

ASSESSMENT OF SPEECH BY PARENTS  
OF HEARING IMPAIRED AND NORMAL  
CHILDREN - A COMPARISON

REG. NO. M9400

*AN' INDEPENDENT PROJECT WORK SUBMITTED IN PART  
FULFILMENT FOR FIRST YEAR MASTER OF SCIENCE  
(SPEECH AND SEARING) .*

UNIVERSITY OF MYSORE  
ALL INDIA INS TITUTE OF SPEECH AND HEARING  
MYSORE 570 006

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**To**

***The Lord Almighty...for  
constantly seeing me through.***

***My dear Sis Preeth, for  
making me enter the World of Speech &  
Hearing.***

***My Beloved Daddy and Mummy,  
Your Patience, Love & concern.....  
" what more do I want in life " ?***

***My Guidiiig sliadow.....  
When I have you. My days are Aapp/er  
and more complete.***

# CERTIFICATE

This is to certify that the Independent project entitled *"ASSESSMENT OF SPEECH BY PARENTS OF HEARING IMPAIRED AND NORMAL CHILDREN-A COMPARISON"* is the bonafide work in part fulfilment of M.Sc, I year Speech and Hearing, of the student with Register No: M9409.

Mysore  
May 1995



**Director.**

All India Institute of Speech & Hearing  
Mysore - 570 006

# CERTIFICATE

This is to certify that the Independent Project entitled "*ASSESSMENT OF SPEECH BY PARENTS OF HEARING IMPAIRED AND NORMAL CHILDREN-A COMPARISON*", has been prepared wider my supervision and guidance.



Mysore  
May 1995

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# DECLARATION

I hereby declare that this Independent Project entitled "*ASSESSMENT OF SPEECH BY PARENTS OF HEARING IMPAIRED AND NORMAL CHILDREN-A COMPARISON*" is a result of my own study under the guidance of Dr. S. Nikam, Director, All India Institute of Speech and Hearing, Mysore and has not been submitted earlier at any University for any other Diploma or Degree.

Mysore  
May 1995

Reg. No. M9409

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## INTRODUCTION

"SPEECH IS THE WAY OF LIFE FOR MAN. NO NORMAL PERSON IS WITHOUT THIS FACULTY AND NO OTHER SPECIES IS KNOWN TO POSSESS IT"

(PENT - 1952).

Human speech production is diverse and a very fascinating endeavour, the diversity of which is highlighted by the capacity for human communication by speech to be examined at several levels - the acoustic, physical and the physiological levels.

Communicative and speech competence refers to one's ability to use language appropriately and effectively in varying social interactions. As all of us know, speech serves as an outlet of varying emotions, thoughts, perceptions and attitudes.

Parent, the first source of stimulation in the natural world of the child, is more sensitive to the communicative needs of their language hearing children and should be able to fine tune their parental contributions to the languages and speech level of the child irrespective of the age of the child.

Early hearing impairment has definite effects on language and speech developments. As shown by Quigley and

Thomure (1968), Harrison (1964), even very mild impairment of hearing are often related to language and other educational difficulties. This leads to impairment of speech & then all aspects of language.

The speech of the deaf differs from that of normals in all regards (Balck 1971). In studies of speech of hearing impaired, attention is drawn to the fact that to a greater or lesser degree, the hearing impaired individuals don't produce speech as well as those who can hear (Monsen 1974). Various studies have been carried out in understanding the speech of the HOH children in their language environment (Hudgins, Numbers 1942 & Nober 1967).

Parent, child interactions and the assessment of the child's own speech by parents is a very crucial and an important landmark and factor for the parents to know about their child's speech competencies. One important function of assessment in such an area is to determine the clear boundaries of normal developing communication and speech and outline the reason for the delay in hearing the speech competencies.

Assessment includes a study of any process, which requires the observation and analysis of a flow of events that starts logically at some point and progresses on to a logical culmination of events.

In order to build upon skills parents need to be able to

assess their child's current level of functioning. For eg. parents must learn to recognize whether vocabulary has been acquired through contextual, gestural or strictly verbal clues. They need to hone their own listening skills to monitor their child's speech.

The attitudes held by the parents towards their hearing impaired child's use of speech and hearing vary widely between their HOH child and the normal child. Parents are the ones who live with the child through out his life and they are the ones whose continuous influences tend to be the greatest force in child's life. (Greenberg 1978). Thus it is very essential to know the capacities of a HOH child's speech and its lagging phase that of their normal child since it leaves a very great standpoint on their developmental competencies both academically and socially.

Roman (1980) points out that when information could not be obtained directly by testing the child due to physical, emotional or intellectual disabilities obtaining information from a parental source could be an easier, quicker way of screening large numbers of children.

In the clinical set up, even though the clinician plays a major role in the assessment and producers to follow for rehabilitating a hearing impaired child, parental reporting gives valid information about the speech and languages

environment of the child. Information from parents can be one of the reliable sources of information that can be gained by the clinician.

Need for the Study:-

Several studies (Elliot and Ambruster 1967, Asbed Etal 1980, Roman 1980, Gleason & Blood 1982, Kessler 1963 have been conducted in western countries regarding parental reporting techniques and such similar studies need to be conducted for the Indian scenario (Suma 1985)

(i) The most successful intervention programmes are those that begin early in life and involve active participation of parents (Mitchell and Brown 1991). In such a context it is necessary to emphasize the role of parents and their importance in the assessment of their child's speech performance and hence bring an awareness in them to deliniate the factors that are involved in their child's speech production.

(ii) If such a questionnaire is developed it may be used for assessing children's speech and language by parents in areas which have restricted speech and hearing services.

(iii) Parental reporting is very useful for clinicians if children are residing in far off places. It is useful as a baseline for planning early intervention programmes.

(iv) Information about the effectiveness of implemented therapy programmes are the child's progress can be easily

available from parental reports.

(v) Such parental reporting, are very essential in setups which are over loaded and have less professionals, since it serves as a direct source of valid information.

The present study was undertaken to check if there is differences in expressive, receptive and other speech skills between the hard of hearing children and normal children based on parents responses using the questionnaire method.

A similar study was conducted by suma (1985) and this study is an extension and expansion of the same on the following lines.

(i) The study focuses on parental reporting of a larger population of both parents of hearing impaired and normal children.

(ii) The study is aimed to assess speech and languages in greater detail as more varied and differentiated aspects of speech and language are included in the questionnaire.

## REVIEW OF LITERATURE

"Speech is a medium that employs a linguistic code, oral and a visible by which we are able to express feelings and communicate thought to others with comparable capacities" (Eisenson 1971).

The review is discussed under the following topics in this project.

- (a). Normal language development & speech acquisition.
- (b). Speech of the hearing impaired.
- (c). Assessment of speech and parental reporting.

### (A) NORMAL LANGUAGE DEVELOPMENTS AND SPEECH ACQUISITION.

An eminent Belgian Linguist A. Gregoire quotes " An investigation ought to have lives day by day, hour by hour, in the society of infants and to have been constantly on the watch for the external manifestations of their speech & language behaviour".

Infancy is usually described as that nonverbal period in which the young child's life extending from birth to 1 year when the first words are uttered. (Darley and Winitz 1961). It is during this time that the infant learns to produce a wide variety of sounds mastered from environmental feedback through all senses. Normal speech and language development always proceeds in succession of steps in an hierarchical manner. Any delay or disturbance at any/all

levels leads to a lag in the normal acquisition as of speech of the hearing impaired children.

Thirumalai (1977) in his extensive study on normal language acquisition outline two approaches. He quotes that first, language is learned through other behaviour and secondly, the child has an innate or inherent capacity to acquire language. The first milestone in the child's language is the birth cry and about the first month and after it is differentiated for various physiological needs like hunger, pain, discomfort etc. Different investigators have tried to study cries in terms of length, pitch and have found that they vary for different physiological responses. Investigators have summarised the stages of Speech and language development.

Lushinger (1947) - Gives a table of language development.

- |                |  |
|----------------|--|
| 1 month        | - Global signs and tone ' language of reflex cries.                |
| 2 months       | - Structured sounds of babbling.                                   |
| 8 - 9 months   | - Beginning speech correction.                                     |
| 8 - 10 months  | - Association of linguistic pre conditions.                        |
| 9 - 10 months  | - Infantile ideoglossia with intentional expression and echolalia. |
| 13 - 15 months | - Evolution of symbolic consciousness.                             |



13 - 18 months - Monoverbal sentences.

The stages have also been summarised by Shyamala Chengappa (1986) as follows.

- (a) Vocalizations are differentiated at 1 - 4 weeks.
- (b) Babbling at 2 - 6 months.
- (c) Lalling at 6 - 9 months.
- (d) Echolalia at 9 - 10 months.
- (e) First word at 12 - 18 months.

Darley and Winitz (1961) have pointed out the various events that occur in these stages.

(<sup>a</sup> Reflexive vocalization stage: During this stage the infant produces a number of sounds that results from muscular contractions of the vocal apparatus during respiration (Semion 1957) .

Laura D'oderico (1984) - studied prelinguistic communications by analysing some type of infant cries and non cry vocalizations. Results indicated that at different contexts the infants cry and non cry vocalizations can be differentiated.

In the second month of life the child's vocalisations can be differentiated as cooing which chiefly consists of vowel productions.

(b) Cooing stage:

As the infant enters the second month, vocalizations appear which don't resemble those that could be classified as

strictly reflexive - This stage consists chiefly of vowel sounds plus a few consonant sounds (Ingram 1976, olmstead 1971, Perkins 1977, Templin 1973).

Other investigators have described this stage, as a stage of comfort (Lewis 1936) and wolff (1966) reports that vocalizations in this stage resemble physical movement patterns like rhythimical mouthing actions that resemble sucking actions, even in the absence of food stimuli.

(c) Babbling stage; (6-7 months)

Larr (1976) defines babbling as sequential combinations of two or more, non crying, non reflexive infant sounds, made with the vocal apparatus plus all prosodic and suprasegmental features of these sounds. Winitz (1969) uses the term babbling to refer to all vocal or nonmeaningful responses that may be conditoned. This belief is also concurred by Van Riper (1969), Darley and Winitz (1961), Anderson, Newby (1973) and Eisenson & Ogive (1977) who suggest that babbling begins at 3 months of life.

The hypothesis that metaphonological characteristics of target language have an early influence on babbling was verified by Laurart Sargurt etal (1984) who took sampling productions of 6-8 and 10 months old infants and made adults listeners identify their babbling productions.

In this stage, some important events that occur in the child's speech are addition of several consonants and

syllabic duplication and only after 6 months the infant uses some vocal sounds to express meaning.

Irwin (1958) has reported a high percentage of monosyllabic, bisyllabic during the 7th, 8th and 9 months. In this stage, the labials and the post dental sounds constitute more than 80% of the consonants at each age level and 95% of words consist of both vowels and consonants. Vehman et al (1985) reported that babbling continued to occur even after 1 year and phonetic properties of babbled utterances were influenced by standard points.

(d) Echolalia (9-12 months)

The child's vocal contour suggests request, demands :sophisticated cooing expresses calmness and contentment.

In this stage, the child sounds as if he or she is talking. However though the child may utter either 'ma-ma' or 'da-da', the child probably does not mean what he or she seems to be saying.

(c) First Word Stage

'Hi' or 'bye-bye' accompanied by appropriate gestures are likely to be the first "words" of most normal, socialised children. By the end of the first year, some of the children most often girls than boys evoke their first naming labelling words. By this stage as the child starts speaking he begins attracting adult attention (Bersy 1969).

Parents play a very important role in the Speech language acquisition. Maternal Care, Speech stimulation is an essence for development of speech of the child. It is reported that "Parents and care takers should speak in phrases, Short sentences, encouragingly, reinforcing there vocalizations, words etc. (Eisenson 1986)

**(b) ACQUISITION OF SPEECH AND LANGUAGE - PHONOLOGICAL DEVELOPMENT**

The Holophrasic stage of language acquisition lasts for about six months, from approximately the first year to six months. During this period, the child comes to acquire about about 50 words before his vocabulary begins to grow very rapidly (Nelson 1973)

Jacobson and Halle (1956) have given an universal order of phonological acquisition.

- (a) The first syllabus CV or CVCV are reduplicated
- (b) The first consonant are labial most commonly /p/ or /m/.
- (c) These are followed by /t/ and later /k/.
- (d) The first vowel is /a/ followed later by /i/ or /u /.
- (e) A homo organic fricative is acquired only if the stop has been acquired.

Ferguson and Garnica (1975) have also pointed out that Jacobson missed the fact that /R/ and /W/ are often among the first sounds acquired.

Irwin O. C. (1951) studied acquisition of consonants occurring in initial, medial and final positions. and that occurrence of initial consonants in infant vocalisation is greater than medial and the latter is greater than the final positions.

Carroll - Stoel - Gammon (1987) - extensively studied the skills of 2 years old children by analysing the speech samples of 33- 2 years old children and documented that 2 years old produce words of the form CV, CVC, CV and CV, CVC; and they also produce a few consonant clusters in initial position. and 2 or 3 in final positions. and produce 9-10 different consonant phones including examples from the classes of stops, nasals, fricatives and glides. Sreedevi (1976) has studied phonological acquisition of 2 years old children in Kannada language.

The consonants such as /b/ /m/ /f/, /w/ /k/, /h/ /p/ /g/ /k/ /j/ and /e/ are mastered in age four and however these are not evident in all positions Menyuck (1971). In compliment Templin (1957) adds sounds such as /Sm/ /Sn-//st/ /tw/ /kw/ /pi/ and few consonant clusters and sounds like /t/ /v/ /s/ /z/ /s/ /z/ /r/ /θ/ to the child's vocabulary.

Acquisition of Tamil phonology of 4 years old children was outlined by Thirumalai (1972). He reported that subjects

acquired consonants like /k/ /e/ /t/ /p/ ; 6 nasal sounds. He found differences between adults and children's phonology in the supposition that alveolar retroflex nasals in the intervocalic position was interchanged most often by children.

