

Assessing Children with Language Impairments: A Study on Kannada, a South Indian Language

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ABSTRACT

Purpose: *This is one of the first comprehensive studies to assess receptive and expressive language skills in a South Indian language, Kannada. It demystifies language impairments and provides a model for future research to understand other languages in India and in countries around the world.*

Method: *Language impairments were identified in 68 students of Grades 3 and 4, in elementary schools where Kannada was the medium of instruction. The children were assessed in different language components. The results were analysed in terms of their ages and their levels of functioning in each language component and sub-component.*

Results: *As a group, the children showed no significant deficits in phonological and semantic skills; however, individual deficits and deficits within sub-component skills of semantics were noted. Mean and individual deficits in auditory reception, aural comprehension and receptive vocabulary were also noted. Deficits in syntax & verbal expression were notably significant. The extent of language delay increases with age, and plateaus at higher ages.*

Conclusion: *Children with language impairments in Kannada, display many similar characteristics in terms of problems in different components of language. Early intervention is called for because the language delay increases as age advances. A thorough assessment reveals specific strengths and weaknesses in language components and skills. This can be used as a starting point to base remediation activities.*

Key words: *language impairments, India*

INTRODUCTION

Language impairments, specific language impairment, developmental language disorders or language disorders are terms that are often used synonymously to

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address specific disorders in language development, including receptive and expressive language use. These primary language disorders are shown to have many associated problems such as in reading and social skills (Lapadat, 1991; Mann, 2003). As clinicians and researchers still disagree on terms, classification and prevalence, there is no consensus concerning its definition, criteria for classification or prevalence (Hannus et al, 2009).

Few studies have focused on specific language impairments in India. Attempts to develop standardised testing protocol for identification (Binay Kant & Shyamala, 2004) and classification (Geetha & Prema, 2007), are noteworthy for understanding the language specific features of language impairments. Considering the number of languages (more than 30 recognised languages and 50 dialects), and the absence of an accepted criteria for identification or diagnosis, it is of utmost importance to understand the prevalence and the nature of language impairments in an Indian language. This would in turn guide similar studies in languages other than English.

OBJECTIVE

The study focused on finding answers to the following research questions:

1. What is the nature and extent of delay in specific language areas for children with language impairments in Kannada?
2. What are the specific language areas of strengths and weaknesses exhibited by these children?
3. What are some implications for intervention?

METHOD

Subjects

Many schools in India (especially private schools) use English as the medium of instruction. However, the children were selected from third and fourth Grade general education classrooms of eleven public schools in which Kannada language was the medium of instruction. Since the process of language disability identification is not a common procedure in schools, the researcher had to make a start with the identification process.

Identification

The exclusionary approach recommended by Stark and Tallal (1981) and Leonard (1998) was used to identify children with language disabilities. An overall class sample of 995 third and fourth Grade school children was evaluated, and exclusions were made on the basis of bilingualism, language difference, hearing, speech-motor problems, cognitive abilities and the demonstration of more than one year overall language delay.

Sixty-eight students (or approximately 6.84%) were found to have language impairments. The number of boys identified with language impairments (N=40, 59%) was more than the number of girls (N=28, 41%), consistent with the general findings of the population of language impairments (Law et al, 1998).

Assessment of Specific Language Skills

The 68 children so identified served as the sample for the assessment phase of the study. The functioning levels of children with language impairments were assessed in the following component skills of language: phonology, semantics, syntax, auditory reception, receptive vocabulary, aural comprehension and verbal expression.

Procedure

As this was one of the first attempts to establish a procedure for the study of disabilities in an Indian language, comprehensive tests in Kannada had to be identified in order to evaluate each of the specific language skills in both receptive and expressive modes. Local norms for some English language tests were established because tests in Kannada are yet to be developed. Five tests assessing different components of language were identified for this purpose and individually administered to all the 68 selected children. The tests used for assessment are given in Table 1.

Table 1: Tests used for assessing specific language components

Sl. No.	Components/Areas of Language covered	Name of the test	Author
1	Auditory Reception	Auditory reception test in Kannada	Ramaa (1985)
2	Receptive Vocabulary	Peabody Picture Vocabulary Test (PPVT), normed and adapted to Kannada by the investigator	Dunn & Dunn (1998)
3	Phonology Syntax Semantics	Linguistic Profile Test (LPT)	Suchitra & Karanth (1990)
4	Auditory Comprehension	Aural comprehension test in Kannada	Ramaa (1985)
5	Verbal Expression	Verbal expression subtest of Illinois Test of Psycholinguistic Abilities (ITPA) – normed to Kannada population by researcher	Kirk et al (1968)

Variables of the Study

The following variables were considered during assessment of specific language skills by the researcher: age and their mean, as well as individual performance in all of the language components listed above.

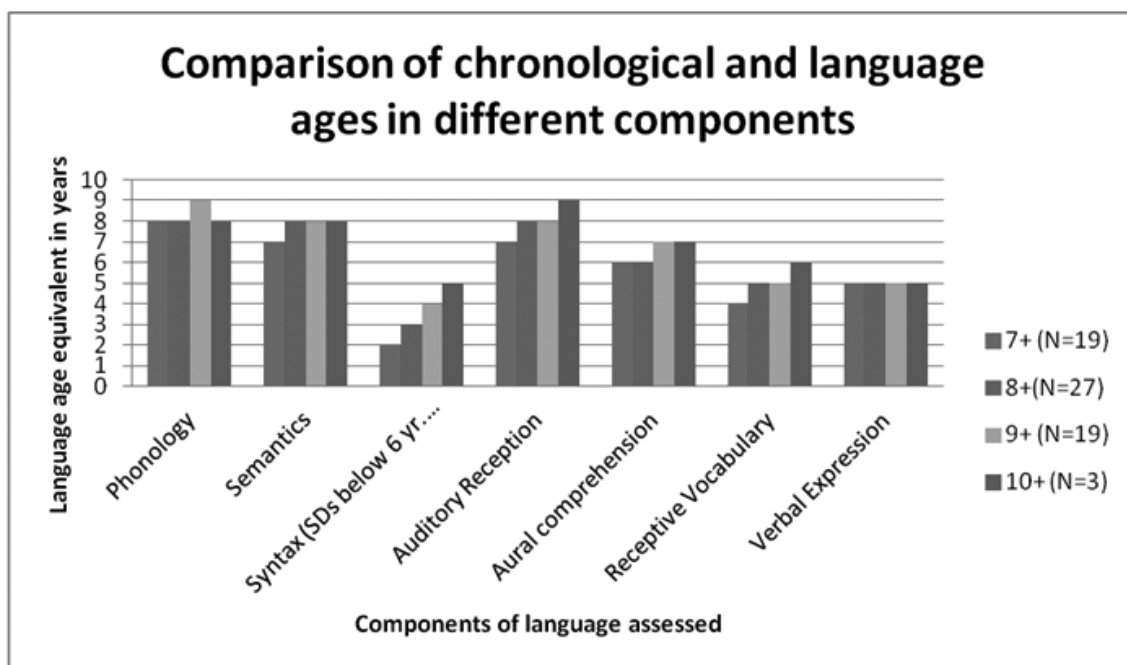
Analysis of the Assessment Data

The assessment data was analysed to determine if children with language impairments differ significantly in their language skills as compared to children without impairments, and also to determine the extent of this difference, if any, in all the above mentioned components of language as well as in sub-component skills of semantics and syntax.

