 for NR.
- b. Expression: The responses were scored as correct response (CR), partial/incomplete response (PR/IR) or no/incorrect response (NR). A score of 2 was given for CR, 1 for PR/IR and 0 for NR.

Thus, the maximum score for comprehension was 56 (28 items x 2) and for expression was 54 (27items x 2). The maximum score in the narration section was 12. The grand total maximum score for the test was 122.

### **Statistical Analysis**

The obtained data was subjected to appropriate statistical analysis using SPSS (Version 16.0). The following statistical analyses were made.

- i) The mean and standard deviation scores were computed for the age of acquisition of each of the grammatical category. It was also used to compare the acquisition patterns among the groups and between males and females.
- ii) Independent sample t-test was carried out to study gender difference, if any, for each of the grammatical classes acquired in the same group.

iii) Advanced statistical procedure, i.e., MANOVA was applied in order to study the pattern of acquisition of each grammatical category across the seven age groups. Duncan's Post-Hoc test was also used to find out the homogeneity and differences across the various age groups.

## CHAPTER IV

### RESULTS

The aim of the present investigation was to adapt Screening Test for the Acquisition of syntax in Kannada (STAS-K) for Telugu speaking children in the age range of 1-5 years. The test was administered for all the children and the corresponding responses were documented. Prior to item analysis the scores were analyzed to observe the general developmental pattern across age groups for both males and females. The mean and standard deviation was obtained and the results are depicted in graphical form.

a) **Simple Sentences:** From figure 1 and 2, it is evident that an increasing developmental pattern was noticed in both genders. Further, both males and females mastered the comprehension and expression of simple sentences by the age of 2.7 years.

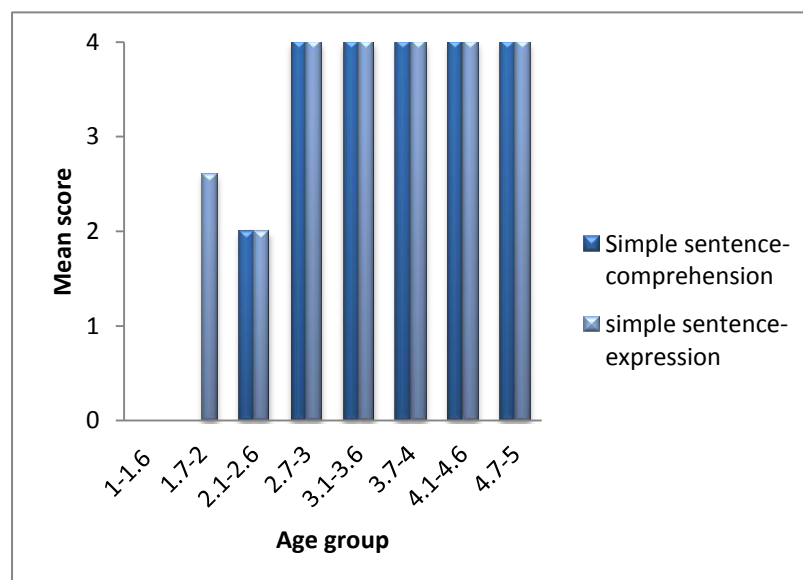


Figure 1. *Comprehension and expression scores for simple sentences in males.*

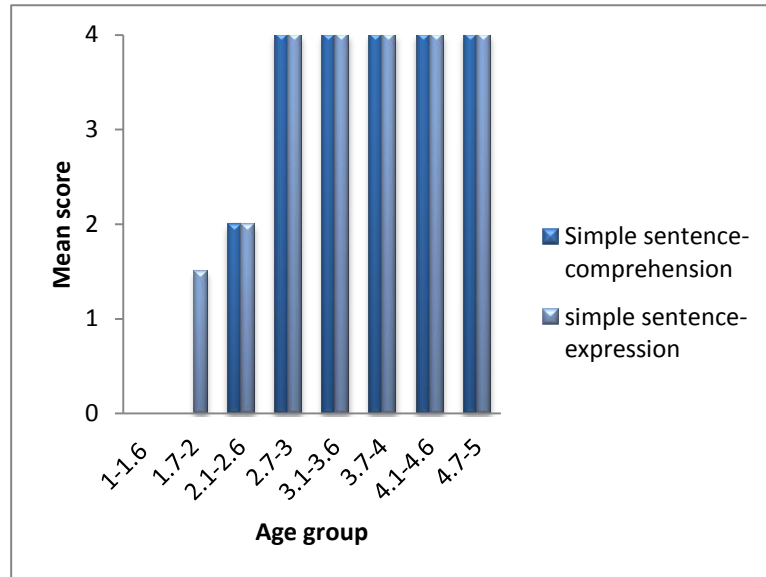


Figure 2. *Comprehension and expression scores for simple sentences in females.*

**b) Person:** From Figure 3 and 4 it is evident that there is an increase in the comprehension and expression values of the participants. However, the developmental trend is different for comprehension and expression skills.

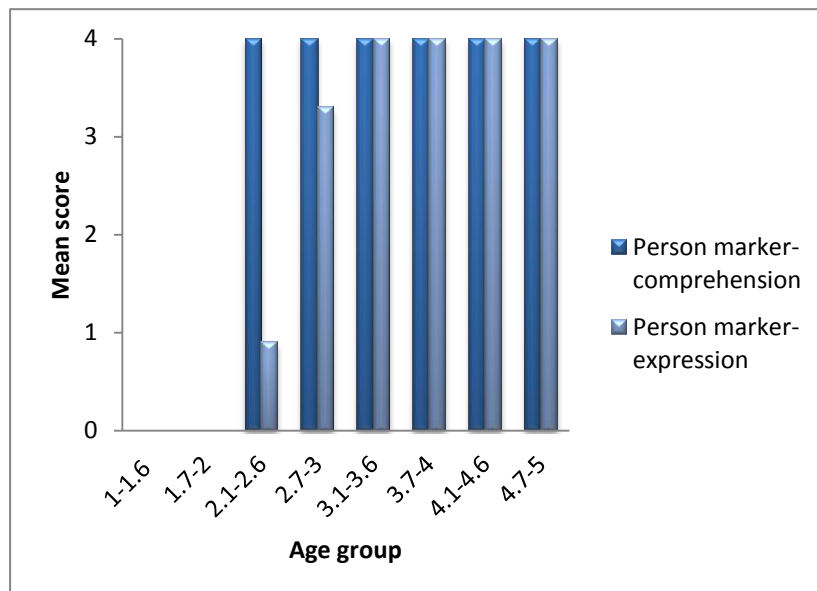


Figure 3. *Comprehension and expression scores for person marker in males.*

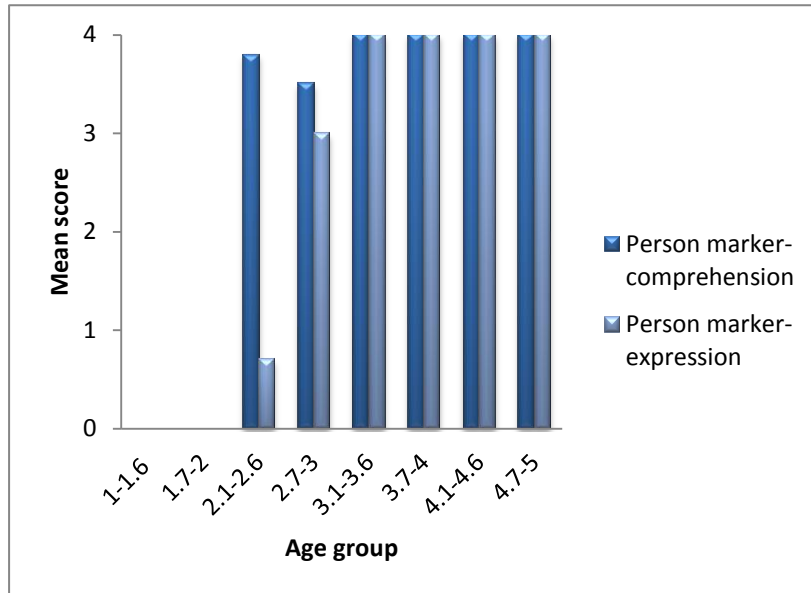


Figure 4. *Comprehension and expression scores for person marker in females.*

c) **Case Marker:** It is observed that the expression scores are greater than the comprehension scores. Therefore, it can be stated that one to one comparison for comprehension and expression during developmental period is warranted. It would be ideal if these patterns are observed separately in males and females during the developmental stages. In Figure 5 and 6, it is evident that there is an abrupt increase in comprehension scores, while a gradual increase in the expression scores is noticed in the participants for case markers.

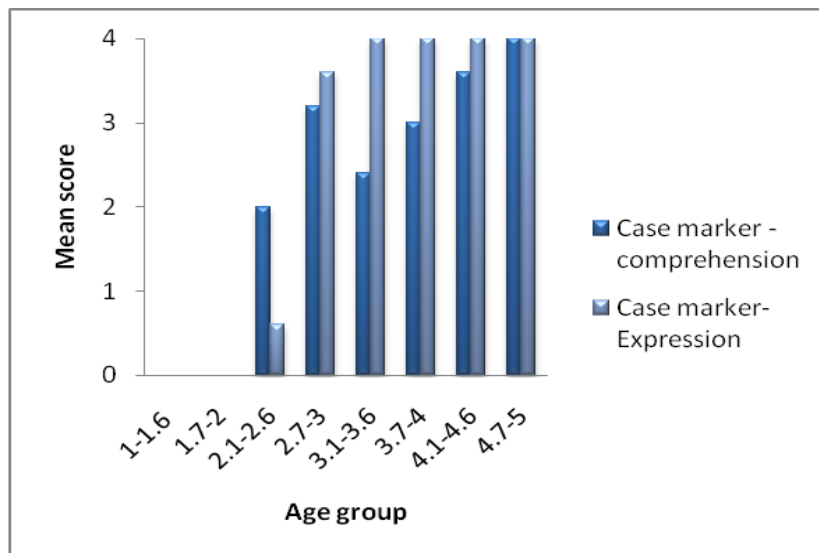


Figure 5. *Comprehension and expression scores for case marker in males.*

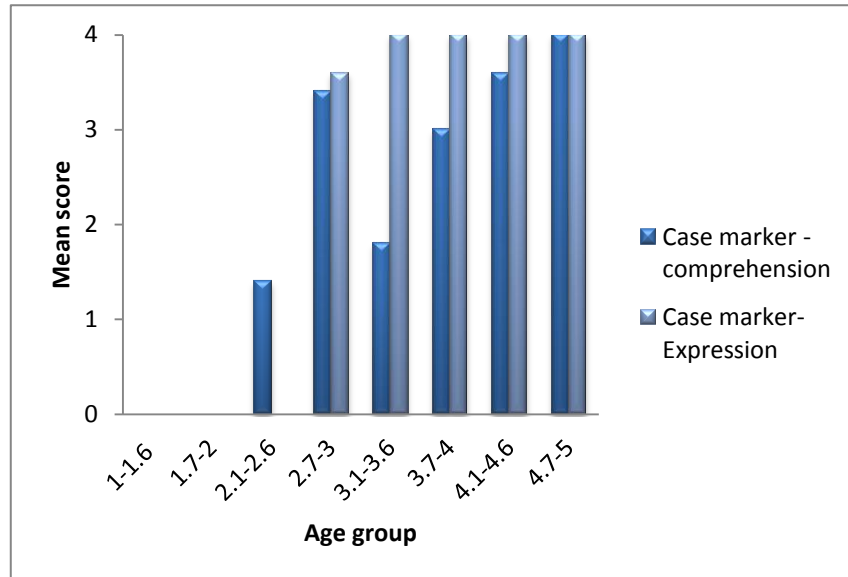


Figure 6. *Comprehension and expression scores for case marker in females.*

d) **Adjectives:** It can be inferred from figure 7 and 8 that children performed better for the comprehension sub test than the expression sub test and increase in the developmental pattern with increase in age is noticeable in males and females.

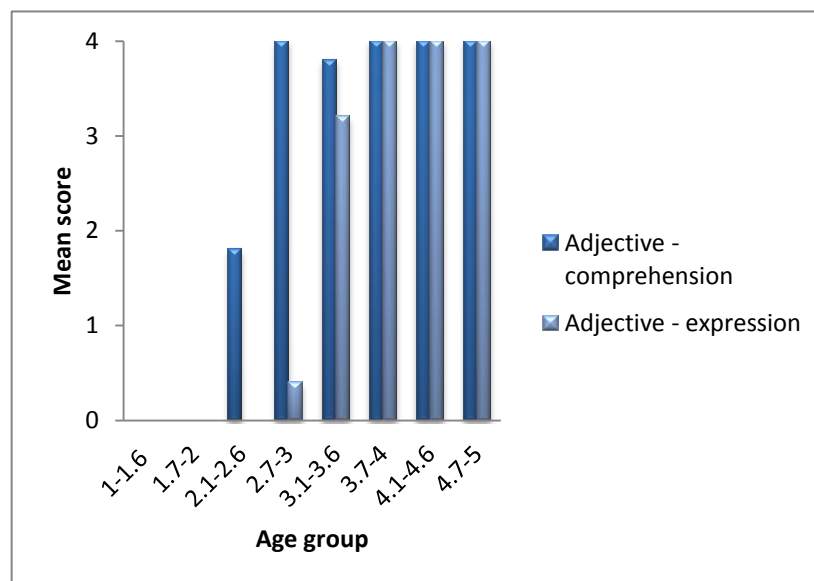


Figure 7. *Comprehension and expression scores for adjectives in males.*

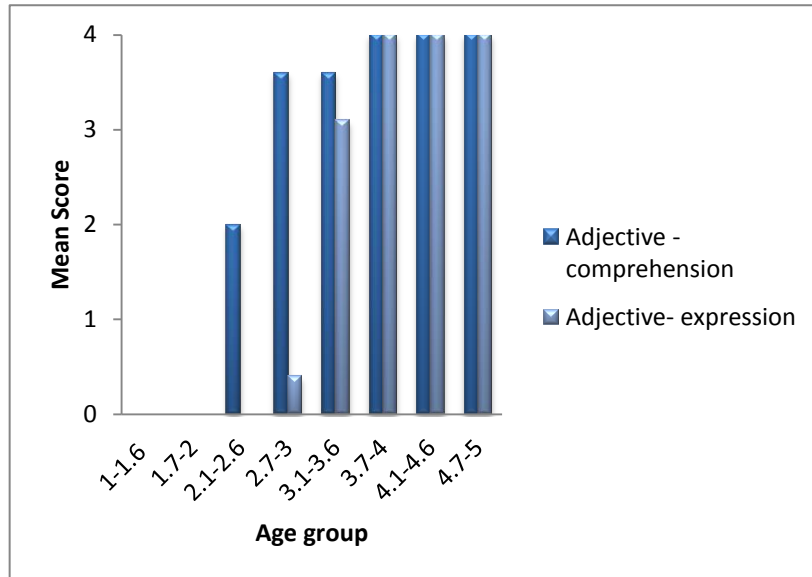


Figure 8. *Comprehension and expression scores for adjectives in females.*

e) **Post-positions:** It is noticeable from the Figure 9 and 10, that comprehension scores are better than expression scores for both males and females. In males, a dip in the scores of expression in 3.7-4 years is evident in contrary to 3.1-3.6 years where there was an abrupt increase in the expressive scores of males and then again a stable developmental pattern was followed. Whereas for females a consistent increasing developmental pattern was noted.

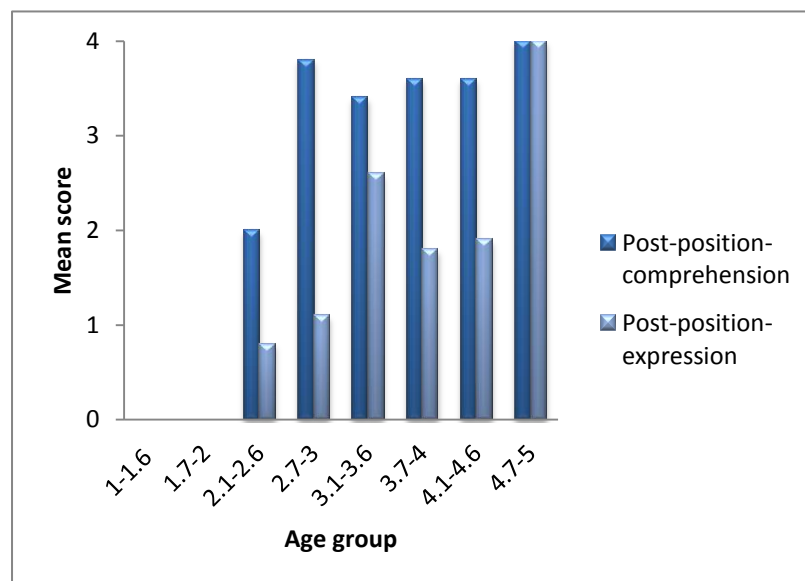


Figure 9. *Comprehension and expression scores for post positions in males.*



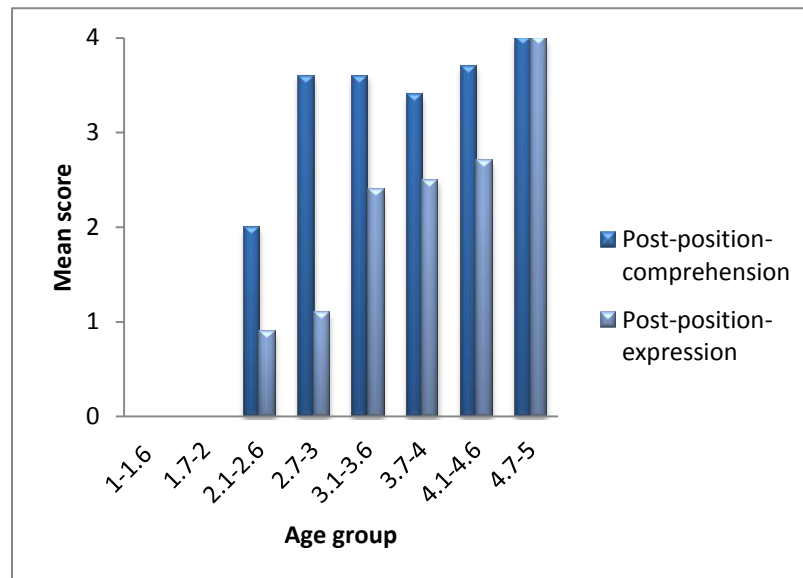


Figure 10. *Comprehension and expression scores for post positions in females.*

f) **Definite determiner:** The results indicated that children started acquiring the definite determiners in the age range from 2.1-2.6 years i.e. group 3. It is evident from the Figure 11 that both comprehension and expression are acquired in group 4 i.e., in 2.7–3.0 years, but there is a dip in comprehension of definite determiners in group 6 (3.7-4.0 years). Based on the results of group 6, it can be stated that in this age group, expression is better than comprehension. It might be because of the abstractness of the comprehension test items. It is evident from Figure 12 that expression is better than comprehension in group 3 (2.1-2.6years). However, in group 5 (3.1-3.6years) again there is a dip in the comprehension scores thereafter gradual increasing patterns were noted.

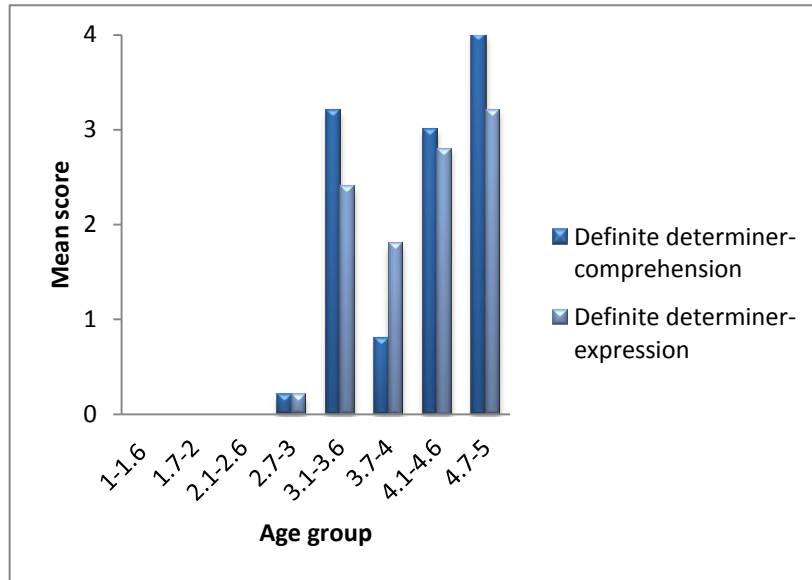


Figure 11. *Comprehension and expression scores for definite determiner in males*

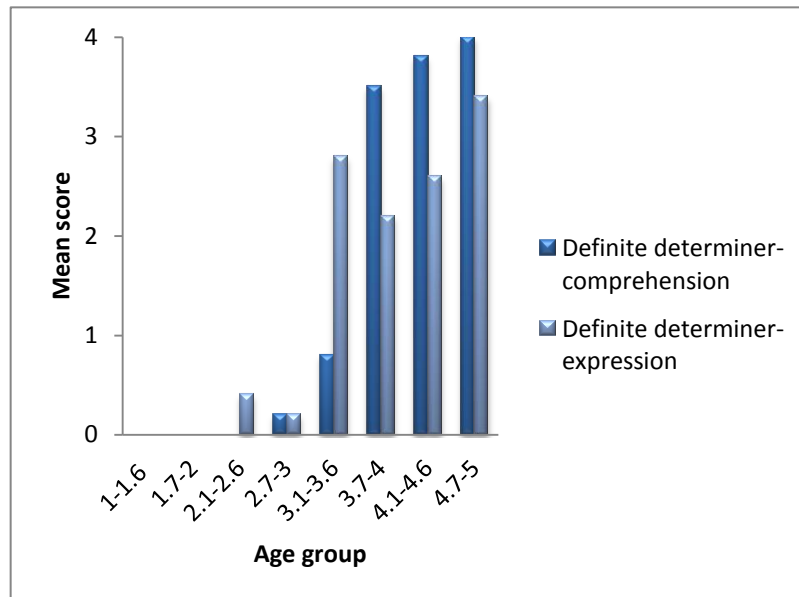


Figure 12. *Comprehension and expression scores for definite determiner in females*

**g) Tense Markers:** From the Figure 13 and 14, it can be inferred that both comprehension and expression showed uneven developmental patterns in both females and males. In contrast, a regression of the grammatical structure for both males and females was evident in 2.7-3 years. While males also showed

regression in group 6 and 7. However, expression scores are better than comprehension scores.

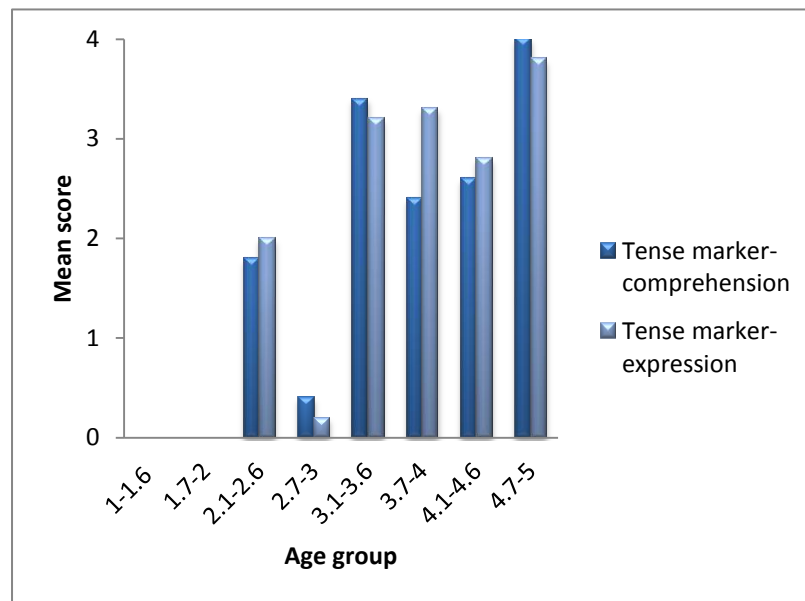


Figure 13. *Comprehension and expression scores for tense markers in males*

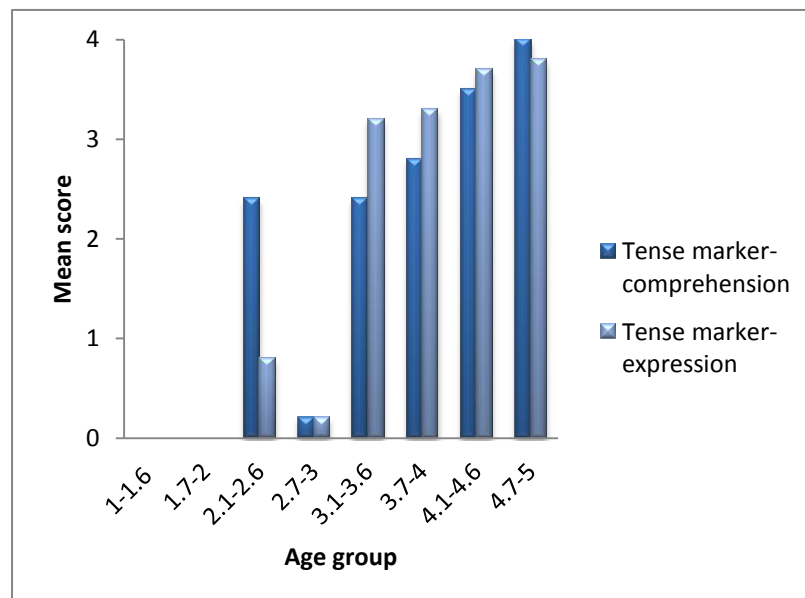


Figure 14. *Comprehension and expression scores for tense markers in females*

**h) Number Markers:** Both males and females started acquiring comprehension of number markers from the age of 3 years and above (group 5). A sudden rise in the comprehension scores was seen for males for group 8 whereas an even pattern of development was evident for the comprehension scores for females.

For expression, both males and females start using the number markers for communication from the age of 4<sup>1/2</sup> years and above.