There have been 3 large studies conducted by Wellman and others (1931), Poole (1934), Templin (1957). The results of these studies have been found to have similarities. They all agree with the following conclusions that

(i) Certain groups of sounds with similar distinctive features are acquired before others.

(ii) Nasals stops are acquired relatively early, fricatives and affricatives are mastered relatively late.

(iii) Consonant clusters are also acquired late with two consonant clusters preceding 3 consonant clusters.

(iv) All consonant clusters are mastered by age 7-8 years.

(v) Vowels are usually acquired by 3 years of age.

The relationship between articulation and discrimination of Kannada speech sounds was found by Kumudavalli (1972). Her findings support the motor theory of speech production. She found that discriminated sounds were also articulated properly and that sounds misarticulated were not discriminated. Many word pairs which were articulated correctly were not discriminated and in both perception and production tasks, the alveolar and the retroflex distinction

was the last to be acquired. A definite pattern in the articulatory acquisition with change from age to age was also reported by Tasneem Banu (.1977).

Phonological acquisition even continued till the age of puberty. . (Ingram 1976)that is acquisition of the supra segmentals.

**(c) ADULT LIKE PRODUCTIONS - PRELINGUISTIC TO LINGUISTIC SPEECH.**

The child is tuned to make adult like productions from the stage of cononical and non-reduplicated babbling stages at the age of 10 months, were variations occur in the syllable strings of the child's speech.

The development of symbolic language after 18 months depends primarily on the mother's teaching efforts.

Through constant examples and encouragement the parents and siblings guide the infants acquisition of mother tongue. The first attempts on spontaneous speech and the development of words begin approximately at the beginning of the second year.

Stern (1942) and Berko (1958) have reported the acquisition of word categories reveal a certain regularity of growth, and direct relationship exists between chronological age, mean length of utterances and percentage of complex sentences. (Dorothy L. Tyack and Robert H. Gottle ban 1986).

In the beginning of this stage the child is egocentrically oriented to his environment, so he names concrete things within his sphere of interest.

Bowerman (1976) has noted that the names of objects and events constituted the major portion of the child's vocabulary at this stage and the processes of which include division of cognitive fields separated into smaller categories and from which a new concept emerges from the formation of new words. With increasing abstraction the single words grows into a carrier of concept formation (Lushinger and Arnold).

\* **Development of syntax;**

Irrespective of methodological or physiological orientation, practically all researchers agree that most children begin to form two word and three word sentences sometimes between months 18 to 24. In addition most contemporary writers have demonstrated that children's utterances are not random but have underlying grammatical rules, which permit generation of large number of sentences. Fraser etal (1963) remarked that children have higher grammar than they produced.

Franklin, Miller and Ramer (1976) described precursory behaviours as presyntactic behaviours that occur before children learned to use word order as a linguistic device to signal the meaning relations between words in sentences.



Bloom (1973) studied observationally a 16 month old child and found consistent word order with an interpretable word (Wida); which was observed before multi words.

Brown and Bellugi (1984) report that open class words seem to be established before 18 months. However pivot word classes seem to undergo a differentiation process which does not begin until 18 months.

Bloom (1970) 'This' 'that' 'a' 'the' 'these' 'more' are determined at the age of 2 years; mastery of 'here' 'there', not observed by 4 years (Clark and Seigal 1978); questions 'what' 'where' were found in the younger age groups itself one-and-half to three-and-half years (Smith 1933); and 'Yes' 'No' questions at 2 years of age (Smith 1933), (Menyuk 1964), (Ingram 1975), found coordinating conjunctions before subordinate conjunctions.

A pool of Indian studies done by various investigators have led to the following conclusions

(a). First and second person singular and third neutral singular appear earlier than other types (Sreedevi 1976).

(b). na:nu; ni:nu - occurred at 2 years.

Avanu at four-and-a-half years; avalu/avanu at four to four-and-a-half years. "More<sup>1</sup> adjectives at three to three-and-a-half years. (Basavaraj 1981).

(c). Transitive and intratransitive verbs are acquired later than reflexive and causative verbs (1976).

(d). Tag questions are present in four to five-year-old children. (Roopa N 1980)..

(e) . Negations such as 'ilia' 'alia' and 'beda' develop at 22 months and 'not' at 24 months after which complex structures are joined through conjunctions.

(f). 'Mathe' and noun phrase conjunctions at 5 to 6 years. (Prema 1979).

\*Development of sentences:

The production of syntactical categories in the child's verbal repetoir, makes the child integrate them with intellectual capacities and prior experience as a result of which simple sentences grow in a hierarchical manner into complex sentences which marks the mastery of adult speech. The sentences produced at 18 months are called pluri verbal sentences, and at 2 years: Declarative and interrogative sentences; at 3 years called as imperative forms of words (Lushinger and Arnold 1947). The sentences are made intelligible by the various supra segmental features like stress, rythm, intonation, pitch that are learnt by the child which is facilitated by audio visual feedback, from the age of 2 years (Bladssel and Genson 1970)..

Raju Pratap (1991) studied stress development in 3-4 yrs old Kannada speaking children and found that word stress

increased from 3-4 yrs in both females and males for clauses and sentences.

Jaya. P (1992) found that durational and loudness changes were the major perceptual cues for the perception of stress and pause, intonation were the minor cues, in her study of stress development in Tamil speaking children.

## **(B) SPEECH OF THE HEARING IMPAIRED**

Research on speech -and language acquisition of hearing impaired has not been given the same degree of importance as in normals (Geffner and Freeman 1980).

The speech of the hearing impaired differ in all aspects.

Swathi (1993) and Usha (1986) have reported delay in speech and language development of the hearing impaired children as compared to normal children.

Data also suggests that there is a delay in the hearing impaired children phonemic acquisition and HOH children's phonology also differs from normal individuals. The same was supported in cross sectional and longitudinal studies by Stoel Gammon (1982).

The importance of prelinguistic base for language development was well documented for hearing impaired who use both gestural (Bates and Bruner 1981) and vocal modalities (Halliday 1975) for prelinguistic, intentional communication prior to language. Little information is available about the communicative use of vocalisations during the first two years of life by children with hearing loss, although their delayed development of metaphonological is well established (Oiler and Eillers 1988, Stoel and Gammon and Olomo 1988).

Investigators have reported that infants and children with hearing loss show decreased production of intentionally communicative behaviours regardless of modality or linguistic level compared to hearing children of the same age (Gregory 1988, Spencer and Gutfreund 1990 and Well and Monig and Lumhey 1980) .

For many years it was believed that the vocalisation development of normal hearing and hearing impaired infants was the same, atleast through the babbling stage and after this period, the hearing impaired children were reported to stop babbling (Osberger 1982).

Apart from the delay in lang development vocalisations of hearing impaired are reported have decreased. This occurs after 3 months (Mavilya 1968) as against stark (1982) who does not find decrease in vocalisations after the babbling period.

The language and speech deviations seen in hearing impaired have been a well documented area of research.

Research on deviancies in speech of the deaf can be grossly concluded as

(i) Front consonants produced by hearing impaired was found to be of greater frequency than back consonants (Carr 1953).

(ii) Consonantal misarticulation and failure to differentiate between voiced and voiceless distinctions,

occur in deaf speech.

(iii) Slow diadekokinetic rate was seen in hearing impaired speakers (Shukla 1987) as compared to normal children.

(iv) Centralised vowel productions (Hudgins and numbes 1942) and high proportions of nasalised vowels (Hudgins 1934) longer duration of productions (Hudgins 1961)

(v) The suprasegmental errors include use of inappropriate pitch depending upon type of hearing loss, absence of stress in appropriate word positions; wrong perception and production of intonation contours etc.

(vi) An overall decrease in speech intelligibility occurs due to these errors.

The speech of the hearing impaired will be discussed under the following.

- (i) Comprehension in hearing impaired children,
- (ii) Syntax of deaf speech
- (iii) Articulatory patterns in deaf speech.
- (iv) Articulatory correlates in deaf speech.
- (v) Suprasegmental aspects.
- (vi) Respiratory patterns in deaf speech.
- (vii) Voice quality in deaf speech.
- (i) Comprehension and expression in HOH speakers :

Swathi (1993) and Osha (1986) reported that speech and language expression was better than language reception in HOH children. Passive voice comprehension preceded production in children with hearing loss.(Power and Quigley 1973).

Seena. K (1994) studied relationship between comprehension and expression in hearing impaired children within a particular age group and across different age groups. Results indicated delay in both expression and reception for hearing loss children.

Some studies on comprehension and expression of suprasegmentals include that of intonation patterns conducted by Tova Most and Yael Frank (1994) and Weirr (1966) and Boothroyd (1978) who have shown that hearing impaired perceive and produce intonation patterns whereas Frank, Bergman and Tobin (1987) disagree with the above authors in that the hearing impaired failed to comprehend and produce intonation patterns.

Varied results of the above investigators suggest that comprehension and expression of HOH children depends upon varying factors like age, onset of hearing loss, severity of hearing loss, amount of language delay and environmental feedback.

(ii)Syntax in deaf speech:

Literature has studied syntax of deaf speech by analysing written language (Cooper 1967, Power and Stein Kamp

1977, Quigley and Montanelli 1975, Wilber 1974) and spontaneous speech samples.

Pressnell (1962) in his investigation of development of syntax on 47 congenitally deaf children found that perception of syntactical categories preceded production of syntactical categories. Wilson (1974) reports of similar findings.

A moderate hearing does not significantly impede the acquisition of all word classes but only pronouns adverbs and auxiliaries. Language of hearing impaired also contain more naming words and fewer abstract words. So learning of nouns was quicker for deaf than adverbs and other syntactical categories (Brannon 1968). Examination of grammatical morphemes for 10 HOH children with age range 9 years revealed that the order of acquisition for grammatical for identical for both normal hearing and hearing impaired children (Jean S. Brown 1984).

Presnell (1973), Wilcox and Jobin (1934) revealed that deaf children acquired phrase structure of English in a normal but delayed and deviant fashion. Transformational Generative Grammar also suggests that the order of difficulty of various syntactical structures was similar but not identical for deaf and normal hearing children.

Subramanya (1978) has outlined the development of some morphological categories in Kannada in hearing impaired



children between six to eight years of age. 32 children were tested to see for the application of morphological rules for three items -plural, gender and tenses.

(i) /Galu/ allomorph was used as plural; /aru/ and /andiru/ were not acquired in these children.

(ii) In gender allomorphs /-i/ and /alu/ were predominantly used by children. They also acquired /-gitti/ allomorph

Quigley and Power and Stein Kamp (1974) also showed that the different structures for deaf children were pronominalisation, complementation and relativisation.

The effect of grammatical category and syntactical complexity on consonantal articulation of forty five severely and profound hearing impaired was studied by Suzanne Abraham et al (1987). All subjects were asked to respond verbally to two experimental tasks. The responses were used to evaluate nouns/ verbs and adjectives in sequential contexts on accuracy of target phonemes production. Results show that grammatical category significantly affected articulatory accuracy of target phonemes produced by the hearing impaired. No effects syntactical complexity were indicated.

The varying errors in syntax of deaf speech definitively contribute to an overall decline in their speech intelligibility. (iii)Articulatory patterns in deaf speech:

Numerous independent investigations (Hudgins and

Numbers 1942, Markides 1970, Smith 1975, Mc. Garr 1980) have been remarkably consistent in identifying typical articulatory errors in the speech of the hearing impaired who were trained in many different programmes. Much attention has also been given to the segmental errors seen in hearing impaired children,

(a) Consonantal Articulation:

Hudgins & Numbers (1942) Error types in hearing impaired involved confusion in voiced-voiceless distinction, distinction, substitution of one consonant for another, added nasality, misarticulation of consonantal blends, misarticulation of abutting consonants and omissions of word initial or word final consonants. (Brannon 1966, Geffner 1980, Gold 1978, Levitt, Smith 1976).

Substitution errors were seen mostly for sounds in front of the mouth than the back of the mouth (Smith 1975, Gold 1978). This general trend for better production of visible phonemes is also seen in spontaneous speech of the deaf.

Smith (1975) found that phonemes /p/ and /b/ were substituted for each other, /f/ for which /v/ was substituted /C/ which was replaced by /t/ and /d/ and /w/ substituted in the mean proportion of errors in initial and medial positions, but also for marked errors which was also seen for final positions.

Substitution errors are also seen in place of articulation of deaf speech. Commonly nasal oral substitutions, nasalisation of non-nasal phonemes, production of stops for nasal consonants, glottal stops substitution for other sounds are reported by various investigators (Hudgins and Numbers 1942, Markides 1970, Smith 1975, Stevens, Nickerson, Boothroyd 1976). Rate of substitution errors for fricatives was high and lesser compared to the plosives (Geffner 1980). These errors led to overall decrease in intelligibility of the speech of the deaf.

#### Omission errors

Omission of consonants is another error seen in spontaneous speech of the hearing impaired children.

Initial consonants are found to be omitted more often than final consonants.

Hudgins and Numbers (1942) reported that consonants /h/ /l/, /r/, /y/, /th/, /s/ are all omitted in initial positions of words.

A phoneme in the blend environment is more likely to be omitted than the same phoneme occurring in the non blend environment (Osberger & Mc. Garr 1982), palatal plosives, fricatives and affricatives and nasals had the most errors (Nober's and Smith 1967).

Consonant clusters omissions are also quoted in the literature by Hudgins (1942), Brannon (1964), Smith (1975).

### Voicing errors

HOH children used more voiced than voiceless sounds was indicated by the comprehensive work of Smith (1975). In his analysis of speech to 40 HOH children he showed that more substitution errors occurred on voiceless member of the pair than on voiceless sounds.

