

A STUDY OF METALINGUISTIC ABILITIES IN CHILDREN

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**A Dissertation submitted in part fulfillment of final year
M.Sc. (Speech and Hearing) to the University of Mysore.**

**ALL INDIA INSTITUTE OF SPEECH AND HEARING
MYSORE - 570 006
1990**

In Honour of my.

Parents, Sister,
Teachers and
Friends.

CERTIFICATE

This is to certify that the Dissertation entitled

A STUDY OF METALINGUISTIC ABILITIES IN CHILDREN

is the bonafide work in part fulfillment for the degree of

Master of Science (Speech and Hearing), of the student with

Register number M 8810



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CERTIFICATE

This is to certify that the Dissertation entitled

A STUDY OF METALINGUISTIC ABILITIES IN CHILDREN

has been prepared under my supervision and guidance.



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DECLARATION

This is to certify that the Dissertation entitled

A STUDY OF METALINGUISTIC ABILITIES IN CHILDREN

*is the result of my own study under the guidance of Dr. G. Purushothama,
Professor, Department of Speech Pathology, All India Institute of Speech and
Hearing, Mysore, and has not been submitted earlier at any University for any
Other Diploma or Degree.*

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INTRODUCTION:

Linguists have been pointing out for some time, the knowledge that mature speakers of a language possess permits them not only to produce and understand utterances in that language but, in addition, to reflect upon and evaluate those utterances. This sort of reflection and evaluation has generally been referred to as involving "linguistic intuitions".

Our linguistic intuitions are, of course, not limited to the evaluation of utterances produced by young children. Adult speakers occasionally produce utterances that they themselves realize after the fact were not well formed. And listeners some times notice that there is some thing wrong with ways in which adult speakers have expressed themselves. (Hakes, 1980).

Though such intuitions do not often intrude themselves into our everyday understanding and producing of language, their existence has been a familiar fact for quite some time. The abilities that make such intuitions possible were referred to as metalinguistic abilities by Cazden (1972, 1975), and several others followed him. Whereas, David Crystal (1980) say. Linguistics, as other sciences, uses this term in the sense of a higher language for describing the object of study, here, is language, viz. the various language samples, which constitute our linguistic experience. He also says, metalinguistics is the

study of metalanguage, in this general sense, it is only recently that systematic attention has begun being paid to questions about when and how such metalinguistic abilities arise in children in the course of their language. Another area which is being studied more extensively by increasing number of investigators is the relationship between metalinguistic abilities and reading performance of young children.

It was hypothesized by some that metalinguistic abilities are different from, and emerge later than, the abilities involved in producing and understanding language. Specifically, it is proposed that metalinguistic abilities show their greatest development during middle childhood, the period between, roughly, 4 and 8 years. In the recent study by Pease (1986), it was found that, many aspects of children's semantic and metalinguistic knowledge of words were observed to develop between kindergarten and 3rd grade. /Apart from this study, there are a number of lines of evidence that suggests the occurrence of major developmental changes during middle childhood in children's ability to deal with a variety of tasks that require reflecting upon the properties of language, unfortunately most studies have considered developmental changes in only a single kind of metalinguistic performance. One of the examples of such kind being the study of Papandropoulou and Sinclair (1974) who experimentally studied the concept

of " the word", with children aged 4 to 10 years. It indicated a slow development of the concept from an initial non-differentiation between the word and thing towards the capacity of conceiving of the word both as a meaningful constituent element of larger unit and as a unit which is itself built up from small elements.

clark (1978) claims first signs of an ability to reflect upon language begin to appear at about two years. According to clark these reflections include the following.

- 1) Spontaneous corrections of one's own pronunciations, word forms, word order, and even choice of language in the case of bilinguals;
- 2) Questions about the right words, the right pronunciation, and the appropriate speech style;
- 3) comments on the speech of others; their pronunciation, accent, and the language they speak;
- 4) Comments on and play with different linguistic units, segmenting words into syllables and sounds making up etymologies, rhyming and punning;
- 5) Judgements of linguistic structure and function, deciding what utterances mean, whether they are appropriate or polite, whether they are grammatical.
- 6) Questions about languages in general.

Further it was claimed that, a list like this makes the study of children's awareness seem fairly straight forward, the criteria for assessing awareness are not always clear cut.

Despite of the above mentioned difficulty several experiments have been done to study the development of Metalinguistic abilities. However, it remains unclear whether all the various metalinguistic abilities that flower during middle childhood are manifestations of a single underlying developmental change or whether they are a set of independent developments which by coincidence, all happen to occur during the same developmental period. Just as there is little empirical evidence as yet to link the development of one kind of metalinguistic performance to that of other, there is also little evidence available concerning how the development of metalinguistic abilities might be related to other aspects of cognitive development. Many authors have assumed that such relationship exist, based largely on the similar time course of metalinguistic and concrete operational developments. It is clear that middle childhood is a time marked by major cognitive developmental changes, among them the changes piaget characterized as the onset of concrete operations. But empirical evidence of such relationships is largely lacking, only because most investigators of metalinguistic development have not simultaneously examined performance on cognitive developmental tasks in the same subjects.

The existence of a metalinguistic-cognitive developmental relationships can also be inferred indirectly from data on phonological awareness, reading achievement and concrete operations, Zifcak (1978) has reported a substantial relation

between first graders performance on phoneme segmentation task and reading achievement. Lunzer (1976) have reported a similar relationship between reading achievement and an operativity factor derived from piagetian tasks, Rohl and Tunmer (1988) also suggested that deficits in phonologically related skills may be causally related to difficulties in acquiring basic spelling knowledge. Given the magnitude of the relationship between reading achievement and each of these, it seems unlikely that contributions of phonological awareness and operativity to reading achievement are independent of each other. Ehri (1975), Holden and McGinitie(1972), Hutten Locher (1964) and Karpova (1966), have all found preschool children unable to segment meaningful sentences into their components words. They are particularly likely to ignore functional words.