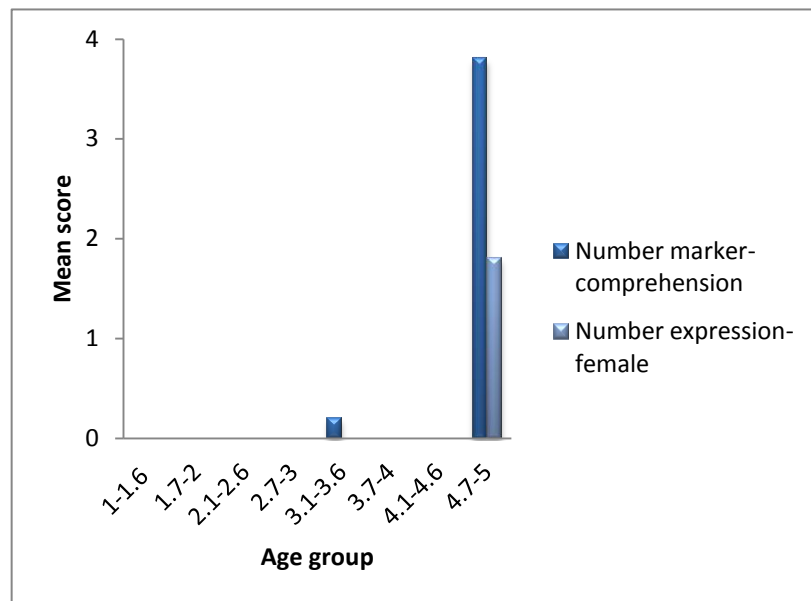


Figure 15. *Comprehension and expression scores for number markers in males.*

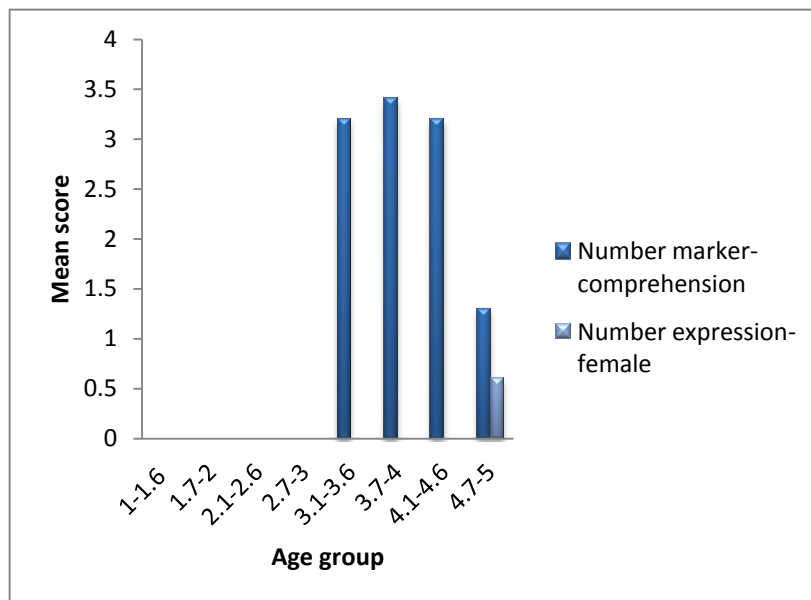


Figure 16. *Comprehension and expression scores for number markers in females*

i) **Wh-questions:** Figure17 shows that in males the acquisition of comprehension of wh-questions started in group 3 and expression begins from group 4 onwards. From Figure 18 it can be interpreted that females started

acquiring comprehension and expression for wh- questions in group 3. There was a dip in the expression scores of females in group 4, whereas a gradual developmental pattern was seen in males.

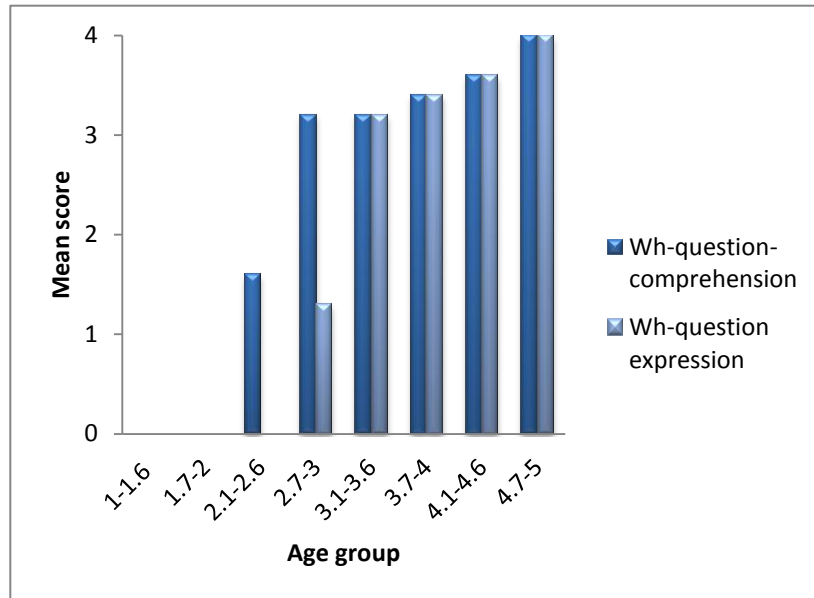


Figure 17. *Comprehension and expression scores for Wh-questions in males*

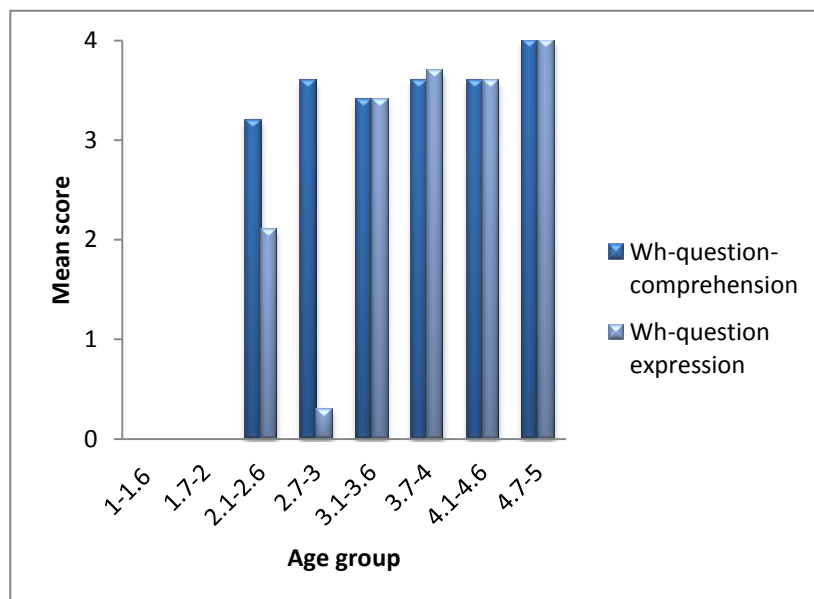


Figure 18. *Comprehension and expression scores for Wh-questions in females*

j) **Yes/No questions:** Both males and females began comprehending yes-no questions by the age of 2 years and above and almost achieved by 3 years of age. In figure 19 in females, the expression started by 2.1-2.6 years of age and then in group 2.7-3 years and 3.1-3.6 years, there was a decline in the expression scores, where minimal responses were observed and finally achieved in 4.7-5 years. The initiation of expression of this grammatical structure was seen in the 2.7-3 years for males, it was mastered in 4.7-5 years i.e. by 5 years of age.

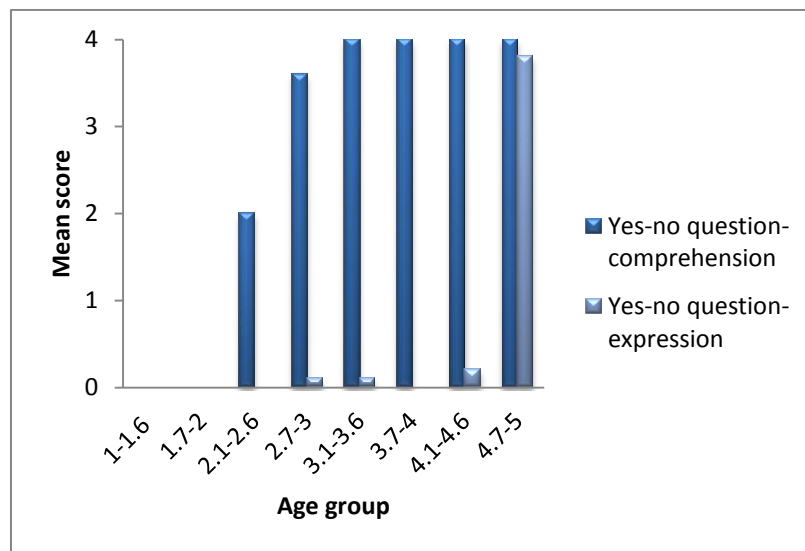


Figure 19. Comprehension and expression scores for yes-no questions in males

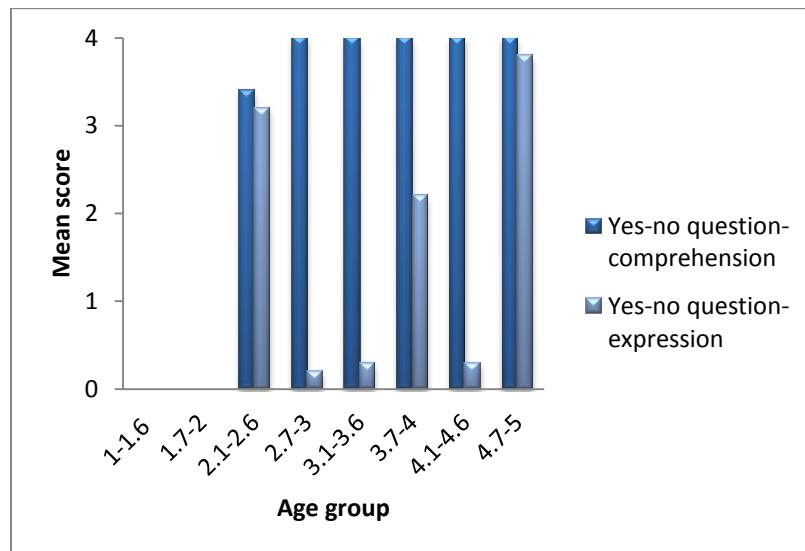


Figure 20. Comprehension and expression scores for yes-no questions in females

**k) Negatives:** Comprehension of negative markers started by 2.1- 2.6 years of age. However, it was noted that the expression scores become better than the comprehension scores at the later stage which can be attributed to the complexity of the stimuli. Further, to the fact that it was a binary choice task and thus, there could be chances of mere guess work. In males, for comprehension an uneven pattern was noticed. In both males and females, the expression is better than comprehension .For expression, males started using negatives by age of 2.7–3 years. In females, the expression of negative marker started at the age of 2 years and was achieved by the age of 3½ years.

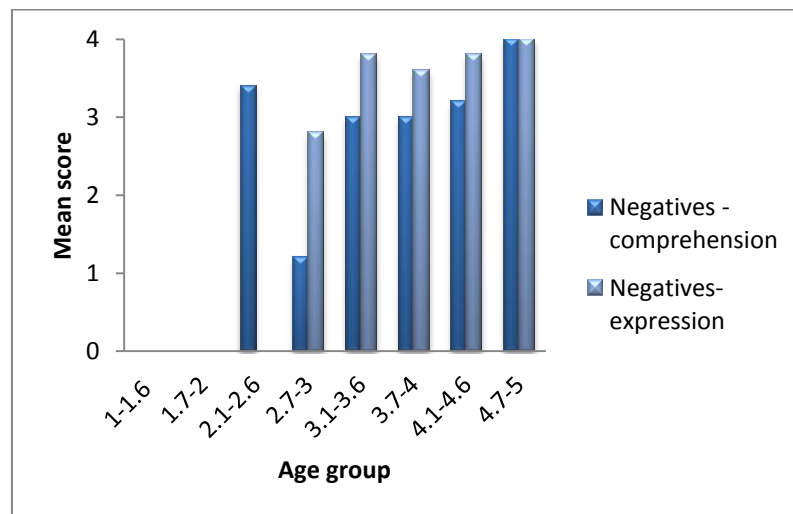


Figure 21. *Comprehension and expression scores for negatives in males*

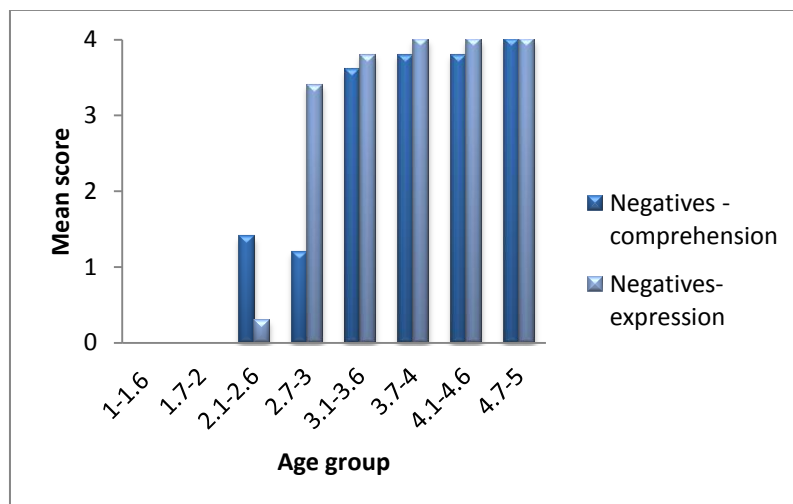


Figure 22. *Comprehension and expression scores for negatives in females*

1) **Embedded sentences:** From the figure 23 and 24, it is evident that both males and females started understanding embedded sentences by 2 years of age. Comprehension of this grammatical feature was achieved by group 4 i.e., 2.7-3 years in both males and females. Acquisition of expression was noticed in the group 8 in both males and females.

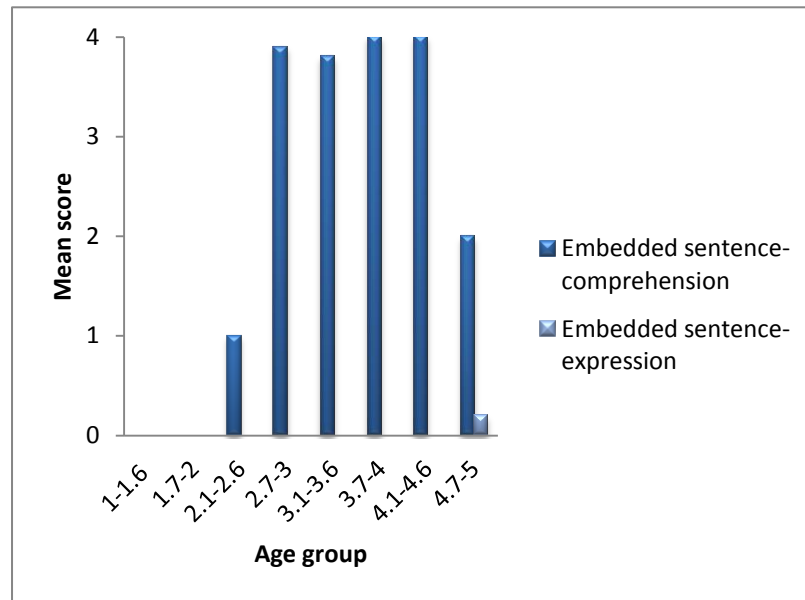


Figure 23. Comprehension and expression scores for embedded sentences in males

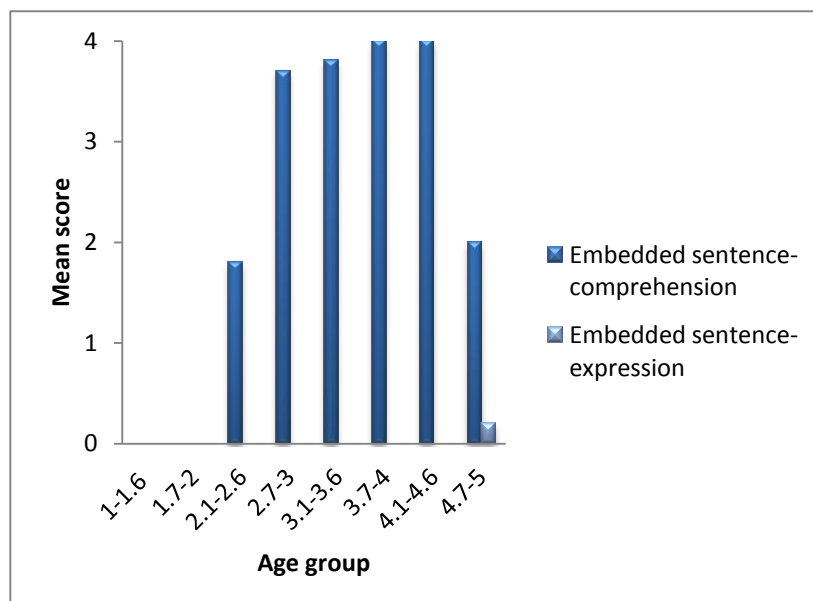


Figure 24. Comprehension and expression scores for embedded sentences in females



**m) Co-ordinated Sentences:** Acquisition of comprehension of this grammatical category for both males and females started around the age of 2-2.5 years and followed an even developmental pattern. In males, expression of this grammatical category started in group 3.1-3.6 years. Whereas in females, the acquisition started in 2.1-2.6 years, followed by regression in performance in 2.7-3 years. From 3.1-3.6 years onwards, consistent developmental trend was evident.

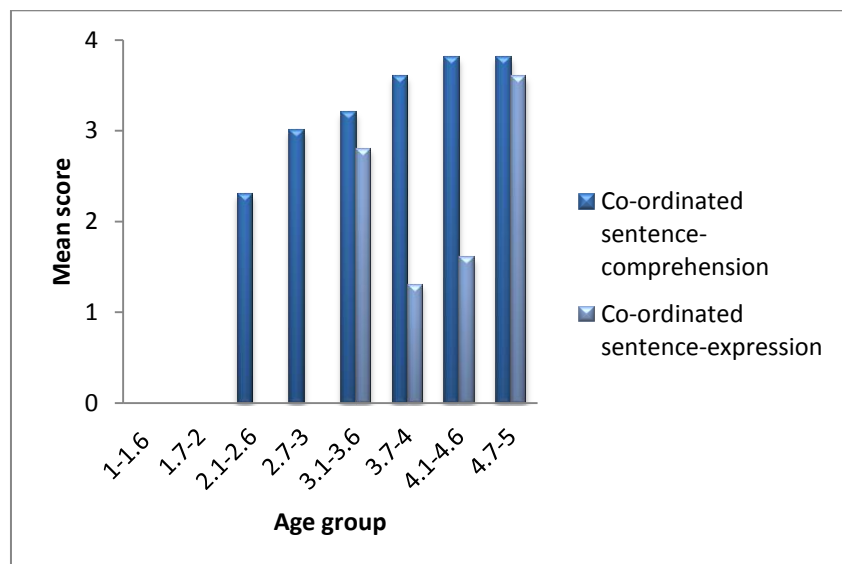


Figure 25. *Comprehension and expression scores for co-ordinated sentences in males*

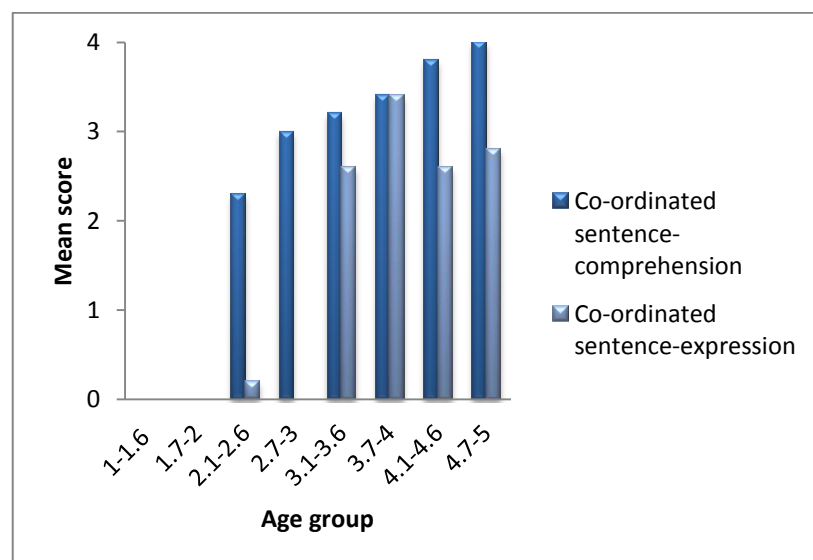


Figure 26. *Comprehension and expression scores for co-ordinated sentences in females.*

n) **Narration:** From figure 27, it can be seen that the acquisition of narration started in 2.1-2.6 years and the performance for the narration, both males and females showed almost similar developmental trend in comprehension and expression skills.

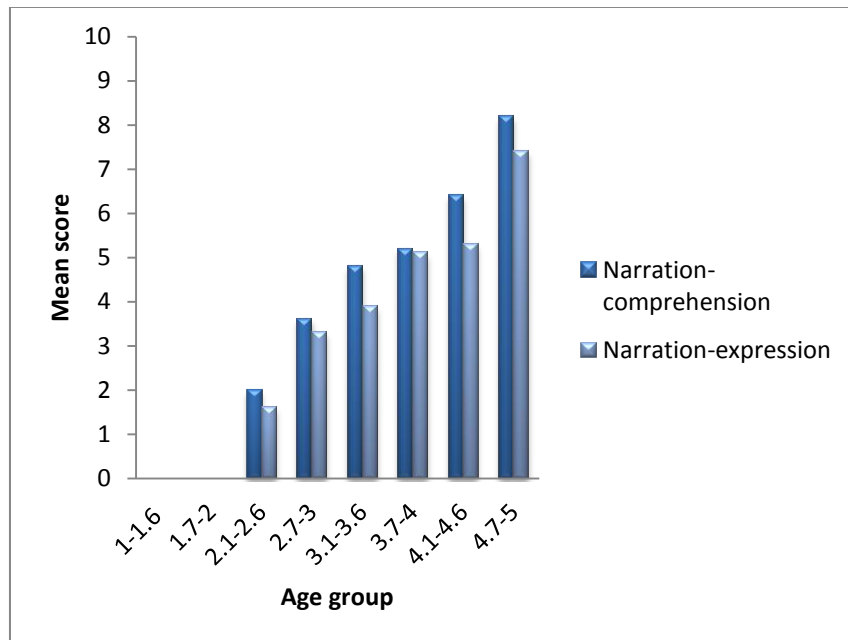


Figure 27. *Comprehension and expression scores for narration in males*

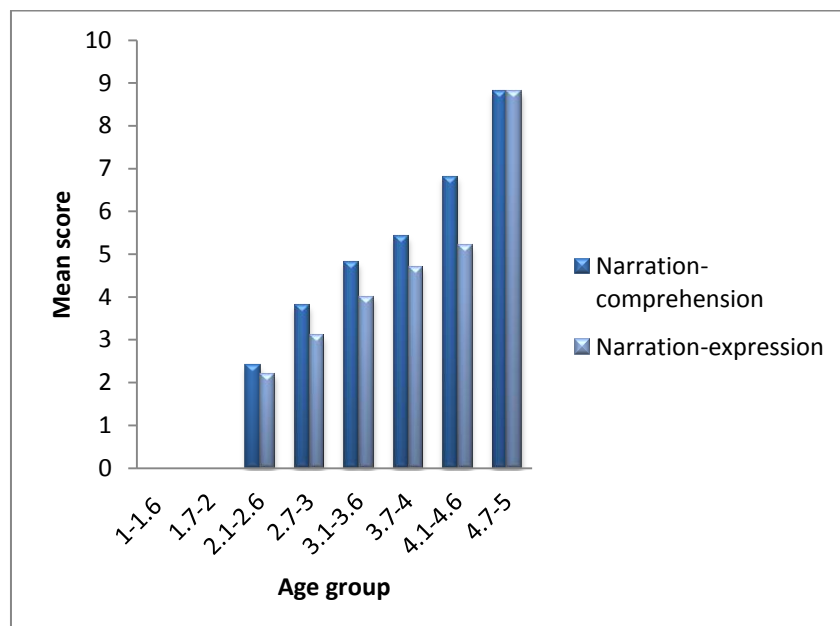


Figure 28. *Comprehension and expression scores for narration in females*

Thus, the above findings indicate the mean scores of males and females development pattern and the age of acquisition of these grammatical structures. The raw scores for the grammatical structures obtained in the particular age group were tabulated. The data was subjected to statistical analysis using SPSS (Version 16.0). The analysis was performed for both the raw data and the percentage score. The results are discussed under the following sections.

### **Analysis of raw data**

The raw scores obtained by the children were analyzed for each of the grammatical structure that was attained in the particular group. For example, in the age group of 1.7-2.0 years, two structures, i.e., simple sentences and person was acquired and hence, the raw scores obtained were examined, mean and standard deviation was computed. Similarly, it was performed for the rest six groups. The mean and standard deviation values are tabulated below separately for males and females. The data was analyzed separately for comprehension and expression.

#### **a) Simple Sentences**

**Comprehension:** An increasing trend in the mean scores was observed in the acquisition of this grammatical structure in both males and females from group III to group VIII {2.1-2.6 years (Mean: 2.00; SD: 0.00) to 4.7 - 5 years (Mean: 4.00; SD: 0.00)}. From group 4 onwards, both males and females obtained a mean score of 4.00. The same is being depicted in Table 17.

Table 17. Mean and standard deviation (SD) scores for comprehension of simple sentences in males and females.

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	2.00	0.00	2.00	0.00
2.7-3	IV	4.00	0.00	4.00	0.00
3.1-3.6	V	4.00	0.00	4.00	0.00
3.7-4	VI	4.00	0.00	4.00	0.00
4.1-4.6	VII	4.00	0.00	4.00	0.00
4.7-5	VIII	4.00	0.00	4.00	0.00

**Expression:** Table 18 shows that both males and females started expressing themselves from group 2 onwards (Mean: 2.60-males, 1.50-females) and the development progressed thereafter. The males showed a drop in their performance in group 3 (2.1-2.6 years). From group 4 onwards, both the males and females obtained a mean score of 4.00 indicating a consistent pattern of development.

Table 18. Mean and standard deviation (SD) scores for expression of simple sentences in both males and females.

Age groups	Group	Males		Females	
		Mean	D	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	2.60	0.84	1.50	1.17
2.1-2.6	III	2.00	0.00	2.00	0.00
2.7-3	IV	4.00	0.00	4.00	0.00
3.1-3.6	V	4.00	0.00	4.00	0.00
3.7-4	VI	4.00	0.00	4.00	0.00
4.1-4.6	VII	4.00	0.00	4.00	0.00
4.7-5	VIII	4.00	0.00	4.00	0.00

## b) Person

**Comprehension:** A similar pattern of acquisition as that of simple sentences was noticed for this particular grammatical structure. The mean scores of males and females in group 3 were 4.00 and 3.80 and in group 4 were 4.00 and 3.50 respectively. But in later groups, both males and females obtained a mean score of 4,

as shown in Table 19.

Table 19. *Mean and standard deviation (SD) scores for comprehension of persons in both males and females.*

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	4.00	0.00	3.80	0.63
2.7-3	IV	4.00	0.00	3.50	1.08
3.1-3.6	V	4.00	0.00	4.00	0.00
3.7-4	VI	4.00	0.00	4.00	0.00
4.1-4.6	VII	4.00	0.00	4.00	0.00
4.7-5	VIII	4.00	0.00	4.00	0.00

**Expression:** In group 3 and 4 the males obtained a mean score of 0.90 and 3.30, while females obtained a mean score of 0.70 and 3.00 respectively, as illustrated in Table 20. The performance of both the males and females were same from group 5 onwards as both the groups obtained a mean score of 4.00.