First, children with language impairments were assessed for their performance in the different component skills of language and their performance was compared to that of normal language acquiring children (as indicated by the prescribed standardised norms on each of the assessment tests). The relative performance of children with language impairments was also assessed on two measures, comparison based on sex and age. A discussion of the results follows.

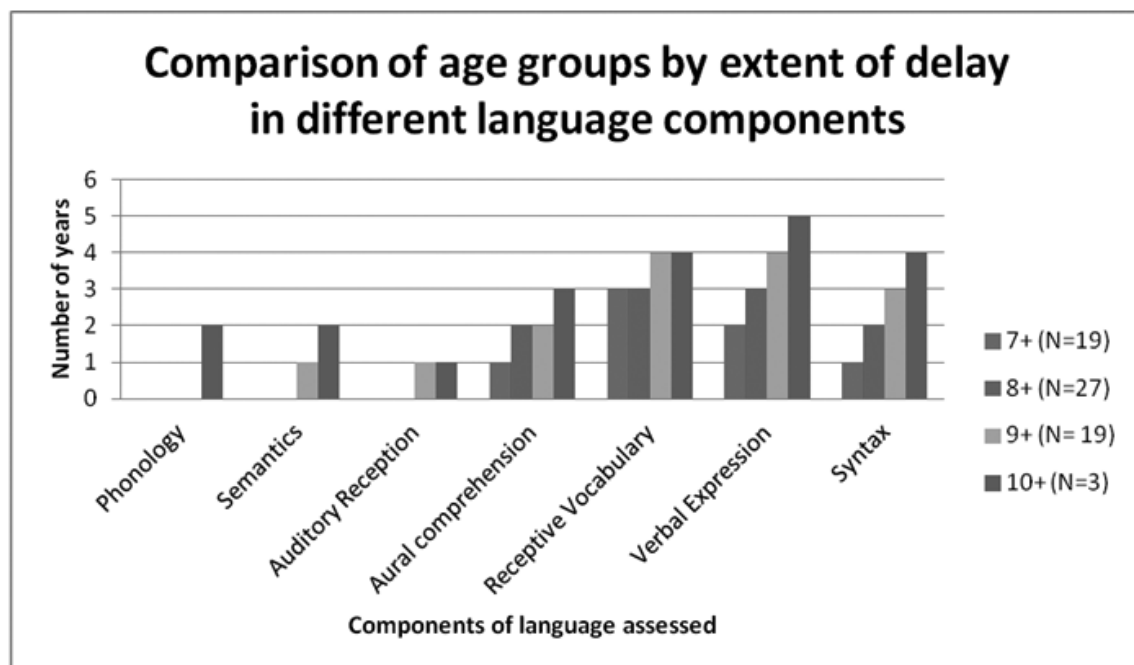
Figures 1 & 2 show the performance of different age groups of children with language impairments in the components of language.

Figure 1: Comparison of chronological ages with equivalent language ages (Note: Syntax scores were significantly below that of a 6+ year old (lowest norm), hence standard deviations below that level were used to assess the delay)



Analysis of data in Figure 1 reveals that the areas of significant strength appear to be in phonology, semantics and auditory reception. The delay significantly increases in each of the following component skills: auditory reception, receptive vocabulary, verbal expression and syntax. There is evidence that language skills reach a plateau as children grow older.

Figure 2: Comparison of children with language disabilities by age groups and extent of delay in each language component assessed



Analysis of data in Figure 2 reveals that the extent of delay in most components of language increases with age.

Comparison of the individual performances of children with language impairments in the different components of language assessed

In the previous section, the mean performance of children with language impairments was observed in terms of their age groups. For a better perspective of the language characteristics, the individual performance of subjects was examined in relation to his or her mean age. The percentage of children with language impairments who scored below average (at least 1 S. D. below age equivalent), average (age equivalent) and above average (at least 1 S. D. above age equivalent), was calculated in all the 4 age groups. Table 2 shows this analysis, which could be used to identify components of language skills ranging from most difficult (Level 4) to the least difficult (Level 1).

Table 2: Percentage of children with language impairments who scored average (A), above average (AA) and below average (BA) in the assessed components of language

Language Components	7+ years			8+ years			9+ years			10+ years		
	BA	A	AA	BA	A	AA	BA	A	AA	BA	A	AA
Phonology	5.26	15.79	78.95	11.11	48.15	40.74	5.26	68.42	26.32	100	0	0
Syntax	100	0	0	100	0	0	100	0	0	100	0	0
Semantics	10.53	42.11	47.36	44.45	51.85	3.7	57.9	42.1	0	66.67	33.33	0
Auditory reception	36.84	36.84	26.32	29.63	37.04	33.33	78.95	5.26	15.79	33.33	66.67	0
Aural comprehension	63.16	21.05	15.79	88.89	11.11	0	100	0	0	100	0	0
Receptive vocabulary	73.69	26.31	0	88.89	11.11	0	100	0	0	100	0	0
Verbal expression	94.74	5.26	0	100	0	0	100	0	0	100	0	0

Table 3: Classification of the language components into different levels based on difficulty levels

Difficulty levels	Age-Groups of Children with language impairments			
	7 + years	8 + years	9 + years	10 + years
Level 1 (< 25%)	Phonology Semantics	Phonology	Phonology	
Level 2 (25 - 50%)	Auditory reception	Auditory reception Semantics		Auditory reception
Level 3 (50 -75%)	Aural comprehension Receptive vocabulary		Semantics	Semantics
Level 4 (75 - 100%)	Syntax Verbal expression	Aural comprehension Syntax Verbal expression	Aural comprehension Receptive vocabulary Syntax Verbal expression	Aural comprehension Receptive vocabulary Syntax Verbal expression

As observed in Table 3, phonology seems to be the least difficult for the 7+, 8+ and 9+ age groups, while syntax and verbal expression seem to be the most difficult for all the four age groups.

Analysis of Performance in the sub-components of Semantics

Table 4 shows the performance of children with language impairments in the sub-component skills of semantics. The sub-component skills of semantics were assessed to determine the easiest and the most difficult components for children with language impairments, based on their age.

Analysis of Performance in the sub-components of Syntax

Similarly, the sub-component skills of syntax were analysed to determine the level of difficulty. Table 5 shows the percentage of children who scored average, above average and below average in the sub-component skills of syntax.