Foregoing information tells us that, there is a strong relationship between metalinguistic ability and cognition. It is to be noted that both are developing during middle childhood.

An attempt was made in this study to differentiate the performance on metalinguistic tasks by children of 1st and 2nd grades. It was expected that both first and second graders do better on word and syllabic segmentation tasks than segmenting sentence into phoneme. It was expected that 2nd graders do better than first graders on segmenting sentences into words and syllables and good achievers do

better than poor achievers of the same grade.

So, it was hypothesized that

- i) Good achievers do better than poor achievers on all segmentation tasks.
- ii) Among segmentation tasks word and syllable segmentation tasks are easier, when compared to phoneme segmentation task.
- iii) There is a strong relation between school performance and these metalinguistic abilities.

/x/x/x/x/x/

REVIEW OF LITERATURE:

segmenting spoken utterances into words syllables and phonemes constitutes as an important ability interne of language awareness. Following is a review of relevant literature on the subject.

Children's conceptions of word boundaries in speech, and correspondence between their conceptions of word boundaries were investigated by Holden and MacGinitie(1973). They have taken 84 children and interviewed them near the end of Kinder garten. The children repeated an utterance while tapping a separate pokerchip for each word, 57 of children were also taught to identify word boundaries in print and were tested for their ability to identify a line of print containing the same number of letter clusters as words in an utterance. Their results showed that identification of functional words as separate words depend on context, few children could segment both speech and print conventionally, but more could identify the number of letter groups corresponding to their own unconventional segmentation of speech.

An examination of preschool. Kindergarten and first grade children's conceptual understanding ef what constitutes a spoken English word, was done by Downing and Oliver(1973).

children were presented examples of 8 classes of auditory stimuli to which they responded 'yes' if they thought each was a single word and 'no' if they did not. They noted

certain age trends with respect to the number of correct responses to each class of stimuli and to the number of children demonstrating concept attainment within each stimulus class. All of the children regardless of age, confused isolated phonemes and syllables with spoken words. All of the children were also able recognize that non-verbal sounds which were not identifiable were not words. Children upto the age of 6.5 years however, tended to confuse identifiable non-verbal sounds, phrases and sentences with words. Then confusions disappeared with older children. Children between the ages of for 5.6 and 6.5 years tended to exclude long words from their conception of the spoken word, but younger and older did not.

Papandropoulou and Sinclair (1974) reported a study concerning the concept of "the word" experimentally studied with children aged 4 to 10 years. It indicated a slow development of this concept from an initial non-differentiation between the word and thing towards the capacity of conceiving of the word both as a meaningful constituent element of larger units and as a unit which is itself built up from small elements. Another study done by Fox and Routh(1975) indicated that children of Kindergarten first and 2nd grade often encounter difficulty in segmenting spoken phrases and sentences into their components words and sounds.

Allan, Karan Kuelthan (1982) studied the development of young children's metalinguistic understanding of the word.

To systematically test children's metalinguistic ability and cognitive clarity in aural and visual contexts, a random sample of 15 children from each of 3 grades (preschool, Kindergarten, and first grade) were tested on reading ability. From an informal assessment, 3 reading categories were determined* non-readiness, readiness and reader. The children were retested and reclassified by word string recognition, presented in both a written form and on tape. Results showed that readers and reading readiness children are for more proficient at segmenting words than non readers. This indicates that children gradually develop a metalinguistic view of language.

Children's metalinguistic awareness of the concept "word" was examined in a group of 20 children aged 4.10 to 6.0 years. In experiment subjects were shown cards containing words, single letters, vowel strings, consonant strings and strings of graphic symbols (punctuation marks). Subjects were asked to put all the cards with "words" on them in one pile and all the others in a second pile. In experiment here knowledge/punctuation was examined in children aged 5.9 to 6.8 years., numbered 20. subjects were asked to copy 4 lines of text which included various punctuation marks. Results indicated that metalinguistic knowledge of graphic symbols is low in young children, criteria used to differentiate words seemed to include differentiation in terms of symbol shape and string length. In the 2nd study children recognized the need for spacing in text, but had little conceptualization of punctuation beyond the

This was done by DeGoes and Mathew (1983).

Lieberman, Shankweiler, Fischer, and Carter(1974) developed a task for assessing children's ability to count the number of segments in spoken words and syllables. The experimenter spoke a word and asked the child to tap out the number of segments it contained, the experimenter providing examples of what was desired. For syllabic segments, the experimenter said one syllable word, tapping once, and then asking the child to repeat the word and tap it in the same way. A two-syllable word was then presented, with two taps, followed by 3 syllable word, with 3 taps. If the child made a mistake, the experimenter again demonstrated the correct number of taps. After several trials on which the experimenter demonstrated the correct number before asking the child to tap, there were 42 trials on which the child was asked to tap one-, two-, and three- syllable words without prior demonstration. The experimenter continued to demonstrate the correct number if the child made an error. Thus, the task was a learning task, the question being whether the child could learn that the correct number of taps was determined by the number of syllables in the word. Learning, therefore, was dependent upon the child's being able to determine the number of syllables each word contained.

Lieberman et al., also developed a parallel task involving phonemic segmentation. Here, for example, /u/ was one

tap, "boo" was two, and "boot" was three. Thus, learning in this later task was dependent upon the child's being able to determine the number of segmental phonemes in syllables. All the syllables used contained one, two, or 3 phonemes.

Groups of nursery school, kindergarten and first grade children were tested on the syllabic and phonemic segmentation tasks, different children receiving the two tasks. The phonemic task was considerably more difficult than the syllabic task. At the nursery school level, 46% of the children reached criterion (6 consecutive correct responses) on the syllabic task; none did soon the phonemic task. At the Kindergarten level, the comparable percentages were 48 and 17, and at the first grade level, they were 90 and 70. Being aware of the phonemic structure of spoken words on syllables appears to be beyond the capabilities of the 4 year olds and is generally, though not universally, within the capabilities of children by the time they reach the end of the first grade. Being aware of the syllabic structure of spoken words is apparently a capability that develops rather earlier.