Table 20. *Mean and standard deviation (SD) scores for expression of persons in both males and females.*

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	0.90	0.73	0.70	0.67
2.7-3	IV	3.30	1.16	3.00	1.41
3.1-3.6	V	4.00	0.00	4.00	0.00
3.7-4	VI	4.00	0.00	4.00	0.00
4.1-4.6	VII	4.00	0.00	4.00	0.00
4.7-5	VIII	4.00	0.00	4.00	0.00

### c) Case Markers

**Comprehension:** The mean scores in Table 21 reflect an uneven pattern of development in the acquisition of case markers. Till group 2, this grammatical feature was not acquired in both males and females.

It can be noticed that in group 3, both the male and female participants started

acquiring this grammatical feature. The males in this group obtained a mean score of 2.00, while females obtained a mean score of 1.40 respectively. In group 4, the mean values were 3.20 and 3.40 for males and females respectively. A drop in performance for both males and females was noticed in group 5, where the mean values were 2.40 and 1.80. From group 6 onwards, an even pattern of improved performance was observed.

Table 21: *Mean and standard deviation (SD) scores for comprehension of case markers in both males and females.*

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	2.00	0.00	1.40	0.96
2.7-3	IV	3.20	1.39	3.40	0.96
3.1-3.6	V	2.40	1.26	1.80	1.13
3.7-4	VI	3.00	1.05	3.00	1.05
4.1-4.6	VII	3.60	0.84	3.60	0.84
4.7-5	VIII	4.00	0.00	4.00	0.00

Table 22: *Mean and standard deviation (SD) scores for expression of case markers in males and females.*

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	0.60	0.51	0.00	0.00
2.7-3	IV	3.60	0.84	3.60	0.84
3.1-3.6	V	4.00	0.00	4.00	0.00
3.7-4	VI	4.00	0.00	4.00	0.00
4.1-4.6	VII	4.00	0.00	4.00	0.00
4.7-5	VIII	4.00	0.00	4.00	0.00

**Expression:** Group 3 obtained a mean score of 0.60 for males, while females did not show any evidence of acquisition. The performance of the participants from group 4 onwards was more clear and robust, with a mean score of 3.60 for both males and females. The performance of both males and females were same from group 5

onwards, where a mean score of 4.00 was obtained. Thus, it can be stated based on these results, that the mastery of expression of this grammatical structure was evident from group 5 onwards. The same is being depicted in Table 22.

**d) Adjectives**

**Comprehension:** Table 23 shows that group 3 obtained a mean score of 1.80 for males and 2.00 for females. A small dip in performance is recorded in group 5 in males. Subsequently, mean score of males in group 4, 6, 7 and 8 was 4.00. In females, for group 4 and 5, a mean score of 3.60 while from group 6 onwards, a mean score of 4.00 was obtained.

Table 23: *Mean and standard deviation (SD) scores for comprehension of adjectives in males and females.*

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	1.80	0.63	2.00	0.00
2.7-3	IV	4.00	0.00	3.60	0.84
3.1-3.6	V	3.80	0.63	3.60	0.84
3.7-4	VI	4.00	0.00	4.00	0.00
4.1-4.6	VII	4.00	0.00	4.00	0.00
4.7-5	VIII	4.00	0.00	4.00	0.00

Table 24: *Mean and standard deviation (SD) scores for expression of adjectives in males and females.*

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	0.00	0.00	0.00	0.00
2.7-3	IV	0.40	0.69	0.40	0.69
3.1-3.6	V	3.20	1.47	3.10	1.37
3.7-4	VI	4.00	0.00	4.00	0.00
4.1-4.6	VII	4.00	0.00	4.00	0.00
4.7-5	VIII	4.00	0.00	4.00	0.00

**Expression:** Acquisition of this syntactic element started only by 3 years {(males- Mean: 0.40, SD: 0.69), (females- Mean: 0.40, SD: 0.69)} and in group V {(males- Mean: 3.20, SD: 1.47), (females- Mean: 3.10, SD: 1.37)} and then from group VI, there was a uniform increase in the scores with each successive groups. Group 6 onwards {(males-Mean: 4.00, SD: 0.00), (females- Mean: 4.00, SD: 0.00)} had acquired this grammatical component. The same is being presented in Table 24.

**e) Post positions**

**Comprehension:** Table 25 illustrates that an increasing trend was obtained in males from group III to VIII {2.1-2.6 years (Mean: 2.00; SD: 0 .00) to 4.1-4.6 years (Mean: 3.60; SD: 0.84)} and a small decrease in group V {3.7-4.0 years (Mean: 3.40; SD: 0.96)} In females, an increasing trend was obtained from group III to group V {2.1-2.6 years (Mean: 2.00; SD: 0.00) to 3.1-3.6 years (Mean: 3.60; SD: 0.84)}. A nominal decrease was observed in group VI {3.7-4.0 years (Mean: 3.40; SD: 0.96)} but this grammatical category was achieved in group VIII {4.7-5.0 years (Mean: 4.00; SD: 0.00)}.

Table 25. *Mean and standard deviation (SD) scores for comprehension of post positions in both males and females.*

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	2.00	0.00	2.00	0.00
2.7-3	IV	3.80	0.63	3.60	0.84
3.1-3.6	V	3.40	0.96	3.60	0.84
3.7-4	VI	3.60	0.84	3.40	0.96
4.1-4.6	VII	3.60	0.84	3.70	0.67
4.7-5	VIII	4.00	0.00	4.00	0.00

**Expression:** The acquisition of this element was different from other grammatical element as reflected in Table 26. Males started acquiring this form from the age of 2.5 years (Mean: 0.80, SD: 0.42). While in group IV and V there was a



slight increase in scores {2.7-3.0 years (Mean: 1.10; SD: 0.56) to 3.1-3.6 years (Mean: 2.60; SD: 1.35)}. Then a small decrease in mean scores in group VI and VII {3.7-4.0 years (Mean: 1.80; SD: 1.47) to 4.1-4.6 years (Mean: 1.90; SD: 1.19)} was noticed. Conversely, in females there was a steady increase in the scores from group IV (Mean: 1.10, SD: 0.87) to group VIII (Mean: 4.00, SD: 0.00).

Table 26. *Mean and standard deviation (SD) scores for expression of post positions in both males and females.*

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	0.80	0.42	0.90	0.73
2.7-3	IV	1.10	0.56	1.10	0.87
3.1-3.6	V	2.60	1.35	2.40	1.50
3.7-4	VI	1.80	1.47	2.50	1.58
4.1-4.6	VII	1.90	1.19	2.70	1.63
4.7-5	VIII	4.00	0.00	4.00	0.00

**f) Definite determiner**

**Comprehension:** Table 27 reveals that this grammatical structure was not acquired in both the genders till group III i.e. till 2.1 years of age. It can be observed that this grammatical structure started acquiring in group IV {2.7-3.0 years (Mean: 0.20; SD: 0.63)} for both the genders. However, the male children in group V obtained a mean score of Mean: 3.20 while females obtained a mean value of 0.80. The consistency in terms of acquisition of this grammatical category in both the genders was obtained in group VII onwards. The mastery of this grammatical structure was achieved in group VIII.

Table 27. Mean and standard deviation (SD) scores for comprehension of definite determiner in both males and females.

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	0.00	0.00	0.00	0.00
2.7-3	IV	0.20	0.63	0.20	0.63
3.1-3.6	V	3.20	1.03	0.80	1.03
3.7-4	VI	0.80	1.03	3.50	0.85
4.1-4.6	VII	3.00	1.41	3.80	0.63
4.7-5	VIII	4.00	0.00	4.00	0.00

**Expression:** The acquisition trend in this category was noticed at the age of 2.7-3.0 years i.e., groups IV. The performance of the participant improved in all the groups, except in group VI, where a decline was observed in both the genders {3.7-4.0years (Mean: 1.80-males and 2.20 in females). The performance of both the genders from group VII onwards was consistent as evident from the mean values shown in Table 28.

Table 28. Mean and standard deviation (SD) scores for expression of definite determiner in both males and females.

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	0.00	0.00	0.40	0.51
2.7-3	IV	0.20	0.63	0.20	0.42
3.1-3.6	V	2.40	0.84	2.80	1.03
3.7-4	VI	1.80	0.63	2.20	0.63
4.1-4.6	VII	2.80	1.03	2.60	0.96
4.7-5	VIII	3.20	1.03	3.40	0.96

**g) Tense markers**

**Comprehension:** Acquisition of tense marker grammatical category was noticed in group III in both genders, as tabulated in Table 29. The performance of both the genders deteriorated in group IV. The increasing trend of mean values was

evident from group VI onwards in both the genders. The total mean value of 4.00 was achieved by both the genders in group VIII.

Table 29. *Mean and standard deviation (SD) scores for comprehension of tense markers in both males and females.*

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	1.80	0.63	2.40	1.26
2.7-3	IV	0.40	0.84	0.20	0.63
3.1-3.6	V	3.40	0.96	2.40	1.26
3.7-4	VI	2.40	1.57	2.80	1.39
4.1-4.6	VII	2.60	1.35	3.50	0.85
4.7-5	VIII	4.00	0.00	4.00	0.00

**Expression:** The tense marker grammatical category was acquired by both the genders in the age of 2.1- 2.6 years, i.e., group III (Mean: 2.00 in males and 0.80 in females) as evident from Table 30. The performance of both the genders deteriorated for the expression of tense markers in group IV, where the mean value was 0.20. Group VI onwards, both the genders showed a consistency in the mean score values, except the males in group VII, where the mean values (2.80) declined.

Table 30. *Mean and standard deviation (SD) scores for expression of tense markers in both males and females.*

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	2.00	0.81	0.80	1.13
2.7-3	IV	0.20	0.42	0.20	0.42
3.1-3.6	V	3.20	1.03	3.20	1.03
3.7-4	VI	3.30	0.94	3.30	0.82
4.1-4.6	VII	2.80	1.03	3.70	0.67
4.7-5	VIII	3.80	0.42	3.80	0.42

## h) Number Marker

**Comprehension:** The Table 31 shows that number markers were not comprehended till group IV in both the genders. A subtle acquisition was noticed in group V for males, while females showed more clear and robust mean values (3.20). From group VI onwards, males showed more obvious regression in this grammatical feature while, the females showed uneven regression. The highest mean values for this feature was 3.80 for males in group VIII. The females obtained a highest mean value in group VI (3.40). It can be stated from Table 31, that no uniform trend of acquisition was noticed for this grammatical feature.

Table 31. *Mean and standard deviation (SD) scores for comprehension of number markers in both males and females.*

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	0.00	0.00	0.00	0.00
2.7-3	IV	0.00	0.00	0.00	0.00
3.1-3.6	V	0.20	0.63	3.20	1.03
3.7-4	VI	0.00	0.00	3.40	0.96
4.1-4.6	VII	0.00	0.00	3.20	0.91
4.7-5	VIII	3.80	0.63	1.30	1.49

Table 32. *Mean and standard deviation (SD) scores for expression of number markers in both males and females.*

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	0.00	0.00	0.00	0.00
2.7-3	IV	0.00	0.00	0.00	0.00
3.1-3.6	V	0.00	0.00	0.00	0.00
3.7-4	VI	0.00	0.00	0.00	0.00
4.1-4.6	VII	0.00	0.00	0.00	0.00
4.7-5	VIII	1.80	1.47	0.60	0.96

**Expression:** Acquisition of this grammatical component began in group VIII for both males and females. Males obtained a mean score of 1.80 (SD: 1.47) while females obtained a mean value of 0.60 with a SD of 0.96 as tabulated in Table 32.

**i) Wh-Questions**

**Comprehension:** Table 33 shows that in males, the mean values obtained increase from group III to group IV {2.1-2.6 years (Mean: 1.60; SD: 0.84) to 2.7-3.0 years (Mean: 3.20; SD: 1.39)} followed by a gradual developmental pattern in the other groups. The highest mean values was obtained by group VIII in both the genders (mean score of 4.00).

Table 33. Mean and standard deviation (SD) scores for comprehension of Wh-Questions in both males and females.

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	1.60	0.84	3.20	1.03
2.7-3	IV	3.20	1.39	3.60	0.84
3.1-3.6	V	3.20	1.03	3.40	0.96
3.7-4	VI	3.40	0.96	3.60	0.84
4.1-4.6	VII	3.60	0.84	3.60	0.84
4.7-5	VIII	4.00	0.00	4.00	0.00

Table 34. Mean and standard deviation (SD) scores for expression of Wh-Questions in both males and females.

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	0.00	0.00	2.10	2.02
2.7-3	IV	1.30	1.56	0.30	0.67
3.1-3.6	V	3.20	1.03	3.40	0.84
3.7-4	VI	3.40	0.96	3.70	0.67
4.1-4.6	VII	3.60	0.84	3.60	0.84
4.7-5	VIII	4.00	0.00	4.00	0.00

**Expression:** Males begin to use wh-questions to ask for their needs from 2.7-3.0 years (Mean: 1.30, SD: 1.56) and the increase in the use of these type of question increased from group VI (Mean: 3.40, SD: 0.96). Females started acquiring this form from group III (Mean: 2.10, SD: 2.02) and an obvious decline in the acquisition pattern was noticed in group IV {2.7-3.0 years (Mean: 0.30, SD: 0.67) and the use of this grammatical structure increased with age. The same is being illustrated in Table 34.

**j) Yes-No Questions**

**Comprehension:** The data in Table 35 reveals that both males and females begin responding to yes-no question by group III (Mean: 2.00 for males and 3.40 for females). Complete acquisition of this grammatical element was evident from group V onwards where both the genders obtained a mean value of 4.00.

Table 35. *Mean and standard deviation (SD) scores for comprehension of Yes/No-Questions in both males and females.*

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	2.00	1.26	3.40	0.96
2.7-3	IV	3.60	0.00	4.00	0.00
3.1-3.6	V	4.00	0.00	4.00	0.00
3.7-4	VI	4.00	0.00	4.00	0.00
4.1-4.6	VII	4.00	0.00	4.00	0.00
4.7-5	VIII	4.00	0.00	4.00	0.00

**Expression:** As seen from the Table 36, females started acquiring this grammatical structure at group III (Mean: 3.20, SD: 1.68). But a decline was noticed in successive groups. Males started acquiring in group IV .Both the genders showed an increasing trend in group VIII (Mean: 0.10, SD: 0.31).

Table 36. *Mean and standard deviation (SD) scores for expression of Yes/No-Questions in both males and females.*

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	0.00	0.00	3.20	1.68
2.7-3	IV	0.10	0.31	0.20	0.42
3.1-3.6	V	0.10	0.31	0.30	0.48
3.7-4	VI	0.00	0.00	2.20	1.47
4.1-4.6	VII	0.20	0.42	0.30	0.48
4.7-5	VIII	3.80	0.63	3.80	0.63

### k) Negatives

**Comprehension:** In both males and females, the acquisition started from group III onwards (Mean: 3.40 in males and 1.40 in females). Males in Group IV showed an obvious decline while females showed a subtle decline. Steady acquisition was noticed from group V onwards in both the genders. A highest mean value of 4.00 was obtained by both the genders in group VIII as depicted in Table 37.

Table 37. *Mean and standard deviation (SD) scores for comprehension of Negatives in both males and females.*

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	3.40	0.96	1.40	0.96
2.7-3	IV	1.20	1.93	1.20	1.93
3.1-3.6	V	3.00	1.41	3.60	0.84
3.7-4	VI	3.00	1.05	3.80	0.63
4.1-4.6	VII	3.20	1.03	3.80	0.63
4.7-5	VIII	4.00	0.00	4.00	0.00

**Expression:** From the Table 38 it is evident that in males started acquiring this grammatical structure in group IV (Mean: 2.80, SD: 1.68) and an increase in scores from group VI {3.7-4.0years (Mean: 3.60, SD: 0.84). Negatives were acquired

by Group VIII (Mean: 4.00, SD: 0.00). Females started acquiring negatives by group III (Mean: 0.30, SD: 0.67) and were mastered in group VII (Mean: 4.00, SD: 0.00).

Table 38. *Mean and standard deviation (SD) scores for expression of Negatives in both males and females.*

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	0.00	0.00	0.30	0.67
2.7-3	IV	2.80	1.68	3.40	1.35
3.1-3.6	V	3.80	0.63	3.80	0.63
3.7-4	VI	3.60	0.84	4.00	0.00
4.1-4.6	VII	3.80	0.63	4.00	0.00
4.7-5	VIII	4.00	0.00	4.00	0.00

#### 1) Embedded sentences

**Comprehension:** From the table 39, it is evident that children start understanding embedded sentences from 2 years of age (Mean: 1.00 for males and 1.80 for females) and mastery of this grammatical form was observed from group VI onwards in both males and females (Mean: 4.00, SD: 0.00). However there was a subtle variation in the mean values of males in group V (Mean: 3.80, SD: 0.63) when compared to group IV (Mean: 3.90, SD: 0.31). The performance of the female participants was consistent in nature.

Table 39. *Mean and standard deviation (SD) scores for comprehension of embedded sentences in both males and females.*

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	1.00	1.05	1.80	1.47
2.7-3	IV	3.90	0.31	3.70	0.67
3.1-3.6	V	3.80	0.63	3.80	0.63
3.7-4	VI	4.00	0.00	4.00	0.00
4.1-4.6	VII	4.00	0.00	4.00	0.00
4.7-5	VIII	2.00	0.00	2.00	0.00



**Expression:** From the Table 40, it can be stated that both males and females did not acquire the expressive skills for embedded sentences till the age of 4.6 years. However, an emergence trends were noticed from the age of 4.7 years onwards, which was not very obvious in nature.

Table 40. *Mean and standard deviation (SD) scores for expression of embedded sentences in both males and females.*

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	0.00	0.00	0.00	0.00
2.7-3	IV	0.00	0.00	0.00	0.00
3.1-3.6	V	0.00	0.00	0.00	0.00
3.7-4	VI	0.00	0.00	0.00	0.00
4.1-4.6	VII	0.00	0.00	0.00	0.00
4.7-5	VIII	0.20	0.42	0.20	0.42

#### m) Coordinated sentences

**Comprehension:** Both males and females started acquiring the comprehension of coordinated sentences from group II onwards. The performance of both the participants consistently improved till the group VIII. The minimum score was obtained by group II (Mean: 2.30) for both the genders, while the maximum mean score obtained by males in group VIII was 3.80. Mastery of comprehending this grammatical category was achieved by females in group VIII (Mean: 4.00). A small decline in the performance of both males and females was noticed in group VI (Mean: 3.60 for males and 3.40 for females). Table 41 illustrates the same.

**Expression:** Expression of coordinated sentences was achieved by both the genders from group V onwards (Mean: 2.80 for males and 2.60 in females). A dip in the performance of males in the expression of this grammatical category was observed in group VI and VII (Mean: 1.30 and 1.60). In females, a dip in their performance was noticed in group VII (Mean: 2.60) as shown in Table 42.

Table 41. *Mean and standard deviation (SD) scores for comprehension of coordinated sentences in both males and females.*

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	2.30	0.94	2.30	1.05
2.7-3	IV	3.00	1.41	3.00	1.41
3.1-3.6	V	3.20	1.03	3.20	1.03
3.7-4	VI	3.60	0.84	3.40	0.96
4.1-4.6	VII	3.80	0.63	3.80	0.63
4.7-5	VIII	3.80	0.63	4.00	0.00

Table 42 *Mean and standard deviation (SD) scores for expression of coordinated sentences in both males and females.*

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	0.00	0.00	0.00	0.00
2.7-3	IV	0.00	0.00	0.00	0.00
3.1-3.6	V	2.80	1.03	2.60	0.96
3.7-4	VI	1.30	1.33	3.40	0.96
4.1-4.6	VII	1.60	1.26	2.60	0.96
4.7-5	VIII	3.60	0.84	2.80	1.03

**n) Narration**

It is clear from Table 43 that a developmental trend in terms of the acquisition of narrative skills was seen. Both the males and the female participants showed a similar pattern in the acquisition of Narratives. Both males and females started to acquire narratives by the age of 2 years (Mean: 2.00 for males and 2.40 for females). The maximum score obtained was by group VII (Mean: 8.20 for males and 8.80 for females).

Table 43. Mean and standard deviation (SD) scores for Narration in both males and females.

Age groups	Group	Males		Females	
		Mean	SD	Mean	SD
1-1.6	I	0.00	0.00	0.00	0.00
1.7-2	II	0.00	0.00	0.00	0.00
2.1-2.6	III	2.00	0.00	2.40	0.84
2.7-3	IV	3.60	0.84	3.80	0.63
3.1-3.6	V	4.80	1.03	4.80	1.03
3.7-4	VI	5.20	1.03	5.40	0.96
4.1-4.6	VII	6.40	1.26	6.80	1.39
4.7-5	VIII	8.20	1.47	8.80	1.39

### Analysis of Percentage Data

As the number of stimulus items was variable in each sub section, thus, to bring about similarity in the data, the whole data was converted to percentage form. The mean and standard deviation of the percentage data is tabulated separately for males and females. Tables indicate the compiled comprehension and expression percentage scores.

Descriptive statistical analysis was carried out on the percentage data for comprehension and expression to obtain a mean and standard deviation scores. The details of this descriptive data for both males and females in the form of normative scores for comprehension and expression are depicted in table 44, 45, 46 and 47. Independent sample t-test was carried out to study the effect of the gender, if any.

Table 44: Mean (%) and Standard deviation (SD) for grammatical categories comprehension across age groups in females

Grammatical category	1-1.6 years		1.7-2 years		2-2.6 years		2.7-3 years		3.1-3.6 years		3.7-4 years		4.1-4.6 years		4.7-5 years	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Simple sentence			50	0	50	0	100	0	100	0	100	0	100	0	100	0
Person			55	22.97	95	15.81	87.5	27	100	0	100	0	100	0	100	0
Case marker					35	24.15	88.89	22.04	45	28.38	75	26.35	90	21.08	100	0
Adjective					50	0	88.89	22.04	90	21.08	100	0	100	0	100	0
Post-position					50	0	88.89	22.04	85	24.15	85	24.15	92.5	16.87	100	0
Definite determiner							5.56	16.66	20	25.82	87.5	21.24	95	15.8	100	0
Tense marker					60	31.62	5.56	16.66	60	31.62	70	34.96	87.5	21.24	100	0
Number marker									80	25.82	85	24.15	80	22.97	32.5	37.36
Wh- question					70	34.96	94.44	16.66	85	24.15	90	21.08	90	21.08	100	0
Yes-No question					85	24.15	100	0	100	0	100	0	100	0	100	0
Negatives					35	24.15	33.33	50	90	21.08	95	15.81	95	15.81	100	0
Embedded sentence					45	36.89	91.67	17.67	95	15.81	100	0	100	0	50	0
Coordinated sentence					38.33	17.65	48.14	24.21	53.32	17.21	56.66	16.09	63.32	10.53	66.66	0

Table 45: Mean (%) and Standard deviation (SD) for grammatical categories expression across age groups in females

Grammatical category	1 -1.6 years		1.7-2 years		2-2.6 years		2.7-3 years		3.1-3.6 years		3.7-4 years		4.1-4.6 years		4.7-5 years	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Simple sentence			37.5	29.46	50	0	100	0	100	0	100	0	100	0	100	0
Person					20	19.72	72.22	36.32	100	0	100	0	100	0	100	0
Case marker							88.89	22.04	100	0	100	0	100	0	100	0
Adjective							11.11	18.16	77.5	34.25	100	0	100	0	100	0
Post-position					22.5	18.44	30.56	20.83	60	37.63	62.5	39.52	67.5	40.91	100	0
Definite determiner					10	12.91	5.56	11.02	70	25.82	55	15.81	65	24.15	85	24.15
Tense marker					20	28.38	5.56	11.02	80	25.82	82.5	20.58	92.5	16.8	95	10.54
Number marker															15	24.15
Wh- question					52.5	50.62	5.56	16.66	85	21.08	92.5	16.87	90	21.08	100	0
Yes-No question					80	42.16	5.56	11.02	7.5	12.07	55	36.89	7.5	12.07	95	10.54
Negatives					7.5	16.87	83.33	35.35	95	15.81	100	0	100	0	100	0
Embedded sentence															5	10.54
Coordinated sentence					3.33	7.02	0	0	43.32	16.09	56.66	16.09	43.32	16.09	46.66	17.21

Table 46: Mean (%) and Standard deviation (SD) for grammatical categories comprehension across age groups in males

Grammatical category	1-1.6 years		1.7-2 years		2-2.6 years		2.7-3 years		3.1-3.6 years		3.7-4 years		4.1-4.6 years		4.7-5 years	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Simple sentence			50	0	50	0	100	0	100	0	100	0	100	0	100	0
Person			25	26.35	100	0	100	0	100	0	100	0	100	0	100	0
Case marker					50	0	80	34.96	60	31.62	75	26.35	90	21.08	100	0
Adjective					45	15.81	100	0	95	15.81	100	0	100	0	100	0
Post-position					50	0	95	15.81	85	24.15	90	21.08	90	21.08	100	0
Definite determiner							5	15.81	82.5	23.71	20	25.82	75	35.35	100	0
Tense marker					45	15.81	10	21.08	85	24.15	60	39.44	65	33.74	100	0
Number marker									5	15.81	0	0	0	0	95	15.81
Wh- question					40	21.08	80	34.96	80	25.82	85	24.15	90	21.08	100	0
Yes-No question					50	0	90	31.62	100	0	100	0	100	0	100	0
Negatives					85	24.15	30	48.3	75	35.35	75	26.35	80	25.82	100	0
Embedded sentence					25	26.35	97.5	7.9	95	15.81	100	0	100	0	50	0
Coordinated sentence					38.32	15.81	49.99	23.56	53.32	17.21	59.99	14.05	63.32	10.53	63.32	10.53

Table 47: Mean (%) and Standard deviation (SD) for grammatical categories expression across age groups in males

Grammatical category	1-1.6 years		1.7-2 years		2-2.6 years		2.7-3 years		3.1-3.6 years		3.7-4 years		4.1-4.6 years		4.7-5 years	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Simple sentence			65	21.08	50	0	100	0	100	0	100	0	100	0	100	0
Person					17.7	16.65	82.5	28.98	100	0	100	0	100	0	100	0
Case marker					0.6	0.51	90	21.08	100	0	100	0	100	0	100	0
Adjective							10	17.48	77.5	34.25	100	0	100	0	100	0
Post-position					20	10.54	27.5	14.19	65	33.74	45	36.89	47.5	29.93	100	0
Definite determiner							5	15.81	82.5	23.71	20	25.82	75	35.35	100	0
Tense marker					50	20.41	2.6	7.87	80	25.82	82.5	23.71	70	25.82	95	10.54
Number marker															45	36.89
Wh-question							32.5	39.17	80	25.82	85	24.15	90	21.08	100	0
Yes-No question							2.5	7.9	2.5	7.9	0	0	5	10.54	95	15.81
Negatives							70	42.16	95	15.81	90	21.08	95	15.81	100	0
Embedded sentence															5	10.54
Coordinated sentence									46.66	17.21	21.66	22.28	26.66	21.07	59.99	14.05

**Group I (1-1.6 years):** Children in this age group did not acquire any of the grammatical structures either for comprehension or for expression skills as stated in STAS-T. Thus, indicating that this test may not be applicable to assess the comprehension and expression skills till the age 1.6 years in Telugu speaking children.