The term surdonant error is given to the voicing errors of deaf speech, (Mangan 1961, Calvart 1962, 64). They found that intended voice plosives were perceived as voiceless plosives or the reverse.

### Vowel Articulation

Brannon (1966) reported that production of vowels was easier for HOH speakers than consonants.

Hudgins and Numbers (1942) have studied the HOH speaker's production of vowels and diphthongs and classified errors as

- (i) Substitution of one vowel for another.
- (ii) Diphthongisation of vowels.
- (iii) Neutralisation of vowels.
- (iv) Errors involving diphthongs.

Vowels produced by deaf learners have reported to be often centralised (Hudgins and Numbers 1942) and he also noted that a high proportion of nasalised vowels occurred in the deaf.

Duration of vowels in deaf speakers appear to be overlong by a much greater factor than seen in 2-4 year old children. Calvert (1961) found that durations of initial unstressed vowels were nearly five times as great as in deaf as in normal hearing. Stressed vowels were nearly as twice as long in hearing speakers.

Substitution and neutralisation of vowels as well as difficulty with the production of diphthongs were among the common errors seen in HOH speakers. This was seen at CVC framework by an Angelocci and Kopp etal (1964); in test words by Geffner etal (1980) and in sentences by Smith (1975).

In general deaf speakers have found to produce back vowels correctly more often than front vowels (Boone 1966, Jeffner 1980, Mangon 1961) and low vowels correctly more often than those with mid or high tongue position (Smith etal 1975).

#### Articulatory Rate:

Errors generally in the segmental features lead to a slow speaking rate/articulatory rate in the speech of the HOH. Shukla (1987) in his extensive work on hearing impaired speech studied diadekokinetic rate on 30 HOH speakers and after spectographically analysing them found that mean DDK was 155.73/min and HOH showed a poor diadekokinetic rate. The same was in agreement with Fraser etal (1985).

Priya S.B. (1991) has noted that for HOH speakers

auditory feedback plays a vital role, in the oral diadekokinesis, 12 male and 8 female HOH speakers were included in her study. She further explains that as the severity of the hearing loss increases ability of articulatory system to perform rapid, alternating and repetitive movements of the articulators to produce speech decreases. She also related the DDK rate to the speech intelligibility of the deaf speakers.

With few exceptions the speech of the severely and profoundly hearing impaired is perceived as being too slow and sounding very laboured.

Physical measures of speaking rate have shown that profound hearing impaired speakers on the average take 1.5 to 2 times longer to produce the same utterance as do normal hearing speakers

The decreased speaking rate is attributed to the excessive prolongation of speech segments and insertion of pauses. (Boone 1966, Heidinger 1972^ Hood 1966, John & Howark 1985).

#### Articulatory correlates in deaf speech:

##### \* Breath duration;

It is defined as the maximum amount of time an individual can sustain phonation after taking maximum inhalation.

Van (1934) suggests that phonation duration is 12 secs for HOH speakers whereas Fairbanks (1960) and Purushotam et al (1982) delineate a wider range of about 20-25 secs.

Inadequate breath control in the speech of the HOH individuals was reported by Hudgins (1934) and Rawlings (1935).

It can be concluded from these studies that HOH speakers expel much more breath while speaking than normals and are likely to interrupt the speech flow more frequently in order to permit the intake of air.

\* Fundamental frequency contours:

Whitehead & Maki (1977) have found that deaf adults have speaking fundamental frequency higher than hearing adults, but majority of deaf adults have speaking fundamental frequency within a normal range.

Monsen (1979) in a group of 24 HOH children reported that fundamental frequency was 227 hertz for deaf speakers which falls within the range of normal hearing children.

Lack of variation of fundamental frequency (Calvert 1962) and excessive fundamental frequency variation (Monsen et al 1979) is reported in the hearing impaired.

Angelocci et al (1964), Boone (1966), Martony (1988) If there is a problem with the HOH speakers average fundamental frequency more often the voice pitch is characterised as too high rather than too low.

\* Voice onset time

VOT is the difference between the release of a complete articulatory construction and onset of phonation (Lusher and Abraham 1964).

Gilbert and Campbell (1978) have observed difference in VOT values for HOH speakers and found that they are shorter than normally hearing speakers. The reasons are due to the reduced intraoral presence during the production of stop consonants and in-coordination of phonatory and articulatory mechanisms.

Negative VOT volume values were also shown by some HOH speakers for the prevocalic voiced components than normals,

(e) Suprasegmental aspects of deaf speech;

Suprasegmental or prosodic features of language are variations larger than individual segments overlaid upon a word phrase or a sentence. They are a direct bridge in meaning (Borden and Harris 1980).

Apart from the segmental errors noticed in the speech of the HOH individuals, there is an important contributing factor such as the suprasegmentals like prosody, intonation, stress resulting in a decrease in the intelligibility of the deaf speech.

\* Pauses:

Profound HOH speakers, typically insert more pauses and



pauses of longer duration than do speakers with normal hearing. (Boone 1960, Boothroyd, Micherson & Stevens 1974).

The reasons for occurrence of frequent pauses is due to the fact that HOH speakers have a poor control over their respiratory and phonatory systems.

For speech perception, the phoneme duration is an important factor. So a durational vowel serves to differentiate between vowels and consonants adjacent to them.

Several suprasegmental aspects of the speech of the HOH were analysed spectrographically by Sussman and Hernandez (1979) and observed that speakers produced longer vowels before voiceless stops, than before voiced stops.

John, Howrath (1965), Hood (1966) have all noticed the insertion of pauses, longer duration of pauses, within and inbetween phrases contributes to the decline in speech intelligibility.

A trend towards reduction of speech intelligibility when pauses were combined with excessive prolongation of voiced segments was noted by Levitt, Smith and Strombeg (1974) in their manipulated speech samples of deaf subjects.

But on the otherhand, literature also quotes that pauses don't have a very strong negative effect on speech intelligibility.

#### **\*Interphonemic Transitions:**

Speech sounds that require the precise co-ordination of the timing of different articulatory movements or the rapid transition from one articulatory position to another, may be a problem of the HOH speakers (Nickerson 1975) .

Many researchers also report that the deaf don't position their articulators correctly in proceeding from one phoneme to another.

\*Pitch & Intonation in deaf speech;

The fundamental frequency on its psychological correlate pitch varies considerably in the speech of a given speaker or characteristic fundamental frequency  $f_0$  varies over speakers.

It has been reported by Green (1956), Eromovik (1965), Boone (1966), Monsen (1979), that there are no significant difference in average  $f_0$  between young hearing and hearing impaired children.

But there is ample evidence to suggest the presence of pitch deviations in the speech of the hearing impaired. Green (1956), Boone (1966) have noted abnormal average pitch inadequate control overpitch within utterance leading to errors in intonation.

So the speech of the HOH individuals was referred as "monotonous" and "devoid of melody".

Later investigations have shown that HOH speaker did

produce pitch variations but the average maximum pitch changes were more reduced than those of speakers with normal hearing.

Errors in pitch control lead to errors in intonation. The first feature of natural language observed in a child's babbling is intonation.

Several studies have shown that intonation can be perceived and produced by hearing impaired children with severe to profound hearing loss (Boothroyd 1978, Weir 1966, Tova Most and Yael Frank 1994) but Frana, Bergman and Tobin (1987) contradicted study by saying that HOH fail altogether in perception and production of intonation patterns.

Tova Most & Yael Frank (1994) aimed at studying the effect of age and hearing loss on tasks of perception and production of 42 severe HOH and found that 6-9 yrs old HOH children had more difficulty in rising contours than falling contours and also found no effect of age and hearing loss. The same was in agreement with the study of Most (1985) There were only a few attempts to arrive at a quantitative classification of intonation contours produced by 3 to 6 yrs old HOH children. They were categorised as (1) falling contour (2) short falling contour (3) a flat falling contours (d) a changing contour.

Indira. N (1981) studied intonation patterns of HOH and normal children on and primary emotions such as

joy, sorrow, fear and anger and found that variations in pitch levels of HOH subjects did not have the same use and fall pattern as normal hearing subjects.

#### Stress:-

Angelocci (1962), Vichevson Etal (1974) pointed that the ability to recognise and differentiate between durations of stressed and unstressed syllables, Manifests in the failure to recognise the duration of phonemes, in the HOH speakers.

Nicherson etal (1974) found that the deaf children fail to produce differences between the durations of the stressed and unstressed syllables that were as great as those produced by normal hearing children. The deaf children produced unstressed syllables with increased duration.

Durational increase for stressed syllables also has been reported (John And Howarth 1965)

The results of these studies imply that deaf speaker seems to produce only stressed syllables and that there is an overall tendency for increased duration of all phonemes in the speech of the HOH.

#### Timing & Rythm

Poor timing and rythm characteristics of deaf speech have lead to a overall decrease in their speech intelligibility.

Hearing impaired individuals were noticed to pause at inappropriate linguistic boundaries either to inspire or

alternatively to waste air and thus they produced fewer syllables per breath unit (Forner 1977)

The insertion of pauses, tends to decrease their overall speech rate.

Boone (1966) Heidings (1972) Hood (1966) John & Howarth (1985) showed that physical measures of speaking rate have shown that profound HoH speakers on the average take 1.5 to 2.0 times longer to produce the same utterance as the normal hearing speakers.

Deaf speakers fail to make the difference between the durations of stressed and unstressed syllables sufficiently larger (Stevens Etal 1978, MC Garr & Harris 1980)

Hudgins & Numbers (1942) have reported the following errors in rhythm.

(1) Sentences broken up into unusual breath groups.

(2) Word accents misplaced & normally unaccentuated syllables.

(3) Adventitious syllables added.

(4) Syllables omitted for polysyllabic words.

Brannon (1979) compared these tongue movements of deaf and hearing children by means of electronic glossal transducers. The deaf children moved their tongue slowly from one position to another & unnecessary motions were also present. They concluded by saying that timing errors extend to phonemic as well as prosodic contrasts.

Wendell Leimohn Etal (1990) have suggested that the quantity of rhythmic performance is a function of a modality of the stimulus & rhythmic performance can be improved through training their study on rhythm perception and production of HOH speakers.

From these studies its evident that the HOH speakers distort temporal aspects of speech which inturn disrupt the rhythmic aspects of speech.

(f) Respiratory Patterns in HOH speakers

HOH speakers initiate phonation at too low a level and produce a decreased numbers of syllable breath and they mismanage the volume of air by inappropriate valving at the laryngeal level.( Forner & Hixon (1976) whitehead 1982)

The various studies can be concluded as under

(a) Intelligible deaf speakers had respiratory patterns similar to those of normal speakers ( whitehead 1982)

(b) They did produce plosives and fractives with normal airflow patterns. (Whitehead 1982)

(c) HOH with poorer speech intelligibility would take in 300CC 400CC of air above functions reserve capacity prior to initiating a speech sequence while normals inhaled only 1000CC of air (Forner & Hixon 1977)

(d) Less intelligible hearing impaired speakers were often quite variable in management of airflow and they didnot

differentiate voiced and voiceless cognates aerodynamically.  
(Whitehead 1982)

The data of the above suggests that inappropriate laryngeal gestures are present in the HOH speakers that reduces their air flows.

#### Voice quality in Deaf speech

Literature supports the view that the HOH speakers have a distinctive voice quality that differentiates it from other speakers.

Monsen (1979) has quantified some of the characteristics. He analysed acoustically the duration,  $F_0$  and phonatory control and correlated with ratings of voice quality for monosyllables.  $F_0$  was the cause that differentiated HOH from other speakers.

While other deviations such as poor vowel quantity breathiness and duration errors may exert a strong influence on perceived voice quality in individual hearing impaired cases, these don't appear to be the major factors in determining the quantity of the voice.

From this it is clear that voice of HOH speakers may be due to both poor articulatory timing control and inadequate control of  $F_0$ .

Nasalisation may also be one of the factors contributing to poor voice quality.

Quantification of the degree of nasalisation for nasals

and non nasal sounds was done by Stevens et al. (1976) with the help of accelerometer. Results indicated that Hearing Impaired Children made errors on nasal stop clusters.

J.A. Tactatchell and Lapine (1991) analysed speech samples of 18 Hearing Impaired Children using nasometer. Percentage nasalance in each subject condition was compared according to the degree of Hearing loss and the age of the subject. No significant differences was found when (i) comparisons were made between younger and older groups in all the conditions and when (2) comparisons were made according to the severity of the Hearing loss across the 3 conditions.

Breathy voice is also reported in Hearing Impaired Children (Stevens Etal 1978 ) and he added that Hearing Impaired Children insert many glottolizations (insertion of glottal stops between syllables or words ) in their speech to have lower intelligibility.

Manjula P (1987) did electroglottography in 15 males & 15 females Hearing Impaired Children speakers aged 23 years. The mean open Quotient for (a) was not significantly different from males & females of Hearing Impaired Children normals. Speed Quotient & speed Index difference in Hearing Impaired Children & normals were noticed ; This study indicated that the Hearing Impaired speakers EGG patterns were deviant from normal speakers.



## PART C

### ASSESSMENT OF SPEECH & PARENTAL REPORTING

Assessment may be defined as the process of gathering information for the purpose of making a decision.

Interventionists should be familiar with procedures for communication assessment because all professionals interact and intervene with children through communication. The reasons can be outlined as follows

(a) Communication develops in accordance with a child's social, cognitive and motor skills (Mc Lean & Synder-Mc Lean 1978). Therefore early interventionists must look at communication in relation to the overall development and needs of the child as well as the intervention target of the other professionals.

(b) All professionals interact with the child through communication.

(c) Clear cut knowledge of assessment is necessary to outline therapy goals and generalise them to all environments.

According to Emerick & Hatten (1974) "Diagnosis demands a unique blending of science and art". The scientific aspect involves test data & other measurements, while the artistic aspects consists of clinical impressions derived from direct observations of behaviour and previous experience. The

combination of both scientific and artistic information results in a viable diagnostic attitude.