A number of studies have implicated a lack of awareness of the spoken language's phonemic level of analysis in the difficulties encountered by many first graders in learning to read (Gleitman and Rozin 1973) Liberman et al., 1977, Savin 1972, Treiman and Baron 1979. This again suggests that this sort of "phonological awareness" does not emerge

till the middle childhood and for some children may be delayed, even further. zifcak (1978) has reported a substantial relationship between phoneme segmentation task and reading achievement.

Content, Alain, Morias, Jose, Alegria, Jesus and Bertelson (1982) tested ability of 27 kindergarteners aged 5.1 to 6.1 years to segment words at the phonetic level before and after 4 training sessions. The test consisted of deleting the initial phone of uttered pseudowords, either a vowel, a fricative or a plosive. Training involved games requiring word classification and manipulation at the phonetic level. It was found that subjects improved their performance more than controls on the consonant deletion tests. The acquired ability was not specific to the phonemes used in training and persisted for 6 months. It was concluded that phonetic analysis skills can be learned before the teaching of beginning formal reading.

DaManrique, A.M.B. and Gramigna, susana (1984) administered segmentation tasks in the form of a drumming game to illiterate Mc BuenosAires preschoolers and first graders, in number 40 and 80 respectively. It was found that phonological segmentation was more difficult to perform for both age groups. Younger subjects performed poorer than first graders but both groups performed equally on syllabic segmentation. A facilitating effect of training was found for both tasks.

Ossu et al., (1988) did a study in which they compared the segmentation abilities of Italian children with those of English speaking children using the same methods of assessment and the same subject selection criteria. At the preschool level, through the Italian children manifested a higher level of performance overall, their pattern of performance paralleled that obtained earlier with U.S. Children. In both groups, syllable segmentation ability was stronger than phoneme segmentation. After school entrance, this pattern remained unchanged in U.S. children but was reversed in Italian beginning readers. In both language groups, however phonemic segmentation ability distinguished children of different levels of reading skill. The discrepancies between language groups were seen as reflecting phonologic and orthographic differences between the language.

Rohl and Tunmer (1988) used a spelling age match design to test the hypothesis that deficits in phonologically related skills may be causally related to difficulties in acquiring basic spelling knowledge. Poor 5th grade spellers, average 3rd grade spellers, and good 2nd grade spellers were matched on a standardized spelling test. A group of good 5th grade spellers were matched by chronological age with the poor 5th grade spellers. The total number of subjects numbered 55. They were administered a phonemic segmentation test containing non digraph pseudo words and an experimental spelling test containing words of 4 types:

exception, ambiguous, regular and pseudowords. Consistent with the hypothesis, it was found that when compared with the poor spellers, the average and good spellers performed better on the phonemic segmentation task, made fewer spelling pseudowords, and made spelling errors that were more phonetically accurate.

METHODOLOGY

The study was designed to give information relating to children's capability to segment sentences into words, syllables next smaller units i.e., phonemes to tap these metalinguistic abilities five separate tasks were used, each containing five stimuli items.

- 1) Task I : subjects had to count by marking on paper the number of words in the sentences presented by experimenter, orally. There were 5 sentences for this task.
 - a) First 2 sentences contained 2 words each.
 - b) Third and 4th sentences contained 3 words each.
 - c) Fifth sentence contained 4 words.
- 2) Task II ; This involved counting the number of words in their own utterances which were in response to questions, put up by the examiner. There were 5 questions, such that the response was expected to increase from first to last question in words.
- 3) Task III: This required subjects to count the number of syllables in the words presented by experimenter orally. There were 5 words as items.
 - a) First word contained 2 syllables
 - b) Second and 3rd words contained 3 syllables each
 - c) Fourth word contained 4 syllables, and,
 - d) Fifth word contained 5 syllables.
- 4) Task IV: Here subjects had to count the number of syllables in their utterance in response to questions put up by the experimenter.

5) Task V: This required counting the number of phonemes in the orally presented syllables and words. There were five items.

a) First two items are syllables containing 2 phonemes each.

b) Rest, three items are words containing 4 phonemes each

Tasks I,III and V give the information of child's ability to segment the given utterances from other's speech into words, syllables and phonemes. Tasks II and IV give the information regarding the child's ability to segment his or her own utterance into words and syllables. Segmenting his/her own utterance into phonemes was not administered as it was thought to be too complex.

Subjects:-

A total of 20 Kannada speaking children served as the subjects. There were from the first and 2nd grade class rooms. From each class 10 pupils were taken up comprising of 5 best achievers and 5 poor achievers as ranked by the respective class teachers. Each class contained 30 students.the mean age of first graders was 6,3 years(5.10-6.8). The mean age of second graders was 7.5 years(6.10-7.10). The mean ages of First grade good and poor achievers are 5.11 and 6.5 years respectively. The mean ages of Second grade good achievers are 6.11 and 7.9 years respectively.

procedure:-

Subjects were provided with practice items before they took the required tasks individually. Initially tasks were administered to second grade good achievers followed by second grade poor achievers. Later tasks were administered to First graders in the same sequence. Tasks were administered individually. Each subject was provided with pencil and paper for drawing short lines for each unit they were counting. This has been done during the practice sessions also.

Statistical analysis was done after tabulating the data. Two way Analysis of variance was done to know whether the variance between subjects (from each grade) and between their performance on tasks was significant or not. The relation between the subject's school performance and their metalinguistic ability was found using the method of correlation. Children's achieved marks in the school were not available, which made only rank correlation possible.