Table 4: Percentage of children with language impairments who scored average (A), above average (AA) and below average (BA) in the assessed sub-components of Semantics

Semantic sub-components	7+ years			8+ years			9+ years			10+ years		
	BA	A	AA	BA	A	AA	BA	A	AA	BA	A	AA
1. Colour discrimination	42.11	57.89	0	29.63	22.22	48.15	36.84	63.16	0	100	0	0
2. Furniture discrimination	31.58	68.42	0	22.22	77.78	0	21.05	78.95	0	33.33	66.67	0
3. Body parts discrimination	26.32	73.68	0	33.33	7.41	59.26	26.32	73.68	0	66.67	33.33	0
4. Naming	10.53	89.47	0	25.93	22.22	51.85	26.32	73.68	0	33.33	66.67	0
5. Lexical category	21.05	52.63	26.32	37.04	40.74	22.22	68.42	21.05	10.53	66.67	33.33	0
6. Synonymy	47.36	42.11	10.53	55.56	44.44	0	100	0	0	33.33	66.67	0
7. Antonymy	31.58	21.05	47.37	33.33	44.45	22.22	47.37	47.37	5.26	100	0	0
8. Homonymy	100	0	0	100	0	0	100	0	0	100	0	0
9. Polar questions		78.94	10.53	59.26	37.04	3.7	57.89	31.58	10.53	33.33	66.67	0
10. Semantic anomaly	21.05	31.58	47.37	48.15	48.15	3.7	31.58	63.16	5.26	66.67	33.33	0
11. Paradigmatic relations	5.26	47.37	47.37	33.33	18.52	48.15	42.1	10.53	47.37	33.33	0	66.67
12. Syntagmatic relations	10.53	26.31	63.16	33.33	40.74	25.93	10.53	42.1	47.37	33.33	66.67	0
13. Semantic contiguity	10.53	10.53	78.94	11.11	11.11	77.78	21.05	15.79	63.16	33.33	33.33	33.34
14. Semantic similarity	10.53	15.79	73.68	22.22	59.26	18.52	36.84	52.63	10.53	33.33	33.33	33.34

Table 5: Percentage of children with language impairments who scored average (A), above average (AA) and below average (BA) in the assessed sub-components of Syntax

Syntactic sub-components	7+ years			8+ years			9+ years			10+ years		
	BA	A	AA	BA	A	AA	BA	A	AA	BA	A	AA
1.Morphophonemic structures	31.58	63.16	5.26	77.78	22.22	0	78.95	21.05	0	100	0	0
2.Plural forms	63.16	31.58	5.26	77.78	22.22	0	68.42	31.58	0	33.33	66.67	0
3.Tenses	63.16	36.84	0	70.37	25.93	3.7	52.63	47.37	0	33.33	66.67	0
4.PNG markers	84.21	15.79	0	66.67	33.33	0	73.69	26.31	0	66.67	33.33	0
5. Case markers	84.21	15.79	0	100	0	0	78.95	21.05	0	100	0	0
6.Transitives, Intransitives and Causatives	94.74	5.26	0	100	0	0	100	0	0	100	0	0
7.Sentence types	89.47	10.53	0	100	0	0	94.74	5.26	0	100	0	0
8. Predicates	63.16	36.84	0	74.08	25.92	0	73.69	26.31	0	0	100	0
9.Conjunctives, Comparatives and Quotatives	100	0	0	100	0	0	100	0	0	100	0	0
10.Conditional clauses	100	0	0	100	0	0	100	0	0	100	0	0
11. Participial constructions	100	0	0	100	0	0	100	0	0	100	0	0

RESULTS and DISCUSSION

The major findings are discussed here with reference to each variable under study.

Different Language Components

1. The discrepancy between the performance of children with language impairments and their normal peers increases as they grow older. These findings support various studies in English (Fry et al, 1970; Wiig and Semel, 1975; Wiig 1984).

2. A possible hierarchy of language components, based on the difficulty level experienced by different age groups, can be established (See Table 3). Syntax is shown to be the most difficult component, followed by verbal expression, while the least difficult are phonology and semantics.

No studies were found, either in English or in other Indian languages, regarding attempts to structure the components of language in a hierarchy based on their relative difficulty level for children with language impairments. However, studies show that children with language impairments do exhibit deficits in the above components of language (Ingram, 1976; Wiig & Semel, 1980). They are found to have difficulty in developing the use of inflections or bound morphemes (Johnson & Croasmun, 1991; Smith, 1991), and these problems are known to affect syntactic competence as well.

Phonology

1. The phonological deficits in children with language impairments were not significant in the 7+, 8+ and 9+ age groups, with their performance ranging from average to above average. These results are in contrast to the findings in English (Ingram, 1976; Schwartz et al, 1980; Weiss et al, 1983). This could possibly be explained by the differences in the English and Kannada languages. Kannada has 14 vowels and 31 consonants, with a high phoneme-grapheme correspondence and the pronunciation of the letter being consistent in whatever word it occurs, unlike in English. For example, in English the pronunciation of 'ca' is different in 'car', 'care' and 'can', while in Kannada the 'ka' sound remains the same in all the 3 words - 'kale', 'kare' and 'karadi'.
2. Although the mean performance of 7+, 8+ and 9+ age groups was average to above average, individual results varied. In the 7+ age group 5.26% were below average, in the 8+ age group 11.11% were below average, and in the 9+ age group 5.26% performed below average.
3. Commonly noted errors in phonemic discrimination of 's' and 'sh' in 'salu' (row) and 'shalu' (shawl); 'da' and 'dha' in 'dana' (cow) and 'dhana' (wealth) and in expression of 'ha' and 'a' reading to pronounce 'haladi (turmeric)' as 'aladi', 'vi' as 'i' in 'vimana (airplane)' and 'imana'.
4. In the 10+ age group significant deficits in phonology were noted (See Table 1). However since the sample was very small (N=3), the results or findings cannot be generalised to this population of children with language impairments.

Semantics

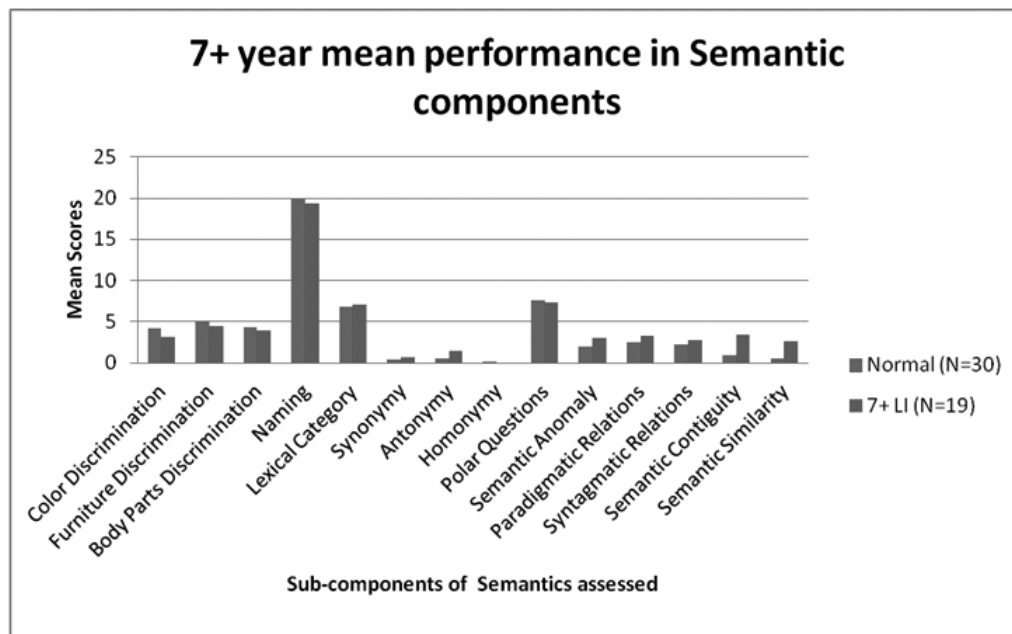
1. The performance of groups of 8+, 9+ and 10+ year-old children with language impairments was significantly different from their respective age-expected

levels. While the performance of 7+ and 8+ age groups were equivalent to their age-required levels, the performance of the 9+ age group was 1 year below the equivalent age requirement and that of the 10+ age group was 2 years below the equivalent age requirement. The 9+ and 10+ age groups performed at the levels of younger normal children, which supported various studies in English (Freedman & Carpenter, 1976; Johnston & Kamhi, 1980).