**Group II (1.7-2 years):** Both male and female children in this age group did acquire few grammatical categories as stated in STAS-T. Both males and females acquired the comprehension of simple sentences and person markers. When the data was subjected for further statistical analysis no significant difference in the comprehension of these skills were noticed for the children in the age range of 1.7- 2 years. Both males and females acquired the expression of simple sentences; no other grammatical structures were acquired by them in STAS-T. There was obvious statistical significant difference between the performance of males and females. Results indicated that the performance of the males was statistically more significant than the females ( $p < 0.05$ ) for the acquisition of simple sentences under expression.

**Group III (2-2.6years):** Both males and females in this age group acquired all the grammatical categories other than definite determiners and number markers under the comprehension skills. When the data was subjected for further statistical analysis significant difference ( $p < 0.05$ ) in the performance of males and females was noticed in the comprehension of all the grammatical categories other than person marker and coordinated sentences. In the expression skill, males in this age group acquired simple sentences, person marker, case marker, post position and tense markers. However, the females acquired the simple sentences, post positions, tense markers, 'wh' questions, negatives and coordinated sentences. The statistical analysis showed a significant difference in the performance of males and females ( $p < 0.05$ ) for the



expression of all the categories which were acquired. Except the person marker and post position where no obvious significant difference was noticed in the performance of both males and females.

**Group IV (2.7-3 years):** Both the genders acquired all the grammatical categories stated under the STAS-T for the comprehension other than the number markers. No statistical difference was noticed in the performance of both the genders for the comprehension of various grammatical structures. The females did not acquired number markers and embedded sentences while the males along with these grammatical structures coordinated sentences were also not acquired. When the data was subjected to statistical analysis other than the 'wh' questions no obvious statistical difference ( $p < 0.05$ ) were noticed in the performance of both males and females for the expression of various grammatical structures stated under STAS-T.

**Group V (3.1 – 3.6 years):** Both males and females in this age range acquired comprehension of all the grammatical structures. Other than the definite determiners and number markers no other grammatical structures showed statistical significant difference ( $p < 0.05$ ). In the expression skill other than the embedded sentences and number markers all other skill were acquired by both the genders statistics revealed no significant difference ( $p < 0.05$ ) in males and females under expression skill.

**Group VI (3.7 to 4 years):** All the grammatical structures under the comprehension domain stated in the STAS-T were acquired by both the males and females. Definite determiners and number markers showed statistical significant difference ( $p < 0.05$ ), rest grammatical did not showed any difference. Under the expression domain except number markers and embedded sentences were not acquire by both the genders in this

age range. The performance of the males and females deferred statistically only for Yes/No questions and coordinated sentences ( $p < 0.05$ ) under the expression.

**Group VII (4.1 to 4.6 years):** Both males and females in comprehension acquired all the grammatical structures. Though, the mean differences were noticed in their performance, statistically their performance deferred only at number markers. Both the genders showed the acquisition of expression of the grammatical structures except for number markers and embedded sentences. The tense markers showed statistical significant difference ( $p < 0.05$ ) in the expression domain, rest grammatical structures did not differed statistically under the expression domain.

**Group VIII (4.7 to 5 years):** Based on the performance of males and females under comprehension and expression domains as depicted in table 44, 45, 46 and 47, all the children acquired all grammatical structures in this age range. Both in comprehension, and expression, number markers showed statistically significant difference ( $p < 0.05$ ) for both males and females.

Advanced statistical procedure, i.e., MANOVA was applied in order to study the pattern of acquisition of each grammatical category across the seven age groups. The analysis was carried out separately for males and females as there was variability in the data.

### **Performance of the participants in the expression and comprehension of simple sentences**

Duncan's Post-Hoc analysis was not carried out for comprehension of simple sentences, as MANOVA indicated that there is no significance difference between the age groups, as all the groups had similar performance scores.

- MANOVA revealed a statistically significant main effect of age for the expression of simple sentences {F (6, 63) =70.68, p<0.05} in males. Duncan post hoc analysis was further carried out which showed that Group II performed differently than the others.

Table 48: Mean percentage scores for simple sentences expression in males

Age range	Group	Mean Scores (%)		
2.1-2.6	III	50.00		
1.7-2	II		65.00	
2.7-3	IV			100.00
3.1-3.6	V			100.00
3.7-4	VI			100.00
4.1-4.6	VII			100.00
4.7-5	VIII			100.00

Table 49: Mean percentage scores for simple sentences expression in females

Age range	Group	Mean Scores (%)		
1.7-2	II	37.50		
2.1-2.6	III		50.00	
2.7-3	IV			100.00
3.1-3.6	V			100.00
3.7-4	VI			100.00
4.1-4.6	VII			100.00
4.7-5	VIII			100.00

### **Performance of the participants in the expression and comprehension of Person marker**

MANOVA revealed a statistically significant main effect of age for the comprehension of person marker {F (6, 63) = 81.0, p<0.05} in males and {F (6, 63) = 215.27, p<0.05} in females. Significant main effect for age was also observed for expression of person marker {F (5, 54) = 58.19, p<0.05} in males and {F (5, 53) = 39.41, p<0.05} in females.

It is obvious from Table 50 and 51 that the group II differed on Duncan's test from rest of the groups. The mean percentage values showed that the males obtained a

mean percentage score of 25 in comprehension while females obtained a mean percentage score of 55. The male participants in the comprehension of the grammatical feature person obtained a mean percentage 100% from group III onwards, thus indicating that a child at the age of two or above can comprehend the person markers as stated in the STAS-T. On the other hand the female participants starts comprehending person markers from 1.7 years onwards however, unlike their male counterparts, by the age of three years they obtained the maximum score of 100.

Table 50: *Mean percentage scores for person comprehension in males*

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>	
1.7-2	II	25.00	
2.1-2.6	III		100.00
2.7-3	IV		100.00
3.1-3.6	V		100.00
3.7-4	VI		100.00
4.1-4.6	VII		100.00
4.7-5	VIII		100.00

Table 51: *Mean percentage scores for person comprehension in females*

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>	
1.7-2	II	55.00	
2.7-3	IV		87.50
2.1-2.6	III		95.00
3.1-3.6	V		100.00
3.7-4	VI		100.00
4.1-4.6	VII		100.00
4.7-5	VIII		100.00

Table 52 and 53 shows that for the expression of person markers the performance of males and females in the age range of 2.1-2.6 and 2.7-3.0 was varied from the other age groups. The Duncan test revealed that the performance of the participants was same from age 3.0 onwards. Thus, indicating that both male and female participants performed equally by obtaining a mean score of 100. The male and female participants in the expression of the grammatical feature person obtained a

mean percentage 100% from group V (3.0 years) onwards, thus indicating that a child at the age of three or above can express the person markers as stated in the STAS-T.

Table 52: Mean percentage scores for person expression in males

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>		
2.1-2.6	III	17.70		
2.7-3	IV		82.50	
3.1-3.6	V			100.00
3.7-4	VI			100.00
4.1-4.6	VII			100.00
4.7-5	VIII			100.00

Table 53: Mean percentage scores for person expression in females

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>		
2.1-2.6	III	20.00		
2.7-3	IV		72.22	
3.1-3.6	V			100.00
3.7-4	VI			100.00
4.1-4.6	VII			100.00
4.7-5	VIII			100.00

### **Performance of the participants in the expression and comprehension of Case marker**

MANOVA revealed a statistically significant main effect of age for the comprehension of case marker {F (5, 54) = 6.14, p<0.05} in males and {F (5, 53) = 13.81, p<0.05} in females. Significant main effect for age was also observed for expression of case marker {F (5, 54) = 215.48, p<0.05} in males and {F (5, 53) = 219.70, p<0.05} in females.

Table 54 and 55 shows that both the male and female participants in group III and V on Duncan's test performed differently from the other four groups. Male participants in group IV, V, and VI performed same for comprehension while in other groups, the performance of the both male and female participants was same i.e. group IV, VI VII performed same similarly the performance of groups IV, VII, and VIII

were same when subjected to Duncan’s Post Hoc tests in the comprehension of case markers.

Table 54: Mean percentage scores for case marker comprehension in males

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>			
2.1-2.6	III	50.00			
3.1-3.6	V	60.00	60.00		
3.7-4	VI		75.00	75.00	
2.7-3	IV		80.00	80.00	80.00
4.1-4.6	VII			90.00	90.00
4.7-5	VIII				100.00

Table 55: Mean percentage scores for case marker comprehension in females

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>			
2.1-2.6	III	35.00			
3.1-3.6	V	45.00			
3.7-4	VI		75.00		
2.7-3	IV		88.89	88.89	
4.1-4.6	VII		90.00	90.00	
4.7-5	VIII				100.00

From Table 56 and 57 following conclusions can be made of the expressive skills of the participants

- Male participants: Group III and IV differed in their mean percentage scores from the rest of the groups indicating that the groups V onwards performed same on Duncan’s Post Hoc test.

Table 56: Mean percentage scores for case marker expression in males

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>			
2.1-2.6	III	0.60			
2.7-3	IV		90.00		
3.1-3.6	V				100.00
3.7-4	VI				100.00
4.1-4.6	VII				100.00
4.7-5	VIII				100.00

- Female participants: Group III and IV differed in their mean percentage scores from the rest of the groups, indicating that the groups V onwards performed same on Duncan's Post Hoc test.

Table 57: Mean percentage scores for case marker expression in females

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>		
2.1-2.6	III	0.00		
2.7-3	IV		88.89	100.0
3.1-3.6	V			100.0
3.7-4	VI			100.0
4.1-4.6	VII			100.0
4.7-5	VIII			100.0

### **Performance of the participants in the expression and comprehension of Adjectives**

MANOVA revealed a statistically significant main effect of age for the comprehension of adjectives { $F(5, 54) = 58.8, p < 0.05$ } in males and { $F(5, 53) = 25.26, p < 0.05$ } in females. Significant main effect for age was also observed for expression of adjectives { $F(5, 54) = 89.89, p < 0.05$ } in males and { $F(5, 53) = 85.65, p < 0.05$ } in females.

Group III of both males and females performed differently in comprehension from the rest of the groups. As evident from table 58 and 59, the performance from group IV onwards was same in comprehension for males and from group IV onwards in females.

Table 58: Mean percentage scores for adjective comprehension in males

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>		
2.1-2.6	III	45.00		
3.1-3.6	V		95.00	
2.7-3	IV		100.00	
3.7-4	VI		100.00	
4.1-4.6	VII		100.00	
4.7-5	VIII		100.00	

Table 59: Mean percentage scores for adjective comprehension in females

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>	
2.1-2.6	III	50.00	
2.7-3	IV		88.89
3.1-3.6	V		90.00
3.7-4	VI		100.00
4.1-4.6	VII		100.00
4.7-5	VIII		100.00

The males and females in group III, IV, and V differed in their mean percentage scores in expression skills from the rest of the groups. As evident from Table 60 and 61 that the males in groups VI, VII, and VIII performed similarly in expression of adjectives.

Table 60: Mean percentage scores for adjective expression in males

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>		
2.1-2.6	III	0.00		
2.7-3	IV	10.00		
3.1-3.6	V		77.50	
3.7-4	VI			100.00
4.1-4.6	VII			100.00
4.7-5	VIII			100.00

Table 61: Mean percentage scores for adjective expression in females

<i>Age</i>	<i>Group</i>	<i>Mean Scores (%)</i>		
2.1-2.6	III	0.00		
2.7-3	IV	11.11		
3.1-3.6	V		77.50	
3.7-4	VI			100.00
4.1-4.6	VII			100.00
4.7-5	VIII			100.00

### **Performance of the participants in the expression and comprehension of post-position**

MANOVA revealed a statistically significant main effect of age for the comprehension of post-position {F (5, 54) = 11.4, p<0.05} in males and {F (5, 53) =



9.41,  $p < 0.05$ ) in females. Significant main effect for age was also observed for expression of post-position { $F(5, 54) = 13.45$ ,  $p < 0.05$ } in males and { $F(5, 53) = 8.35$ ,  $p < 0.05$ } in females.

From Table 62 and 63 it can be stated that for comprehension of post position the mean percentage scores of group III differed statistically on Duncan's post hoc test from the rest of the groups. Though the mean percentage scores of group IV, V, VI, VII and VIII were different, but on Duncan's test no significant difference was obtained. Thus, indicating that the performance of both males and females in group IV, V, VI, VII and VIII was same for comprehension of post positions.

Table 62: Mean percentage scores for post-position comprehension in males

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>	
2.1-2.6	III	50.00	
3.1-3.6	V		85.00
3.7-4	VI		90.00
4.1-4.6	VII		90.00
2.7-3	IV		95.00
4.7-5	VIII		100.00

Table 63: Mean percentage scores for post-positions comprehension in females

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>	
2.1-2.6	III	50.00	
3.1-3.6	V		85.00
3.7-4	VI		85.00
2.7-3	IV		88.89
4.1-4.6	VII		92.50
4.7-5	VIII		100.00

The performance of both the male and female participant for the expression of post positions on Duncan's test are being depicted in Table 64 and 65. It is evident from these two tables that the performance of both males and females in group III and IV were statistically different from V, VI and VII. Both males and females in group

VIII obtained a maximum scores and showed obvious statistical difference from all the other groups for the expression of post position. The mean percentage scores of males were lower than the females in all the groups except the group VIII, where both males and females scored a mean percentage of 100.

Table 64: Mean percentage scores for post-position expression in males

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>			
2.1-2.6	III	20.00			
2.7-3	IV	27.50	27.50		
3.7-4	VI		45.00	45.00	
4.1-4.6	VII		47.50	47.50	
3.1-3.6	V			65.00	
4.7-5	VIII				100.00

Table 65: Mean percentage scores for post-positions expression in females

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>			
2.1-2.6	III	22.50			
2.7-3	IV	30.56			
3.1-3.6	V		60.00		
3.7-4	VI		62.50		
4.1-4.6	VII		67.50		
4.7-5	VIII				100.00

### **Performance of the participants in the expression and comprehension for definite determiner**

MANOVA revealed a statistically significant main effect of age for the comprehension of definite determiner {F (5, 54) = 42.01, p<0.05} in males and {F (5, 53) = 80.82, p<0.05} in females. Significant main effect for age was also observed for expression of definite determiner {F (5, 54) = 27.82, p<0.05} in males and {F (5, 53) = 26.21, p<0.05} in females.

The performance of both males and females for comprehension of definite determiner in group III, IV and VI was same and differed from group V, VII and VIII. There was a variation in mean percentage scores in all the groups. Male participants

as evident from Table 66 in group V and VII showed similar performance. The group VIII scored a maximum mean percentage score of 100 and showed an obvious statistical difference on Duncan's post hoc test. On the other hand the performance of females in group IV and V were same and these two groups differed from group VI, VII and VIII. The group VI, VII and VIII performed similarly for comprehending the definite markers, though there was difference in the mean percentage scores, but statistically it was not evident as represented in Table 67

Table 66: Mean percentage scores for definite determiners comprehension in males

Age range	Group	Mean Scores (%)		
2.1-2.6	III	0.00		
2.7-3	IV	5.00		
3.7-4	VI	20.00		
4.1-4.6	VII		75.00	
3.1-3.6	V		82.50	82.50
4.7-5	VIII			100.00

Table 67: Mean percentage scores for definite determiner comprehension in females

Age range	Group	Mean Scores (%)		
2.1-2.6	III	0.00		
2.7-3	IV	5.56	5.56	
3.1-3.6	V		20.00	
3.7-4	VI			87.50
4.1-4.6	VII			95.00
4.7-5	VIII			100.00

Table 68 and 69 shows the performance of males and females in the definite determiner grammatical feature under the expression. It can be stated from these two tables that the performance of males in group III and IV and females in group IV and III were different from rest of the groups. The male participants in group V and VI performed same and also in group VII and VIII. On the other hand the females in group V, VI and VII on Duncan's post hoc showed similar performance, and their performance differed from group V and VIII.

Table 68: Mean percentage scores for definite determiners expression in males

Age range	Group	Mean Scores (%)		
2.1-2.6	III	0.00		
2.7-3	IV	5.00		
3.7-4	VI		45.00	
3.1-3.6	V		50.40	
4.1-4.6	VII			70.00
4.7-5	VIII			80.00

Table 69: Mean percentage scores for definite determiner expression in females

Age range	Group	Mean Scores (%)		
2.7-3	IV	5.56		
2.1-2.6	III	10.00		
3.7-4	VI		55.00	
4.1-4.6	VII		65.00	
3.1-3.6	V		70.00	70.00
4.7-5	VIII			85.00

### **Performance of the participants in the expression and comprehension for tense markers**

MANOVA revealed a statistically significant main effect of age for the comprehension of tense markers {F (5, 54) = 15.01, p<0.05} in males and {F (5, 53) = 80.82, p<0.05} in females. Significant main effect for age was also observed for expression of tense markers {F (5, 54) = 26.83 p<0.05} in males and {F (5, 53) = 26.21, p<0.05} in females.

The performance of males and females for the tense marker comprehension task showed similar patterns of development. Table 70 and 71 shows the performance of males and females in the tense marker comprehension task. Results revealed that group IV performance was different from all the other groups. Whereas groups III, VI and VII in males and group III, V, VI in females showed similar developmental pattern. On the other hand group V and VIII in males and group VII and VIII in females showed similar performance and they differed from the other groups.

Table 70: Mean percentage scores for tense marker comprehension in males

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>			
2.7-3	IV	10.00			
2.1-2.6	III		45.00		
3.7-4	VI		60.00		
4.1-4.6	VII		65.00	65.00	
3.1-3.6	V			85.00	85.00
4.7-5	VIII				100.00

Table 71: Mean percentage scores for tense marker comprehension in females

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>			
2.7-3	IV	5.56			
2.1-2.6	III		60.00		
3.1-3.6	V		60.00		
3.7-4	VI		70.00	70.00	
4.1-4.6	VII			87.50	87.50
4.7-5	VIII				100.00

Table 72 and 73 shows the performance of the males and females on the tense marker expression task. Male participants in group IV performed differently from the other groups. Performance of male group III was also different from other groups. Whereas similar developmental pattern was observed in female group III and IV. Performance of male groups V, VI and VII showed similar development. Again a similar developmental pattern was demonstrated by male in group V, VI and VIII. Similar developmental pattern was observed in the performance of female in group V, VI, VII and VIII.

Table 72: Mean percentage scores for tense marker expression in males

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>			
2.7-3	IV	2.60			
2.1-2.6	III		50.00		
4.1-4.6	VII			70.00	
3.1-3.6	V			80.00	80.00
3.7-4	VI			82.50	82.50
4.7-5	VIII				95.00

Table 73: Mean percentage scores for tense marker expression in females

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>	
2.7-3	IV	5.56	
2.1-2.6	III	20.00	
3.1-3.6	V		80.00
3.7-4	VI		82.50
4.1-4.6	VII		92.50
4.7-5	VIII		95.00

**Performance of the participants in the expression and comprehension for number markers**

MANOVA revealed a statistically significant main effect of age for the comprehension of number markers {F (5, 54) = 177.20, p<0.05} in males and {F (5, 53) = 14.98, p<0.05} in females. Significant main effect for age was also observed for expression of number markers {F (5, 54) = 14.87, p<0.05} in males and {F (5, 53) = 36.22, p<0.05} in females.

Table 74 and 75 shows the performance of male and female subjects on number marker comprehension task. Results revealed that the performance of male group VIII differed substantially from other groups and a similar developmental pattern was followed by the male in group III, IV, V, VI and VIII. Female participants in group VIII performed differently from other groups. Performance similarity was seen in female groups III and IV. Similar developmental pattern was also observed in female groups V, VI, and VII .

Table 74. Mean percentage scores for number marker comprehension in males

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>	
2.1-2.6	III	0.00	
2.7-3	IV	0.00	
3.7-4	VI	0.00	
4.1-4.6	VII	0.00	
3.1-3.6	V	5.00	
4.7-5	VIII		95.00

Table 75. Mean percentage scores for number marker comprehension in females

Age range	Group	Mean Scores (%)		
2.1-2.6	III	0.00		
2.7-3	IV	0.00		
4.7-5	VIII		32.50	
3.1-3.6	V			80.00
4.1-4.6	VII			80.00
3.7-4	VI			85.00

Table 76 and 77 represents the performance of male and female participants on number marker expression task. Similar developmental pattern was observed in both gender groups. It can be concluded that number marker expression is achieved in group VIII only in both the gender and the other groups it was not yet achieved.

Table 76. Mean percentage scores for number marker expression in males

Age range	Group	Mean Scores (%)	
2.1-2.6	III	0.00	
2.7-3	IV	0.00	
3.1-3.6	V	0.00	
3.7-4	VI	0.00	
4.1-4.6	VII	0.00	
4.7-5	VIII		45.00

Table 77. Mean percentage scores for number marker expression in females

Age range	Group	Mean Scores (%)	
2.1-2.6	III	0.00	
2.7-3	IV	0.00	
3.1-3.6	V	0.00	
3.7-4	VI	0.00	
4.1-4.6	VII	0.00	
4.7-5	VIII		15.00

Table 78 and 79 shows the performance of males and females on Wh-question for comprehension task. Developmental similarity can be seen in male groups IV, V, VI, VII and VIII. Performance of male group III was different from other groups. Similar and better scores were observed in male groups IV, V, VI, VII

and VIII. The performance of female participants revealed similar performance across groups III, V,VI,VII . Performance similarity was present between group VII and VIII also, which was different from other groups.

Table 78. *Mean percentage scores for wh-question comprehension in males*

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>	
2.1-2.6	III	40.00	
2.7-3	IV		80.00
3.1-3.6	V		80.00
3.7-4	VI		85.00
4.1-4.6	VII		90.00
4.7-5	VIII		100.00

Table 79. *Mean percentage scores for Wh-question comprehension in females*

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>	
2.1-2.6	III	70.00	
3.1-3.6	V	85.00	85.00
3.7-4	VI	90.00	90.00
4.1-4.6	VII	90.00	90.00
2.7-3	IV		94.44
4.7-5	VIII		100.00

### **Performance of the participants in the expression and comprehension for Wh-questions**

Duncan’s Post-Hoc analysis was not carried out for comprehension of simple sentences, as MANOVA indicated that there is no significance difference between the age groups, as all the groups had similar performance scores.

Results of male and female performance on wh-question expression task are given in Table 80 and 81. It can be seen from the table that male participants in group III did not achieved the wh-expression. Performance of male group IV was entirely different from other group and group V onwards performed same on Duncan’s post hoc test. Mean percentage scores of female group IV were substantially different from other groups. Performance scores were comparatively lower in this group. Scores of



female group III was different from other groups .Similar performance on Duncan’s post hoc test was obtained for group V-VIII, which indicate a similarity in developmental pattern of wh expression across these groups in females.

Table 80. *Mean percentage scores for wh-question expression in males*

Age range	Group	Mean Scores (%)		
2.1-2.6	III	.00		
2.7-3	IV		32.50	
3.1-3.6	V			80.00
3.7-4	VI			85.00
4.1-4.6	VII			90.00
4.7-5	VIII			100.00

Table 81. *Mean percentage scores for Wh-question expression in females*

Age rang	Group	Mean Scores (%)		
2.7-3	IV	5.56		
2.1-2.6	III		52.50	
3.1-3.6	V			85.00
4.1-4.6	VII			90.00
3.7-4	VI			92.50
4.7-5	VIII			100.00

**Performance of the participants in the expression and comprehension for Yes/No questions**

MANOVA revealed a statistically significant main effect of age for the comprehension of Yes/No questions {F (5, 54) = 24.00, p<0.05} in males and {F (5, 53) = 3.77, p<0.05} in females. Significant main effect for age was also observed for expression of Yes/No questions {F (5, 54) = 178.35, p<0.05} in males and {F (5, 53) = 25.80, p<0.05} in females.

Mean percentage scores for comprehension of yes-No questions in males and females are given in Table 82 and 83 respectively. Similar developmental pattern was seen in both males and females across different groups. In both the gender group III performed differently from other groups. Similar performance on Duncan’s post hoc

test and higher mean percentage scores were observed across the group IV-VIII in both male and female participants.

Table 82. *Mean percentage scores for Yes-No question comprehension in males*

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>	
2.1-2.6	III	50.00	
2.7-3	IV		90.00
3.1-3.6	V		100.00
3.7-4	VI		100.00
4.1-4.6	VII		100.00
4.7-5	VIII		100.00

Table 83. *Mean percentage scores for Yes-No question comprehension in females*

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>	
2.1-2.6	III	85.00	
2.7-3	IV		100.00
3.1-3.6	V		100.00
3.7-4	VI		100.00
4.1-4.6	VII		100.00
4.7-5	VIII		100.00

Table 84 and 85 represents the mean percentage scores of male and female participants on Yes- No question expression task. Males group III-VII revealed similar developmental pattern, where as the performance of group VIII was different from others. Performance of female participants' revealed similar developmental pattern across groups IV, V, VII. Group VI performance was different from other groups. Performance similarity was observed between group III and VIII.

Table 84. *Mean percentage scores for Yes-No question expression in males*

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>	
2.1-2.6	III	0.00	
3.7-4	VI	0.00	
2.7-3	IV	2.50	
3.1-3.6	V	2.50	
4.1-4.6	VII	5.00	
4.7-5	VIII		95.00

Table 85. Mean percentage scores for Yes-No question expression in females

Age range	Group	Mean Scores (%)		
2.7-3	IV	5.56		
3.1-3.6	V	7.50		
4.1-4.6	VII	7.50		
3.7-4	VI		55.00	
2.1-2.6	III			80.00
4.7-5	VIII			95.00

### Performance of the participants in the expression and comprehension for Negatives

MANOVA revealed a statistically significant main effect of age for the comprehension of negatives {F (5, 54) = 6.01,  $p < 0.05$ } in males and {F (5, 53) = 15.11,  $p < 0.05$ } in females. Significant main effect for age was also observed for expression of negatives {F (5, 54) = 32.18,  $p < 0.05$ } in males and {F (5, 53) = 47.84,  $p < 0.05$ } in females.

Mean percentage scores of males and females on negative comprehension task are given in table 86 and 87. Scores of group IV was different from other male groups. Similar performance on Duncan's post hoc test was observed for male groups III, V, VI, VII and VIII. Performance results of female groups revealed similarity between group III and IV which is entirely different from other groups. Performance similarity was seen in female groups V-VIII.