RESULTS:

As expected, the II grade good achievers scored higher on all tasks (Table 1). Good achievers of I and II grade did better on word segmenting task in the utterances of the examiner, than in their own utterances. Similar trend was found even on syllable segmentation task. Analysis of variance has shown that the differences among I grade subjects and their performance on metalinguistic tasks was significant at 0.01 level (Table 2). In the case of II grade subjects only the differences between tasks was significant at 0.01 level (Table 3), The correlation between scores on metalinguistic tasks and school achievement rankings is presented in table 4. In the case of I Grade subjects significant correlation was obtained between segmenting experimenter's utterances into syllables and school achievement rankings. In the case of II grade subjects significant correlation was between scores on segmenting experimenter's utterances into words, syllables and phonemes and school achievement ranks.

Surprisingly, on the task of segmenting experimenter's utterances into words, I grade poor achievers scored higher than I grade good achievers (Table 1). Though the I grade good achievers had responded to have identified more number of words than poor achievers of same grade, these were wrong responses (Fig. 1, Tables A and P Appendix). Actual raw scores obtained by different subjects are tabulated in the Appendix. On the same task (I) II grade good achievers

scored better than poor achievers. good achievers of II Grade too had responded to have identified more number of words than poor achievers which ere also wrong responses. (Fig. 1 Tables K and p in Appendix).

On the task of segmenting their own utterances into words I grade poor achievers scored better than good achievers (Table 1). Here also, good achievers had responded to have identified more number of words compared to poor achievers (I grade) which were actually wrong responses (Fig. 2 Tables B and G Appendix), in case of H grade subjects good achievers performed better than poor achievers (Table 1) on this task, on this task also II grade good achievers had responded to have identified more number of words than poor achievers, these were also wrong responses.

On the task (III) of segmenting syllables in experimenter's utterances good achievers of either grades scored more than poor achievers of respective grades (Table 1). First grade good achievers have responded to have identified more number of syllables than poor achievers of same grade, few of these were wrong responses (Tables C, H, Fig. III and Tables M & R).

In the task (IV) of segmenting their own utterances into syllables good achievers of either grade performed better than poor achievers of respective grades. Here I grade good achievers had responded to have wrongly

identified more number of syllables than poor achievers on few occasions. (Fig.XX 4). In case of H grade good achievers they also responded to have identified more number of syllables than poor achievers.

On segmenting experimenter's utterances into phonemes (Task V) I grade good and poor achievers scored equally well (Table 1) II grade good achievers scored better than poor achievers on this task (Table1). Second grade poor achievers had wrongly responded to have identified more number of phonemes than good achievers (Fig.5).

* * * * *

TABLE-1

PERCENTAGE OF CORRECT IDENTIFICATION

SUBJECT/TASK	I	II	III	IV	V
I GRADE					
GOOD	28	20	72	64	28
POOR	32	40	20	16	28
II GRADE					
GOOD	60	44	100	64	32
POOR	20	32	44	40	16

TABLE-2

SOURCE TABLE FOR ANALYSIS OF VARIANCE OF 1st GRADERS

SOUR. OF VARIATION	SUM OF SQUARES	df	MEAN SQUARES OR VARIANCE	VARIANCE RATIO OR F
Between tasks type	19.236	4	4.809	9.24*
Between subjects type	33.776	9	3.75	7.21*
remainder or error	18.588	36	0.52	
Total	71.60	49		

* Significant at 0.01 level.

TABLE-3

SOURCE TABLE FOR ANALYSIS OF VARIANCE OF IInd GRADERS

SOUR. OF VARIATION	SUM OF SQUARES	df	MEAN SQUARES OR VARIANCE	VARIANCE RATIO OR F
Between tasks type	14	4	3.5	6.36*
Between subjects type	9	9	1	1.81
remainder or error	19.68	36	0.55	
Total	42.68	49		

* Significant at 0.01 level.