2. Although the mean performances of the 7+ and 8+ age groups were average, the percentage of children who scored below average in each level were 10.53 and 44.45 respectively, demonstrating that not all children were capable of age-equivalent performance. Similarly, 57.9% of 9+ year-old children scored below average and 66.67% of 10+ year-old children with language impairments scored below average in semantics as a whole. Thus, children with language impairments do exhibit deficits in semantic ability, which is well established by studies in English (Vogel, 1990).

3. The performance of children with language impairments in the sub-component skills of semantics varied from average to below average, showing delays ranging from 1 year to 5 years.

Figure 3: Comparison of performance of 7+ year-old children with SLI in the sub-component skills of Semantics



4. The group of 7+ year-old children with language impairments showed 1 year delay in colour and furniture discrimination, naming, homonymy and polar questions, while on the other semantic constructs they showed average to above average performance.

Based on the percentage of children who scored below average in the different sub-component skills of semantics, a hierarchy of the sub-components can be listed starting from the least difficult (in which the lowest percentage of children scored below average) to the most difficult (in which the highest percentage of children with language impairments scored below average). The hierarchy of the semantic structures from the least to the most difficult is:

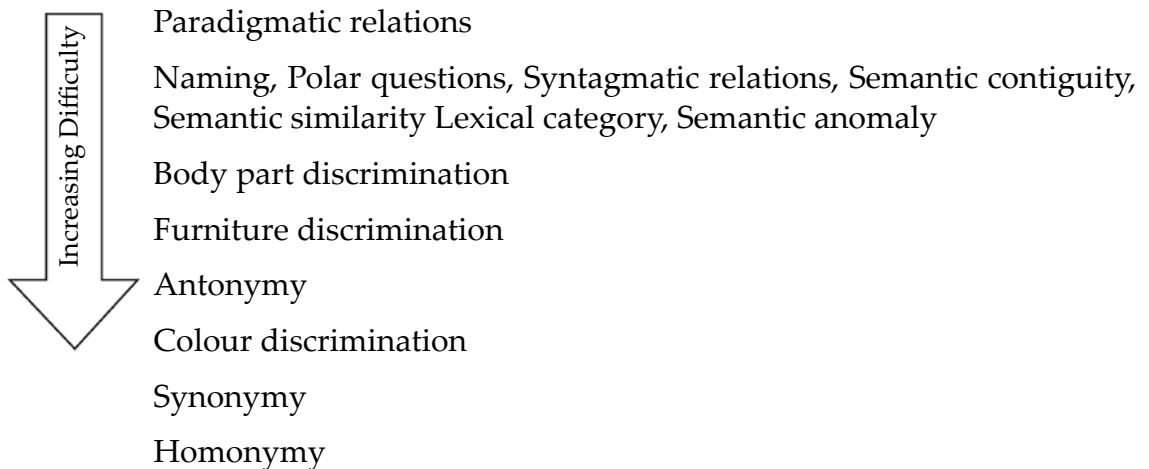
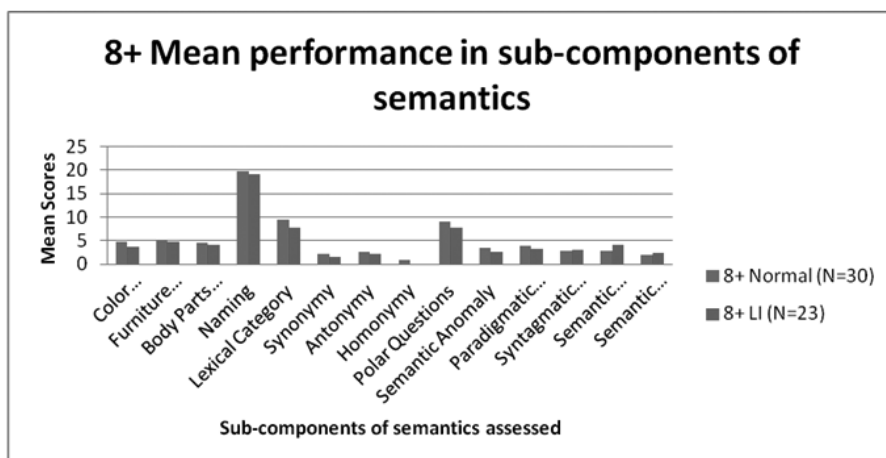


Figure 4: Comparison of performance of 8+ year-old children with SLI in the sub-component skills of Semantics



4. The group of 8+ year-old children showed a delay of 1 year in body parts discrimination and a delay of 2 years in the constructs of colour and furniture discrimination, naming and homonymy, and average performance on other sub-components. The hierarchy of the sub-component skills of semantics for this group, from the least to the most difficult is:

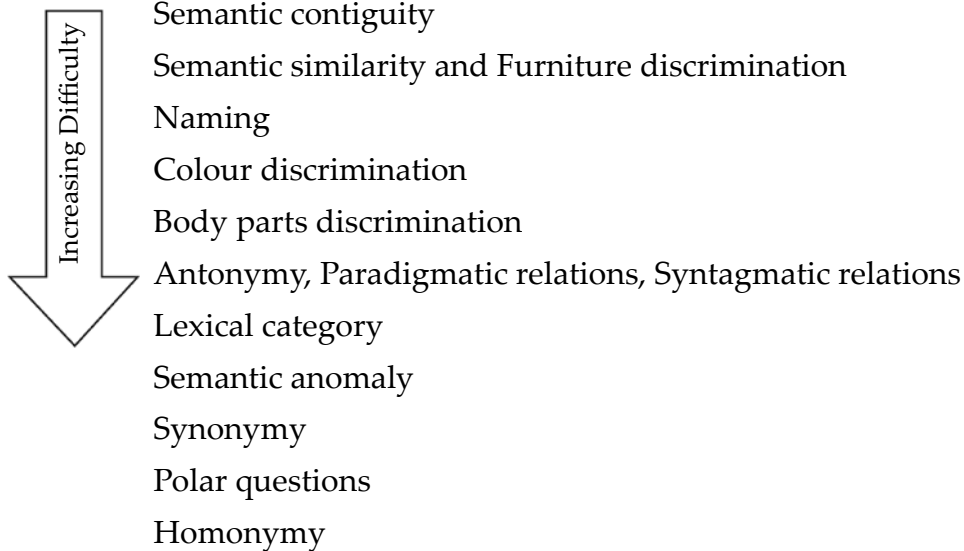
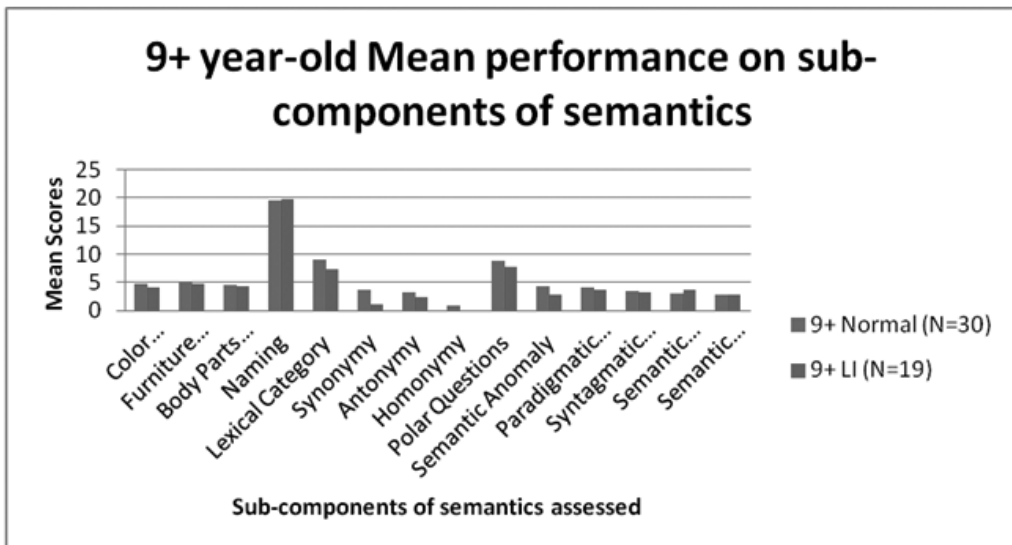


Figure 5: Comparison of performance of 9+ year-old children with SLI in the sub-component skills of Semantics



5. The group of 9+ year-old children with language impairments showed a delay of 1 year on lexical category, synonyms, antonyms, polar questions and paradigmatic relations; a delay of 2 years in colour and body parts discrimination; and a 3-year delay in furniture discrimination and homonymy. In the other components of semantics, they showed average performance. The hierarchy of the sub-component skills of semantics from the least difficult to the most difficult is:

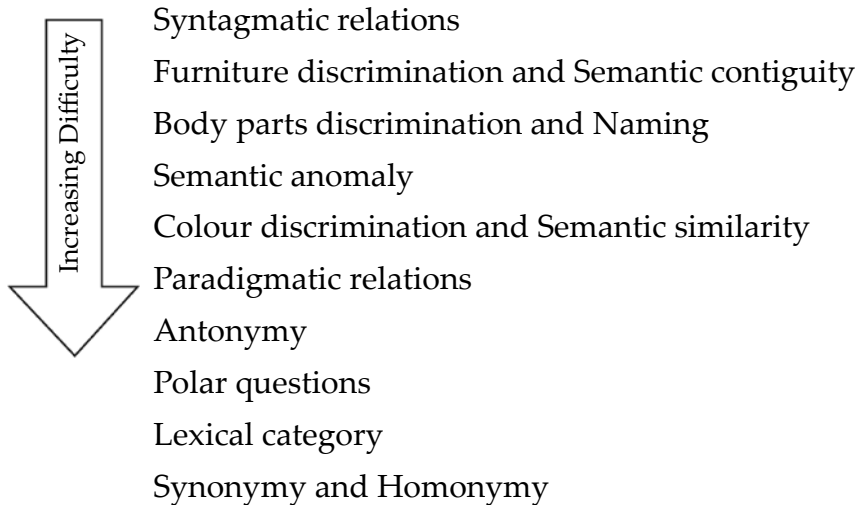
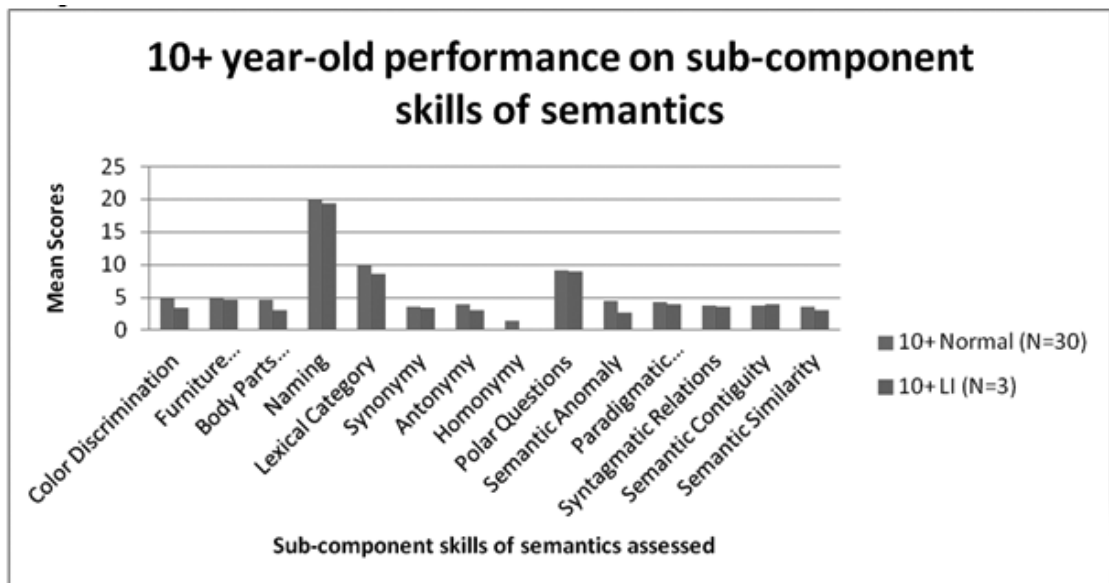
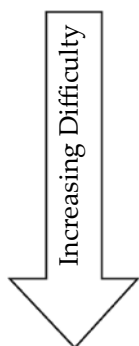


Figure 6: Comparison of performance of 10+ year-old children with SLI in the sub-component skills of Semantics



6. The group of 10+ year-old children with language impairments showed a delay of 1 year in antonyms and paradigmatic relations, a delay of 2 years in lexical category, polar questions and semantic anomaly, a delay of 4 years in colour and body part discrimination, and a 5-year delay in naming and homonymy. They showed average performance on the other semantic constructs.



The hierarchy of sub-components of semantics from the least difficult to most difficult is:

Furniture discrimination, Naming, Synonymy, Polar questions, Paradigmatic relations Syntagmatic relations, Semantic contiguity, Semantic similarity

Body part discrimination, Lexical category, Semantic anomaly

Colour discrimination, Antonymy, Homonymy

7. Semantic skills like naming and semantic contiguity were found to be relatively less difficult for children with language impairments, as compared to colour discrimination, antonymy, synonymy and homonymy. Homonymy seems to be the most difficult for all the four age groups with 100% of the children scoring below average.