Literature until now, has used the following methods in the speech and language of Hearing Impaired and normal children.

- a. Non-standardised & standardised tests.
- b. Naturalistic description
- c. Clinical observation
- d. Interview Techniques
- e. Questionnaire methods

a. Standardised/Non-standardised tests :-

Non-standardised tests do not have well established norms, standardised procedures are used for test administration and interpretation. Non-standardised procedures can include developmental scales, checklists, observational samples, structured situations or procedures designed to elicit particular behaviours.

On the other hand, Standardised tests require specific instructions, & procedures to elicit behaviour and include standards or norms for scoring and interpretation.

Historically, informal techniques were used by teachers of the deaf to assess the language of their Hearing Impaired students with little consistency within or across programmes.

One of the standardised tests for assessing speech & language development of the hearing impaired children between

ages 2-8 years 11 months, was given by (Jean. S. Moog & Hun. B.Green 1975) called as the scale of early communication skills for Hearing Impaired children. The test checks receptive language, expressive language, and non-verbal expressive skills and non-verbal receptive skills. The Indian version of the test in Kannada was compiled by Swathi (1993).

Direct testing using standardised procedures and materials has been criticised as providing a restricted picture of child's abilities under artificial conditions. However they provide a means for evaluating a child's developmental status but they also can be used to evaluate child's progress in a standardised fashion and to evaluate the effectiveness of broad intervention efforts. A table of various standardised tests and information about the testing procedures, materials are provided below :

**DEVELOPMENTAL PROFILES OF SPEECH & LANGUAGE**

TEST NAME	AREAS ASSESSED	AGE RANGE	FORMAT	SCORES OBTAINED	UNIQUE ASPECTS
Birth to three developmental scales Bangs & Dodson 1979)	Problem solving, personal social skills, motor skills, general receptive and expressive language.	years	ing directions, motor verbal imitation, picture identification, naming body parts objects identification, parental report.	Age equivalent for each subtest, scores indicating energizing behaviours, profile of skills across areas.	
Communication evaluation chart. (Anderson, Miles 1963)	Overall language development.	3 yrs to 5 yrs	Observation, following directions, verbal and motor productions, drawing and answering questions,	Checklist to mark present, absent, or inconsistently present behaviours.	
Environmental Prelanguage battery Horst Heier Mc Donald 1978)	Prelinguistic skills (functional play, imitation and turn taking)	criterion nouns 1 to 2 yrs 6 yrs	Observation play, verbal and gestural imitation, object identification, following directions.	Nonverbal and verbal 'percentage scores.	Assess early communication skills.
Environmental language intervention program Mc Donald 1978)	Expressive grammatical forms & structure	nouns for 1 yr to 4 yrs 9 months	Conversation, imitation, play	Rankings, length of responses, intelligibility.	Adaptable for many different populations.
Infant communicative intent (Sacks & Young 1982)	Prelinguistic skills.	0 to 1 yr 6 month	.Observation	Checklist to mark pass/fail inconsistent behaviours.	

## STANDARDISED SPEECH DIAGNOSTIC INSTRUMENTS

TEST NAME	AREAS ASSESSED	AGE	FORMAT	SCORING
Arizona articulation proficiency scale (Firdala 1978)	Determining misarticulations and total articulation proficiency.	any age 3 to 11 yrs	Picture identification	Total score weighted for percentage each error sound is used in English.
Compton & Hulton phonological assessment (Compton & Hulton 1978)	Broad patterns of articulation errors and linguistic analysis of misarticulation.	any age	Picture identification	Summary of phonological processes used.
Goldman-Friscoe test of articulation (Goldman & Friscoe 1986)	Articulation errors and stimulability for correct production of error sounds.	2 to 16 years	Picture identification story retelling, imitation.	Percentage of speech in error.
Khan-Lewis phonological analysis. (Khan & Lewis 1986)	Diagnosis and description of articulation or phonological disorders.	any age 2 yrs to 5 yrs 11 m	Uses stimulus material from Goldman-Friscoe test of articulation, test yields errors scores percentage ranks.	Developmental phonological process rating.

**STANDARD LANGUAGE DIAGNOSTIC INSTRUCTIONS**

TEST NAME	AREAS ASSESSED	AGE RANGE	FORMAT	SCORES OBTAINED	UNIQUE ASPECTS
Assessment of children's language comprehension (Foster, Stark 1973)	Comprehension of word combinations of varying length and complexity.	3 to 6 yrs 11 months	Picture identification object manipulation parent report (base choice)	Percentage of accuracy on four subtests.	Can be adapted for children with motor impairments.
*Carrow elicited language inventory (Carrot) 1974)	Grammatical form and structure.	3 to 7 yr 11 months	Elicited imitation.	Percentile, stanine age equivalent	
*Detroit tests of learning Aptitude (Hamill & Bryant 1986)	Comprehension of grammatical form and structure	3 to 9 Yrs	Picture identification, Object identification, observation, drawing.	Percentile and standard score for general intelligence and specific skills.	Embedded subjects correspond conceptually to composites on DTLA-2
*Miller, Yoder Language comprehension test (Hiller & Yoder 1984)	Comprehension of grammatical form and structure.	4 to 8 Yrs	Picture identification.	Receptive development age and error analysis by grammatical forms,	
Peabody picture vocabulary test (Rev) Duan (1981)	(Receptive vocabulary)	1 Yr 9mon to 33 Yrs on. 8 months	Picture identification.	Receptive vocabulary age, Standard score, percentile stanine	Adaptable for children with motor impairment, Spanish translation available.
*Test of Auditory comprehension of language (Carroll & Wolfolk 1985)	Comprehension of grammatical form and structure, content and vocabulary	3 to 9 Yrs 11 months	Picture identification, Object manipulation, best choice.	Precentile rank, age equivalent,	
Preschool language Assessment Instrument (Blank, Rose & Berlin 1981)	[Discourse, general language ability.	3 to 5 Yrs	Responses to pictures, questions.	Profile discourse skills; quantitative rating of language adequacy.	Can be used with children who have poor school performance & whose language skills are questionable (upto age 18)

## (B) STANDARDISED LANGUAGE SCREENING INSTRUMENTS

TEST NAME	AREA ASSESSED	AGE RANGE	FORMAT	SCORES OBTAINED	UNIQUE ASPECTS
Bankson's language screening test (Bankson 1977)	Vocabulary, grammatical form, content visual & auditory perception.	4 Yrs 1 mon to 8 Yrs	Picture identification, Object identification, best choice imitation, sequencing & matching.	Standard duration scores, percentiles.	
* Preschool language screening test (Hannak & Gardner 1974)	Visual and auditory perception, motor skills, basic concepts.	3 Yrs to 5 Yrs 6mon	Picture identification, following directions.	Percentiles for general language ability & for specific skills.	Toddler screening to determine if basal can be established.
* North Western syntax screening test (Lee 1971)	Receptive & expressive grammatical form & structure.	3-7 Yrs 11 months	Picture identification imitation.	Age equivalent	
* Pragmatics Screening test (Pring & Weiner 1987)	Maintaining topic, formulating speech acts, narration	3 Yrs 5mon to 8 Yrs 5 mon	Gamlike tasks		
Preschool language scale (Zimse- ruance Steener 1979)	Developmental aspects of auditory comprehension, articulation grammatical form and structure, basic concepts.	1 Yr to 6 Yrs 7mon	Responses to pictures <sup>B</sup> object manipulation, picture identification following directions.	Auditory comprehension and verbal ability ages; language Quotient; profile of language use.	Spanish translation.
Receptive Expressive emergent language scale (Bzoch & League 1978)	Prelinguistic skills	1 Yr to 3 Yrs	Parent report	Receptive & Expressive communication age.	

(b) Naturalistic Description :

In general, naturalistic observation requires the professional or parent to observe the infant or pre school child in natural situations and to record various aspects of the child's behaviour. Direct description is a critical component of any assessment procedure because it provides information about how children use or do not use communication skills. (Bailey & Wolery 1989).

In 1960, Brown and Colleagues have analysed children's language in naturalistic settings i.e. at child's home and Bloom & Lahey (1978) analysed language based on the verbal output.

A developmental data base was developed by Miller (1978) to identify language disorders. He evaluated comprehension and production tasks and focussed on the definition and description of the linguistic behaviour.

Muma (1978) has also descriptively analysed, cognition,, linguistic and communicative systems and i processes. i

Fewell & Rich (1987) suggested that by using play assessment procedures the professional can obtain information about cognitive, communication & social skills. The authors found high correlations between play observational data and multiple measures of cognition, language and social



behaviour.

Omark (1981) suggested that the scan and focal techniques as 2 observational techniques that may be incorporated into the assessment of the students language status.

Indian studies conducted by Thirumalai (1972), Sridevi (1976), Prema (1979), Roopa (1980) have all used the method of assessment.

So the naturalistic description assessment method is documented to result in

- (i) increased co-operation by the child,
- (ii) easier to administer.
- (iii) provides a content for observing the child's preferred learning strategies.

(c) Clinical Observation :

Here the child's Behaviour is observed during the clinical situation. It includes observation of the non linguistic variables such as reduced attention span, distractibility, lability, rapport building, disorientation, impulsivity etc.

The information obtained from the standardised lists can be supplemented by this method and this gives full picture of an individual.

(d) Interviews:-

The rationale for interviewing as well as guidelines and a framework for conducting family interviews are

described by Winton(1988).

Interviews may be structured or open ended, and are best used in conjunction with other, more formalised assessment procedures.

Their flexibility allows the professional to explore areas of concern as they arise (odon & sheester 1986) and face to face discussions using effective communication skills convey a message to parents that their opinions are valued and respected.

#### Assessment of Children's speech by parents.

Parent participation in the assessment process by completing standardised measures, rating scales or checklists questionnaires has been a topic of considerable discussion in the profesional lliterature.(Rescorla 1993).

In particular, numerous publications have addressed the extent to which parents and professionals agree on ratings of children's abittities.

Although studies generally report a high correlation between parent and profesional ratings (Blacher-Dixon & Simonson 1981, Sonnander 1987), when the actual scores are compared the results are less clear.

Although studies on the involvement of parents in the assesment procedures have concluded the following,

(a) Parents generally rate their children's abilities

higher than professionals rate them (eg. Gradel, Thompson & Sheehan 1981, Sexton Hall & Thomas 1983)

(b) Differences in agreement with no consistent directional effects (Hardman, Feldman & Honigman 1987)

(c) No differences were reported by (Sexton, Keeley & Scot 1982)

Handen Etal(1987) also found that agreement varied according to the skill, area assessed, with greatest agreement in the areas of eating skills and specific behaviour problems and lowest agreement in speech and language.

Graded Etal(1981) discovered greater parent/professional agreement with preschool aged handicapped Children than with infants.

An important component of a preschooler's sp & language evaluation is the parental report of the child's developmental history & current levels of functioning (Pamela Hadley 1993) and hence variables associated with parent/professional agreement will continue to be explored in the professional literature.

After discussing briefly on the accuracy of the parental reports, studies reporting the involvement of parents need to be outlined.

Linchentstein and Heton 1984 have suggested 3 general methods of obtaining information from parents. They

suggested that interviews, developmental inventories, periodic inventories and comprehensive questionnaire were proved to be useful.

Guided observation technique for parents was used by Gayle Wilson (1981) to increase the confidence of parents in their abilities to interact and work successfully with their children.

#### Parental Assessment using the Questionnaire method;-

Literature holds a good note on assessment by parents by the Questionnaire method. Kurian (1977) studied the parental attitudes towards their hard of hearing children using 62 questions under 5 categories.

Elliot & Amtruster (1967)-administered the questions that they had framed to parents whose children were enrolled in a school for the deaf. Questionnaire responses analysed showed major differences between a group of severely hearing impaired and another group of severe HOH children with learning problems.

A comprehensive Questionnaire was also used by Lichentstein & Ireton (1984) for obtaining information from parents on their childrens speech and language capabilities.

Donald Groldberg Etal (1989) developed a parent checklist for placement of hearing impaired child, in a mainstreamed classroom.

A two stage screening program with parents doing the

first stage with the aid of a checklist was carried out by Asbed Etal(1970). The second stage consisted of testing by the professionals of those children whose parents had answered the Questionnaire.

Gleason & Blood (1982) examined the parents perception of child's hearing abilities by a 17 item Questionnaire. Subsequent audiological testing found 1% of the children had hearing handicap. Otological examination revealed that a significant number of children who were found to have abnormalities of the eardrum had been reported by parents as having troubled hearing.

Roman (1980) compared mother's description of their preschool childrens language with the childs demonstrated skill. Results indicated that parents could identify their preschool childrens language skill.

Kessler (1983) has reported a parent dairy which was used as an component of an assessment of the child's expressive language. The author has found this method very useful.

Suchitra M.G.(1984) has developed a correspondance course for 16 normal hearing and 16 HOH children who were selected from 9 years - 22 years and used the Questionnaire method . to parents to assess the efficacy of the correspondance course.

It can be concluded from the above studies that parents can be a very reliable source of information about their child's speech and language abilities.

The studies in the Indian context, have used spontaneous speech samples as their bases (Therumalai 1972, Sreedevi 1976, Prema 1979, Roopa 1980) and also based on the data of test administration of professionals (Karanth 1980, Basavaraj 1981, Sudha 1980). Both methods carry lots of limitations like the variants in type and spontaneity of responses.

Suma (1985) carried out a study on Assessment of child's speech by parents on 32 normal children and 13 Hard of Hearing children and Ragunath (1991) has conducted a Field study on the same.

This current study focuses on checking the reliability of parents assessment of child speech and extending the study to a larger population of parents of both hard of hearing & normal children, with clearcut classification of age groups.

The procedure for the study is discussed in the next chapter.

## METHODOLOGY

The present study is designed to check if differences in expressive, reception and other speech skills between hearing impaired children and normal children can be obtained based on parents responses from the questionnaire method.