TABLE-4

COEFFICIENTS OF CORRELATION BETWEEN SCHOOL ACHIEVEMENT AND PERFORMANCE ON METALINGUISTIC ABILITIES

TASKS	I GRADE	II GRADE
I	0.07	0.5428
II	0.05	0.515
III	0.559	0.913
IV	0.419	0.419
V	0.176	0.643

FIG.3: MEAN OF RESPONSES OF GOOD & POOR I & II GRADERS ON THE SYLLABLE SEGMENTING TASK IN EXPERIMENTER'S UTTERANCES

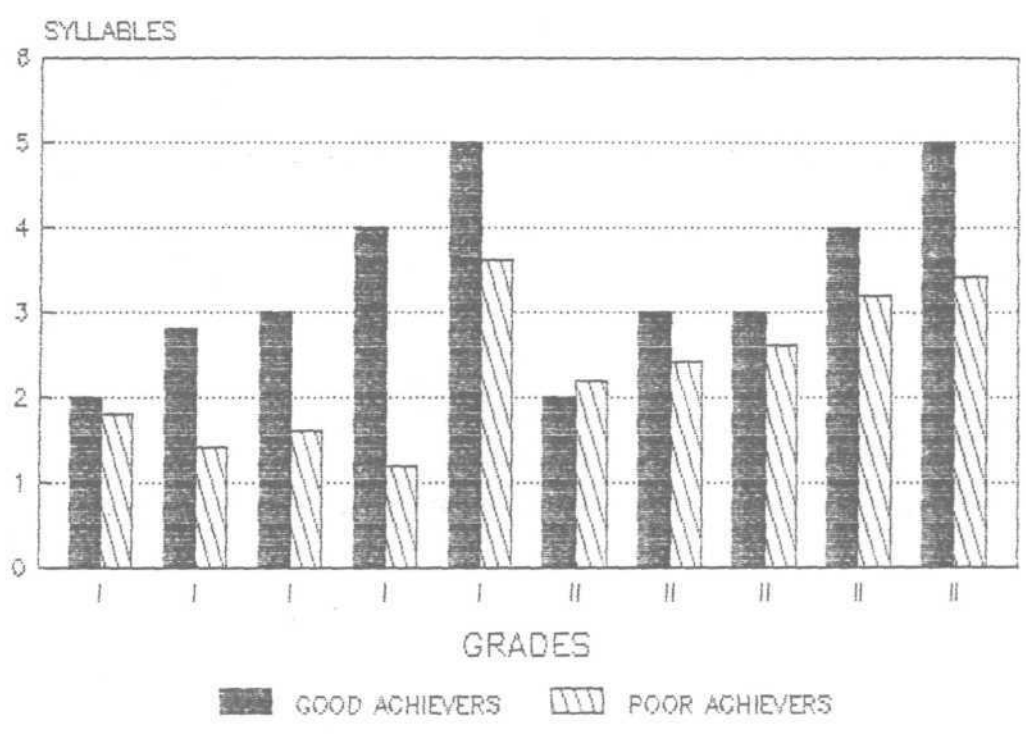


FIG.4: MEAN OF RESPONSES OF GOOD & POOR I & II GRADERS ON THE SYLLABLE SEGMENTING TASK IN THEIR OWN UTTERANCES

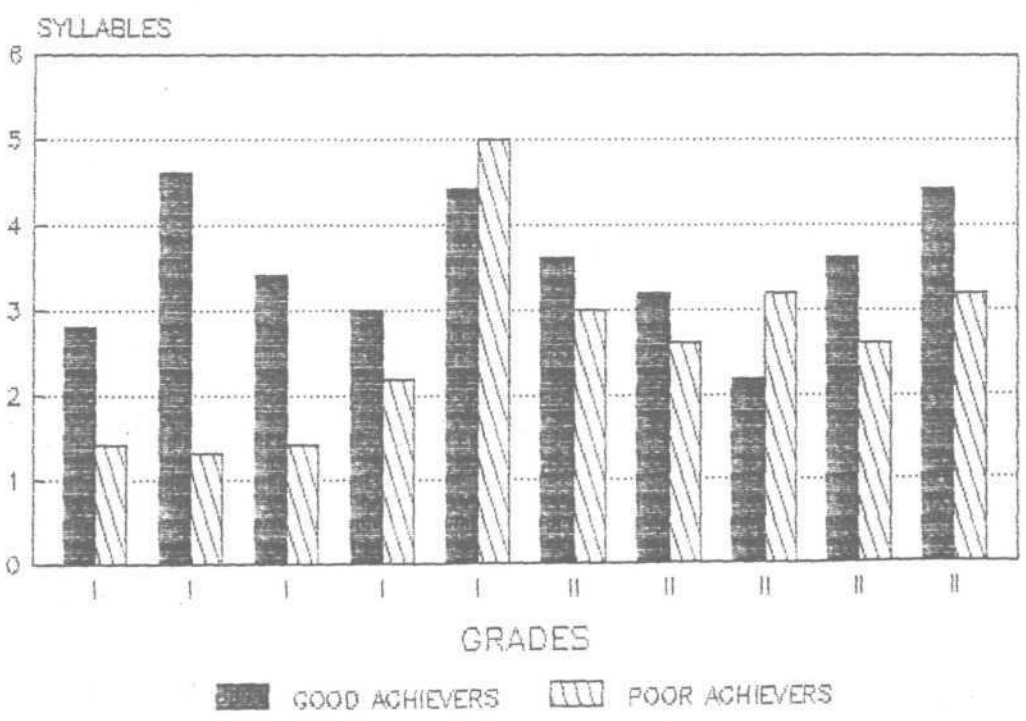


FIG.3: MEAN OF RESPONSES OF GOOD & POOR I & II GRADERS ON THE SYLLABLE SEGMENTING TASK IN EXPERIMENTER'S UTTERANCES

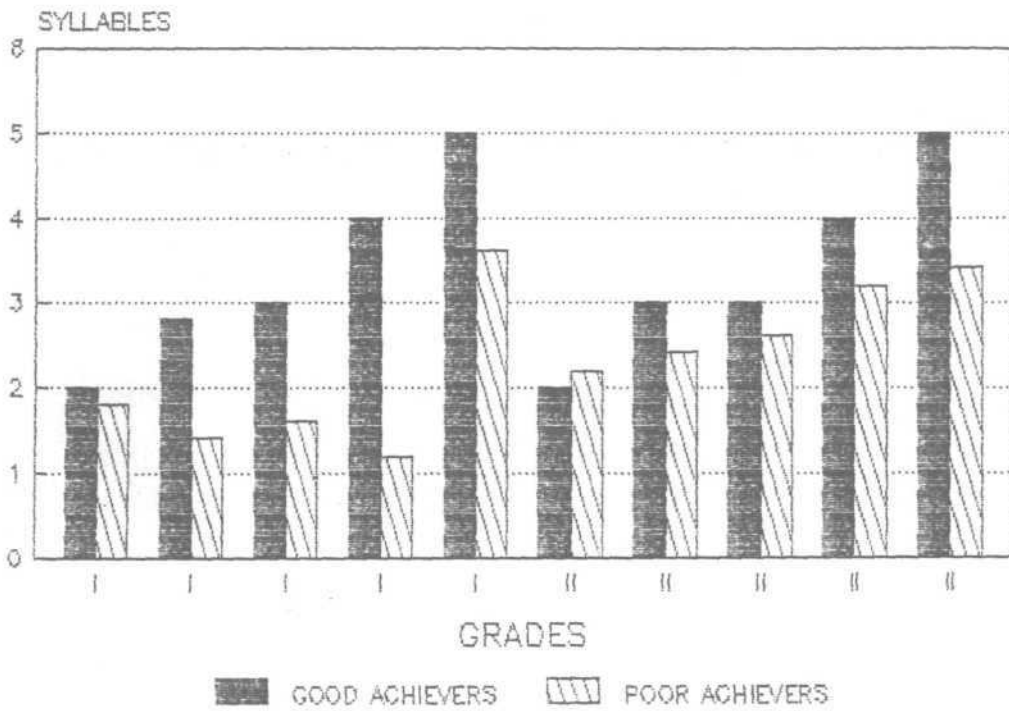
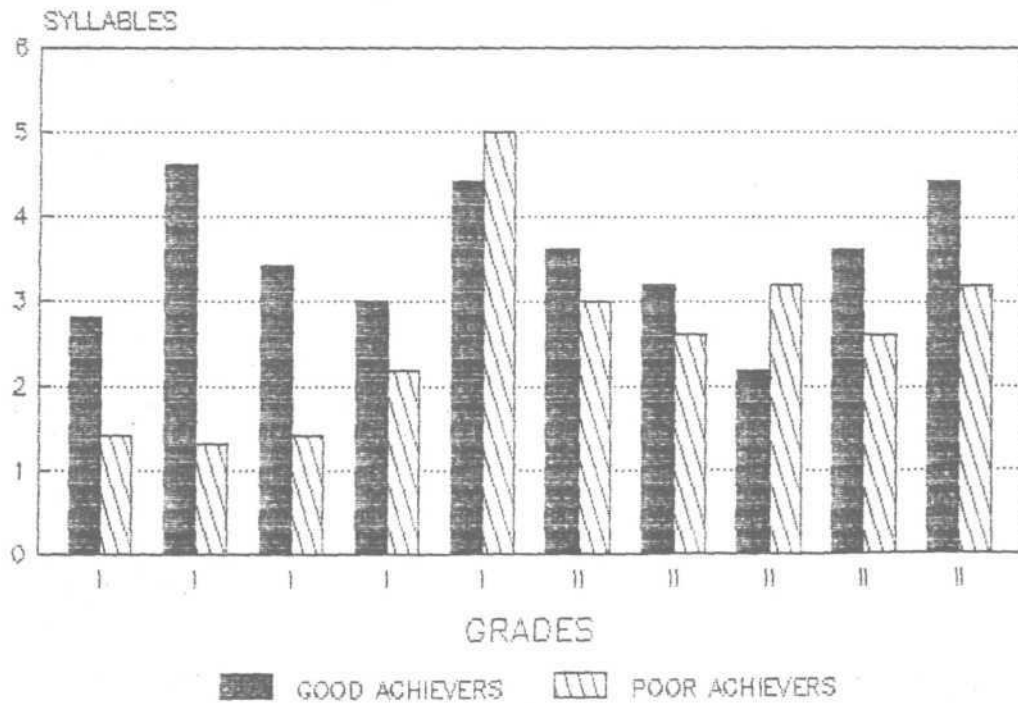


FIG.4: MEAN OF RESPONSES OF GOOD & POOR I & II GRADERS ON THE SYLLABLE SEGMENTING TASK IN THEIR OWN UTTERANCES



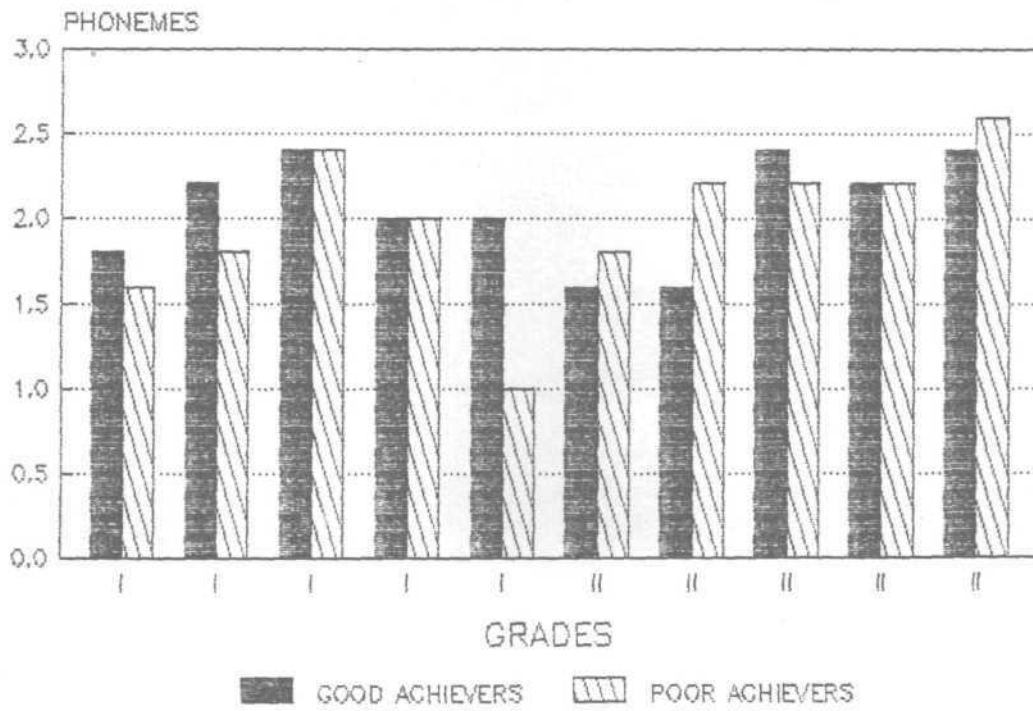
DISCUSSION:

Second grade good achievers were the ones who scored best on most task of metalinguistic abilities. For this one should also account for their age. Also, school achievement and metalinguistic abilities are inter dependent. It is possible that reading achievement has influence their performance on all tasks. All metalinguistic abilities are related to school achievement. Especially, phoneme and syllable segmentation abilities are more closely related to reading achievement as reported by Gleitman and Rozin (1973), Liberman et a., (1977), Savin (1972).

In the case of word segmenting abilities, I grade poor achievers correct performance compared to good achievers might be due to several factors. Good achievers might be concentrating on syllable segmentation instead of words. This seems more probable because good achievers have made such an over estimation of words that many times the number was nearer to that of syllables.