No studies were found in English or other languages, which attempted to arrange the sub-components of semantics based on their relative difficulty levels. However, difficulties in semantic abilities in children with language impairments have been identified by many researchers (Johnson & Ramstad, 1983; Camarata et al, 1985). Abdunnassar (1997), in his study on Malayalam, found that the children with language impairments perform at normal levels in naming, semantic contiguity, semantic anomaly, polar questions and paradigmatic relations. In the present study too, these constructs appear at higher levels in the hierarchy, showing that they are relatively less difficult for children with language impairments.

Receptive Vocabulary

1. In all the four age groups, children with language impairments were significantly poorer on receptive vocabulary than their non-impaired peers.
2. The functioning levels of children with language impairments were equal to levels of younger normal children. The 7+ age group was 3 years delayed and showed the performance level of 4- year-old normal children. The 8+ and 9+ year age groups showed delays of 3 and 4 years respectively, equivalent to

the functioning level of normal 5-year-old children. The 10+ year age group showed performance equal to normal 6-year-old children and delays of 6 years. The lower functioning levels of children with language impairments on vocabulary measures, with performance being similar to younger normal children, is evidenced in studies by Wiig and Semel (1984) and Elliott and Hammer (1988).

Auditory Reception

The 7+ and 8+ year age groups of children with language impairments showed age-equivalent performance. The 9+ and 10+ year age groups showed a delay of 1 year and functioning at levels of 8+ year-olds and 9+ year-olds respectively. Although the mean performance of 7+ and 8+ year-old children with language impairments was average, 36.84% of 7+ year-olds and 29.63% of 8+ year-old children with language impairments scored at below average levels. These deficits found in auditory receptive abilities of children with language impairments support studies in English by various researchers (Kamhi & Koenig, 1985; Kamhi & Catts, 1986).

Aural Comprehension

1. The performance of children with language impairments in all the 4 age groups was significantly poorer than their expected age-level performance.
2. The discrepancy between performance and age of children with language impairments showed a gradual increase: 1 year in 7+ year-olds, 2 years each in 8+ and 9+ year-olds, and 3 years in 10+ year-old children.
3. The 7+ and 8+ age groups showed performance equivalent to normal 6-year-old children while the 9+ and 10+ age groups showed performance equivalent to normal 7-year-old children. Thus, in aural comprehension the performance of children with language impairments was equivalent to that of younger normal children. These findings support earlier research in comprehension abilities of children with language impairments (Weismer, 1985; Bishop & Adams, 1992; Wiig & Wilson, 1994).
4. Children with language impairments were seen to develop aural comprehension skills equivalent to that of normal 7+ year-old children, after which the development seems to cease and the performance levels plateau. There were no studies found in English or other languages to substantiate these findings.

Verbal Expression

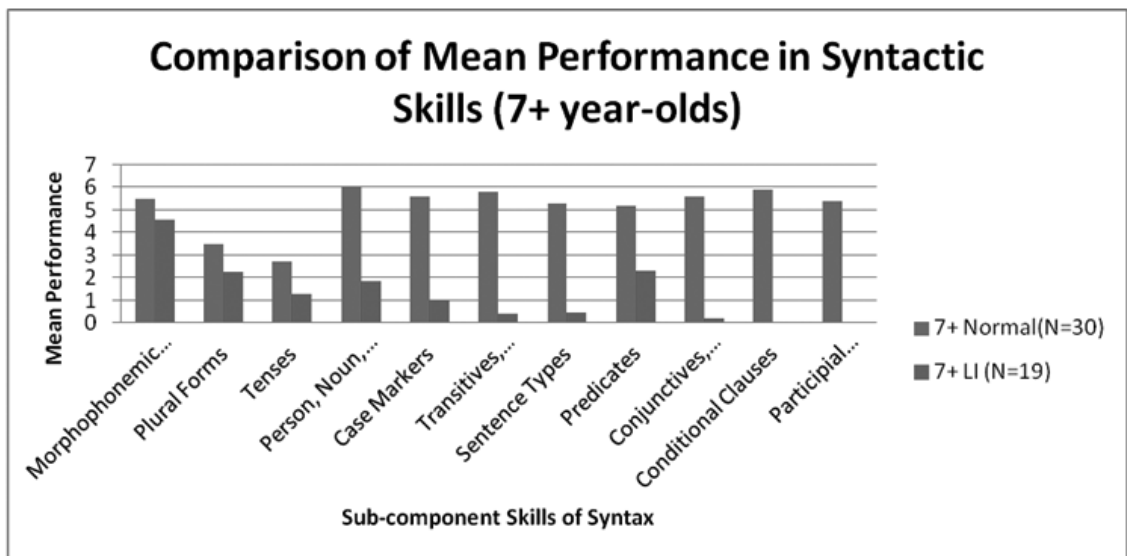
1. The performance of children with language impairments in all the 4 age groups (7+ to 10+) was significantly poorer than the levels among their normal peers. All the 4 age groups functioned at levels equivalent to normal 5-year-old children. In other studies, these deficits found in the abilities of children with language impairments were variously attributed to linguistic skills (Wiig et al, 1983; Morice & Slaghius, 1985), to memory deficits (Leonard et al, 2007) and metalinguistic skills like learning to discriminate and form concepts (Kamhi et al, 1984).
2. The discrepancy between the performance level and chronological age increases with age, from 7+ to 10+ years. Thus, 7+ year-olds showed a delay of 2 years, and 8+, 9+ and 10+ year groups showed delays of 3, 4 and 5 years respectively.
3. It is noteworthy that in 7+ year group, 94.74% of children showed below average level of functioning, and in the 8+, 9+ and 10+ year groups, 100% of the children showed below average level of functioning. Thus, verbal expression abilities seem to be most difficult for children with language impairments, ranking second only to syntactic abilities.

Syntax

1. Children with language impairments in all the 4 age groups (7+ to 10+ years) were significantly poorer performers than their non-impaired peers. Their performance levels were 2 to 5 standard deviations below the expected level for 6+ year-olds. Since the norms for Linguistic Profile Test (LPT) were set to begin at 6+ years, it was not possible to assess the exact performance level of children with language impairments. Hence, performance was assessed in terms of the number of standard deviations below the 6-year group mean. Functioning of children with language impairments at levels equal to younger normal children as found here, supports the findings of a number of studies in English syntax (Wiig & Semel, 1980; Wiig et al, 1981; Kamhi & Koenig, 1985; Paul & Alforde, 1994). The LPT assessing syntax involved metalinguistic skills of judgement and differentiating correct and wrong forms. Children with language impairments exhibited significant difficulty, supporting studies by Kamhi and Koenig (1985). Findings in Malayam, another Indian language, also showed that children with language impairments exhibited significant difficulty in syntactic abilities (Abdunnassar, 1997).