### \* Development of the questionnaire:

Information from parents was planned to be elicited through the questionnaire.

Information on identification includes child's name, age, sex, birth order of the child. Child's placement whether the child attends school (normal, integrated, special school) or does not attend school was also included. Information on family background was included. Information on family background included questions on parents name, age, sex, education, occupation, and total income.

Information on presence / absence of consanguinity, mother tongue, other languages known and spoken by the child were also added.

The questionnaire mainly consisted of closed set of questions and a few open questions, formats.

The questionnaire was formulated based on the following area, as evident from the literatine.

- \* Nature of cry, vocalizations.
- \* Vegetative skills.
- \* Movement of articulators
- \* Prelinguistic skills.
- \* Vocabulary & Syntax.
- \* Comprehension & Expression skills.
- \* Intonation.
- \* Articulation skills.
- \* Voice quality.
- \* intelligibility of speech.
- \* Parents opinion on child's speech.
- \* Remarks on the questionnaires.

The questionnaires consisted of parts A -to J. Each parts had 2 to 5 sub questions with 3 to 4 alternative choices covering the above mentioned areas. Speech sounds and words which are used commonly both in English and Kannada were selected to obtain equivalent results. Instructions were clearly included at the beginning of the questionnaire. In the last part, parents were required to write a few lines about the child's speech.

The questionnaire was first prepared in English and then given to 5 speech pathologists and audiologists to check



for the clarity of the instructions and questions and the length and to give remarks of the questionnaire.

The questionnaire was then translated into Kannada because the native language spoken in Mysore is Kannada and then it was given to parents who know Kannada & English. They reported that questionnaire in English and Kannada was equivalent in all aspects.

The questionnaire were then distributed to parents to check if it elicited the required information about speech and language.

\*. Subjects:

1. Parents, who knew to read either Kannada or English were chosen for the study. The parents were required to volunteer for the study and they formed a heterogenous group with respect to linguistic, socioeconomic, educational and religious background.

2. The set of questions was given to parents of

a) Normal children - Who were identified by speech pathologists as having normal language, speech development and normal intelligence, and no other sensory & motor impairments.

b) Hearing impaired children - Who were identified by

speech pathologists as having congenital/ acquired, mild to profound hearing loss, with normal intelligence and who wore hearing aids and who attended speech and language therapy in speech and hearing centres.

c) The age range of hearing impaired and normal children was required to range from 0-7 years. Subjects were divided into 6 age groups.

Table - II - Showing selction of subjects

SUBJECTS	Questionnaires given	Mean Age of children	Completed Q received
Parents of hearing impaired	50	3., 9 yrs	37
Parents of normal children	60	4..2 yrs	37

Table III- showing subjects under each age range.

GROUP	AGERANGE 1-3 yrs	NO. OF 3-5 yrs	SUBJECTS 5-7 yrs
Hearing impaired children	10	12	15
Normal children	6	15	16

Procedure:

Based on the above criteria the questionnaires were

distributed to the parents.

The questionnaires were distributed to parents by speech and hearing professionals. Choices were given to the parents to choose Kannada or the English questionnaire. English questionnaire were given to parents who new only English and Kannada questionnaire to native speakers of Kannada language.

The parents were given instructions on the following:

(a) To tick the appropriate choices for each of the questions applicable to their child.

(b) To answer all questions applicable about their child.

(c) To comment on their child's speech and the effectiveness of the questionnaire.

As the questionnaires were given to parents of hearing impaired children, the speech & hearing professional was asked to check the correlation of their assessment with the parents assessments.

The questionnaires were accepted only if the parents assessments correlated with the speech and hearing professionals assessment.

\* Analysis:

Parents responses of Normal children and Hard of hearing children was analysed and compared. The results are given in the following chapter.

## RESULTS

The results of the Analysis of the collected data are discussed under the following -

- (a) Analysis of Cry
- (b) Analysis of Vocalisation
- (c) Analysis of Vegetative skills
- (d) Analysis of Articulatory skills, Intellegibility,  
Analysis of Diadekokinetic rate (DDK).
- (e) Analysis of Expressive skills
  - Speech Sounds
  - Vocabulary
  - Syntax
  - Sentence length
- (f) Analysis of Auditory skills
- (g) Analysis of Voice quality
- (h) Analysis of Social skills
- (i) parents reaction to child's speech

a. Analysis of cry :- In part A, Question a)

In the Hearing Impaired group, all the parents of the 3 age group have reported that they are able to identify the

different situations of their children's crying like hunger, pain, discomfort etc. except for 2 parents in each group who fail to identify the different contexts of the cry. The same was also reported by parents of normal children of age 1-3 years and 3-5 years.

For Question b) the parents of all the Hearing Impaired group and the normal group reported that their child's crying had variations according to various situations and was not monotonous.

b. Analysis of Vocalization :- In Part C Question b)

All the parents in the three groups of the hearing Impaired children were able to identify that their child vocalized only for less than 5 sees except for 3 parents in the other age group (5-7 years), who have reported their child's vocalization for more than 10 sees., whereas, in this skill the normal children started vocalising /a/ /i/ /n/ for more than 15 sees for the age of 1 year itself.

c. Analysis of Vegetative skills :-

There was no differences found in the Questions Part B and Part D (which assesses skills like appropriate positioning of articulators and blowing, sucking, chewing etc.) Between the three groups of Hearing Impaired and normal children both the

groups were able to perform these tasks.

d. Analysis of Articulatory skills, DDK,& Intellegibility :-

The Hearing Impaired children were clearly noted by their parents to have deviation in articulation in Question V, Part E., compared to the normal group. Parents of the 3 age ranges have reported misarticulation of their child's speech either of omissions, substitutions or both. From this there can be distinguished from the normal group, whose parents have not reported any misarticulations except for one parent whose child substituted /Ka/ for /tha/.

Analysis of diadekokinetic rate Part B Question C to E, in both the group showed that the normal children whose age ranged from 1-3 years, repeated /p/ /t/ /k/ correctly at a fast rate, whereas most parents of the 3 hearing Impaired children noted that their children repeated correctly, but only at a slower rate.

Intelligibility was rated poor, if parents noted that their child's speech was only understood by them, fair if understood by relatives and good if understood by strangers.

Parents of normal children of age 3 years and above noted that their child's speech intelligibility was good, whereas parents of all the 3 age groups of Hearing

Impaired children showed varying responses ie. either fair or poor intelligibility.

e. Analysis of Expressive skills :-

Vocabulary - Varied and inconsistent responses were noted for Question Part F-e, c. parents of 1-3 years aged Hearing Impaired children have mostly noted that their child was able to name only 2-5 of each lexical category and substituted other sounds for calling dog, cat etc., and showed gestures to indicate needs. The responses of the other two groups varied inconsistently with language level and severity of hHearing loss and amount of speech and language stimulation.

The responses of the normal children-parents of 1-3 years itself have reported that their child could name more than 10-15 items in each lexical category and spoken in words to indicate needs such as water, milk to drink etc.

-Syntax :-

For Questions d, the responses were negative for the Hearing Impaired group and Question f, parents have remarked that their child uses some other words, to indicate self, relative and others. Only 3 parents in the 3-5 years age group and 4 parents of the 5-7 years age group of Hearing Impaired children have reported that their child calls names



for indication.

In this task the hearing Impaired group, significantly differed from the normal group.

Parents of 3-5 years old normal children have reported that child used big, small, in, out, over, top and pronouns., whereas the usage of the other syntactical categories were not found to be consistent with age.

Most of the parents of Hearing Impaired have reported only 3 word sentences even in the older age group (5-7 years) whereas parents of normal children have noted that their children spoke 3 word sentences above in the age 2.5 years itself.

The responses were markedly negative for the question

a) in part F, from the parents of Hearing Impaired children only 2 parents of age groups of 3-5 years and 5-7 years have elicited repetitions of poems and rhymes with gestures. The responses were negative for singing prayers and slokas. The responses were also "no" for singing film songs.

For speech sounds, none of the age range, of Hearing Impaired children have scored 100% in all speech sounds in questions part &, whereas, all the normal children except 4 have scored 100% on all speech sounds.

**TABLE IV - Showing responses of Hearing Impaired children to speech sound**

SPEECH SOUNDS = %

No. of Subjs	a	ee	u	o	au	ya	va	sa	ka	tha	na	ga	kripa	screw	stamp	Raksha	Brush	Blade
AGE RANGE = 1 - 3 YRS																		
10	100%	80%	70%	70%	70%	60%	50%	50%	50%	30%	60%	70%	10%	10%	-	-	-	-
AGE RANGE = 3 - 5 YRS																		
12	100%	83.3%	66.6%	66.6%	66.6%	74.7%	49.8%	49.8%	66.6%	83.3%	58.1%	66.6%	-	-	-	-	-	-
AGE RANGE = 5 - 7 YRS																		
15	100%	100%	100%	92.4%	66%	33%	33%	33%	66%	66%	92.4%	26.4%	26.4%	26.1%	8.3%	26.3%	33%	26.4%
TABLE V - SHOWING RESPONSES OF NORMAL CHILDREN TO SPEECH SOUNDS																		
AGE RANGE = 1 - 3 YRS																		
16	100%	100%	100%	100%	100%	83%	100%	100%	100%	100%	100%	100%	100%	100%	83.3%	83.3%	100%	100%
AGE RANGE = 3 - 5 YRS																		
15	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
AGE RANGE = 5 - 7 YRS																		
16	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

f. Analysis of Auditory skills :-

In part H, Gross discrimination of verbal stimuli ie. 'papa'<sup>1</sup> and 'kaka' was present only in one child in age range 1-3 years and 3 children from 5-7 years and only few other parents of Hearing Impaired children group have noted that their child responded to his or her name.

So the Hearing Impaired children's performance varied on auditory awareness, localization and discrimination and was not consistent with severity of Hearing loss,

g. Analysis of voice quality :-

All parents of normal children have answered that their child does not have abnormal voice.

While parents of 6, Hearing Impaired children have delineated their child's voice to be abnormal, low intensity, harsh and hoarse voice.

h. Analysis of Socialisation :-

No significant differences are found for the Question Part I between the normal and Hearing Impaired group. Parallel play was reported consistently in both Hearing Impaired children and normal children.

i. Parent's Reactions :-

Parents of the Hearing Impaired group have shown positive reactions (6/10 in age range 1-3 years, 8/12 in age range 3-5 years and 13/15 in age range 5-7 years) ie. they are affected by their child's abnormal speech and so they are working to give more stimulation to child's speech by talking to the child often and also making others talk to the child.

Parents of the normal children have reported that after answering the Questionnaire they were able to observe their child's speech behaviour more meaningfully.

Parents of the Hearing Impaired children have reported that a checklist as the present one, was helpful in monitoring their child's current level of functioning and gives clues for a base line of Therapy programme to be formulated.

## DISCUSSION

1. Calvert (1961) showed that HOH speakers extended their duration of vowels, fricatives and closure period of plosives upto five times the average deviation of normal speakers. Failure of the HOH children on items of articulation could be attributed to this.

Shukla (1987) has also showed a reduced articulatory and diadekokinetic rate in HOH speakers. The present study stands in agreement that HOH children were only able to repeat syllables /p/ /t/ /k/ correctly but only at a slower rate. The reasons for this was given by Hudgins(1946) who found that Hearing Impaired children use short irregular breath groups often with only one or two words and breath pauses that interrupted the flow of Speech at inappropriate places.

2. Normal children except 4 in age group 1-3 years , have scored 100% in all speech sounds. The present results are in agreement with studies of Menyuk (1971) who reported mastery of consonants /b/ /m/, /n/, /f/, /w/, /h/ , /p/, /g/, /k/, /j/ and /l/ by 4 years consonant clusters such as /st-/, /sm-/ /sn-/' /pr-/' /Dr-/' were repeated at age four by Templin

(1975), whereas for the Hearing Impaired group, misarticulation of consonantal blends was reported by Hudgins & Numbers (1945) and this is in agreement that the Hearing Impaired children have not scored 100% on all Speech sounds, across any age group.

3. The observation that Hearing Impaired children were equivalent to normal children for the Vegetative skills and another activities such as positioning of lips for 'aa<sup>1</sup>, sucking, chewing etc. can be attributed to the fact that Hearing Impaired children easily learn these tasks through imitation by tactile, kinesthetic and visual feedbacks.

4. The varying responses of the Hearing Impaired children on tasks like naming of lexical categories, usage of pronouns and other grammatical could be attributed to the amount of receptive and expressive language levels, of each child.

Though Literature Quotes that usage of "what", "where", "who", "why", "how" in 4 year old children (Roopa 1982), "why", "who", at 3.5 to 4 years age group (Basavaraj 1981), in the present study, these grammatical responses were not found consistent with age in all the age groups.

5. Some parents have quoted their Hearing Impaired child's voice to be of low intensity, harsh, hoarse and breathy.

There are evidences quoted in the Literature for the abnormal voice quality in the Hearing Impaired speakers.

Stevens etal (1976) has reported nasalised voice quality in Hearing Impaired speakers. Monsen (1979) has reported breathiness and said that the poor voice quality may be due; the poor articulatory timing control and inadequate control of fundamental frequency.

6. The negative responses for the Question h in part F could be because, parents of Hearing Impaired speakers concentrate more on teaching spontaneous speech to their children, rather than these aspects and musical quality.

7. Suma (1985) has concluded that from the parents responses, it was possible to identify, the

(a) Substitutions present in their children

(b) The grammatical categories which had not been acquired by their children.

She included 13 Hearing Impaired children and 32 normal children in her study.

In addition, from the present study, we can conclude, that parents of Hearing Impaired identified, poor intelligibility in their child's speakers and poor voice quality.

Creating an awareness in parents that they can be involved in their child's assessment of speech and language skills and as they have responded positively, it is very conducive to call them for early identification of Speech problems in children.