Table 86. Mean percentage scores for negatives comprehension in males

Age range	Group	Mean Scores (%)	
2.7-3	IV	30.00	
3.1-3.6	V		75.00
3.7-4	VI		75.00
4.1-4.6	VII		80.00
2.1-2.6	III		85.00
4.7-5	VIII		100.00

Table 87. *Mean percentage scores for negatives comprehension in females*

<i>Group</i>	<i>Group</i>	<i>Mean Scores (%)</i>	
2.7-3	IV	33.33	
2.1-2.6	III	35.00	
3.1-3.6	V		90.00
3.7-4	VI		95.00
4.1-4.6	VII		95.00
4.7-5	VIII		100.00

Table 88 and 89 represent the mean percentage scores for negatives expression in males and females respectively. Results reveal that emergence of this syntactic category commenced in males from 2.7-3 years onwards, whereas it commenced from 2.1-2.6 years in females. Apart from group IV all the other higher age groups followed a clear and cut developmental pattern in males. Similarly, groups IV to VIII followed a similar developmental pattern in females.

Table 88. *Mean percentage scores for negatives expression in males*

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>		
2.1-2.6	III	0.00		
2.7-3	IV		70.00	
3.7-4	VI			90.00
3.1-3.6	V			95.00
4.1-4.6	VII			95.00
4.7-5	VIII			100.00

Table 89. *Mean percentage scores for negative expression in females*

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>	
2.1-2.6	III	7.50	
2.7-3	IV		83.33
3.1-3.6	V		95.00
3.7-4	VI		100.00
4.1-4.6	VII		100.00
4.7-5	VIII		100.00

## Performance of the participants in the expression and comprehension for embedded Sentences

MANOVA revealed a statistically significant main effect of age for the comprehension of embedded sentences {F (5, 54) = 62.33,  $p < 0.05$ } in males and {F (5, 53) = 20.40,  $p < 0.05$ } in females. For Expression of embedded sentences statistically significant main effect for age was also observed in males {F (5, 54) = 2.25,  $p < 0.05$ } in males. However, in females there was no significant main effect of age was observed at  $p < 0.05$  level, indicating the performance was uniform across the age group for the expression of this category.

The results of post hoc Duncan's test for the task of embedded sentence comprehension of males and females are represented in Table 90 and 91. Group III and Group VII of both males and females performed significantly different from the other age groups.

Table 90. Mean percentage scores for embedded sentences comprehension in males

Age range	Group	Mean Scores (%)		
2.1-2.6	III	25.00		
4.7-5	VII		50.00	
3.1-3.6	V			95.00
2.7-3	IV			97.50
3.7-4	VI			100.00
4.1-4.6	VIII			100.00

Table 91. Mean percentage scores for embedded sentences comprehension in females

Age range	Group	Mean Scores (%)		
2.1-2.6	III	45.00		
4.7-5	VII	50.00		
2.7-3	IV			91.67
3.1-3.6	V			95.00
3.7-4	VI			100.00
4.1-4.6	VIII			100.00

Table 92 and 93 shows the performance of male and female subjects on the task of embedded sentences expression. The results reveal that both the male and female subjects began acquiring this syntactic category only by the age of 4.7-5 years (Group VIII).

Table 92. *Mean percentage scores for embedded sentences expression in males*

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>	
2.1-2.6	III	0.00	
2.7-3	IV	0.00	
3.1-3.6	V	0.00	
3.7-4	VI	0.00	
4.1-4.6	VII	0.00	
4.7-5	VIII		5.00

Table 93. *Mean percentage scores for embedded sentences expression in females*

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>	
2.1-2.6	III	0.00	
2.7-3	IV	0.00	
3.1-3.6	V	0.00	
3.7-4	VI	0.00	
4.1-4.6	VII	0.00	
4.7-5	VIII		5.00

### **Performance of the participants in the expression and comprehension for Coordinated Sentences**

MANOVA revealed a statistically significant main effect of age for the comprehension of coordinated Sentences { $F(5, 54) = 3.69, p < 0.05$ } in males and { $F(5, 53) = 4.16, p < 0.05$ } in females. Significant main effect for age was also observed for expression of coordinated Sentences { $F(5, 54) = 24.70, p < 0.05$ } in males and { $F(5, 53) = 29.56, p < 0.05$ } in females.

The mean scores for coordinated sentence comprehension in male and female participants are provided in Table 94 and 95. Groups III to V showed a similar pattern of development in male subjects as reflected by the post hoc Duncan test scores. The

developmental trend is similar in Groups VI to VIII in the male subjects. Similarly there is a steady developmental pattern across age groups in female subjects. The results reveal that group III to group V exhibit performance similarity. On the other hand the females in group VI and VII on Duncun's post hoc showed similar performance, and their performance differed from group VIII.

Table 94. *Mean percentage scores for coordinated sentences comprehension in males*

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>	
2.1-2.6	III	38.3290	
2.7-3	IV	49.9950	49.9950
3.1-3.6	V	53.3280	53.3280
3.7-4	VI		59.9940
4.1-4.6	VII		63.3270
4.7-5	VIII		63.3270

Table 95. *Mean percentage scores for coordinated sentences comprehension in females*

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>		
2.1-2.6	III	38.3310		
2.7-3	IV	48.1433	48.1433	
3.1-3.6	V	53.3280	53.3280	53.3280
3.7-4	VI		56.6610	56.6610
4.1-4.6	VII		63.3270	63.3270
4.7-5	VIII			66.6600

Table 96 and 97 represent the mean percentage scores for coordinated sentences expression in males and female subjects respectively. The acquisition of this syntactic category begins with a mean score of 21.66 and the age of 3.7-4 years (group VI) in males. Thereon a developmental trend is observed in males. Group VI and VII show similar pattern in performance whereas subjects in group V and VIII performed similarly. In females the acquisition of this category commences earlier when compared to males with a mean score of 3.33 at the age of 2.1-2.6 years (group III). Group V to VIII reveal similar performance in female subjects.

Table 96. *Mean percentage scores for coordinated sentences expression in males*

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>		
2.1-2.6	III	0.0000		
2.7-3	IV	0.0000		
3.7-4	VI		21.6640	
4.1-4.6	VII		26.6640	
3.1-3.6	V			46.6620
4.7-5	VIII			59.9940

Table 97. *Mean percentage scores for coordinated sentences expression in females*

<i>Age range</i>	<i>Group</i>	<i>Mean Scores (%)</i>		
2.7-3	IV	0.0000		
2.1-2.6	III	3.3320		
4.1-4.6	VII		43.3290	
3.1-3.6	V		43.3290	
4.7-5	VII		46.6620	
3.7-4	VI		56.6610	



Table 98: Normative scores for comprehension of grammatical structures in males

Grammatical category	1-1.6 years		1.7-2 years		2-2.6 years		2.7-3 years		3.1-3.6years		3.7-4 years		4.1-4.6 years		4.7-5 years	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
<b>Simple sentence</b>	0.00	0.00	50	50	50	50	100	100	100	100	100	100	100	100	100	100
<b>Person</b>	0.00	0.00	0.00	50	100	100	100	100	100	100	100	100	100	100	100	100
<b>Case marker</b>	0.00	0.00	0.00	0.00	50	50	0.00	100	0.00	100	50	100	50	100	100	100
<b>Adjective</b>	0.00	0.00	0.00	0.00	0.00	50	100	100	50	100	100	100	100	100	100	100
<b>Post-position</b>	0.00	0.00	0.00	0.00	50	50	50	100	50	100	50	100	50	100	100	100
<b>Definite determiner</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50	50	100	0.00	50	0.00	100	100	100
<b>Tense marker</b>	0.00	0.00	0.00	0.00	0.00	50	0.00	50	50	100	0.00	100	0.00	100	100	100
<b>Number marker</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50	0.00	0.00	0.00	0.00	50	100
<b>Wh- question</b>	0.00	0.00	0.00	0.00	0.00	50	50	100	50	100	50	100	50	100	100	100
<b>Yes-No question</b>	0.00	0.00	0.00	0.00	50	50	100	100	100	100	100	100	100	100	100	100
<b>Negatives</b>	0.00	0.00	0.00	0.00	50	100	0.00	100	0.00	100	50	100	50	100	100	100
<b>Embedded sentence</b>	0.00	0.00	0.00	0.00	0.00	50	75	100	50	100	100	100	100	100	50	50
<b>Coordinated sentence</b>	0.00	0.00	0.00	0.00	16.66	66.66	0.00	66.66	33.33	66.66	33.33	66.66	33.33	66.66	33.33	66.66

Table 99: Normative scores for expression of grammatical structures in males.

Grammatical category	1-1.6 years		1.7-2 years		2-2.6 years		2.7-3 years		3.1-3.6years		3.7-4 years		4.1-4.6 years		4.7-5 years	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
<b>Simple sentence</b>	0.00	0.00	25	100	50	50	100	100	100	100	100	100	100	100	100	100
<b>Person</b>	0.00	0.00	0.00	0.00	0.00	50	25	100	100	100	100	100	100	100	100	100
<b>Case marker</b>	0.00	0.00	0.00	0.00	0.00	1	50	100	100	100	100	100	100	100	100	100
<b>Adjective</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50	0.00	100	100	100	100	100	100	100
<b>Post-position</b>	0.00	0.00	0.00	0.00	0.00	25	0.00	50	0.00	100	0.00	100	0.00	100	100	100
<b>Definite determiner</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50	40	100	0.00	50	50	100	50	100
<b>Tense marker</b>	0.00	0.00	0.00	0.00	0.00	75	0.00	25	50	100	50	100	50	100	75	100
<b>Number marker</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100
<b>Wh-question</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50	50	100	50	100	50	100	100	100
<b>Yes-No question</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25	0.00	25	0.00	0.00	0.00	25	50	100
<b>Negatives</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100	50	100	50	100	50	100	100	100
<b>Embedded sentence</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25
<b>Coordinated sentence</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33.33	66.66	0.00	66.66	0.00	66.66	33.33	66.66

Table 100: Normative scores for comprehension of grammatical structures in females

Grammatical category	1-1.6 years		1.7-2 years		2-2.6 years		2.7-3 years		3.1-3.6years		3.7-4 years		4.1-4.6 years		4.7-5 years	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
<b>Simple sentence</b>	0.00	0.00	50	50	50	50	100	100	100	100	100	100	100	100	100	100
<b>Person</b>	0.00	0.00	0.00	75	50	100	25	100	100	100	100	100	100	100	100	100
<b>Case marker</b>	0.00	0.00	0.00	0.00	0.00	50	50	100	0.00	100	50	100	50	100	100	100
<b>Adjective</b>	0.00	0.00	0.00	0.00	50	50	50	100	50	100	100	100	100	100	100	100
<b>Post-position</b>	0.00	0.00	0.00	0.00	50	50	50	100	50	100	50	100	50	100	100	100
<b>Definite determiner</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50	0.00	50	50	100	50	100	100	100
<b>Tense marker</b>	0.00	0.00	0.00	0.00	0.00	100	0.00	50	0.00	100	0.00	100	50	100	100	100
<b>Number marker</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50	100	50	100	50	100	0.00	100
<b>Wh-question</b>	0.00	0.00	0.00	0.00	0.00	100	50	100	50	100	50	100	50	100	100	100
<b>Yes-No question</b>	0.00	0.00	0.00	0.00	50	100	100	100	100	100	100	100	100	100	100	100
<b>Negatives</b>	0.00	0.00	0.00	0.00	0.00	50	0.00	100	50	100	50	100	50	100	100	100
<b>Embedded sentence</b>	0.00	0.00	0.00	0.00	0.00	100	50	100	50	100	100	100	100	100	50	50
<b>Coordinated sentence</b>	0.00	0.00	0.00	0.00	0.00	66.66	0.00	66.66	33.33	66.66	33.33	66.66	33.33	66.66	66.66	66.66

Table 101: Normative scores for expression of grammatical structures in females

Grammatical category	1-1.6 years		1.7-2 years		2-2.6 years		2.7-3 years		3.1-3.6years		3.7-4 years		4.1-4.6 years		4.7-5 years	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
<b>Simple sentence</b>	0.00	0.00	0.00	75	50	50	100	100	100	100	100	100	100	100	100	100
<b>Person</b>	0.00	0.00	0.00	0.00	0.00	50	0.00	100	100	100	100	100	100	100	100	100
<b>Case marker</b>	0.00	0.00	0.00	0.00	0.00	0.00	50	100	100	100	100	100	100	100	100	100
<b>Adjective</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50	0.00	100	100	100	100	100	100	100
<b>Post-position</b>	0.00	0.00	0.00	0.00	0.00	50	0.00	75	0.00	100	0.00	100	0.00	100	100	100
<b>Definite determiner</b>	0.00	0.00	0.00	0.00	0.00	25	0.00	25	50	100	50	100	50	100	50	100
<b>Tense marker</b>	0.00	0.00	0.00	0.00	0.00	75	0.00	25	50	100	50	100	50	100	75	100
<b>Number marker</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50
<b>Wh-question</b>	0.00	0.00	0.00	0.00	0.00	100	0.00	50	50	100	50	100	50	100	100	100
<b>Yes-No question</b>	0.00	0.00	0.00	0.00	0.00	100	0.00	25	0.00	25	0.00	100	0.00	25	75	100
<b>Negatives</b>	0.00	0.00	0.00	0.00	0.00	50	0.00	100	50	100	100	100	100	100	100	100
<b>Embedded sentence</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25
<b>Coordinated sentence</b>	0.00	0.00	0.00	0.00	0.00	16.66	0.00	0.00	33.33	66.66	33.33	66.66	33.33	66.66	33.33	66.66

## CHAPTER V

### DISCUSSION

The main focus of the current study was to adapt the STAS-Kannada for Telugu speaking children in the age range of 1-5 years. The test material was prepared and it was administered on 160 participants. Equal numbers of males and females were considered for the study. The results were analyzed using appropriate statistical tools in order to obtain the following:

- a) Developmental pattern of grammatical structures
- b) Normative scores for comprehension and expression for the morpho-syntactic forms
- c) Gender differences
- d) Age wise comparisons

Each of the 13 grammatical elements was analyzed in detail keeping in view of the above mentioned objectives.

#### **Simple Sentences**

A simple sentence, otherwise called as an independent clause consists of a subject and a verb. Children started using one word utterances at the age of one year. There is no distinction between their utterances and sentences. They tend to use a single word to convey the complete meaning, hence, this stage has been referred to as the holophrastic stage. In the present study, under comprehension task, all the participants across all the age groups i.e., from 2.7-3.0 years to 4.7-5.0 years achieved 100% scores, but in the expression task participants in 1.7-2.0 years and 2.1-2.6 years age group scored only 50% of the responses. These results were in accordance with the study done by Santhi (2008). It was found that children start using simple sentences from 1½ years which is in consonance with earlier studies.

Wood (1997) classified the children into six stages and reported that two-word utterances begin to appear from 18 months of age. Similar results have been also stated by Goswami, Priyadarshi, Ramya and Pallavi (2010), where similar trend of acquisition was seen in Hindi speaking children.

### **Person Marker**

A person marker is considered to be a morpho-syntactic category, which may be used to substitute for nouns or noun phrases, but differ from the latter in its morphological and syntactic properties. The children of the age ranging from 3.1-3.6years to 4.7-5.0 used first person singular /ne:nu/ (I) and second person plural /nuvvu/ (you) even though they understood third person singular /athanu/ (his) /a:me/ (her) and third person plural /va:llu/ (they). But all of them used the first person singular most frequently in both the genders. This finding was in accordance with the studies of Carrow (1968); Bloom (1970); Sreedevi, (1976); Miller (1979); Sudha (1981); Vijayalakshmi (1981); and Santhi (2008). The results obtained in the current study revealed that comprehension of person marker starts by 1.7 years of age in both the genders and expression by 2 years in boys and 2.6 years in girls. An increasing developmental trend was noticed across all the age groups. The findings support the earlier studies done to study the acquisition of person markers (Gregoire, 1947; Zazzo 1948; Menyuk, 1964; Miller, 1979). Most of the authors have observed that expression of person markers begins by 2 years of age. It was also seen that Telugu speaking children start understanding this marker at 1.7 years, this was achieved by 2 years in Kannada speaking children, (Basavaraj, 1981). Goswami, Priyadarshi, Ramya and Pallavi (2010), also reported that Hindi speaking children to start understanding person markers by the age of 1.6 years.

## **Case marker**

Case marker can be defined as a system of marking dependent nouns for the type of relationship they bear to their heads (Blake, 2001). Eight types of cases have been defined namely: nominative case, accusative case, dative case, ablative case, vocative case, genitive case, instrumental case and locative case. This vital element begins appearing in children from 2- 2.6 years. Comprehension of case markers was achieved 100% at the age of 4.7 onwards in both genders, whereas, expression was achieved 100% from 3 years onwards in both the genders. Participants in the age range of 2.7-3.0 years achieved 75% and in 2.1-2.6 years group achieved 50% scores. These findings showed that as age increased the performance of the children increased. These findings were also in support with Santhi (2008) and Sudha (1981), where older groups achieved better scores than younger groups. Most of the former studies are of the opinion that girls develop language faster than boys. The development starts from 2 years and is seen to be mastered by the age of 3.7- 4.0 years. These findings are in support with the findings of Basavaraj (1981).

## **Adjectives**

The syntactic role of an adjective is to modify a noun or pronoun, giving more information about its referent. Adjectives can be classified on the basis of appearance, condition, feelings, shape, size, sound, time, taste, touch and quantity. This aspect of syntax has attracted more attention than other aspects. The adjectives of colour were acquired only by the age of 3-4 years. Most of the children in the age range of 4-5 years were able to express the differences between long and short, fat and thin. According to the present study, the comprehension of adjectives started by the age of 2 years in both boys and girls. Under this subtest, in comprehension task all the participants from 3.7 years to 4.7-5.0 years group achieved 100% scores in

both the genders. Expression starts developing by the age of 3 years and is mastered by 5 years of age in both the genders. The scores increased with age which shows the growth or developmental trend. The use of adjectives of size and quantity were consistent by the age of 3.6-4 years. Similar findings have been reported by Bloom (1971); Sudha (1981); Vijayalakshmi (1981) and Santhi (2008). Murthy (1981) concluded that the use of adjectives in Tamil speaking children begins by 3 ½ to 4 years, which is in concordance with the present findings.

### **Post-positions**

In the present study, children in the age range of 3-5 years showed confusion of understanding /mundu/ (in front), /venuka/ (behind), /pakkana/ (beside). The development of this particular grammatical component in both males and females starts at 2 years in comprehension and expression. The comprehension of post-positions is acquired by 2 years of age and expression of post positions starts by 2.6 years by both boys and girls. Under comprehension tasks and expression task the participants in 4.7-5.0 year groups achieved 100% .By the age of five years all the children could understand and use of all the post-positions as reported by Sudha (1981) and Santhi (2008). Murthy (1981) studied Tamil speaking children and reported acquisition of this category from 3-5 years. Basavaraj (1981) studied Kannada speaking children and reported acquisition of post positions from the age of 2 years onwards.

### **Determiner**

A determiner is a noun-modifier that expresses the reference of a noun or noun-phrase in the context, including quantity, rather than attributes expressed by adjectives. Development of comprehension as well as expression of determiners starts from the age of 2 years and above. The 3.1-3.6 year children in this group



were able to understand the definite determiners /akkada/ (there), /ikkada/ (here), /a:me/ (she),/ athanu/ (he) but the expression of these structures in the spontaneous speech is less compared to other groups. Sudha (1981) and Santhi (2008) had also reported similar findings. This grammatical category is acquired by boys at the age of 3 years and girls at the age of 2.6 years. Acquisition of expression of determiners starts from the age of 2 years and above in both boys and girls. Girls performed better than boys in the age range of 3.6 - 2.4 years. These findings may be attributed to the abstractness of the comprehension test due to which the children performed poorly on the same compared to expression tasks. These findings are in accordance with the pattern of acquisition of determiners in Kannada by Basavaraj (1981).

### **Tense marker**

Tense marker forms a very significant category in the acquisition of any language. It represents a temporal linguistic quality expressing the time at, during, or over which a verb occurs. It can be classified to past tense, present tense and future tense. The findings of the present study revealed that development of comprehension as well expression of tense marker starts from the age of 2 years. This finds support from Goffman and Leonard (2000), Rice, Wexler and Hershberger (1998), Hadley and Rice (1996) and Radford (1990). The younger children used and identified the present tense marker more than the past tense marker, 99% correct usage was found and distinction of past and present tenses were made by the children in the age range of 4-6 years. Berko (1958); Sreedevi (1976); Sudha (1981); Vijayalakshmi (1981), and Santhi (2008) had reported similar findings. 4,5years groups achieved 100% score .In 3-3.6 year group majority of them achieved 50% scores. Boys as well as girls start acquiring this grammatical category from the age of 2 years and >90% accuracy is achieved by the age of 5 years. These findings are in support with

Schütze & Valian (1992, 1991) Wexler (1998), Wexler et al. (1998), Wexler (2000), Wilson (2003), Valian & Aubry (2005), whereas Valian (2006), Rispoli, Hadley and Holt (2009), findings refute the present results. Some studies in Indian languages also revealed similar findings Sreedevi (1976) and Basavaraj (1981) for Kannada language and Murthy (1981) for Tamil language). The performance of boys showed a dip in the age range of 2.7-3.0 years. Also, it was noticed that boys performed better than girls in the age range of 3-3.6 years and girls performed better than boys in the age range of 4 - 4.6 years. Mastery of this grammatical category was not achieved by the age of 5 years in both the genders.

### **Number marker**

Number marker is another vital morphosyntactic category that appears in the child's repertoire. According to the present study, the development of comprehension of number marker started at the age of 3.1 years in boys as well as girls and development of expression started at the age of 4.7-5.0 years in both the genders. These findings are not in accordance with Cazden (1968) and Zapf & Smith (2003, 2007) who reported that children start comprehending number marker from the age as early as 1.6 years, but in support with Gleason (1958); Graves and Koziol (1971); Anisfeld and Tucker (1967; and Befi-Lopes, Rodrigues, Puglisi (2009) who reported that the expression of number markers starts as late as 4 to 7 years of age. Older groups performed better compared to younger groups which shows that performance improved as age increased. These findings are supported by Sreedevi (1976); Vijayalakshmi (1981), Sudha (1981) and Santhi (2008).

### **Wh- and Yes-No questions**

Interrogative sentence form is classified as wh- and yes-no questions. Wh-questions are considered to be more complex than the former as they require

additional information. According to Klima and Bellugi (1966) and Bloom (1991) these questions develop over four phases which are classified based on MLU. The results of the current study indicated that both males and females acquire this category from 2 years of age. The expression of this element starts at a later age of 2½ years. This finds support from the study by Basvaraj (1981). Earlier studies also reveal that this grammatical component starts developing by 2 years although with errors ( Klima & Bellugi, 1966; Erwin & Tripp, 1970; Labov & Labov, 1978; Bloom, Merkin & Wooten, 1982; Erreich, 1984; Klee, 1985; Stromswold, 1990). In the age group of 2- 2.6 years it was noticed that the females performed better than males. this category was mastered by both males and females by the age of 4.7-5.0 years. Quigley et al (1975) however commented that children use wh-questions with 100% accuracy by ten years of age. A similar pattern as in the acquisition of wh-questions is noticed for yes-no questions. All the children begin to acquire this form 2 years of age. The findings are in consonance with earlier investigations (Menyuk, 1964; Bellugi, 1967; Bloom, 1970; Ervin-Tripp, 1970; Dale, 1976; Sreedevi, 1976; Roopa, 1980 & Basavaraj, 1981). So as the age increased use of Wh questions had increased. Similar findings had been reported by Sudha (1981) and Santhi (2008) from their studies. The use of yes-no questions seems to go hand-in-hand with the acquisition of Wh-questions.

### **Negatives**

The marker /ledu/ was used and understood correctly by all the children in the study. Thus a ceiling effect of this grammatical element was observed. This finding supported the reported made by Bellugi (1964); Menyuk (1969); Bloom (1970); Sreedevi (1976); Prema (1979); Roopa (1980); Vijayalakshmi (1981); Sudha (1981) and Santhi (2008). Bloom (1991) found that children start using negation at

the stage of one- and two- word utterances. It has well been noted that children start using one word utterance by one year of age. The results obtained in the current study add on to the previous ones regarding the development of negatives. Comprehension of negatives begins at age of 1.7 -2.0 years in females and 2.1-2.6 years in males. Expression is acquired by 2.6 years in females and 2.7-3.0 years in males. 100% score is obtained in expression by 3.7-4.0 years in females and 4.7-5.0 years in males. The upshots of the study go hand in hand with the studies carried out by Brown and Bellugi (1964), Menyuk (1969), Bloom (1970), Sreedevi (1976), Roopa (1980) and Basavaraj (1981).

### **Embedded sentences**

Complex constructions such as embedded sentences were tested in the present research. It can be remarked that comprehension of embedded sentences starts by 2.1-2.6 years in both the genders. The use of embedded sentences begins only at the age of 5 years in both the genders. A significant difference was noted in the performance of boys and girls in the age range of 2-2.6 years, females performed better than males. The findings are in accordance with Basavaraj (1981) who found that Kannada speaking children start using this structure by 1.6 years. Brown (1973) in his extensive study on grammatical acquisition has found that these structures emerge after 3 years in a child's repertoire.

### **Coordinated sentences**

Coordinated sentences were comprehended by 2 years of age in both the genders and the use of this structure begins in the age range of 2.1 to 2.6 years in females and 3.1-3.6 years in males. However, it was also noticed that the expression of this morpho-syntactic structure was absent in the age range of 3.6-4 years. Under comprehension tasks all the groups performed well. Females in the age range 2.7-3.0

year group performed poorly in the expression task compared to older groups. They were not able to repeat the instructions back to the investigator. Children in 4-4.6 year group were not able to use the proper grammar while repeating the action which they had done, whereas 5-year group children were able to perform on this task without error. Same findings were reported by Vijayalakshmi (1981) and Santhi (2008). The same findings as in embedded sentences were seen with respect to the task for the coordinated sentence. 4.7-5 year group children performed when compared to younger groups which show the development as age increases. These findings are in accordance with Vijayalakshmi (1981) and Santhi (2008).

### **Narration**

In narration, both boys and girls performed similarly. The children below 3 years were not able to answer all the questions which were asked while narrating the story, the answers were mostly at one or two word level. 4-5 year group used 2 phrases most of the time and few used longer sentences while narrating. Similar findings were reported by Santhi (2008) and Basavaraj (1981).

## SUMMARY AND CONCLUSIONS

Syntax had been defined as the way the words of a language are combined to make larger units, such as phrases, clauses and sentences. Syntax is primarily concerned with whether a sentence is “properly put together” rather than whether it is meaningful, or silly, or bizarre. Syntactic development seems to consist of learning ways to express each word’s inherent semantic potential in the appropriate syntactic form.

The majority of the tests constructed for assessing are in western context. Very few tests were developed for assessment of syntax in Indian context like STASK in Kannada by Vijayalakshmi (1981), in Tamil by Sudha (1981) and in Malayalam by Santhi (2008), and knowledge of syntax in one language cannot be applied to other languages. So it is necessary to develop tests suitable to specific culture and language. Thus, this study was an attempt in developing a language test in one of the Indian languages i.e. Telugu.