2. The discrepancy in all components of syntax increases with age. Since all the 4 age groups exhibited performance levels compatible with normal 6-year-old children, it is possible that among children with language impairments the development of syntactic ability continues till a minimum level (below 6-year-old level) and plateaus after a certain point. Since the later years of schooling (in the case of 8+ to 10+ year groups) have brought about no significant development in syntax, it can be inferred that the difficulties faced by children with language impairments cannot be overcome without intervention. This finding supports research in English, done by Wiig and her colleagues (Wiig et al, 1983; Wiig, 1984). It was found that syntactic performance of adolescents with language impairments plateaus at levels expected of children in early primary grades.
3. The performance of children with language impairments in all the sub-components of syntax was significantly poorer than among their non-impaired peers, in all the 4 age groups.

Figure 7: Comparison of performance of 7+ year-old children with SLI in the sub-component skills of Syntax



4. The 7+ age group was more than a year delayed in all the sub-component skills of syntax. However, the percentage of children with language impairments who showed below average performance was maximum (100%) in the constructs of conjunctives, comparatives and quotatives, conditional clauses and participial

constructions, and minimum (31.58%) in morphophonemic structures. The following hierarchy of sub-component skills of syntax from the least to most difficult for 7+ year-old children with language impairments, based on the percentage of children who scored below average, was observed:

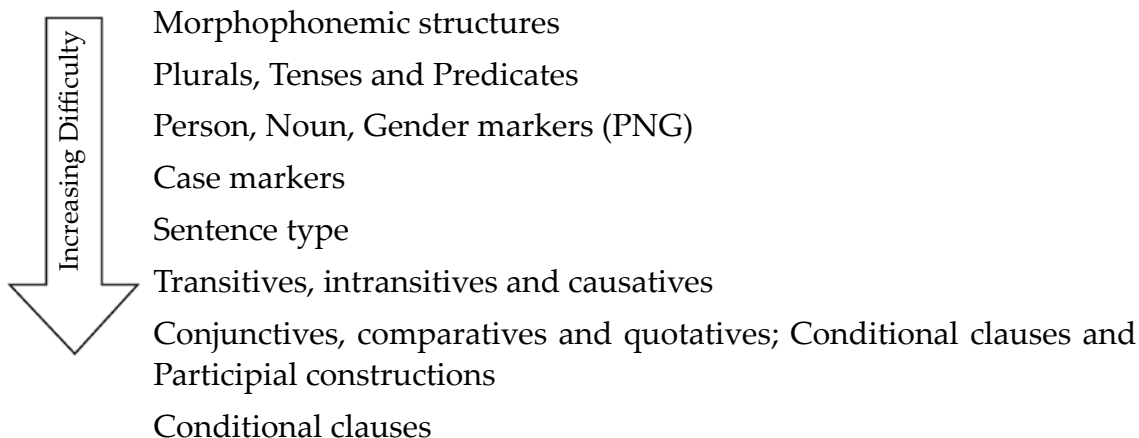
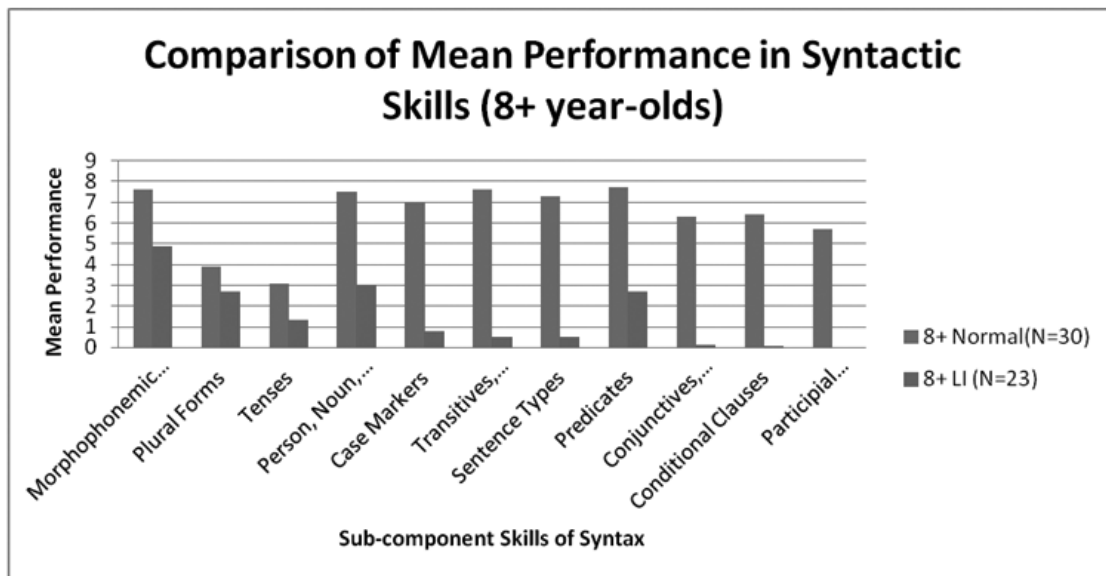


Figure 8: Comparison of performance of 8+ year-old children with SLI in the sub-component skills of Syntax



5. The 8+ age group of children with language impairments was more than 2 years delayed in performance on all the sub-components of syntax. The hierarchy of these skills for the 8+ year- old group, from the least to the most difficult is:

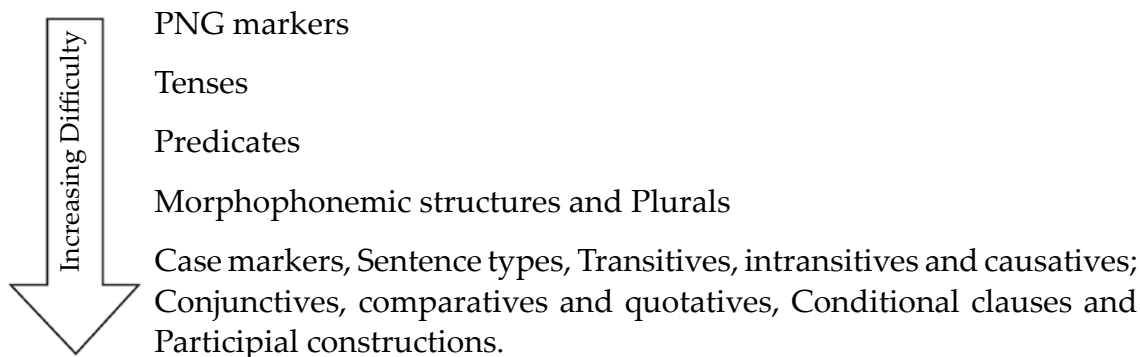
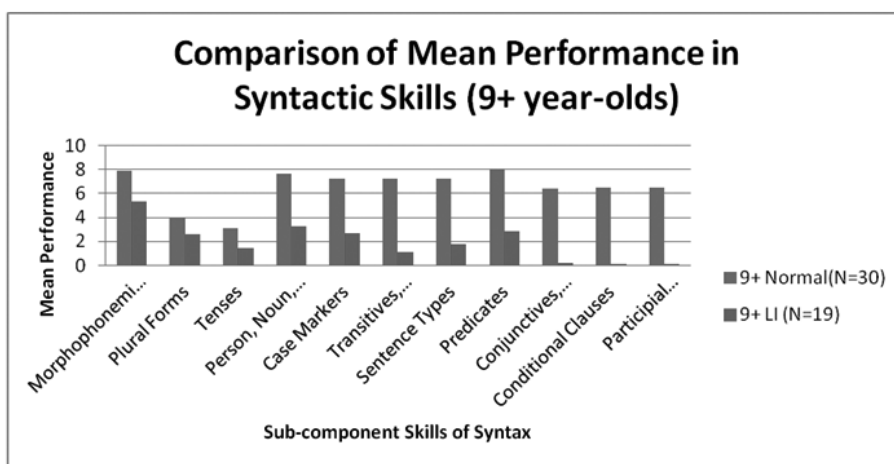