None of the subjects scored 100% on word segmenting task because the development of concept of 'word' will be completed at the age of around 10 years (papandropoulou and Sinclair 1974). These results are also in consonance with those of Fox and Routh (1975) who reported that Kindergarten and 2nd graders often encounter difficulty in segmenting spoken phrases and sentences into component words and sounds. This word segmenting abilities in case even II graders do not seem to be as strong related to school

FIG.5: MEAN OF RESPONSES OF GOOD & POOR I & II GRADERS ON THE PHONEME SEGMENTING TASK IN EXPERIMENTER'S UTTERANCES



DISCUSSION:

Second grade good achievers were the ones who scored best on most task of metalinguistic abilities. For this one should also account for their age. Also, school achievement and metalinguistic abilities are interdependent. It is possible that reading achievement has influence their performance on all tasks. All metalinguistic abilities are related to school achievement. Especially, phoneme and syllable segmentation abilities are more closely related to reading achievement as reported by Gleitman and Rozin (1973), Liberman et al., (1977), Savin (1972).

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achievement than syllable segmentation.

Syllable segmentation abilities are highly related to school achievement. This view is also supported by the amount or correlation on these tasks with that of school achievement such a strong relation in the II graders is understandable because the classroom related tasks that children have carried out for two years have involved syllable segmentation and syllable writing.

phoneme segmentation abilities seem to develop later in age. An earlier study by Pox and Routh (1975) who indicated that children of Kindergarten and H grade face difficulty in segmenting spoken phrases and sentences into component words and sounds. This provides support for the present findings in case of II graders performance. In case of II graders in this study the relationship between phoneme segmentation abilities and school achievement is more because of school tasks may involve or stress phoneme awareness and the good achievers are good learners.

Good achievers of either grade performed better on segmenting experimenter's utterances than the their own utterances. This because it is clear that children may not treat their own speech in the same way they treat other's speech. They may be able to better attend to the form of others speech than their own speech.

Summary and Conclusion:

The study of as designed to give information related to children's ability to segment utterances into words, syllables and phonemes of experimenters and those of their own utterances. To tap these metalinguistic abilities five separate tasks were used, each containing five stimulus items. Ten pupils comprising of five best and five poor achievers (as ranked by the teacher) from each of I and II grade class rooms served as subjects.

Practice preceded administration of scoring items. A two way analysis of variance and correlation were used for analysis of the data, second grade good achievers score higher on all tasks. In general children performed better in segmenting the experimenter's utterances than their own utterances. There were significant differences among the I graders and their performances on various tasks. In case of II graders significant differences were on their performance on various tasks. For both the graders maximum relation of school achievement with segmentation ability for only experimenter's utterances, and not for their own utterances.

It was concluded that syllable segmentation was the easiest of all the segmentation tasks. Segmenting phonemes was the most difficult for all subjects of the study. There was a strong relationship between the metalinguistic abilities tested-segmenting syllables and words - and the children's school achievement. It was easy for children

to segment the experimenter's utterances than their own probably because they could not attend to both the production and attending to the production in a metalinguistic way. Good achievers were found to be better in their segmentation abilities.

Suggestions:-

1. Study be extensive and longitudinal.
2. Other measures of metalinguistic abilities should be included along with the present ones.
3. Language disabled population may also be tested for these abilities.
4. Indepth study of school achievement is also necessary for validating these findings.

/x/x/x/x/x

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APPENDIX

TABLE - A

WORDS IDENTIFIED BY I GRADE GOOD ACHIEVERS IN EXPERIMENTER'S
UTTERANCES

PRESENTED WORDS	SUBJECT I	SUBJECT II	SUBJECT III	SUBJECT IV	SUBJECT V
2	3	2	4	2	2
2	3	2	4	2	2
3	7	3	8	8	2
3	8	7	7	9	4
4	9	8	10	9	6

TABLE - B

WORDS IDENTIFIED BY I GRADE GOOD ACHIEVERS IN THEIR
UTTERANCES IN RESPONSE TO QUESTIONS

RES.	SUB.I	RES.	SUB.II	RES.	SUB.III	RES.	SUB.IV	RES.	SUB.V
1	3	1	3	1	3	1	2	1	3
1	3	1	3	2	4	1	2	1	2
1	2	2	2	1	2	1	2	1	3
2	2	2	2	2	2	2	2	1	4
5	3	4	3	4	3	4	3	4	3

TABLE - E

PHONEMES IDENTIFIED BY I GRADE GOOD ACHIEVERS IN
EXPERIMENTERS UTTERANCES

PRESENTED PHONEMES	SUBJECT I	SUBJECT II	SUBJECT III	SUBJECT IV	SUBJECT V
2	2	2	1	2	2
2	2	3	1	2	3
4	2	2	2	2	4
4	2	2	2	2	2
4	2	2	2	2	2

TABLE - F

WORDS IDENTIFIED BY I GRADE POOR ACHIEVERS IN
EXPERIMENTERS UTTERANCES

PRESENTED WORDS	SUBJECT I	SUBJECT II	SUBJECT III	SUBJECT IV	SUBJECT V
2	2	1	2	2	2
2	2	2	2	2	3
3	2	1	2	3	2
3	2	2	2	1	1
4	2	1	2	2	2

TABLE - G

WORDS IDENTIFIED BY I GRADE POOR ACHIEVERS IN THEIR
UTTERANCES IN RESPONSE TO QUESTIONS

RES.	SUB. I	RES.	SUB. II	RES.	SUB. III	RES.	SUB. IV	RES.	SUB. V
1	1	1	2	1	1	1	3	1	1
1	1	2	2	2	2	2	3	1	1
2	1	2	1	2	1	1	2	1	1
2	1	1	1	2	1	1	3	2	1
3	1	3	1	4	1	2	2	4	1