The present study was designed to investigate the acquisition of syntax in Telugu speaking children. It is an adaptation of “Screening Test for the Acquisition of Syntax in Kannada” by Vijayalakshmi (1981). The test consisted of two sections i.e., comprehension and expression, under which there were fourteen subtests. They were simple sentences, person, case marker, adjectives, post positions, definite determiner, tense markers, number markers, Wh-questions, yes-no questions, negatives, embedded sentences, coordinated sentences and narration. Each subtest consisted of two items, except for coordinated sentences subtest which consisted of three items and narration subtest consisted of six items. The test was administered on one hundred and sixty typically developing children who were attending normal school. Depending on the age of the children, they were divided

into eight groups; Group I (1.0-1.6 years), Group II (1.7-2.0 years), Group III (2.1-2.6 years), Group IV (2.7-3.0 years), Group V (3.1-3.6 years), Group VI (3.7-4.0 years), Group VII (4.1-4.6 years), Group VIII (4.7-5.0 years). The performance scores thus obtained for all the participants were subjected to statistical analysis.

Results obtained in the present study, showed that the children of higher age group i.e., 4.7-5.0 years had highest scores followed by children in the age group of 4.0-4.6 years, 3.7-4.0 years, 3.1-3.6 years, 2.7-3.0 years respectively for both comprehension and expression tasks. An increase in the overall performance of comprehension and expression on all the grammatical categories as a function of age was observed which was in accordance with the previous studies by Vijayalakshmi (1981), Sudha (1981) and Santhi (2008).

Although there were minor performance differences between the genders, in the individual grammatical categories, overall the differences were not found to be statistically significant. These findings were also in consonance with the previous studies by Sudha (1981) and Santhi (2008). The comprehension scores almost always remained superior to the expression scores for most of the grammatical categories.

It can be concluded that the present test in Telugu would be helpful in collecting normative data on language acquisition in Telugu speaking children and also helpful in identifying areas of syntactic deficits, planning therapy and in estimating prognosis.

### **Implications of the Study**

1. The test would find its use as a research tool in order to collect the normative data on a larger scale and on different populations.
2. STAST can be used as a guide to plan remediation activities for children with language delay.
3. This test would be useful in assessing the progress in children undergoing speech and language training and also in scheduling the therapeutic technique.
4. As the test yields information regarding the level of language development for age groups between one to five years, it would facilitate in developing teaching aids for children at their age levels. It can also guide the nursery teachers to maintain their optimum level of complexity with regard to the language they should use in the classrooms.

### **Future Directions**

- 1) Validity of the present study should be checked by administering it to a large group of language disordered children such as specific language disorders, children with mental retardation and in early identification of dyslexic children.
- 2) The test may be administered on children beyond 5 years of age to document the age of mastery of certain grammatical categories considered in the present study.
- 3) The utility of the present test can be assessed by using it in various clinical settings.
- 4) Syntactic development in bilingual and monolingual children can be investigated using the present test.



## REFERENCES

- Ammons, R. B., & Ammons, H. S. (1958). *Full range picture vocabulary test*. Missoula, Montana: Psychological Test Specialists.
- Anisfeld, M., & Tucker, G. R. (1967). "English pluralization rules of six-year-old children". *Child Development*, 38, 1201-1217.
- Austin, J. (1962). *How to do things with words*. Oxford: Oxford University Press.
- Asha, M. M. (1997). *Linguistic profile test in Malayalam: Normative data for children in grades I to X*. Unpublished Master's Dissertation, University of Mysore, Mysore.
- Babu, Ratna, & Bettagere. (1972). *Picture Word Articulation Test in Kannada*. Unpublished Master's Dissertation, University of Mysore, Mysore.
- Bankson, N. (1977). *Bankson language screening test*. Baltimore: University Park Press.
- Banu, T. (1977). *Articulatory acquisition in Kannada: A study of normal children in age range 3-6; 6 years*. Unpublished Master's Dissertation, University of Mysore, Mysore.
- Basavaraj, V. (1977). *Viba grows up – from 0 to 9 ½ months*. Paper presented at the 10<sup>th</sup> Annual Conference of Indian Speech and Hearing Association, Mysore.
- Basavaraj, V. (1981). *Screening Test for the Acquisition of Syntax in Kannada*. Unpublished Ph.D. Thesis, University of Mysore, Mysore.
- Basavaraj, V. (2011). *Screening Test for the Acquisition of Syntax in Hindi: An Adaptation of STAS-K*. Unpublished ARF project, All India Institute of Speech and Hearing, Mysore.

- Bedore, I. M., & Leonard, L. B. (2001). Grammatical morphological deficits in Spanish – speaking children with specific language impairment. *Journal of Speech, Language and Hearing Research, 44*, 905-924.
- Befi-Lopes, D. M., Rodrigues, A. & Puglisi, M. L. (2009). Number morpheme acquisition in children within normal language development. *Pro Fono Journal. 21*(2), 171-5.
- Bellugi, U. H. (1967). The acquisition of negation. Unpublished Doctoral dissertation. Harvard University. Massachusetts: Harvard University Press.
- Bellugi, U. H. (1971). Simplification in children's language. In R. Huxley and E. Ingram (Eds.) *Methods and Models in Language Acquisition* (pp. 95-117). Academic Press, New York.
- Bench, J., & Bamford, J. (1979). *Speech – hearing test and the spoken language of the Hearing- Impaired children, London: Academic Press.*
- Berko, J. (1958). The child's learning of English morphology. *Word. 14*:150-77.
- Berko-Gleason, J. (2001). *The development of language. (5<sup>th</sup> ed.)*. Boston: Allyn & Bacon.
- Bever, T. G. (1970). The cognitive basis for linguistic structures. In J.R. Hayes ( ) *Cognition and the development of language*. New York: Wiley, pp. 279-362.
- Bhuvaneshwari, C. S. (1993). *TPVT - A screening picture vocabulary test in Tamil*. Unpublished Master's Dissertation, University of Mysore, Mysore.
- Blackwell , A. A. (1998). *Adjectives in acquisition: On the semantic and syntactic development of English adjectives*. Unpublished Doctoral dissertation, Boston University, Boston, MA.
- Blake, B. J. (2001). *Case. (Second edition)*. Cambridge: CUP.

- Bliss, L. S. & Allen, D. V. (1984). Screening kit of language development: A preschool language screening instrument. *Journal of Communication Disorders, 17*, 133-141.
- Bliss, L. S., Allen, D. V., & Wrasse, K. W. (1977). A Story completion approach as a measure of language development in children. *Journal of Speech and Hearing Research, 20* (2), 358-371.
- Bower, T.G.R. (1971). The object in the world of an infant. *Scientific American, 225* (4), 30-38.
- Maccoby, E. (1966). *The development of sex differences*. Stanford: Stanford University Press
- Bloom, L. (1991). On the Acquisition of Negation in Tamil and English. *Journal of Child Language, 18*, 715-716.
- Bloom, L. (1970). *Language development: Form and function in emerging grammar*. MIT Press, Cambridge.
- Bloom, L & Lahey, M. (1978). *Language Development and Language Disorders*. New York: John Wiley and Sons.
- Bloom, L., Merkin, S., & Wootten, J. (1982). Wh-questions: linguistic factors that contribute to the sequence of acquisition. *Child Development, 53* (4), 1084-1092.
- Bloom, L., Miller, P., & Hood, L. (1975). Variation and reduction as aspects of competence in child language. In A. Pick (Ed.), *Minnesota symposia on child psychology* (Vol, 9, pp. 3-55). Minneapolis MN: University of Minnesota Press.
- Bloom, L. (1991). On the Acquisition of Negation in Tamil and English. *Journal of Child Language, 18*, 715-716.

- Borer, Hagit & Wexler, K. (1987). *The maturation of syntax*. In Thomas Roeper & Edwim Williams (eds.), *Parameter Setting*, Dordrecht: Reidel, pp.23-172.
- Bochner, J. (1978). Error, anomaly, and variation in the English of the deaf Individuals. *Language and Speech*,21,174-189.
- Bohannon, J. N., & Warren-Leubecker, A. (1985). *Theoretical approaches to language acquisition*, Ed. Columbus, Ohio: Merrill.
- Bowerman, M. (1978). Starting to talk worse: clues to language acquisition from children's late speech errors. In: Strauss S, editor. *U-shaped behavioural growth*. New York: Academic Press.
- Bowerman, M. (1974). Learning the structure of causative verbs: A study in the relationship of cognitive, semantic, and syntactic development. *Papers and Reports on Child Language Development*, 8, 142 178.
- Bowerman, M. (1976). Semantic factors in the acquisition of rules for word use and sentence construction. In D. Morehead & A. Morehead (Eds.), *Directions in normal and deficient language development* (pp. 99 179). Baltimore: University Park Press.
- Bowerman, M. (1982). Starting to talk worse: Clues to language acquisition from children's late speech errors. In S. Strauss (Ed.) *U shaped behavioral growth* (pp. 101 145). New York: Academic Press.
- Braine, M. D. S. (1971). On two types of models of the internalization of grammars. In D. Slobin (Ed.) *The Ontogenesis of Grammar*. Academic Press, New York.
- Brannon, J. B., & Murray, T. T. (1966). The spoken syntax of normal, hard- of-hearing, and deaf children. *Journal of Speech and hearing research*,9, 604-610.

- Brown, R. & Bellugi, U. H. (1964). Three Processes in the Child's Acquisition of Syntax. In E. H. Lenneberg, *New Directions in the Study of Language* (pp. 131 – 161). Cambridge: M.I.T. Press.
- Brown, R. W. (1973). *A first language: The early stages*. Cambridge, Mass.: Harvard University Press.
- Bruner, J. S. (1975a). From communication to language - A psychological perspective. *Cognition*, 3, 255-288.
- Bruner, J. S. (1975b). The ontogenesis of speech acts. *Journal of Child Language*, 2, 1-19.
- Bybee, J. L., & Slobin, D. I. (1982). Rules and schemas in the development and use of the English past tense. *Language*, 58, 265-289.
- Cairns, H., & Hsu, J. (1978). Who, why, when and how: A developmental study. *Journal of Child Language*, 5, 477-488.
- Carrow, M. A. (1968). The development of auditory comprehension of language structure in children. *Journal of Speech and Hearing Disorders*, 39, 99-111.
- Carrow, E. (1973). *Screening test for auditory comprehension of language- Test manual*. Austin, Texas: Urban Research Group.
- Carrow, E. (1974). *Carrow elicited language inventory*. Austin, Tex.: Learning Concepts.
- Cazden, C. B. (1968). The acquisition of noun and verb inflections. *Child Development*, 39, 433-448.
- Choi, S., & Gopnik, A. (1995). Early acquisition of verbs in Korean: A cross-linguistic study. *Journal of Child Language*, 22, 497-530.
- Chomsky, N. (1957). *Syntactic structures*. Janua Linguarum Series Minor No. 4, Hague: Mouton.

- Chomsky, N. (1959). Review of verbal behavior by B.F. Skinner. *Language*, 35, 26-58.
- Chomsky, N. (1965). *Aspects of theory of syntax*. MIT Press, Cambridge, Mass.
- Chomsky, C. S. (1968). *The Acquisition of syntax in children from Five to Ten*. MIT Press, Cambridge, Mass.
- Cleary, M., Schwartz, R. G., Wechsler- Kashi, D., & Madell, J. R. (2006). *Hearing Impairment in Children associated with slower retrieval from memory during recall*. Poster presented at the association for Psychological science 18<sup>th</sup> Annual convention, New York, NY, May 25-28.
- Compton, A. (1978). *Compton speech and language screening evaluation*. San Francisco: Carousel House.
- Crabtree, M. (1963). *Houston test for language development*. Houston, Texas: Box 35152.
- Crain, S & Lillo-Martin, D. (1999). *An Introduction to Linguistic Theory and Language Acquisition*. Oxford: Blackwell.
- Cromer, R. (1970). Children are nice to understand: Surface structure clues for the recovery of a deep structure, *British Journal of Psychology*, 61, 397-408.
- Cruttenden, A. (1979). *Language in infancy and childhood*. Manchester University Press.
- Crystal, D. (1987). *The Cambridge encyclopedia of language*, Newyork: Cambridge University Press.
- Crystal., Fletcher & Garman (1978). *Readings in language development*. New York: Wiley.
- Crystal, D., Fletcher, P., & Garman, M. (1989). *The grammatical analysis of language disability (2<sup>nd</sup> edition)*. London: Cole and Whurr.

- Dale, P. S. (1976). *Language development: Structure and function (2nd Ed.)*. Holt, Rinehart & Winston, New York.
- Darwin, C. (1877). A biographical sketch of an infant mind. *Mind*, 2 (7), 285-294.
- de Villiers, J. G. & de Villiers, P. A. (1973). Development of the use of word order in comprehension. *Journal of Psycholinguistic Research*, 2, 331-341.
- deVilliers, J. G., & deVilliers, P.A. (1973). Development of the use of word order in comprehension. *Journal of Psycholinguistic Research*, 2, 331-341.
- deVilliers, (1978) & de Villiers, J.G. (1979). Children's comprehension of relative clauses. *Journal of Psycholinguistic Research*, 8, 499-517.
- de Villiers, J. G., & de Villiers, P. A. (1979). Form and function in the development of sentence negation. In L. Bloom (Ed.) *Language Development from Two to Three*. Cambridge University Press, Cambridge, MA.
- Drozd, K. (1995). Child English pre-sentential negation as metalinguistic exclamatory sentence negation. *Journal of Child Language*, 22, 583-610.
- Dunn, L., & Dunn, L. (1981). *The Peabody Picture Vocabulary Test—Revised*. Circle Pines, MN: American Guidance Service.
- Dunn, L. M. (1959). *Peabody picture vocabulary test*. Bloomington, MN: Pearson Assessments.
- Dunn, L. M. (1965). *Peabody picture vocabulary test*. Circle Pines. Minnesota: American Guidance Service.
- Duncan, D., & Gibbs, D. A. (1987). Acquisition of syntax in Panjabi and English. *British Journal of Disorders of Communication*, 22, 129-144.
- Durand, J. (1990). *Generative and Non-Linear Phonology*. New York: Addison Wesley Longman Inc.

- Eadie, P. A., Fey, M. E., Douglas, J. M., & Pearson, C. L. (2002). Profiles of grammatical morphology and sentence imitation in children with specific language impairment and Down's syndrome. *Journal of Speech, Language and Hearing Research, 45*, 720-732.
- Erreich, A. (1984). Learning how to ask: patterns of inversion in yes-no and *wh* questions. *Journal of Child Language, 2*, 579–592.
- Ervin-Tripp, S. M. (1970). Discourse agreement: How children answer questions. In Hayes, J. R. (Ed.) *Cognition and Development of Language*. John Wiley and Sons, New York.
- Félix-Brasdefer, J. C. (2006). The acquisition of functional categories in early Spanish: Evidence from the strong continuity hypothesis. Indiana University on line Working Papers, Vol. 6 (pp. 1-33).
- Fogel, A. (1993). *Two principles of Communication: Co regulation and framing*. In Nadel and L. Camaioni , Ed., *New Perspectives in early Communication Development*. London: Routledge.
- Foster, R., Giddan, J. J., & Stark, J. (1972). *Manual for the assessment of children's language comprehension*. Palo Alto: Consulting Psychologists Press.
- Frankenberg, W. K, Dodds, J. B., & Fandal, A. W. (1970). *Denver developmental screening test materials*. Denver: University of Colorado Medical Centre.
- Fraser, C., Bellugi, U., & Brown, R. (1963). Control of grammar in imitation, comprehension and production. *Journal of Verbal Learning and Verbal Behavior, 2*, 121- 135.
- Gaer, E. (1969). Children's understanding and production of sentences. *Journal of Verbal Learning and Verbal Behavior, 8*, 289-294.



- Garai, J. E. & Schlenfield, A. (1968) .Sex difference in mental and language traits. *Gent. Psy. Monograph, 77, 2.*
- Gauthier, S. V., & Madison, C. I. (1998). *Kindergarten language screening test.* Novato, Calif.: Academic Therapy Publications.
- Geffner, D.S., & Freeman, L, R. (1980) .Assessment of language comprehension of 6 year old deaf children. *Journal of Communication Disorders, 13,445-47.*
- Geethakumary, V. (1997). A contrastive analysis of Hindi and Malayalam: Morphology. In Thirumalai., Mallikarjun,B., Mohanlal,S., & Sharada, A.B. (2002). *Language In India:In strength for Today and Bright Hope for Tomorrow. 2, Chapter 5.*
- Gerken, L. A., & McIntosh, B. (1993). Interplay of function morphemes and prosody in early language. *Developmental Psychology, 29, 448-457.*
- Gleason, J. B. (2005). *The development of language (6<sup>th</sup> ed.).* NewYork: Allyn and Bacon.
- Goda, S. (1964). Spoken syntax of normal deaf and retarded adolescents, In Swisher,L. (1976).
- Goodluck, H. (1991). *Language Acquisition: A Linguistic Introduction.* Blackwell: Oxford.
- Goffman, L., & Leonard, J. (2000). Growth of language skills in preschool children with specific language impairment: Implications for assessment and intervention. *American Journal of Speech-Language Pathology, 9, 151-161.*
- Gopnik, M. (Ed.). 1997. *The inheritance and innateness of grammars. Vancouver studies in cognitive science 6.* Oxford: Oxford University Press.
- Goswami, S.P., Shanbal, J. C., Samasthitha, S. & Navitha, U. (2010). *Field testing of Manual for Adult Non-fluent Aphasia Therapy in Kannada. (MANAT-K).*

- Research Project, All India Institute of Speech and Hearing Research Fund, Mysore, India.
- Graves, M. F. & Koziol, S. (1971). Noun plural development in primary grade children. *Child Development*, 42, 1165–73.
- Gregoire, A. (1937). *L'apprentissage du langage, 1*, Les deux premieres annees. Paris:Droz.
- Guasti, M. T. (1993). Verb syntax in Italian child grammar: Finite and nonfinite verbs. *Language Acquisition*, 3, 1-40.
- Haas, A. & Owens, R. (1985). *Preschoolers' pronoun strategies: You and me make us*. Paper presented at the Annual Convention of the American Speech-Language-Hearing Association, Washington, DC.
- Hadley, P. & Rice, M. (1996). Emergent uses of DO and BE: evidence from children with specific language impairment. *Language Acquisition*, 5, 209-243.
- Hegde, M.N. (2001). Introduction to Communicative disorders (3<sup>rd</sup> ed.). Austin,TX: Pro-ed
- Hirsh-Pasek, K. & Golinkoff, R.M., (1996) *The Origins of grammar: Evidence from comprehension*, Cambridge, Mass: MIT Press.
- Hirsh-Pasek, K., & Golinkoff, R. M. (1997). *What infants can teach us about language development*. University of Berne, Berne, Switzerland.
- Hockett, C. (1958). *A course in modern linguistics*. Macmillan, New York.
- Hoff, E. (2005). *Language development (3<sup>rd</sup> ed.)*, United states of America: Thomson learning Inc.
- Hresko, W., Reid, D. K. & Hammill, D. (1981). *Test of Early Language*. Austin Tex.: Pro Ed.
- Hutt, C. 1972. Sex differences in human development. *Human Development*, 15, 153-170.

- Huxley, R. (1970). The development of the correct use of subject personal pronouns in two children. In G. B. F. d'Arcais & W. J. M. Levelt (Ed.) *Advances in Psycholinguistics*. Amsterdam, The Netherlands: Elsevier - N. Holland.
- Ivimey, G.P. (1976). The written syntax of an English deaf child: an exploration in the method, *British Journals of disorders of communication*.11, 103-12.
- Hutt, C. 1972. Sex differences in human development. *Human Development*, 15, 153-170.
- Jusczyk, P. W. (1992). Developing phonological categories from the speech signal. In C. A. Ferguson, L. Menn & C. Stoel-Gammon (Eds.) *Phonological Development: models, research and implications*, pp. 17-64. Timonium, MD: York Press.
- Kanthayani, H. N. (1984). *A Language Test in Kannada for Expression in Children*. Unpublished Master's Dissertation, University of Mysore, Mysore.
- Karant, P. (1980). *Linguistic Profile Test in Kannada*. Indian council of medical research project, India.
- Kinzler, M. (1993). *Joliet 3-Minute Preschool Speech and Language Screen*. Austin, TX: Pro-Ed.
- Kirk, S. A. & McCarthy, S. S. (1961). The Illinois test of Psycholinguistic abilities- An approach to differential diagnosis. *Journal of Mental Deficiency*, 66 (3), 399-412.
- Klee, T. (1985). Role of Inversion in Children's Question Development. *Journal of Speech and Hearing Research*, 28, 225-32.
- Klee, T., & Fitzgerald, M. D. (1985). The relation between grammatical development and mean length of utterance in morphemes. *Journal of Child Language*,12, 251-170.

- Klima, E.S., & Bellugi, U. (1966). Syntactic regularities in children's speech. In J. Lyons & R. Wales (Eds.) *Psycholinguistic papers* (pp. 183-208). Edinburgh, Scotland: Edinburgh University Press.
- Kuhl, P. K., & Meltzoff, A. N. (1997). Evolution, nativism, and learning in the development of language and speech. In M. Gopnik (Ed.) *The inheritance and innateness of grammars* (pp. 7-44). New York: Oxford University Press.
- Kumudavalli, S. (1975). The relationship between articulation and discrimination of Kannada speech sounds in terms of distinctive features. Unpublished Master's Dissertation. Submitted to University of Mysore.
- Kurder, S. J. (2003). Teaching students with language and communication disabilities (2<sup>nd</sup> ed.). Boston, MA: Allyn and Bacon.
- Labov, W. & Labov, T. (1978). Learning the syntax of questions. In R. Campbell & P. Smith (Eds), *Recent advances in the psychology of language*. New York: Plenum Press. *Language and Communication Disorders, 37, 77-93*.
- Language Network: Grammar, Writing, communication (2001). Evanston, IL: McDouglas Littell.
- Lahey, M & Bloom, L. (1978). *Language Development and Language Disorders*. New York: John Wiley and Sons
- Lebeaux, D. (1988), *Language Acquisition and the Form of Grammar*. Ph.D. dissertation. University of Massachusetts at Amherst.
- Lee, L.L., (1966), Developmental Sentence types: A method for comparing normal and deviant syntactical development in children's language. *Journal of Speech and Hearing Disorders, 31, 311-330*.
- Lee, L. L. (1970). A Screening Test for Syntax Development. *Journal of Speech and Hearing Disorders, 35, 103-112*.

- Leopold, W. (1949a). *Speech development of a bilingual child: A linguist's record*.  
Vol III. *Grammar and general problems*. Evanston, IL: Northwestern  
University Press.
- Leopold, W. (1949b). *Speech development of a bilingual child: A linguist's record*.  
Vol IV. *Diary from age two*. Evanston, IL: Northwestern University Press.
- Lewis, M. (1951). *Infant speech: A study of the beginnings of language*.  
Humanities Press, New York.
- Lera, L., (1985). Assessing language development. *Journal of Speech and Hearing  
Research, 1 (1)*, 75-85.
- Lust, B. (1999). Universal grammar: The strong continuity hypothesis in first  
language acquisition. In W. Ritchie & T. Bhatia (Eds.), *Handbook of child  
language acquisition* (pp. 111-155). London: Academic Press.
- McCarthy, D. (1954). In Macaulay, R.K.S.(1978). *The myth of female superiority in  
language, Journal of Child Language, 5*, 353-363.
- Macaulay, R. K. S. (1978). *The myth of female superiority in language, Journal of  
Child Language, 5*, 353-363.
- Maccoby, E. (1966). *The development of sex differences*. Stanford: Stanford  
University Press
- Maratsos, M.P. (1974). Children who get worse at understanding the passive: A  
replication of Bever. *Journal of Psycholinguistic Research, 1*, 65-74.
- McGrath, C. O., & Kunze, L. H. (1973). Development of phrase structure rules  
involved in tag questions elicited from children. *Journal of Speech and  
Hearing Research, 16*, 498-512.

- McLean, J. E & Synder-McLean, L. K (1978). *A transactional approach to early language training*. Columbus, Ohio: Charles E. Merrill Publishing Co. A bell and Howell company.
- McNeil, D. (1966). Developmental Psycholinguistics. In P. Smith and G. A. Miller (Eds.) *The genesis of language: A psycholinguistic approach*. MIT Press, Cambridge, Massachusetts.
- Mecham, M., Jex, J. L., & Jones, J. D. (1967). *Utah Test of Language Development*. Salt Lake City, UT: Communication Research Associates.
- Menyuk, P. (1964). Comparison of grammar of children with functionally deviant and normal speech. *Journal of Speech and Hearing Research*, 7, 109-121.
- Menyuk, P (1969). *Sentences children use*. Cambridge Mass.: M.I.T. Press.
- Miller, J. (1979). Miller's manual of informal language assessment procedures. Cited from Cohen and Gross (1979).
- Moats,L.C.(2000). *Speech to print: Language Essentials for Teachers*. Baltimore,MD:Paul H. Brookes Publishing Co.
- Morehead, D.M and Ingram, D. (1973) The development of base syntax in normal and linguistically deviant children. *Journal of Speech Hearing and Research*, 16, 330-345.
- Moore, D. (1972) Language abilities of hearing impaired children. In Irwin, J.V. and Marge, M. (eds.), *Principle of Childhood Language Disabilities (pp.159-183)*.Appleton-Century-Crofts, New York.
- Moore, (1967). Language and intelligence. A longitudinal study of the first eight years. Part I: Patterns of development in boys and girls. *Human Development*, 10, 88-106.

- Muma, J. (1971). *Language Handbook: Concepts, Assessment, Intervention*. Englewood Cliffs, N. J: Prentice-Hall.
- Murthy, S. (1981). *A Syntax Screening Test in Tamil*. Unpublished Master's Dissertation, University of Mysore, Mysore.
- Navitha, U. (2009). Comprehensive Language Assessment tool for Children (3-6 years). Unpublished masers dissertation submitted to the University of Mysore.
- Nataraja, N. P, Bharadwaj, A. K. & Malini, M. S. (1977). Acquisition of articulatory skills in Kannada speaking children of 3-7 years. *Journal of All India Institute of Speech and Hearing*, 8, 47.
- Nelson, K. (1973). Structure and strategy in learning to talk. Monographs of the Society for Research in Child Development, 38, Serial No. 149.
- O'Donnell, R. C, Griffin, W. J. & Norris, R. C. (1967). *Syntax of KG and elementary school children: A transformational analysis (Research Report No. 8)* Campaign, IL: National Council of Teachers of English.
- O'Grady, William. (1997). *Syntactic Development*. Chicago: University of Chicago Press.
- Osgood, C. E. (1957). *Comtemporary approaches to cognition: A behavioristic analysis*. Cambridge, Harward University Press.
- Owens, R.E. (1996). *Language development: An introduction*, (4<sup>th</sup> Ed.), Boston: Allyn & Bacon.
- Owens, R. (2005). *Language development: An introduction*. (6<sup>th</sup> ed). Pearson-Education.
- Owens, Jr. R. E. (2008). *Language development: An introduction* (6<sup>th</sup> ed.). Boston,MA: Allyn & Bacon.