Parents of Hearing Impaired children, by this Questionnaire, have learnt to assess their child's present Speech and language level. This would serve as a baseline for them to monitor progress in their child.

Since, examining the Questionnaire method revealed the child's level of speech, Suma(1985), had recommended the study on a larger population with inclusion of more grammatical categories.

As this study was carried out on 37 Hearing Impaired children and 37 normal children and included more grammatical categories, the objectives of the study are fulfilled and further studies can be taken up.

From the discussion we clearly see that parents assessment, responses are in agreement with that of professionals cited in the Literature.



## SUMMARY AND CONCLUSIONS

The present study was designed to find out whether the parents of the hard of hearing and normal children can find out difference in expressive and receptive and other speech skills through the questionnaire method. The study was aimed at expanding the data into a large group of children and also include many grammatical categories in the Questionnaire.

The Questionnaire was prepared both in English and in Kannada and distributed to HOH and normal children through the Speech and Hearing Professionals.

Data was collected from parents of 37 HOH children and 37 normal Children.

A descriptive analysis was done and so they were classified into three age groups in each group. The age ranges were 1-3 years and 5-7 years.

The results of the data can be summarised as :

1. Differences were not found between the two age groups of hearing Impaired children and normal children on vegetative skills, types of cry and social skills.

2. Differences were found in expressive skills i.e., vocabulary naming of objects auditory skills, between the hearing impaired group and normal group.

3. As discussed earlier in hard of hearing group based on the parents responses it was possible to identify the following.

(a) The sound substitutions, omissions.

(b) The categories of speech which was not acquired by their children.

(c) Minimal usage of descriptive language such as , slokas, prayers etc.

(d) Intelligibility of their child's Speech.

Based on the present study it is possible to differentiate expressive skills such as amount of vocabulary, naming of objects and comprehension skills between the Hard of hearing and normal children based on the parents responses from the Questionnaire method.

Recommendations for further research :-

(i) The Questionnaire can be translated into other native languages and hence collected from parents of different populations.

(ii) Other speech disorders like MR, Cerebral Palsy, Autism, learning disability, can be investigated by the Questionnaire

method.

(iii) Another method of investigation such as the interview method can be used in conjunction with the Questionnaire method to check the validity and compare responses of parents obtained by both the methods.

(iv) Such a method could be used by the parents to assess the progress of the Speech and language therapy programme attended by their children.

(v) A cassette and video version of the Questionnaire can be used to compare the results obtained by both the methods.

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# APPENDIX-A

ALL INDIA INSTITUTE OF SPEECH AND HEARING: MYSORE 6

## QUESTIONNAIRE 1

### GENERAL INFORMATION

1. Child's Name : Age : Sex :
2. No.of siblings: Brothers Sisters
3. Birth order of the child: \_\_\_\_\_ First \_\_\_ Second \_\_\_ Third
4. Education : \_\_\_\_\_ Attending \_\_\_\_\_ Not  
School attending
5. Placement : \_\_\_\_\_ Special school \_\_\_ integrated  
\_\_\_\_\_ Normal school
8. Peformance : \_\_\_\_\_ Poor \_\_\_ Fair \_\_\_ Good
7. Mother tongue :
8. Languages : \_\_\_\_\_ Knows one \_\_\_\_\_ Knows wore  
Language than one
8. Father's name : Mother's name :
10. Age & Education: Age & Education:
11. Occupation : Occupation :
12. Total Income of the Family :
13. Is your husband/wife your blood relative? \_\_\_\_\_ Yes \_\_\_\_\_ No  
(If yes specify)

### INSTRUCTIONS

- \* Wherever choices are given by boxes, tick appropriate box  
Eg. Yes No Cannot say
- \* Tick only one choice for all questions
- \* Fill in Informations wherever necessary
- \* Write "NA" If the question is not applicable to your child
- \* Ask for help, if you cannot understand
- \* Answer all the question
- \* Give remarks for the questionnaire.

PART A: (Tick Appropriate box)

a) When your child cries, can you find out whether he/she

Pain  Discomfort  Hunger  Fear  Restless  No

b) How is the cry of your child? it is  Monotonous  Has variations

PART D : (Tick Appropriate box)

a) Does your child do the following "as you do"

-> Opening the mouth to say "aa"  Does fully without assistance  
 Does with assistance only.

- > Rounds the lips to Say "oo"  Does fully without assistance  
 Does with assistance only.

-> Closes lips tightly to say "pa"  Does fully without assistance  
 Does with assistance only.

b) Does the child have difficulty in moving the tongue  Yes  No  
from one side to another?

c) Repeats 'papa' 'tata' 'kaka'  Correctly  Slowly

d) Repeats 'pata' in sequence  Correctly and at faster rate  
 Correctly but at slower rate

e) Repeats 'pa ta ka' in sequence -  Correctly and at faster rate  
 Correctly but at slower rate.

PART-C (Tick Appropriate boxes)

(a) Can your child vocalise such as saying aa..., ii..., uu  Yes  No

(b) If yes, the child can vocalise

aa, for  less than 5 secs  more than 5 secs  more than 10 secs  more than 15 secs

ii for  less than 5 secs  more than 5 secs  more than 10 secs  more than 15 secs

uu for  less than 5 secs  more than 5 secs  more than 10 secs  more than 15 secs

PAKT-D (Put a ' ' mark in appropriate column)

(a) BLOWING

- can your child do the following? (tick appropriate column)

	Yes	Has difficulty	Cannot do
--	-----	----------------	-----------

-> Blowing bits of paper

-> Blowing bubbles with soap water

-> Blowing out candles

(b) SUCKING

-> Can suck liquids through straw

-> Can pick up small cut pieces through straw

(c) BITING

-> Bite solids like"  
(Bread, Rice, Chocolates etc)

-> Bite semi solids like  
(Kanji, Icecream, *smashed* potatoes, etc)

(d) Can your child chew food materials like bread, \_\_\_\_\_ Yes \_\_\_\_\_ No  
chocolates, carrots, biscuits etc.

Does the child have any difficulties while chewing \_\_\_\_ Yes \_\_\_\_\_ NO  
like muscular weakness, on side both sides.

PAET-K

V. Can your child say the following sounds and words?

(Tick ' ' in Appropriate column)

Sounds	Says correctly	Says only with help of clues	Does not say
"a' as in 'amma' 'oo' 'u' 'oo' as in 'oh' 'au' as in out 'ya' 'va' 'ga' <sup>1</sup> 'ka' 'tha' 'ma' 'ga'			

kripn

akiaw

~~stang~~<sup>1</sup>  
Blade<sup>1</sup>

---

Raksha<sup>1</sup>

you

Family  
Members

StrangeYS

-> When your child speaks these sounds  
words and other words is it understood  
by -> (say Yes/No in appropriate column)

-> Does your child substitute one of more  
sounds for another in initial, medial  
final positions of words like /ka tha/  
for /tha tha/  
/Bithet/ for Biscuit  
/Buth/ for Book

Yes

No

-> Does your child omit one or more sounds  
in initial, medial, final positions of  
words, sentences like /dek/ for /desk/  
/bool/ for /book/

---

#### PART-F

VI. a) Does your child know animals, vegetable, birds, & vehicles etc. • Yes • No

b) How does your child show and name?

Cat -> • Calls by name • Calls mew-mew • Calls 'ca'  
• Calls 'by' Some other names

Dog -> • Calls by name • Calls bow-bow • Calls 'Bo'  
• Calls 'by' some other names/sounds

vehicles -> • Calls by name • Calls drr-drr • Calls 'ca'  
• Calls 'by' some other names/sounds

Parents > • Calls by name • Calls amma appa  
• calls 'by' some other names

Relatives like aunty, uncle-> • Calls name • Calls by some other names

c) Can your child . . . . . (Put ✓ in appropriate box)

	Names less than 2	Names 2-5	Names 5-10	Names 11
Name body parts 1 like eye, nose, ear, mouth				
-> Name fruits like apple grapes, mango				
-> Name colours like red blue, green etc.				
-> Name objects 1 like furniture, pencil, pen et				
Name clothing like shirt, saree, blouse, etc.				

d) Can your child use the following words (Tick Appropriate boxes)

-> Dig, small, long, tall, short, fat, thin

- Uses all of them
- Uses some of them
- Does not know any

-> More, less

- Uses both
- Uses only one
- Does not know both

-> in, out, up, down, over, top, near, next, behind

- Uses all
- Uses some
- Does not know any of them

e) How does your child indicate the following (Tick ✓ in column)

	Does action	Says in words	Does not know
-> drinking water, milk, etc	S		
Eating biscuits, chocolates icecrems			
-> Wanting to pay with toys			
Wanting to use the toilet etc.			

1)

a) How does your child identify himself /herself?

- Says name
- Says I. me, mine
- Says something else
- Does not



b) How does she/he identify others?

- Says name
- Says he,
- Says something else
- Does not know /say

c) How does she/he identify objects

- Says name
- Says this that, me, mine
- Says something else
- Does not Know/say

d) Does your child ask questions like who, what, where, when

- Yes
- No
- Uses some of them

G)

- a) Says one word sentences -----> • Yes • No
- b) Says two word sentences like 'ama ba' -----> • Yes • No
- c) Says three word, four, word sentences -----> • Yes • No
- d) Long sentences (5 words or more in a sentence) -----> • Yes • No

tick the appropriate :-

	Repeats	Repeats with action	Hums	Does only action	Does not and say
Syllables					
Nursery rhymes					
Poems					
Film songs					
Prayers, Slogas					
short stories					

PART-G

-> Do you feel that the voice of your child is normal? • Yes • No

-> If No, is the voice (tick appropriate)

- Very low pitched
- Very high pitched
- Very loud
- Very soft
- Monotonous
- Nasalised
- Rough
- Husky
- Harsh

PART-H

- > Does your child respond to name ? • Yes • No • Some times
- > Responds to ear horn, door bell dog barking etc. ? • Yes • No • Sometimes
- > knows differences between some gross Bounds like door knock and telephone ringing ? • Yes • No • Sometimes
- > Differentiates between speech sounds Like 'papa' from 'kaka' etc. ? • Yes • No • Sometimes

PART-I

- > Does your child play by himself/herself • Yes • No • Sometimes
- > Flays with other children • Yes • No • Sometimes
- ~> Prefers to play by himself/herself, even in the presence of other children • Yes • NO • Sometimes
- > Talks while playing • Yes • No • Sometimes

PART-J

- a) Do you and other members of family, when you're with him, her, talk to the child?
  - Often • Sometimes • Speak only through gesture
- b) Are you affected by other's reaction towards your child's abnormal speech?
  - Yes • No • Child does not have abnormal Special
- b) Write in few lines about your child speech

c) Remarks on the questionnaire

- Too short • Too long • Appropriate
- Good and easy to answer
- Difficult and needs improvement
- Others (Specify)

ಅಖಿಲ ಭಾರತ ವಾಕ್ಪ್ರವಾಹ ಸಂಸ್ಥೆ - ಮೈಸೂರು-6

ಪ್ರಶ್ನಾವಳಿ

APPENDIX - B

ಸಾಮಾನ್ಯ ವಿಷಯಗಳು :

1. ಮಗುವಿನ ಹೆಸರು : ವಯಸ್ಸು : ಲಿಂಗ :
2. ಓದುತ್ತಿರುವ ವರ್ಷ : ಸಹೋದರರು : ಸಹೋದರಿಗಳು :
3. ಮಗುವಿನ ಜನನ ಕ್ರಮಸಂಖ್ಯೆ  ಮೊದಲನೆ  ಎರಡನೆ  ಮೂರನೆ  ಬೇರೆ
4. ವಿದ್ಯಾಭ್ಯಾಸ :  ಶಾಲೆಗೆ ಹೋಗುತ್ತಿರುವನು  ಇಲ್ಲ
5. ಓದುತ್ತಿರುವ ಶಾಲೆಯು  ಸಾಮಾನ್ಯ ಶಾಲೆ  ವಿಶೇಷ ಶಾಲೆ
6. ಶಾಲೆಯಲ್ಲಿ ಕಲಿಯುತ್ತಿರುವ ಮಟ್ಟ :  ಬಹಳ ಕಡಿಮೆ  ಪರವಾಗಿಲ್ಲ  
 ಹೆಚ್ಚಾಗಿದೆ
7. ಮಾತೃಭಾಷೆ :
8. ಗೊತ್ತಿರುವ ಭಾಷೆಗಳು :  ಒಂದೇ ಭಾಷೆ  ಒಂದಕ್ಕಿಂತ ಹೆಚ್ಚು ಭಾಷೆಗಳು
9. ಮಗುವಿನ ತಂದೆಯ ಹೆಸರು : ಮಗುವಿನ ತಾಯಿಯ ಹೆಸರು :
10. ವಯಸ್ಸು ಮತ್ತು ವಿದ್ಯಾಭ್ಯಾಸ : ವಯಸ್ಸು ಮತ್ತು ವಿದ್ಯಾಭ್ಯಾಸ :
11. ಕೆಲಸ : ಕೆಲಸ :
12. ಸಂಸಾರದ ಒಟ್ಟು ಆದಾಯ :
13. ನಿಮ್ಮ ಗಂಡ:ಹೆಂಡತಿ ರಕ್ತ ಸಂಬಂಧಕರೇ  ಹೌದು  ಇಲ್ಲ  
ಹೌದಾದರೆ ಹೇಗೆ ತಿಳಿಸಿ

ಸೂಚನೆಗಳು :

ಕೆಳಗೆ ಕೊಟ್ಟಿರುವ ಅಂಶಗಳಲ್ಲಿ ಒಂದು ಅಂಶವನ್ನು (✓) ಗುರುತಿಸಿ ತಿಳಿಸಿ :

- ಒಂದು ಪ್ರಶ್ನೆಗೆ ಒಂದೇ ಉತ್ತರವನ್ನು ಅರಿಸಬೇಕು.
- ಅಗತ್ಯವಿಲ್ಲದಿದ್ದರೆ ಉತ್ತರವನ್ನು ಬರೆಯಿರಿ.
- ನಿಮ್ಮ ಮಗುವಿಗೆ ಸಂಬಂಧ ಪಡದ ಪ್ರಶ್ನೆ ಇದ್ದಲ್ಲಿ, ಸಂಬಂಧವಿಲ್ಲ ಎಂದು ಬರೆಯಿರಿ.
- ಗೊತ್ತಾಗದೆ ಇದ್ದಲ್ಲಿ ಸಹಾಯವನ್ನು ಕೇಳಿ.
- ಎಲ್ಲ ಪ್ರಶ್ನೆಗಳನ್ನು ಉತ್ತರಿಸಿ.
- ನಿಮ್ಮ ಅನಿಸಿಕೆಗಳನ್ನು ಪ್ರಶ್ನಾವಳಿಯ ಕೊನೆಯಲ್ಲಿ ತಿಳಿಸಿ.