TABLE - H

SYLLABLES IDENTIFIED BY I GRADE POOR ACHIEVERS IN
EXPERIMENTER'S UTTERANCES

PRESENTED SYLLABLES	SUBJECT I	SUBJECT II	SUBJECT III	SUBJECT IV	SUBJECT V
2	2	1	2	2	2
3	1	1	1	3	1
3	1	2	1	1	3
4	1	1	1	1	2
5	1	10	2	2	2

TABLE - I

SYLLABLES IDENTIFIED BY I GRADE POOR ACHIEVERS IN
THEIR UTTERANCES IN RESPONSE TO QUESTIONS

RES.	SUB. I	RES.	SUB. II	RES.	SUB. III	RES.	SUB. IV	RES.	SUB. V
2	1	4	1	2	1	3	3	2	1
3	1	6	1	8	1	3	3	5	2
4	1	3	1	3	1	4	3	2	3
3	1	3	2	3	3	3	3	3	2
4	1	4	10	4	10	4	1	4	3

TABLE - J

PHONEMES IDENTIFIED BY I GRADE POOR ACHIEVERS IN
EXPERIMENTERS UTTERANCES

PRESENTED PHONEMES	SUBJECT I	SUBJECT II	SUBJECT III	SUBJECT IV	SUBJECT V
2	2	1	1	2	2
2	2	2	2	2	1
4	2	3	1	3	3
4	2	2	2	2	2
4	1	1	1	1	1

TABLE - K

WORDS IDENTIFIED BY II GRADE GOOD ACHIEVERS IN
EXPERIMENTERS UTTERANCES

PRESENTED WORDS	SUBJECT I	SUBJECT II	SUBJECT III	SUBJECT IV	SUBJECT V
2	2	2	2	2	1
2	2	4	2	2	2
3	3	3	3	3	4
3	3	4	7	3	6
4	5	5	11	4	8

TABLE - L

WORDS IDENTIFIED BY II GRADE GOOD ACHIEVERS IN THEIR
UTTERANCES IN RESPONSE TO QUESTIONS

RES.	SUB.I	RES.	SUB.II	RES.	SUB.III	RES.	SUB.IV	RES.	SUB.V
1	1	1	1	1	1	1	1	1	2
1	2	2	1	1	1	2	2	2	2
1	2	1	1	2	2	1	3	1	2
2	2	2	1	2	2	2	2	2	3
6	3	3	1	5	2	4	2	7	4

TABLE - M

SYLLABLES IDENTIFIED BY II GRADE GOOD ACHIEVERS IN
EXPERIMENTER'S UTTERANCES

PRESENTED SYLLABLES	SUBJECT I	SUBJECT II	SUBJECT III	SUBJECT IV	SUBJECT V
2	2	2	2	2	2
3	3	3	3	3	3
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5

TABLE - N

SYLLABLES IDENTIFIED BY II GRADE GOOD ACHIEVERS IN THEIR
UTTERANCES IN RESPONSE TO QUESTIONS

RES.	SUB. I	RES.	SUB. II	RES.	SUB. III	RES.	SUB. IV	RES.	SUB. V
3	4	3	3	4	7	2	2	2	2
2	2	3	3	3	3	6	4	5	4
2	3	2	2	2	3	3	3	3	3
3	3	3	3	3	5	3	3	3	4
4	4	4	5	4	5	4	4	4	4

TABLE - 0

PHONEMES IDENTIFIED BY II GRADE GOOD ACHIEVERS IN
EXPERIMENTERS UTTERANCES

PRESENTED PHONEMES	SUBJECT I	SUBJECT II	SUBJECT III	SUBJECT IV	SUBJECT V
2	1	2	2	1	2
2	2	2	1	1	2
4	4	2	2	2	2
4	2	2	2	3	2
4	2	2	2	4	2

TABLE - P

WORDS IDENTIFIED BY II GRADE POOR ACHIEVERS IN
EXPERIMENTER'S UTTERANCES

PRESENTED WORDS	SUBJECT I	SUBJECT II	SUBJECT III	SUBJECT IV	SUBJECT V
2	1	2	2	2	1
2	1	1	1	2	2
3	2	2	2	2	2
3	1	2	2	2	2
4	2	2	3	3	2

TABLE - Q

WORDS IDENTIFIED BY II GRADE POOR ACHIEVERS IN THEIR
UTTERANCES IN RESPONSE TO QUESTIONS

RES.	SUB. I	RES.	SUB. II	RES.	SUB. III	RES.	SUB. IV	RES.	SUB. V
1	2	1	2	1	4	1	3	1	2
2	2	1	2	1	2	2	2	2	2
2	2	2	2	1	1	1	2	1	2
1	2	1	1	2	3	2	2	2	2
6	3	4	3	3	2	4	3	4	2

TABLE - R

SYLLABLES IDENTIFIED BY II GRADE POOR ACHIEVERS IN
EXPERIMENTER'S UTTERANCES

PRESENTED SYLLABLES	SUBJECT I	SUBJECT II	SUBJECT III	SUBJECT IV	SUBJECT V
2	2	2	3	2	2
3	3	2	3	2	2
3	3	3	3	2	2
4	3	4	4	3	2
5	4	4	5	2	2

TABLE - S

SYLLABLES IDENTIFIED BY II GRADE POOR ACHIEVERS IN THEIR
UTTERANCES IN RESPONSE TO QUESTIONS

RES. SUB. I	RES. SUB. II	RES. SUB. III	RES. SUB. IV	RES. SUB. V
4	5	2	2	4
5	4	3	2	3
6	4	5	3	5
3	3	3	3	3
4	4	4	4	4

TABLE - T

PHONEMES IDENTIFIED BY II GRADE POOR ACHIEVERS IN
EXPERIMENTER'S UTTERANCES

PRESENTED PHONEMES	SUBJECT I	SUBJECT II	SUBJECT III	SUBJECT IV	SUBJECT V
2	2	1	1	3	2
2	1	1	2	4	3
4	2	2	3	2	2
4	2	2	2	3	2
4	2	2	3	4	2