- Owens, R. (2009). *Language development: An introduction* (7th ed.). New York: Charles E. Merrill.
- Owings, N. A. (1972). *Internal reliability and item analysis of the Miller-Yoder test of grammatical comprehension*. Unpublished Master's Thesis. University of Wisconsin, Madison, Wisconsin. Park Press.
- Palermo, D.S. & Molfese, D.L. (1972). Language acquisition from age five onwards. *Psychological Bulletin*, 78 (6), 409-428.
- Piaget, J. (1936). *Origins of intelligence in the child*. London: Routledge & Kegan Paul.
- Piaget, J. (1937). *The Construction of Reality in the Child*. New York: Basic Books.
- Piaget, J. (1945). *Play, dreams and imitation in childhood*. London: Heinemann.
- Piaget, J. (1964). *Six Psychological Studies*. University of London Press, London.
- Piaget, J. (1971). *Biology and Knowledge: An essay on the relations between organic regulations and cognitive processes*. Chicago: University of Chicago Press.
- Poepfel D. & K. Wexler (1993) The Full Competence Hypothesis of Clause Structure in Early German, *Language*, Vol. 69, No. 1: 1-33.
- Power & Quigley, S.P. (1973). Deaf children's acquisition of the passive voice. *Journal of speech hearing and research*, 16, 5-11
- Prema, K. S. (1979). *Some aspects of syntax in 5-6 year old children: A Descriptive study in Kannada*. Unpublished Master's Dissertation, University of Mysore.
- Preyer, W. (1889). *The Mind of the Child*. (H.W. Brown, transl.) New York, Appleton, (Original work published 1882)
- Preyer, W. (1882). Transl: (1888-1889). *The mind of the child*. New York, Appleton



- Prutting, C.A., Gallagher, T. M and Mulac, A.(1975). An expressive portion of the NSST compared to a spontaneous language sample. *Journal of Speech Hearing and Research, 40 (1)*, 40-70.
- Quigley, S. P., Wilbur, R. B., Power, D. J., Montanelli, D. S. & Steinkamp, M. W. (1976). *Syntactic structures in the language of deaf children*. Urbana: Institute for child behavior and development. University of Illinois at Urbana-Champaign.
- Quigley, S.P., Steinkamp, M.W., Power, D.J., and Jomen, B.W. (1978). *Test of syntactic abilities-A guide to administration and interpretation*. Dormac, Inc., Beaverton, Oregon, USA.
- Radford, A. (1990). *Syntactic Theory and the Acquisition of English Syntax*. Oxford: Blackwell.
- Ratusnik, D. L., Klee, T. M. & Ratusnik, C. M. (1980). Northwestern Syntax Screening Test: A short form. *Journal of Speech and Hearing Disorders, 45 (2)*, 200-206.
- Rice, M.,Wexler, K. & Hershberger, S. (1998). Tense over time: The longitudinal course of tense acquisition with specific language impairments. *Journal of Speech, Language, and Hearing Research. 41*, 1412-1431.
- Rice, M. L., Wexler, K., & Cleave, P. L. (1995). Specific language impairment as a period of extended optional infinitive. *Journal of Speech and Hearing Research, 38*, 850-863.
- Rice, M. L., Cleave, P. L., & Oetting, J. B. (2000). The use of syntactic cues in lexical acquisition by children with SLI. *Journal of Speech, Language and Hearing Research, 34*, 582-594.

- Rispoli, M., Hadley, P. & Holt J. (2009). The growth of tense productivity. *Journal of Speech, Language & Hearing Research*, 52, 930-944.
- Roopa, E. (1980). *Some aspects of syntax of 4-5 year old children: A descriptive study in Hindi*. Unpublished Master's Dissertation, University of Mysore.
- Rowland, C. F. & Pine, J. M. (2000). Subject-auxiliary inversion errors and wh-question acquisition: what children do know? *Journal of Child Language*. 27, 157-181.
- Rukmini, A. D. (1994). *Malayalam Language Test (MLT)*. Unpublished Master's Dissertation, University of Mysore, Mysore.
- Russell, W., Quigley, S., and Power, D. (1976). *Linguistics and deaf children*. Washington, DC: Alexander Graham Bell association for the deaf.
- Santhi, S. (2008). *Development of Test for Syntax in Malayalam*, Unpublished Masters Dissertation, Submitted to University of Mysore
- Scarborough, H. S. (1989). Prediction of reading disability from familial and individual differences. *Journal of Educational Psychology*, 81, 101-108.
- Schleicher, (1861). *Compendium der vergleichenders Gramatik der indogermanischen sprachen*. Vol 1. Weimer: Sochlau.
- Schlesinger, I. (1971). Production of utterances and language acquisition. In D. Slobin (Ed.). *The ontogenesis of Grammar*. New York: Academic Press.
- Searle, J.R. (1969). *Speech acts*. Cambridge, England: Cambridge University Press.
- Semel, E., Wiig, E. H. & Secord, W. A. (2004). *CELF- 4 Screeing Test*. New York: Psychological Corporation.
- Seymour, H. N., & Roeper, T. (1999). Grammatical acquisition of African American English. In O. Taylor & L. Leonard (Eds.), *Speech and language in North America* (pp. 109-153). San Diego CA: Singular Press.

- Sharma, M. (1995). *Linguistic Profile Test (LPT) (Hindi) Normative data for Children Grade I to X*. Unpublished Master's Dissertation, University of Mysore, Mysore.
- Sgholes, R. J., Cohen, M. & Brumfield, S. (1978). Some possible causes of syntactic deficit in the congenitally deaf English user. *American Annals of the Deaf*, 123, 528-535.
- Shipley, E.F., Smith, C.S., & Gleitman, L.R., (1969). A study in the acquisition of language: free responses to commands. *Language*, 45, 242-322.
- Shipley, K G., Maddox, M. A., & Driver, J. E. (1991). Children's development of irregular past tense verb forms. *Language, Speech, and Hearing Services in Schools*, 22, 115-125.
- Sigismund, B. (1856). *Kind and Welt*. Braunschweig.
- Simmons, A.A., (1962). A comparison of Type-token ration of spoken and written language of deaf and hearing children. *Volta Review*, 64, 417-421.
- Sinclair, H. (1971). Sensorimotor action patterns as a condition for the acquisition of syntax. In R. Huxley and E. Ingram (Eds.), *Language Acquisition: Models and Methods*. Academic Press, London.
- Skinner, B. F. (1957). *Verbal Behavior*. Appleton-Century Crofts, New York.
- Smith, M. (1933). Grammatical errors in the speech of preschool children. *Child Development*, 4, 182-190.
- Smith, L. (1972). Cited by Kretschmer, R. R & Kretschmer, L.W. (1978). *In language development and intervention with the hearing-impaired: Language and Deafness*. Chapter 4, 85-142. USA: University Park Press.
- Sreedevi, S. V. (1976). *The aspects of acquisition of Kannada in 2+ year old children*. Unpublished Master's Dissertation, University of Mysore, Mysore.

- Sreedevi, N. (1988). *KPVT- A Screening Picture Vocabulary Test in Kannada*. Unpublished Master's Dissertation, University of Mysore, Mysore.
- Staats, A. W. (1968). *Learning, language and acquisition*. New York: Holt, Rinehart and Winston.
- Staats, A. W. (1971a). Linguistic-mentalistic theory versus an explanatory S-R learning theory of language development. In D. I. Slobin (Ed.) *The ontogenesis of grammar*, pp. 104-150. New York: Academic Press.
- Staats, A. W. (1971b). *Child learning, Intelligence and Personality*. New York: Harper and Row.
- Stern (1907). *Die Kindersprache*. Leipzig: Barth.
- Stromswold, K. (1990). *Learnability and the acquisition of auxiliaries*. Unpublished Ph.D dissertation. Massachusetts: MIT Press.
- Stromswold, K. (1995). The acquisition of subject and object wh-questions. The acquisition of wh-questions [special issue]. In J. deVilliers (Ed.) *Language Acquisition*, 4, 5-48.
- Subramanyaiah, M.G. (1978). *Development of some morphological categories in kannada : A study of children of 6-8 years age range*. Unpublished Masters dissertation, University of Mysore. Mysore.
- Sudha, K.M. (1981). *A syntax screening test in Tamil*. Unpublished MSc Dissertation, University of Mysore. Mysore.
- Suhasini, G. (1997). *Linguistic Profile Test in Telugu: Normative Data for Children in Grades I to X*. Unpublished Master's Dissertation, University of Mysore, Mysore.
- Traine, H. (1877). On the acquisition of Language by children, *Mind*, 2, 525-9.

- Tam, C., & Stokes, S. (2001). Form and function of negation in early developmental Cantonese. *Journal of Child Language*, 28, 373-391.
- Tamis-Lemonda, C. S., Bornstein, M. H., Kahana-Kalman, R., Baumwell, L. & Cyphers, L. (1998). Predicting variation in the timing of linguistic milestones in the second year: an events-history approach. *Journal of Child Language*, 25, 675-700.
- Taylor, O., & Swinney, D. (1972). The Onset of Language. In Irwin and Marge (Eds.) *Principles of Childhood Language Disabilities*, Appleton-Century-Crofts /Prentice- Hall, N.Y.
- Templin, M. C. (1957). *Certain language skills in children: Their development and interrelationships*. Institute of child welfare. Monograph. Series 26. (pp. 179-181, 204-205, 383-384, 387). Minneapolis: University of Minnesota Press.
- Thirumalai, M. S. (1972). Some aspects of four year plus old stage in the acquisition of Tamil Phonology, *Journal of All India Institute of Speech and Hearing*, 5, 7-19.
- Tomasello, M. (1987). Learning to use prepositions: A case study. *Journal of Child Language* 14, 79-98. Psychologist's Press.
- Tremaine, R. V. (1975). *Syntax and Piagetian operational thought*. Georgetown University Press, Washington D. C.
- Tyack, D. & Ingram, D. (1977). Children's Production and comprehension of questions. *Journal of Child Language*, 4, 211-224.
- Tyack, D., & Gottsleben, R. (1974). *Language sampling, analysis and training*. Consulting Psychologists Press, Palo Alto: CA.

- Vaidyanathan, R. (1991). Development of forms and functions of negation in the early stages of language acquisition: a study in Tamil. *Journal of Child Language, 18*, 51-66.
- Vainikka, A. (1993-94). Case in the development of English syntax. *Language Acquisition, 3*, 257-325.
- Valian, V., & Aubry, S. (2005). When opportunity knocks twice: two-year-olds' repetition of sentence subjects. *Journal of Child Language, 32*, 617-641.
- Vijayalakshmi, A. R. (1981). *Development of a Test in Kannada for assessing language acquisition in children*. Unpublished Doctoral Thesis, University of Mysore, Mysore.
- Weissenborn, J. (1992). Null subjects in Early Grammars: Implication for parameter setting theories. In J. Weissborne, H. Goodluck, and T. Roeper, eds., *Theoretical issues in language acquisitions*. Hillsdale N.J: Lawrence Erlbaum
- Winitz, H. (1959). Language skills of male and female kindergarten children. *Journal of Speech and Hearing Research, 2*, 377-386.
- Wilbur, R. B., Quigley, S.P., & Montanelli, D. S. (1975). Conjoined structure in the written language of deaf students, *Journal of Speech and Hearing Research, 18*, 319-335.
- Wilson, S. (2003). Lexically specific constructions in the acquisition of inflection in English. *Journal of Child Language, 30*, 75-115.
- Wood, C. (1997). *Six stages of language development*. Retrieved from <http://www.learninginfo.org/language-development.html>

- Zapf, Jennifer A., & Smith, B.L. (2003) The Protracted course of the acquisition of the plural. In B. Beachley, A. Brown, and F. Conlin (eds.) *BUCLD 27 Proceedings*. Cascadilla Press, Somerville, MA, 834-845.
- Zapf, J. A., & Smith, L. B. (2007). Meaning matters in children's plural productions. *Proceedings of the Twenty-Ninth Meeting of the Cognitive Science Society*, 743-748, Boston, MA: Cascadilla Press.
- Zimmerman, I. L., Steiner, V. G., & Evatt, R. L. (1969). *Pre-school language Scale*. Columbus, OH: Charles, E. Merrill.

**APPENDIX- I**

**SCREENING TEST FOR ACQUITION OF SYNTAX IN TELUGU- (STAS-T)**

<b>COMPREHENSION</b> Items  <b><u>Simple Sentences</u></b>	<b>EXPRESSION</b> Items
<b><u>Person</u></b>  5. (Show a girl doll and say she is Uma. Show a boy doll and say he is Ravi. Keep both the dolls in front of the child) నువ్వు ఆమె చెయ్యి పట్టుకో. /nvvu a: me tʃei pəttuko/ You hold her hand  6. (ఈ పువ్వులను చూడు. నువ్వు తీస్కో. నేను అమ్మ ఇక్కడ ఉన్నాము కదా) మా ఇద్దరికీ పువ్వు ఇవ్వు. /i: puvvulənu tʃudu, nvvu ʃi:sko, nenu ə mma ikkəda unnamukəḍa ma idḍəriki pu vvu ivvu/ (Look at these flowers, you take them. I and mother are here) Give us too.	3. (Point to the child's mother) ఆమె ఎవరు? /āme evəru/ Who is she?  4. (Start combing your hair) ఇప్పుడు నేను ఏమీచేస్తున్నాను? /ippudu ne:nu e:mi tʃestunnanu/ What am I doing now?  7. (చప్పట్లు కొట్టండి) ఇప్పుడు ఎవరు చప్పట్లు కొట్టారు? /ippudu evəru tʃəpətlu kottəru/ Who has clapped now?  8. (Ask the child's mother to close her eyes. You also close your eyes. Ask the question by pointing to the mother and to yourself) ఇప్పుడు ఎవరెవరు కళ్ళు మూసుకున్నారు? /ippudu evərevəru kəḷḷu musuku nnaru/ Who had closed their eyes?



	<p><b>Case Marker</b></p> <p>9. (Point to the mother's saree) ఇది ఎవరి చీర? /idi evəri tʃira/ Whose saree is this?</p> <p>10. (Pretend to beat a doll) నేను ఎవరిని కొడుతున్నాను? /nenu evəriṇi koḍuṭunnanu/ Whom am I beating?</p>
<p><b>Adjectives</b></p> <p>11. (Show doll with long hair, doll with short hair, boy doll and a dog) ఎవరికి వెద్ద జడ ఉంది? /evəriki pedḍa dʒəra ũḍi/ Who has long hair?</p> <p>12. (Keep red, white, blue and yellow flowers in front of the child) ఎరుపు రంగు పువ్వు ఎక్కడుంది/చూపించు? /erupu raṅgu puvvu tʃupɪ tʃu/ Show me red color flower?</p>	<p>13. (Show a fat and a thin doll) ఈ బొమ్మ ఎలా ఉంది? i bommə ela ũḍi? How is this doll? (Pointing to the fat doll) ఈ బొమ్మ కంటే ఈ బొమ్మ ఎలా ఉంది? /i bommə kəte i bommə ela ũḍi/ How this doll is compared that doll?</p> <p>14. (Show doll with short hair) ఈ అమ్మాయి జడ ఎలా ఉంది? /i əmmaji dʒəra ela ũḍi/ How is this girl's hair</p> <p>(Show doll with long hair) ఈ అమ్మాయి జడ కంటే ఈ అమ్మాయి జడ ఎలా ఉంది? /i əmmaji dʒəra kəte i əmmaji dʒəra ela ũḍi/ How is this girl hair compared to that girl hair?</p>
<p><b>Post-positions</b></p> <p>15. (Keep one glass on the table, one below the table and the third one on your lap) టిబల్ పైన ఉన్న గ్లాసును చూపించు? /tebəl paina unna glasunu tʃupɪ tʃu/ Show me the glass which is on the table?</p> <p>16. (Keep one dog beside the child, one in front of the child and another one behind the child) నీ పక్కన ఉన్న కుక్కని చూపించు?</p>	<p>17. (Show a glass with marbles in it) గోలీలు ఎక్కడ ఉన్నాయి? /golilu ekkəḍə unnaji/ Where are the marbles?</p> <p>18. (keep a dog beside the child and a doll in front of the child ) కుక్క ఎక్కడ ఉంది? /kukkə ekkəḍə ũḍi/ Where is the dog?</p>

<p>/ni pəkkəna unna kukkəni tʃupɪ tʃu/ Show me the dog beside you?</p>	
	<p><b><u>Definite Determiner</u></b>  19. (keep a boy doll in front of the child and a girl doll 4-5ft. away from the child and say)  ఇతను అబ్బాయి (Point to the boy doll)  ఈమె అమ్మాయి (Point to the girl doll)  <u>అమ్మాయి ఎవరు?</u></p> <p>/itənu əbbaji/ [he is boy]  /ime əmmaji/ [she is girl]  /əmmaji evəru/ [Who is girl]</p> <p>20. (Keep a pencil near the child and a book away from the child )  <u>పుస్తకము/బుక్ ఎక్కడ ఉంది?</u>  /pustəkəmu ekədə ũḍi/  Where is the book?</p>
	<p><b><u>Tense Markers</u></b></p> <p>21. (Ask the child to open the box / open the door by saying)  <u>తలుపు తియి/డబ్బా తియి, నీవు ఇప్పుడు ఏమిచేసావు?</u>  /təlupu tɪju /dəbbətɪju/  Open the door/ open the box</p> <p>22. (Ask the mother to stand up and read a book)  <u>అమ్మ ఏమి చేస్తుంది?</u>  /əmma e:mi tʃestʊḍi/  What is she (mother) doing?</p>

<p><b>Number Markers</b> (For ease of administration, items 23, 24, 25 and 26 may be tested after item 44)</p> <p>23. (Show the appropriate pictures in the album)  <u>అమ్మాయిలు ఉన్న చిత్రం చూపించు?</u>  /əmmajilu unnə tʃitrəm tʃupɪ tʃu/  Show me the picture of girls?</p> <p>24. <u>పువ్వులు ఉన్న చిత్రం చూపించు?</u>  /puvvulu unnə tʃitrəm tʃupɪ tʃu/  Show me the picture of flowers?</p>	<p>25. (Use the pictures in the album)  ఇతను అబ్బాయి.  వీళ్ళంతా ఎవరు?  /iṭṭənu əbbaji/ [ He is a boy ]  /viləṭṭa evəru/ [Who are they?]</p> <p>26. ఇది ఒక పుస్తకము/బుక్కు.  ఇవ్వన్ని ఏంటి?  /idi oka pustakamu/ [This is a book]  /ivanni ēti/ [What are these?]</p>
<p><b>Wh-questions</b></p> <p>27. <u>నీవు ఎక్కడ కూర్చున్నావు?</u>  /nivu ekkədə kurtʃunavu/  Where are you sitting?</p> <p>28. (Show a box)  <u>ఈ డబ్బా ఎలా తీయాలి?</u>  /i dəbba ela tɪjali/  How to open this box?</p>	
<p><b>Yes-No questions</b></p> <p>29. <u>అమ్మ కూర్చుని ఉందా?</u>  /əmma kurtʃuni ũḍḍa/  Is she (mother) sitting?</p> <p>30. <u>నేను బోజనం చేస్తున్నాన/అన్నం తింటున్నాన?</u>  /nenu b<sup>h</sup>odʒanəm tʃestʃunana / ənnəm  tʃitunana/  Am I eating food?</p>	
<p><b>Negatives</b></p> <p>31. (Show an empty glass and a glass with marbles)  <u>ఏ గ్లాసులో గోలీలు లేవు?</u>  /e glasulo golilu levu/  Which glass has no marbles?</p> <p>32. (Keep a pen with no nibs, a good condition dot pen and a pencil in front of the child)</p>	<p>33. <u>నీవు ఇప్పుడు చదువుతున్నావా?</u>  /nivu ippudu tʃəḍḍuvutunnava/  Are you reading now?</p> <p>34. <u>నేను మీ అమ్మనా?</u>  /nenu mi əmməna/  Am I your mother?</p>

<p>రాయాలంటే ఇందులో ఏ పెన్ను వాడలేము? /rajalāte īdulo e pennu vadālemu/ Which of these pens cannot be used for writing?</p>	
<p><b><u>Embedded Sentences</u></b></p> <p>35. (Keep 1. an empty jar 2. a jar with a few marbles 3. a jar with flowers 4. some marbles in a plate in front of the child) గోలీలు ఉన్న డబ్బా చూపించు? /golilu unnə dabbā tʃupī tʃu/ Show me the box which has marbles?</p> <p>37. (Keep 1. an empty small jar 2. an empty big jar 3. a small jar with few marbles 4. a small jar with many marbles 5. a big jar with few marbles 6. a big jar with many marbles 7. Some marbles in a plate in front of the child) ఎక్కువ గోలీలు ఉన్న డబ్బా చూపించు? /ekkuva golilu unnə dabbā tʃ upī tʃu/ Show me the box that has more marbles?</p>	<p>36. (Ask the questions given below soon after the child responds to the item 35) నేను ఏమి చూపించమన్నాను? /nenu emi tʃupī tʃəmənnanu/ What did I ask you to show?</p> <p>38. (Ask the question soon after the child responds to the item 37) నేను ఏమి చూపించమన్నాను? /nenu emi tʃupī tʃəmənnanu/ What did I ask you to show?</p>

**Coordinated Sentences**

39. (Keep book, pencil, rubber, doll and a jar in front of the child)

పెన్సిల్ను బొమ్మను ఇవ్వు.

/pensilnu bommānu ivvu/

Give me pencil and rubber

41. (Use the same articles mentioned under item 39)

పుస్తకము లేదా రబ్బర్ ఇవ్వు?

/puṣṭakamu leḍa rābbar ivvu/

Give me book or rubber

43. (Keep a dog, rubber, book, and a jar in front of the child)

కుక్కని డబ్బాలోపలో, పుస్తకము పైలో పెట్టు?

/kukkāni dābbalopolo, puṣṭakamupāno p  
ettu/

Keep the dog either in the box or on the book.

40. (Ask the questions after the child responds to item 39)

నేను ఏమెమి ఇవ్వమన్నాను?

/nenu emiemi lvvāmānnanu/

What did I ask you to give?

42. (Ask the questions after the child responds to item 41)

నేను ఏమి ఇవ్వమన్నాను?

/nenu emi lvvāmānnanu/

What did I ask you to give?

44. (Ask the questions after the child responds to item 43)

నేను ఏమి చేయమన్నాను?

/nenu emi tfejāmānnanu/

What did I ask you to do?

## Narration

(Narrate the story showing the appropriate picture given in album. Ask the questions underlined while narrating the story. Score the answers for these questions)

### Pic.1

ఒక ఊరిలో ఒక చిన్న బాబు ఉండేవాడు

/oka urilo oka tʃinnə babu ūdev  
adu/

There was a small boy in a village

### Pic.2

అతను ఎప్పుడూ చెప్పులు వేసుకోకుండా  
దారిలో నడుస్తుండేవాడు.

aʃənu eppudu

/tʃeppulu vesukokūdə ɖarilo nəd  
ustūde vadu/

He always used to walk without  
footwear

45. అతను ఎలా నడుస్తుండేవాడు?

/aʃənu eppudu

ela nɔdustūde vadu/

How he used to walk?

### Pic.3and 4

ఒక రోజు అతని కాలికి ముల్లు గుచ్చుకుంది,  
అతను ఏడవటం

మొదలుపెట్టాడు.

/oka rodʒu əʃni kaliki mullu gutʃ  
ukūdi, aʃənu edəvətəm moɖəlu  
pettadu/

One day a thorn pricked to his leg, then  
he started crying

46. అతను ఎందుకు ఏడవటం

మొదలుపెట్టాడు?

/aʃənu enɖuku edəvətəm moɖəlu  
pettadu/

Why was the boy started crying?

### Pic.5

	<p>అతని అక్క వచ్చి అతనిని ఇంటికి తీసుకొని వెళ్ళింది.</p> <p>/əṭṭəni əkka vətʃi əṭṭənini ʔitiki ʔisukoni veliḍi/ Then his sister came and took him home</p> <p>47. ఆమె ఎవరి అక్క? /ame evəri əkka/ Whose sister is she?</p> <p><b>Pic.6</b> ఇంటికి తీసుకొని వెళ్ళినీవు చెప్పులు వేసుకోలేదు అందుకే ముల్లు గుచ్చుకుంది"అని కోప్పడింది.</p> <p>/ʔitiki ʔisukoni velli nivu tʃeppulu vesukoleḍu əḍuke mullu gutʃu kũḍi əni kopəḍiḍi/ She took him home and scolded "you did not wore the footwear, that is why the thorn pricked your leg"</p> <p>48. అక్క ఏమని కోప్పడింది? /əkka eməni kopəḍiḍi/ What did she scold?</p> <p><b>Pic.7</b> ఆ తరువాత నిధానముగా ముల్లును తీసింది.</p> <p>/atəruvətə nidʰanəmuɡə mullunu ʔisiḍi/ Then she slowly removed the thorn from his leg.</p> <p><b>Pic.8</b> ముల్లు తీసిన తరువాత-"నీవు చెప్పులు వేసుకుంటే వాకింగ్ కి తీసుకొని వెళ్తాను"అని చెప్పింది.</p> <p>/mullu ʔisina təruvətə - nivu tʃeppulu vesukũte vəkĩɡki ʔisukoni velʔanu əni tʃepiḍi/ After removing the thorn, she said "if u wear footwear I will take you for walking"</p> <p>49. ముల్లు తీసిన తరువాత అక్క ఏమని చెప్పింది?</p>
--	---

	<p>/mulu tisina taruvata akka emon i tsepidi/ After removing the thorn what did his sister said?</p> <p><b>Pic.9</b> చిన్న బాబు చెప్పులు పేసుకున్నాడు. /tjinna babu tjeppulu vesukūad u/ The boy wore the foot wear</p> <p><b>Pic.10</b> 10 తరువాత అతను వాళ్ళ అక్క వాకింగ్ కి వెళ్ళివచ్చారు. /taruvata tanu valla akka vakiᅅki vellivataru/ Then he and his sister came back from walking.</p> <p>50. వాళ్ళు ఎప్పుడు వాకింగ్ కి వెళ్ళారు? /vallu vakiᅅki eppudu vellaru/ When did they go for walking?</p>
--	--



**APPENDIX II**  
**SCORE SHEET- STAST**

**Name:**

**Age/Gender:**

**Date:**

**No.:**

**Name of the School:**

**Education:**

**First language:**

**Address & Phone No.:**

SKILLS	COMPREHENSION			TOTAL	EXPRESSION				TOTAL	GRAND TOTAL (C + E)	REMARKS	
	Item	NR (0)	CR (2)	C	Item	NR (0)	IR (1)	CR (2)	E		C	E
Simple Sentences	1				3							
	2				4							
Person	5				7							
	6				8							
Case Markers	9				*9							
	10				*10							
Adjectives	11				13							
	12				14							
Post-positions	15				17							
	16				18							
Definite-Determiner	19				*19							
	20				*20							
Tense markers	21				*21							
	22				*22							
Number markers	23				25							
	24				26							
Wh-Questions	27				*27							

	28				*28							
Yes-No Questions	29				*29							
	30				*30							
Negatives	31				33							
	32				34							
Embedded Sentences	35				37							
	36				38							
Co-ordinated Sentences	39				42							
	40				43							
	41				44							
Narration	45				*45							
	46				*46							
	47				*47							
	48				*48							
	49				*49							
	50				*50							
Total												

GRAND TOTAL: \_\_\_\_\_/100

**Note**

- No response/Incorrect response (NR), Partial/Incomplete response (PR/IR), correct response (CR).
- \*A complete response for these items should be given a score of 1 under the comprehension column and 1 score under the expression column. A partial response for these items should be given a score of 1 under the respective column (Comprehension/Expression).