PART 'A'

'ಅ' ಭಾಗ

ಸರಿಯಾದ ಟಿಪ್ಪಣಿಗಳಲ್ಲಿ (✓) ಕೆಲ ಗುರುತು ಮಾಡಿ :

1. ನಿಮ್ಮ ಮಗುವು ಆಳುವಾಗ ನಿಮಗೆ ಕೆಲ ಕೆಳಗಿನವುಗಳಲ್ಲಿ ಯಾವುದಕ್ಕಾಗಿ ಅಳುತ್ತಿರುವನು:ಳು ಎಂದು ತಿಳಿಯುತ್ತದೆ ?  
 ನೋವು  ಆಸವಾಧಾನ  ಹಸಿವು  
 ಭಯ  ತಳವುಳ  ಇಲ್ಲ

2. ನಿಮ್ಮ ಮಗುವು ಅಳುವಾಗ,

- ಧ್ವನಿಯು ಒಂದೇ ತರಬಾಂಗಿರತುಡೆಯೇ ?
- ತುಂಬಾ ವಿರಳತಗಳು ಇರುತ್ತದೆಯೇ ?

PART 'B'

'ಆ' ಭಾಗ

ನರಿಯೂದ ತಲಿಗಳಲ್ಲ (✓) ಈ ಗುರುತು ಮಾಡಿ :

1. ನಿಮ್ಮ ಮಗುವು ನೀವು ಮಾಡಿದಂತೆ, ಈ ಕೆಳಗಿನವುಗಳನ್ನು ಮಾಡುವನೇ, ಮಾಡುವಳೇ ?

- 1. ಬಾಯನ್ನು 'ಆ' ಎಂದು ಹೇಳಲು ತೆರೆಯುವುದು.
- 2. ಸಂಪೂರ್ಣವಾಗಿ ಯಾವುದೇ ಸಹಾಯವಿಲ್ಲದೇ ಮಾಡುವನು:ಳು
- 3. ಸಹಾಯ ಪಡೆದು ಮಾಡುವನು:ಳು.

ತುಲಿಗಳನ್ನು 'ಉ' ಎಂದು ಹೇಳುವಂತೆ

ಸಂಪೂರ್ಣವಾಗಿ ಸಹಾಯವಿಲ್ಲದೇ ಮಾಡುವನು:ಳು

ಸಹಾಯ ಪಡೆದು ಮಾಡುವನು:ಳು

ತುಲಿಗಳನ್ನು 'ಪ' ಹೇಳುವಂತೆ ಭ್ರೂವಾಗಿ ಮುಚ್ಚುವನು:ಳು

ಸಂಪೂರ್ಣವಾಗಿ ಸಹಾಯವಿಲ್ಲದೇ ಮಾಡುವನು:ಳು

ಮಗುವಿಗೆ ನಾಲಗೆಯನ್ನು ಒಂದೇ ಭಾಗದಿಂದ ಇನ್ನೊಂದು ಭಾಗಕ್ಕೆ ತಳ್ಳುವುದು ಕಷ್ಟವೇ ?

- ಹೌದು  ಇಲ್ಲ

'ಪಪ', 'ಬಬ', 'ಕಕ' ವನ್ನು ಮನರೂಪಿಸುವಾಗ

- ನರಿಯೂದಿ ಉಚ್ಚರಿಸುವನು:ಳು
- ನಿಧಾನವಾಗಿ ಉಚ್ಚರಿಸುವನು:ಳು

'ಪ' 'ಬ' ವನ್ನು ಒಟ್ಟಾಗಿ ಉಚ್ಚರಿಸುವಾಗ,

- ನರಿಯೂದಿ, ವೇಗವಾಗಿ ಉಚ್ಚರಿಸುವನು:ಳು
- ನರಿಯೂದಿ, ನಿಧಾನವಾಗಿ ಉಚ್ಚರಿಸುವನು:ಳು

'ಪ' 'ಬ' 'ಕ' ಒಟ್ಟಾಗಿ ಉಚ್ಚರಿಸುವಾಗ

- ನರಿಯೂದಿ, ವೇಗವಾಗಿ ಉಚ್ಚರಿಸುವನು:ಳು
- ನರಿಯೂದಿ, ನಿಧಾನವಾಗಿ ಉಚ್ಚರಿಸುವನು:ಳು

PART 'C'

'ಇ' ಭಾಗ

ನಿಮ್ಮ ಮಗುವು 'ಆ' 'ಈ' 'ಉ' ಉಚ್ಚರಿಸುವನೇ ?

- ಹೌದು  ಇಲ್ಲ

ಹೌದಾದರೆ, ಮಗುವು

- 'ಅ' ವನು  5 ನೆಕೆಂಡುಗಳಿಗಿಂತ ಕಡಿಮೆಕಾಲ ಉಪ್ಪರಿಸುವನು.  
 10 ನೆಕೆಂಡುಗಳಿಗಿಂತ ಹೆಚ್ಚುಕಾಲ ಉಪ್ಪರಿಸುವನು  
 15 ನೆಕೆಂಡುಗಳಿಗಿಂತ ಹೆಚ್ಚುಕಾಲ ಉಪ್ಪರಿಸುವನು

- 'ಆ' ಯನು  5 ನೆಕೆಂಡುಗಳಿಗಿಂತ ಕಡಿಮೆಕಾಲ ಉಪ್ಪರಿಸುವನು:ಳು  
 10 ನೆಕೆಂಡುಗಳಿಗಿಂತ ಹೆಚ್ಚುಕಾಲ ಉಪ್ಪರಿಸುವನು:ಳು  
 15 ನೆಕೆಂಡುಗಳಿಗಿಂತ ಹೆಚ್ಚುಕಾಲ ಉಪ್ಪರಿಸುವನು:ಳು

- 'ಊ' ವನು  5 ನೆಕೆಂಡುಗಳಿಗಿಂತ ಕಡಿಮೆಕಾಲ ಉಪ್ಪರಿಸುವನು:ಳು  
 10 ನೆಕೆಂಡುಗಳಿಗಿಂತ ಹೆಚ್ಚುಕಾಲ ಉಪ್ಪರಿಸುವನು:ಳು  
 15 ನೆಕೆಂಡುಗಳಿಗಿಂತ ಹೆಚ್ಚುಕಾಲ ಉಪ್ಪರಿಸುವನು:ಳು

PART 'D'

ಶಿಕ್ಷಣ

ನಿಮ್ಮ ಮಗುವು ಈ ಕೆಳಗಿನವುಗಳನ್ನು ಮಾಡುವನೆ:ಳೆ ?

---

ಹೌದು ಕಷ್ಟವಾಗುತ್ತದೆ ಮಾಡಲಾಗುವುದಿಲ್ಲ

---

ವೇಪರ ಜಾರುಗಳನ್ನು

ಉಡುವುದು

ನೋಡುವ ನೀರಿನಲ್ಲಿ ಗುಳಿಗೆ

ಳನ್ನು ಉಡುವುದು

ಕಾಂಡಲೆ:ಮೇಲದಬತ್ತಿ

ಯನ್ನು ಉಡುವುದು

---

2 } ಶಿಕ್ಷಣವಾದುದು

- ಸ್ವಲ್ಪ ಮೂಲಕ ಭ್ರಮೆ ಪದಾರ್ಥಗಳನ್ನು ಶಿಕ್ಷಣವನೆ:ಳೆ

- ಸ್ವಲ್ಪ ಮೂಲಕ ಪಿಕ್ಟು ತುಂಡುಗಳನ್ನು ತೆಗೆಯ ಬಲ್ಲನೆ:ಳೆ

ಕಟ್ಟುವುದು

ಗಟ್ಟು ಪದಾರ್ಥಗಳನ್ನು ಕಟ್ಟಬಲ್ಲನೆ:ಳೆ  
(ಬ್ರಿಡ್, ಅನ್ನು, ಪಾಕರೇಟ್ ಇತ್ಯಾದಿ )

ಅರಿಗಟ್ಟು ಪದಾರ್ಥಗಳನ್ನು ಕಟ್ಟ ಬಲ್ಲನೆ

(ಗಂಜ, ಐನಕ್ರೀಂ, ಮಡಿ ಮಾಡಿದ ಅಲೂಗಡ್ಡೆ ಇತ್ಯಾದಿ)

- ನಿಮ್ಮ ಮಗುವು ಬ್ರಿಡ್, ಪಾಕೋರೇಟ್, ಅಹಾರ ಇವುಗಳನ್ನು ಅಗಿಯಬಲ್ಲನೆ:ಳೆ

ಹೌದು  ಇಲ್ಲ

ನಿಮ್ಮ ಮಗುವು ಅಹಾರವನ್ನು ಅಗಿಯುವಾಗ ದವಡೆಯಲ್ಲಿನ ತೊಂದರೆಗಳನ್ನು  
ಅನುಭವಿಸುತ್ತಿರುವನೇ?

ಹೌದು  ಇಲ್ಲ

PART 'E'

ನಿಮ್ಮ ಮಗುವು ಕೆಳಗಿನ ಶಬ್ದ ಹಾಗೂ ಪದಗಳನ್ನು ಹೇಳಬಲ್ಲನೇ?

ಪದಗಳು ಸರಿಯಾಗಿ ಹೇಳುವನು:ಳು ಬೇರೆಯವರ ಸಹಾಯ ಹೇಳಲಾಗುವುದಿಲ್ಲ  
ದಿಂದ ಹೇಳುವನು:ಳು

1. ಅ
2. ಆ
3. ಉ
4. ಊ
5. ಯ
6. ವ
7. ಖ
8. ನ
9. ತ
10. ಥ
11. ಮ
12. ಗ
13. ಕೃಪ
14. ಸೂಜಿ
15. ಸಾಂಪು
16. ರಕ್ತ
- ~~17. ಗಾಳಿ~~
- ~~18. ಗಾಳಿ~~
19. ಬುಜ
20. ಬೀಜ

ನಿಮ್ಮ ಮಗುವು ಈ ಶಬ್ದಗಳನ್ನು ಹೇಳುವಾಗ ಅದು ಯಾರಿಗೆ ಅರ್ಥವಾಗುವುದು

ನಿಮಗೆ  ಮನೆಯ ಇತರ ವ್ಯಕ್ತಿಗಳಿಗೆ ಅಪರಿಚಿತರಿಗೆ

ಹೌದು: ಇಲ್ಲ ಎಂಬುದನ್ನು ಸರಿಯಾದ ವಿಧದಲ್ಲಿ ಗುರುತಿಸಿ

ನಿಮ್ಮ ಮಗುವು ಒಂದು ಅಥವಾ ಹೆಚ್ಚು ಶಬ್ದಗಳನ್ನು ಪ್ರಾರಂಭ, ಮಧ್ಯದ ಅಥವಾ ಕೊನೆಯ ಭಾಗಗಳಲ್ಲಿ (ಕೆಳಗಿನ ಪದಗಳಲ್ಲಿ) ಬದಲಾಯಿಸುವನೇ

' ತ ' ಧ ' ಧ ' ದ ' ಗಾಗಿ

ಬ್ರೇಕ್‌ಡೌನ್ ಬನ್ನಿಗಾಗಿ

' ಬುಕ್ ' ಬುಕ್ ' ಗಾಗಿ

ನಿಮ್ಮ ಮಗುವು ಒಂದು ಅಥವಾ ಹೆಚ್ಚು ಶಬ್ದಗಳನ್ನು ಪ್ರಾರಂಭ, ಮಧ್ಯದ ಅಥವಾ ಕೊನೆಯ ಭಾಗಗಳಲ್ಲಿ ಬದಲಾಯಿಸುವನೇ ?

' ಹೆ ' ಹೆ ' ಗಾಗಿ ' ಬು ' ಬುಕ್ ' ಗಾಗಿ

PART ' ೪ '

ಭಾಗ ' ೮೮ '

ನಿಮ್ಮ ಮಗುವಿಗೆ ಪ್ರಾಣಿಗಳು, ತರಕಾರಿಗಳು, ಪಕ್ಷಿಗಳು, ವಾಹನಗಳು ಇತ್ಯಾದಿ ಗುರುತಿಸುವೆಯೇ ?