## **APPENDIX-III**

### **MANUAL**

#### **Screening Test for the Acquisition of Syntax in Telugu (STAS-T): An Adaptation of STASK.**

##### **Principal Investigator**

Mr. Gopi Kishore Pebbili

##### **Co- Investigators**

(Late) Dr. Vijayalakshmi Basavaraj

Dr. S. P. Goswami

##### **Research Officer**

Ms. Sri Pallavi M.

**Project funded by AIISH Research Fund**

**All India Institute of Speech and Hearing**

**Manasagangothri, Mysore**

## **CONTENTS**

### **SCREENING TEST FOR THE ACQUISITION OF SYNTAX IN TELUGU (STAS-T): AN ADAPTATION OF STASK**

List of subtests and materials required for Screening Test for the Acquisition of Syntax in Telugu.

#### **Chapter I: Introduction**

#### **Chapter 2: Preparation, administration and scoring**

General guidelines

Instructions for subtest administration and scoring for Screening Test

Sub test I: Simple sentences

Sub test II: Person

Sub test III: Case markers

Sub test IV: Adjectives

Sub test V: Post positions

Sub test VI: Definite Determiner

Sub test VII: Tense Markers

Sub test VIII: Number Markers

Sub test IX: Wh-Questions

Sub test X: Yes-No Questions

Sub test XI: Negatives

Sub test XII: Embedded Sentences

Sub test XIII: Co-ordinated Sentences

Sub test XIV: Narration

### **Chapter 3: Development and standardization of STAST**

Test construction

Stimulus material construction

Pilot testing

Standardization

### **Chapter 4: Instructions for scoring**

## Screening Test for the Acquisition of Syntax in Telugu (STAST): An adaptation of STASK.

### List of subtests and materials required for Screening Test

SI No.	Test	Materials required as detailed in Annexure I
1	Simple sentences	Toys
2	Person	Toys
3	Case markers	Toys
4	Adjectives	Toys
5	Post positions	Toys, glass, marbles
6	Definite Determiner	Toy, Book, pencils
7	Tense Markers	Flash cards, book
8	Number Markers	Flash cards
9	Wh-Questions	A Bag / <b>box</b> /
10	Yes-No Questions	Spoken
11	Negatives	Flash cards, pens
12	Embedded Sentences	Toys
13	Co-ordinated Sentences	Toys, pencil, eraser, book
14	Narration	Flash cards

### Equipment enclosed

- Score sheets (double sided)
- Flash cards
- Toys

## Chapter 1: Introduction

Syntax refers to the rules that govern the way words combine to form phrases, clauses, and sentences. The word syntax originates from the Greek words *syn*, meaning ‘together’ and *taxis*, meaning ‘sequence/order’. There have been various studies on the acquisition of syntax across various languages over the past (*English* language: Klima & Bellugi, 1966; Bellugi, 1967; Carrow, 1973; Gazdar, 1981; Bloom, Merkin, and Wooten, 1982; Haas and Owens, 1985; Tomasello, 1987; Duncan and Gibbs, 1987; Crystal, Fletcher and Garman, 1989; Bloom, 1991; Drozd, 1995; Stromswold, 1995; O’Grady, 1997; Blackwell, 1998; Wexler, & Hershberger, 1998; Pecci, 1999; Seymour & Roeper, 1999; Goffman & Leonard, 2000; Befi-Lopes, Rodrigues, Puglisi, 2009; Rispoli, Hadley and Holt, 2009; Rice, *Mandarin, Cantonese* and Korean languages: Lee, 1982; Choi and Gopnik, 1995; Tam and Stokes, 2001; *Spanish* language: Lust, 1999; Felix-Brasdefer and Cesar, 2006; Italian language: Guasti, 1993; *German* language: Poeppel & Wexler, 1993; *Tamil* language: Murthy, 1981; *Kannada* language: Sreedevi, 1976; Prema, 1979; Roopa, 1980; Vijayalakshmi, 1981). These studies have succeeded to provide with the essential information regarding the development pattern of various aspects of syntax of the particular language.

In India, there have been very few attempts to study the syntax acquisition (Sreedevi, 1976; Prema, 1979; Roopa, 1980; Basavaraj, 1981; Murthy, 1981). There is still a dearth of standardized data for the syntax development in children in many languages. There is a great requirement for a standardized measure as it can prove very helpful in evaluating the level of syntactic development in typically development as well as language deficient children. From such a measure, we can also yield information about the lagging areas and thus they can work upon. Attempts in this direction have been made only in English (Quigley et al, 1978), Kannada (Basavaraj, 1981) and Tamil (Murthy, 1981) languages.

Telugu is the language of the southern Indian state of Andhra Pradesh. Well over 75 million people, the world over, speak Telugu, and it stands second only to Hindi in India as to the number of native speakers. According to linguists, Telugu is a Dravidian language. That is to say, it does not belong to the Indo-Aryan family to which Hindi, Sanskrit, Latin and Greek belong. Sanskrit and its vocabulary heavily influenced Telugu literature. Linguists also

determined that the four major southern Indian languages, namely Telugu, Tamil, Kannada and Malayalam belong to the Dravidian family of languages.

The present study aimed at adapting ‘Screening test for the acquisition of syntax in Kannada’ (STASK) developed by Basavaraj (1981) to Telugu i.e. ‘Screening test for the acquisition of syntax in Telugu’ (STAST) so that it serves as a screening tool to assess the comprehension as well as expression acquisition of various syntactic categories in Telugu speaking children in the age range of 1-5 years. The test materials have been incorporated owing to the linguistic and cultural backgrounds.

## **Chapter 2: Preparation, administration and scoring**

### **General guidelines**

- 1) STAST is designed for use by Speech Language Pathologists.
- 2) The administration time is approximately 30 minutes depending upon the co-operation of the child.
- 3) Familiarization: It is important to familiarize fully with STAST well before starting the test. This involves reading through this manual carefully, familiarizing with the procedure and materials, scoring pattern and interpretation for each sub-test.

### *Administration guidelines*

Following instructions should be taken into account before administration:

1. The test results depend on the child’s performance. Therefore, try to get the best performance out of the child- make the child feel at ease in the test situation. Try to build rapport with the child. Accept and welcome early responses so that s/he might feel confident.
2. It is important that the tester adheres to the instructions as any changes may lead to making the task easier for the child and thus affect the accuracy of the scoring.
3. Keep the test materials in the order of administration before you start the test.
4. The test should be administered individually to each child in a quiet room with no distracters.



5. Do not give right/wrong feedback to the child, but try to encourage the child regardless of the outcome. The child may stop concentrating or may be reluctant to say anything after some time. If so, then try to re-motivate him/her by giving appropriate reinforcements and then continuing the test from where you had stopped.
6. Collect the demographic details from the parents (the details of the bio-data required are given on the response sheet)
7. Observe whether the child is paying attention to the test tasks. Try to maintain his interest if he is not attentive. Stop testing if he is not co-operative.
8. Give the following general instructions to the parents or caregivers of the child  
“This testing tells us how much of speech the child understands and how much he speaks. This does not say anything about the intelligence of the child. The way I ask questions to the child is already planned. It is better if I alone test the child. If you must repeat the task, use the same words as I use. The sentence should not be changed in any way, in an attempt to assist the child’s understanding. Please do not give any verbal or non-verbal cues to the child. Do not give him the answers even before he attempts to give a response. It is not necessary that the child has to do well in all items. Therefore, please do not discourage the child if he gives wrong answers. Please assist me by telling the substitute words the child uses for any of the words I use in the test”

### **During testing**

A general procedure is followed while testing. The test questions are provided on the response sheet. The tester presents those questions to the child and waits for a response up to 15 seconds. If the child does not respond even then, the tester prompts some clues regarding the item. This whole process is termed RP (Repeating and/or prompting). RP is also used when the child gives a fairly related but not specific response. If the child gives a correct response, a right mark is ticked against the respective item. The responses other than the correct one are noted down verbatim.

### **On completion of testing**

At the end of the test make sure again that you have entered all the detail. Thank the child and the care giver for taking part, and praise him/her. Then go through the response sheet and complete the score sheet.

### **Record keeping**

The score sheet is an important record. It can be used to develop the plan, assess improvements with age, or for subsequent documenting.

### **Instructions for test administration**

Each child has to be tested individually. The length of the time required to establish a desired response will vary from child to child.

### **General instructions for item administration**

- Record the child's response for each of the item in the appropriate space on the score sheet.
- Positive reinforcement should be given for correct responses.
- Do not give any clues to elicit correct response from the child. E.g., by indicating through facial expression that the probable choice is correct or incorrect. Also, an alternate word should not be substituted for the target stimulus.
- Repeat the test items only once, if the child asks for repetition or when repetition appears to be needed.
- The child may take reasonable amount of time per test item to respond. Meanwhile encourage the child to respond appropriately. However if no response is obtained even after a minute then give the score as '0' and move on to the next item.
- If the child is responding too quickly without comprehending the instructions completely, ask the child to slow down and listen to the instructions again and respond appropriately.
- Do encourage the child in between the test administration.

## **Test setting**

The test should be conducted in a quiet room with adequate light and proper ventilation to avoid fatigue and distraction. Any distracters like toys other than those in the test material should be removed from the vicinity of the child. The examiner and the child should sit just opposite across the table so that the examiner can observe the child's responses in a better way. Developing a good rapport with the child is important. A few minutes of initial conversation prior to testing will usually accomplish this for the older age group i.e. above 3 years of age. But it may take a complete session for the younger children in the age range of 1-3 years. Parents/caretaker of the child can be allowed to be with the child. The examiner should note the responses immediately, but not making it evident to the child. Audio recording of the test proceedings is desirable. However, prior consent from the parents/caregiver needs to be taken.

## **Instructions for subtest administration and scoring for Screening Test**

The participants should be tested individually in a quiet, noise free room. The responses must be recorded on a response sheet.

### ***Sub test 1. Simple Sentences***

*Instructions:* Say "I will ask you a few questions and you have to answer them".

*Score:* For Comprehension, score '2' for correct response and '0' for incorrect or no response. For Expression, score '2' for the correct response, '1' for partial response and '0' for incorrect or no response.

Maximum Scores: Comprehension – 4

Expression – 4

Total Score: 8

### ***Test items***

#### **Comprehension**

- నీ తల చూపించు/ఎక్కడ ఉంది?
- నీ పొట్ట చూపించు/ఎక్కడ ఉంది?
- ఈ బొమ్మను పడుకోపెట్టు.

Expression

- ఆమె ఎవరు?
- ఇప్పుడు నేను ఏమిచేస్తున్నాను?

Expected Answer

అమ్మ  
నువ్వు / మీరు తల దువ్వుతున్నారు?

## Sub test 2. Person

*Instructions*

*For Comprehension;* say “I will ask you a few questions and give you some flowers. You have to carry out what I ask you to do”.

*For Expression;* say “I will ask you a few questions and you have to answer them”.

*Score:* For Comprehension, score ‘2’ for correct response and ‘0’ for incorrect or no response. For Expression, score ‘2’ for the correct response, ‘1’ for partial response and ‘0’ for incorrect or no response.

Maximum Scores: Comprehension – 4

Expression – 4

Total Score: 8

*Test items*

Comprehension

- నువ్వు ఆమె చెయ్యి పట్టుకో.
- మా ఇద్దరికీ పువ్వు ఇవ్వు.

Expression

- ఇప్పుడు ఎవరు చప్పట్లు కొట్టారు?
- ఇప్పుడు ఎవరెవరు కళ్ళు మూసుకున్నారు?

Expected Answer

మీరు/నువ్వు

మీరు/నువ్వు, అమ్మ

## Sub test 3. Case Markers

*Instructions*

*For Comprehension;* say “Now I will show you some pictures. Listen to what I ask carefully and point to the correct picture”

*For Expression;* say “I will ask you a few questions and you have to answer them”.

*Score:* For Comprehension, score ‘2’ for correct response and ‘0’ for incorrect or no response.

For Expression, score ‘2’ for the correct response, ‘1’ for partial response and ‘0’ for incorrect or no response.

Maximum Scores: Comprehension – 2

Expression – 2

Total Score: 4

*Test items*

Comprehension

- --
- --

Expression

Expected Answer

- ఇది ఎవరి చీర? (point to mother’s sari)

అమ్మది

- నేను ఎవరిని కొడుతున్నాను?

బొమ్మని

#### **Sub test 4. Adjectives**

*Instructions*

*For Comprehension;* say “I will give you some toys. You have to give me the toy that I ask you for”.

*For Expression;* say “I will show you some pictures and toys. You have to point to the one that I ask for”.

*Score:* For Comprehension, score ‘2’ for correct response and ‘0’ for incorrect or no response.

For Expression, score ‘2’ for the correct response, ‘1’ for partial response and ‘0’ for incorrect or no response.

Maximum Scores: Comprehension – 4

Expression – 4

Total Score: 8

### Test items

#### Comprehension

- ఎవరికి పెద్ద జడ ఉంది? (doll with long hair, doll with short hair, boy doll and dog)
- ఎరుపు రంగు పువ్వు ఎక్కడంది/చూపించు (red, white, blue and yellow flowers)

#### Expression

- ఈ బొమ్మ ఎలా ఉంది?
- ఈ బొమ్మ కంటే ఈ బొమ్మ ఎలా ఉంది?

#### Expected Answer

లావుగా

పెద్దగా

### Sub test 5. Post Positions

#### Instructions

*For Comprehension;* say “I will now place some toys near you. You have to pick and give me the toy that I ask for.”

*For Expression;* say “there are some toys around you. I will ask you where a particular toy is and you have to tell me where it is.”

*Score:* For Comprehension, score ‘2’ for correct response and ‘0’ for incorrect or no response. For Expression, score ‘2’ for the correct response, ‘1’ for partial response and ‘0’ for incorrect or no response.

Maximum Scores: Comprehension – 4

Expression – 4

Total Score: 08

### Test items

#### Comprehension

- టేబుల్ పైన ఉన్న గ్లాసును చూపించు?
- నీ పక్కన ఉన్న కుక్కని చూపించు? (dog kept beside, behind and at the front of the child)

#### Expression

- గోలీలు ఎక్కడ ఉన్నాయి?
- కుక్క ఎక్కడ ఉంది? (dog at the side and the doll at the front )

#### Expected Answer

గ్లాసులో

పక్కన

## Sub test 6. Definite Determiner

### Instructions:

*For Comprehension;* say “I will show you a picture and some objects now and you have to show me what I ask for”

*For Expression;* say “There are some toys and objects around you. I will ask you where a particular toy or object is and you have to tell me where it is.”

*Score:* For Comprehension, score ‘2’ for correct response and ‘0’ for incorrect or no response. For Expression, score ‘2’ for the correct response, ‘1’ for partial response and ‘0’ for incorrect or no response.

Maximum Scores: Comprehension – 2

Expression – 2

Total Score: 4

### Test items

#### Comprehension

- --
- --

#### Expression

- |   | Expected Answer |
|---|-----------------|
| <ul style="list-style-type: none"><li>• అమ్మాయి ఎక్కడ?<br/>(Girl doll near the child and boy doll far away from the child)</li></ul>  | ఇక్కడ           |
| <ul style="list-style-type: none"><li>• పుస్తకము/బుక్ ఎక్కడ ఉంది?<br/>(Book far away from the child and pen near the child)</li></ul> | అక్కడ           |

## Sub test 7. Tense Markers

### Instructions:

*For Comprehension;* say “I will place some pictures in front of you now and you have to point to the picture that I ask for”.

*For Expression;* say “I will ask you some questions and show a picture also. You have to answer the questions appropriately.”

*Score:* For Comprehension, score ‘2’ for correct response and ‘0’ for incorrect or no response. For Expression, score ‘2’ for the correct response, ‘1’ for partial response and ‘0’ for incorrect or no response.

Maximum Scores: Comprehension – 2

Expression – 2

Total Score: 4

*Test items*

Comprehension

- --
- --

Expression

తలుపు తియి/డబ్బా తియి, నీవు ఇప్పుడు ఏమిచేసావు?

అమ్మ ఏమి చేస్తుంది?

Expected Answer

నేను తలుపు తీసాను.

అమ్మ చదువుతుంది

### **Sub test 8. Number Markers**

*Instructions:* Say “I will show you some pictures and ask few questions and you have to answer them”.

*Score:* For Comprehension, score ‘2’ for correct response and ‘0’ for incorrect or no response. For Expression, score ‘2’ for the correct response, ‘1’ for partial response and ‘0’ for incorrect or no response.

Maximum Scores: Comprehension – 4

Expression – 4

Total Score: 8



*Test items*

Comprehension

- అమ్మాయిలు ఉన్న చిత్రం చూపించు?
- పిల్లలు ఉన్న చిత్రం చూపించు?

Expression

- ఇది ఒక పుస్తకము/బుక్కు, ఇవ్వన్ని ఏంటి?
- ఇతను అబ్బాయి, వీళ్ళంతా ఎవరు?

Expected Answer

పుస్తకాలు/ బుక్కులు

అబ్బాయిలు

**Sub test 9. Wh-Questions**

*Instructions:*

*For Comprehension*, say “You have to answer to my questions now”.

*For Expression*; say “Now you should ask me questions in the same way as I have been asking you till now. I will show you some things and you should ask me questions regarding them.”

*Score:* For Comprehension, score ‘2’ for correct response and ‘0’ for incorrect or no response. For Expression, score ‘2’ for the correct response, ‘1’ for partial response and ‘0’ for incorrect or no response.

Maximum Scores: Comprehension – 2

Expression – 2

Total Score: 4

*Test items*

Comprehension

- నీవు ఎక్కడ కూర్చున్నావు?
- ఈ డబ్బా ఎలా తీయాలి?

Expected Answer

కుర్చిపైన/ చాప పైన

Expression

- --
- --

### **Sub test 10. Yes-No Questions**

*Instructions:*

*For Comprehension,* say “I will ask you some questions and you have to answer as yes or no.

*For Expression;* say “Repeat what I just asked you.”

*Score:* For Comprehension, score ‘2’ for correct response and ‘0’ for incorrect or no response.

For Expression, score ‘2’ for the correct response, ‘1’ for partial response and ‘0’ for incorrect or no response.

Maximum Scores: Comprehension – 2

Expression – 2

Total Score: 4

*Test items*

- అమ్మ కూర్చుని ఉందా?
- నేను బోజనం చేస్తున్నాన/అన్నం తింటున్నాన?

### **Sub test 11. Negatives**

*Instructions*

*For Comprehension;* say “I will place some pictures in front of you now and you have to point to the picture that I ask for”.

*For Expression;* say “I will ask you some questions and you have to answer them.”

*Score:* For Comprehension, score ‘2’ for correct response and ‘0’ for incorrect or no response.

For Expression, score ‘2’ for the correct response, ‘1’ for partial response and ‘0’ for incorrect or no response.

Maximum Scores: Comprehension – 4

Expression – 4

Total Score: 8

*Test items*

Comprehension

- ఏ గ్లాసులో నీళ్ళు లేవు?
- రాయలంటి ఇందులో ఏ వెన్ను వాడలేము?

Expression

- నీవు ఇప్పుడు చదువుతున్నావా?
- నేను మీ అమ్మనా?

Expected Answer

లేదు

లేదు

### Sub test 12. Embedded Sentences

*Instructions:*

*For Comprehension;* say “I will place some toys and pictures in front of you now and you have to point to the picture that I ask for.”

*For Expression;* say “Repeat what I just asked you.”

*Score:* For Comprehension, score ‘2’ for correct response and ‘0’ for incorrect or no response. For Expression, score ‘2’ for the correct response, ‘1’ for partial response and ‘0’ for incorrect or no response.

Maximum Scores: Comprehension – 4

Expression – 4

Total Score: 8

*Test items*

Comprehension

- గోలీలు ఉన్న డబ్బా చూపించు?
- ఎక్కువ గోలీలు ఉన్న డబ్బా చూపించు?

Expression

- నేను ఏమి చూపించమన్నాను?
- నేను ఏమి చూపించమన్నాను?

Expected Answer

గోలీలు ఉన్న డబ్బా చూపించు?

ఎక్కువ గోలీలు ఉన్న డబ్బా చూపించు?

### Sub test 13. Co-ordinated Sentences

*Instructions:*

*For Comprehension;* say “I will give out simple instruction. Please listen carefully and do as I say”.

*For Expression;* say “What did I just ask you to give to me?”

*Score:* For Comprehension, score ‘2’ for correct response and ‘0’ for incorrect or no response. For Expression, score ‘2’ for the correct response, ‘1’ for partial response and ‘0’ for incorrect or no response.

Maximum Scores: Comprehension – 6

Expression – 6

Total Score: 12

*Test items*

Comprehension

- పెన్సిల్ను బొమ్మను ఇవ్వు.
- పుస్తకము తేదా రబ్బర్ ఇవ్వు?
- కుక్కని డబ్బాలోపలో, పుస్తకము వైనో పెట్టు?

Expression

- నేను ఏమెమి ఇవ్వమన్నాను?
- నేను ఏమి ఇవ్వమన్నాను?
- నేను ఏమి చేయమన్నాను?

Expected Answer

- పెన్సిల్ను బొమ్మను
- పుస్తకము తేదా రబ్బర్
- కుక్కని డబ్బాలోపలో, పుస్తకము వైనో పెట్టు?

### Sub test 14. Narration

*Instructions:* Say “Now I will show you some pictures and tell you a very interesting story and also ask some questions. You have to answer them.”

*Score:* score ‘1’ for correct response and ‘0’ for incorrect or no response.

Total Score: 6\*2=12 (comprehension and expression)

*Test items*

ఒక ఊరిలో ఒక చిన్న బాబు ఉండేవాడు

అతను ఎప్పుడూ చెప్పులు వేసుకోకుండా దారిలో నడుస్తుండేవాడు.

1. అతను ఎలా నడుస్తుండేవాడు?

ఒక రోజు అతని కాలికి ముల్లు గుచ్చుకుంది.

అతను ఏడవటం మొదలుపెట్టాడు?

2. అతను ఎందుకు ఏడవటం మొదలుపెట్టాడు?

అతని అక్క వచ్చి అతనిని ఇంటికి తీసుకొని వెళ్ళింది.

3. ఆమె ఎవరి అక్క?

ఇంటికి తీసుకొని వెళ్ళి "నీవు చెప్పులు వేసుకోలేదు అందుకే ముల్లు గుచ్చుకుంది" అని కోప్పడింది.

4. అక్క ఏమని కోప్పడింది?

ఆ తరువాత నిధానముగా ముల్లను తీసింది.

ముల్లు తీసిన తరువాత - "నీవు చెప్పులు వేసుకుంటే వాకింగ్ కి తీసుకొని వెళ్తాను" అని చెప్పింది.

5. ముల్లు తీసిన తరువాత అక్క ఏమని చెప్పింది?

చిన్న బాబు చెప్పులు వేసుకున్నాడు.

తరువాత అతను వాళ్ళ అక్క వాకింగ్ కి వెళ్ళివచ్చారు.

6. వాళ్ళు ఎప్పుడు వాకింగ్ కి వెళ్ళారు?

### **Chapter 3: Development and standardization the STAST**

**Test construction:** The test items for STAST were adapted from STASK and modified considering the cultural variations. The compiled material was rated by five Speech Language Pathologists. They were expected to rate the test items on a five point rating scale for the 14 parameters listed. E.g.: Simplicity of the test material, familiarity of the test stimuli etc.

**Stimulus material construction:** The stimulus material consisted of 56 pictures and toys. The toys that were used for the testing were as follows.

Boy doll

Girl doll with long hair

Girl doll with short hair

Dog toys (3)

Comb

Pen

Pencil

Eraser

Notebook

Flowers of red, white, yellow and blue colours

Medium sized Balls (2)

Small balls (10)

Plastic container with lid (2)

Carry bag and Chocolates

**Pilot testing:** Using this material, a pilot study was conducted on a group of 32 children (4 children in each age range). After analyzing the piloted data, the test items which were most relevant were chosen to form the test materials for the final administration of the test.

**Standardization:** One hundred and sixty typically developing children in the age range of 1-5 years participated in the study. They were sub divided into three groups with an inter age interval of six months (1.0-1.6 years, 1.7-2.0 years, 2.1-2.6 years, 2.7-3.0 years, 3.1-3.6 years, 3.7-4.0 years, 4.1-4.6 years, 4.7-5.0 years). Each sub group comprised of twenty subjects including 10 boys and 10 girls.

The subjects for this study were selected based on the following criteria:

- Native speakers of Telugu language, being reared in an environment of Telugu.
- Belonging to middle socio economic status.

The scores were coded and then subjected to statistical analysis. From the scores obtained, mean, standard deviation were calculated for each age group. Passing criteria of 60% was set for all the items considering that minimum of 60% of the subjects had to perform each of the tasks correctly.

## Chapter 4: Instructions for scoring

1. The total maximum score of STAST is  
 $50$  (comprehension score) +  $50$  (expression score) =  $100$ .
2. All the 50 items are assigned 2 scores each.
3. Score 2 for a complete correct response. Score 1 when the response is incomplete or only approximating.
4. Accept nonverbal responses for comprehension items only.
5. Only expression and Only comprehension items

- a. Only expression items are given under
  - Case marker - Items 9 and 10
  - Definite Determiner - Items 19 and 20
  - Tense Markers - Items 21 and 22
  - Narration - Items 45 to 50

(Total – 12 items)

Correct comprehension of the item under test may be assumed if a correct expressive response is given for these items. Therefore for a correct expressive response, score *one on comprehension column and one on expression column*. If verbal expression is not given even after prompting, but comprehension of the item is expressed in other ways, score one on comprehension column alone.

- b. Only comprehension items are given under Wh and Yes-No questions – items 27, 28, 29, 30.

As it is difficult to elicit the desired questions spontaneously in a test situation for a correct response on these items, score is given as one on comprehension column and one on expression aspects.