ಹೌದು  ಇಲ್ಲ

ನಿಮ್ಮ ಮಗುವು ತೋರಿಸಿ, ಹೆಸರಿಸುವಾಗ

- ಬೆಕ್ಕನ್ನು  ಬೆಕ್ಕು ಎಂದು ಹೇಳುವನು:ಳು  
 ಮ್ಯಾಕ್ - ಮ್ಯಾಕ್ ಎಂದು ಹೇಳುವನು:ಳು  
 ಬಿ ಎನ್ನುವನು:ಳು  
 ಬೀರೆ ಹೆಸರುಗಳಿಂದ ಹೇಳುವನು:ಳು
- ನಾಯಿಯನ್ನು  ನಾಯಿ ಎಂದು ಹೇಳುವನು:ಳು  
 ಬೌವ್ ಬೌವ್ ಎಂದು ಹೇಳುವನು:ಳು  
 ನಾ ಎಂದು ಹೇಳುವನು:ಳು  
 ಬೀರೆ ಹೆಸರು:ಶಬ್ದಗಳನ್ನು ಹೇಳುವನು:ಳು

- ಕಾರನ್ನು  ಕಾರು ಎಂದು ಹೇಳುವನು:ಳು  
 ಕರ್ ಕರ್ ಎಂದು ಹೇಳುವನು:ಳು  
 ಕಾ ಎಂದು ಹೇಳುವನು:ಳು  
 ಬೀರೆ ಹೆಸರು:ಶಬ್ದಗಳನ್ನು ಹೇಳುವನು:ಳು

- ತಂದೆ ತಾಯಿಯನ್ನು  ಅಮ್ಮ, ಅಪ್ಪ ಎಂದು ಹೇಳುವನು:ಳು  
 ಅಮ್ಮ್ ಅಪ್ಪ್ ಎಂದು ಹೇಳುವನು:ಳು  
 ಬೀರೆ ಹೆಸರುಗಳನ್ನು ಹೇಳುವನು:ಳು

ಜಿಕ್ಕನ್ನು ಜಿಕ್ಕು (ಸಂಬಂಧಿಕರನ್ನು)

- ಜಿಕ್ಕು, ಜಿಕ್ಕು ಎಂದು ಕರೆಯುವನು:ಳು  
 ಬೀರೆ ಹೆಸರುಗಳಿಂದ ಕರೆಯುವನು:ಳು

ನಿಮ್ಮ ಪುಗುವು  
ದೇಹದ ಭಾಗಗಳನ್ನು  
(ಕಣ್ಣು, ಕಿವಿ, ಮೂಗು  
ಇತ್ಯಾದಿ )  
ಹೇಳುವನೆ:ಳೆ

- ಹಾಲುಗಳು (ಪೂವು,  
ನೇಬು, ದ್ರಾಕ್ಷಿ ) ಇತ್ಯಾದಿ  
ಹೇಳುವನೆ:ಳೆ

- ಚೂರುಗಳು (ಕೆಂಪು, ನೀಲ,  
ಹಸಿರು, ಇತ್ಯಾದಿ )  
ಹೇಳುವನೆ:ಳೆ ?

- ಒಲೆಯಾಳುಗಳನ್ನು,  
ಬೆಣ್ಣೆ, ಬೆಣ್ಣೆ ಇತ್ಯಾದಿ  
ಹೇಳುವನೆ:ಳೆ

- ಬಟ್ಟೆಗಳನ್ನು, ಶರ್ಟ್, ಸೀರೆ,  
ಬ್ಲೌಸ್ ಇತ್ಯಾದಿ ಹೇಳುವನೆ:ಳೆ

ನಿಮ್ಮ ಪುಗುವು ಈ ಕೆಳಗಿನ ಪದಗಳನ್ನು ಉಪಯೋಗಿಸಬಲ್ಲನೆ:ಳೆ

- ಬೊಟ್ಟೆ, ನಣು, ಉದ್ದ, ಎತ್ತರ, ದಪ್ಪ, ತೆಳು

ಎಲ್ಲವನ್ನೂ ಉಪಯೋಗಿಸುವನು:ಳು  ಒಂದನ್ನು ಮಾತ್ರ ಉಪಯೋಗಿಸುವನು:ಳು  
 ಯಾವುದೂ ಗೊತ್ತಿಲ್ಲ

- ಹೆಚ್ಚು, ಕಡಿಮೆ

ಎರಡನ್ನು ಉಪಯೋಗಿಸುವನು:ಳು  ಒಂದನ್ನು ಮಾತ್ರ ಉಪಯೋಗಿಸುವನು:ಳು  
 ಎರಡೂ ಗೊತ್ತಿಲ್ಲ

- ಒಳಗೆ, ಹೊರಗೆ, ಮೇಲೆ, ಕೆಳಗೆ, ಹತ್ತಿರ, ದೂರ, ಅಡಿಯಲ್ಲಿ

ಎಲ್ಲವನ್ನೂ ಉಪಯೋಗಿಸುವನು:ಳು  ಕೆಲವನ್ನು ಉಪಯೋಗಿಸುವನು:ಳು  
 ಯಾವುದೂ ಗೊತ್ತಿಲ್ಲ

ನಿಮ್ಮ ಪುಗುವು ಕೆಳಗಿನವುಗಳನ್ನು ಹೇಗೆ ನೋಡುತ್ತಾನೆ:ಳೆ

ನಂಜಿಗಿಂಥ ವಾಗ್ಗಿಂಥ ಗೊತ್ತಿಲ್ಲ

- ಹಾಲು ನೀರು ಕುಡಿಯುವುದು

- ಪಾಕೋಲಿಷ್, ಬಿಸ್ಕಿಟ್, ಡ್ರಾಕ್ಟಿಂಗ್  
ತಿನ್ನುವುದು

- ಆಟ ನಾಪಾಲುಗಳೊಂದಿಗೆ  
ಆಟವಾಡುವುದು

- ಮೂತ್ರ ವಿಸರ್ಜನೆಗೆ  
ಹೋಗಬೇಕಾದರೆ

ನಿಮ್ಮ ಪುಗುವು ತನ್ನನ್ನೇ ತಾನೇ ಹೇಗೆ ಗುರ್ತಿಸಿಕೊಳ್ಳುತ್ತಾನೆ:ಳೆ

ಹೆಸರು ಹೇಳಿ  ನಾನು, ನನ್ನ, ನನ್ನದು ಹೇಳಿ  ಬೇರೆ ಏನೋ ಹೇಳುತ್ತಾನೆ:ಳೆ  
 ಏನೂ ಹೇಳುವುದಿಲ್ಲ

ನಿಮ್ಮ ಪುಗುವು ಇತರರನ್ನು ಹೇಗೆ ಗುರ್ತಿಸುತ್ತಾನೆ ?

ಹೆಸರು ಹೇಳಿ  ಅವನು, ಅವಳು, ನೀನು, ಹೇಳಿ  ಬೇರೆನೋ ಹೇಳಿ

ಏನೂ ಹೇಳುವುದಿಲ್ಲ



ನಿಮ್ಮ ಮಗುವು ವಸ್ತುಗಳನ್ನು ಹೇಗೆ ಗುರ್ತಿಸುತ್ತಾನೆ

ಹೆಸರು ಹೇಳಿ  ಇದು, ಅದು ಎಂದು ಹೇಳಿ  ಬೇರೆನೋ ಹೇಳಿ  ಏನೂ ಹೇಳುವುದಿಲ್ಲ

ನಿಮ್ಮ ಮಗುವು ಏನು, ಯಾಕೆ, ಎಲ್ಲಿ, ಯಾವಾಗ ಎಂಬ ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳುತ್ತಾನೆಯೇ:

ಹೌದು  ಇಲ್ಲ  ಕೆಲವನ್ನು ಉಪಯೋಗಿಸುತ್ತಾನೆ:

ನಿಮ್ಮ ಮಗುವು ಒಂದು ಪದದ ವಾಕ್ಯಗಳನ್ನು ಉಪಯೋಗಿಸುತ್ತಾನೆ:

ಹೌದು  ಇಲ್ಲ

ಬಹಳ ಪದಗಳ ವಾಕ್ಯಗಳನ್ನು ಉಪಯೋಗಿಸುತ್ತಾನೆ:

ಅವು, ಬಾ ಎಂಬಂತೆ  ಹೌದು  ಇಲ್ಲ

ಮೂರು, ನಾಲ್ಕು ಪದಗಳ ವಾಕ್ಯಗಳನ್ನು ಉಪಯೋಗಿಸುತ್ತಾನೆ:

ಹೌದು  ಇಲ್ಲ

ಉದ್ದವಾದ ವಾಕ್ಯಗಳನ್ನು ಉಪಯೋಗಿಸುತ್ತಾನೆ:

ಹೌದು  ಇಲ್ಲ

ಮನ: ಹೇಳುವುದು

ಮನಃಪೂರ್ವಕವಾಗಿ

ಹೇಳುವುದಿಲ್ಲ

ಪ್ರಸ್ತುತವಿಲ್ಲ

ಲಾಲಿ ಹಾಡುಗಳು

ನರ್ಸರಿ ಹಾಡುಗಳು

ಪದ್ಯಗಳು

ಜಿಜ್ಞಾಸೆಗಳು

ಪ್ರಾರ್ಥನೆ, ಶ್ಲೋಕಗಳು

ಸಣ್ಣ ಕಥೆಗಳು

PART 6

ನಿಮ್ಮ ಮಗುವು ಧನಿಯು ಸಾಮಾನ್ಯವಾಗಿದೆಯೇ ?

ಹೌದು  ಇಲ್ಲ

ಇಲ್ಲವಾದರೆ ಧನಿಯು

ತುಂಬಾ ಸಣ್ಣ ಸಂಭಾವನೆಯೇ  ತುಂಬಾ ದಪ್ಪವಾಗಿದೆಯೇ

ತುಂಬಾ ಮೇಲಾಗಿದೆ  ತುಂಬಾ ಮೆದುವಾಗಿದೆ  ಒಂದೇ ತರವಾಗಿದೆ

ಮೂಗಿನಿಂದ ಭ್ರೂವುಗಳಿಂದ  ಒಡಲಾಗಿದೆ

PART - 4

ನಿಮ್ಮ ಮಗುವು ತನ್ನ ಹೆಸರಿಗೆ ಪ್ರತಿಕ್ರಿಯಿಸುತ್ತಾನೆಯೇ ?

ಹೌದು  ಇಲ್ಲ  ಕೆಲವೊಮ್ಮೆ

ಕರಗಂಟೆ, ಕಾರಿನ ಹಾರ್ನ್, ನಾಯಿಯ ಬೊಗಸುಗಳಿಗೆ ಪ್ರತಿಕ್ರಿಯಿಸುತ್ತಾನೆ:

ಹೌದು  ಇಲ್ಲ  ಕೆಲವೊಮ್ಮೆ

ಬಾಗಿಲು ತಟ್ಟುವ ಹಾಗೂ ದೂರವಾಣಿಯ ಗಂಟೆಯ ನಡುವಿನ ವ್ಯತ್ಯಾಸ ತಿಳಿದಿದೆಯೇ:

ಹೌದು  ಇಲ್ಲ  ಕೆಲವೊಮ್ಮೆ

ಮಾತಿನ ಶಬ್ದಗಳ ನಡುವಿನ ವ್ಯತ್ಯಾಸ ತಿಳಿದಿದೆಯೇ (ಪಾಪ ಹಾಗೂ ಕಾಕ )

ಹೌದು  ಇಲ್ಲ  ಕೆಲವೊಮ್ಮೆ

PART - 1

ನಿಮ್ಮ ಮಗುವು ತನ್ನ ಮುಕ್ತೆ ತಾನೇ ಅಡುಕುತ್ತಾನೆಯೇ ?

ಹೌದು  ಇಲ್ಲ  ಕೆಲವೊಮ್ಮೆ

ಇತರ ಮಕ್ಕಳೊಡನೆ ಅಡುಕುತ್ತಾನೆಯೇ ?

ಹೌದು  ಇಲ್ಲ  ಕೆಲವೊಮ್ಮೆ

ತನ್ನ ಮುಕ್ತೆ ಅಡುಕುತ್ತಾನೆ (ಇತರ ಮಕ್ಕಳಿಗಿಂತಲೂ )

ಹೌದು  ಇಲ್ಲ  ಕೆಲವೊಮ್ಮೆ

ಅಡುಕುವಾಗ ಮಾತನಾಡಿಕೊಳ್ಳುತ್ತಾನೆಯೇ ?

ಹೌದು  ಇಲ್ಲ  ಕೆಲವೊಮ್ಮೆ

- ನೀವು ಅಥವಾ ನಿಮ್ಮ ಕುಟುಂಬದವರು ನಿಮ್ಮ ಮಗುವಿನ ಜೊತೆ ಇದ್ದಾಂಗ ಅವನೊಡನೆ ಮಾತನಾಡುತ್ತೀರಾ ?

ಆಗಾಗ  ಕೆಲವು ವೇಳೆ  ನನ್ನೆಯ ಮೂಲಕ ಮಾತ್ರ

- ನಿಮ್ಮ ಮಗನ ಮಾತಿನ ಭಾಗೆ ಬೇರೆಯವರ ವರ್ತನೆ<sup>ರೀತಿಯಿಂದ</sup> ನಿಮಗೆ ತೊಂದರೆಯಾಗಿದೆಯೇ?

ಹೌದು  ಇಲ್ಲ  ಮಗುವಿಗೆ ಯಾವುದೇ ರೀತಿಯ ಮಾತಿನ ತೊಂದರೆ ಇಲ್ಲ

(ಬಿ) ನಿಮ್ಮ ಮಗುವಿನ ಮಾತಿನ ಭಾಗೆ ಕೆಲವು ವಾಕ್ಯಗಳನ್ನು ಬರೆಯಿರಿ :

(ಸಿ) ಕೆಲ ಪ್ರಶ್ನೆಗಳಿಗೆ ಭಾಗೆ ನಿಮ್ಮ ಅಭಿಪ್ರಾಯ :

ತುಂಬಾ ಉದಂ  ತುಂಬಾ ಕಡಿಮೆ  ಸರಿಯಾಗಿದೆ

ಸರಿಯಾಗಿದೆ ಮತ್ತು ಉತ್ತರಿಸಲು ಸುಲಭವಾಗಿದೆ

ತುಂಬಾ ಕಷ್ಟ ಮತ್ತು ಇನ್ನೂ ಉತ್ತರಿಸಲು ಸುಲಭವಾಗಿಲ್ಲ

ಮತ್ತಿತರ (ಇತರಾದಿ ವಿವರಿಸಿ )