Figure 9: Comparison of performance of 9+ year-old children with SLI in the sub-component skills of Syntax



6. The 9+ age groups of children with language impairments showed more than 2 years delay in morphophonemic structures, and more than 3 years delay in all the other sub-component skills of syntax. The hierarchy of the syntactic subcomponents for 9+ year-olds, from the least to the most difficult is:

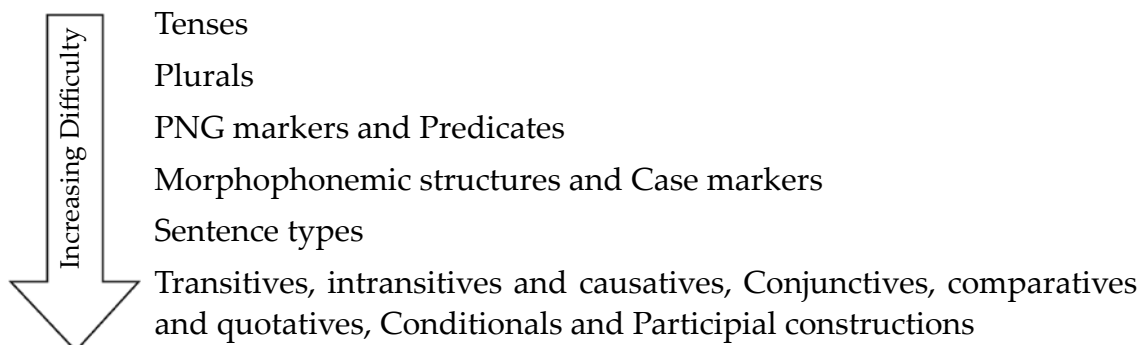
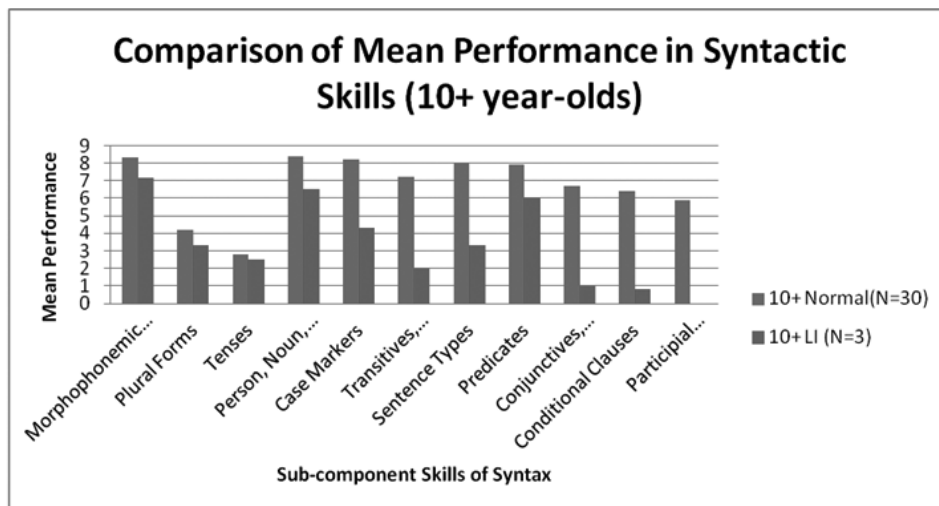
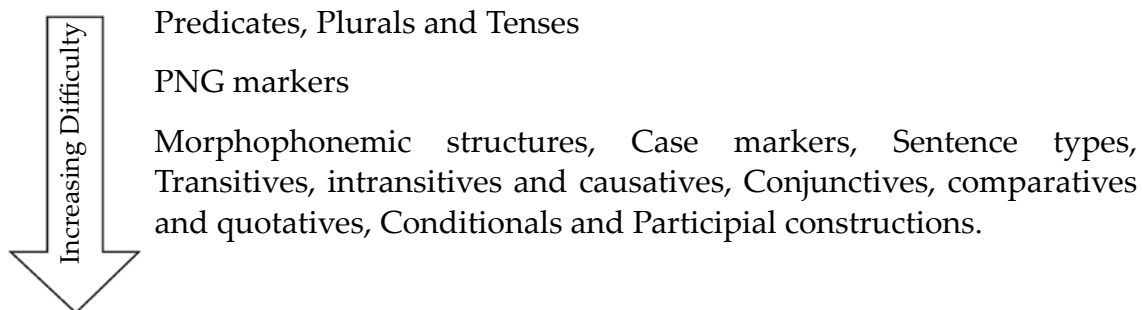


Figure 10: Comparison of performance of 10+ year-old children with SLI in the sub-component skills of Syntax



7. The 10+ age group of children with language impairments showed more than 2 years delay in morphophonemic structures, PNG markers and predicates, and more than 4 years delay in all the other sub-components of syntax, as compared to their non-impaired peers. The hierarchy of syntactic sub-components for the 10+ age group is:



Studies on all the sub-component skills of syntax in children with language impairments or studies which attempted to put the sub-component skills into hierarchies on the basis of their relative difficulty levels could not be traced in English or other languages. However, these findings support earlier evidence that children with language impairments experience difficulties with complex sentences and impaired knowledge of morphological rules (Idol-Maestas, 1980; Wiig et al, 1983).

IMPLICATIONS and CONCLUSION

The existence of language impairments in other languages is not in doubt. This study on Kannada, a south Indian language, which revealed that 6.84% of school children in 3rd and 4th Grades have language impairments, confirms findings of studies on other languages (Law et al, 1998). It places a significant emphasis on the need to identify children such as these in other language populations, and to provide intervention.

Phonology and semantic skills were found to be areas of strength at 7 and 8 years of age, while syntax and verbal expression were found to be significant deficit areas in 7- to 10-year-old children with language impairments. The discrepancy between language functioning and expected language age increases as age advances. This highlights the need for early identification of children with language impairments, and early intervention to prevent the increasing developmental delay. Efforts must be focused on identifying such deficits in children at an early age, and must target specific skills based on difficulty levels. Since verbal expression is shown to be affected significantly as children grow older, more advanced language skills such as reading and writing would be further affected. As verbal expression is rarely assessed and tends to be neglected in the classroom, such deficits may often remain unidentified. This study highlights the need for specific diagnosis of language skills and early remediation measures.

In assessing sub-component skills of semantics and syntax, relative areas of strengths and weaknesses were established for the four age groups studied (7 to 10 years), as described in the section above. This information can be used to classify children, based on their individual needs, to remedial programmes that are designed to capitalise on their strengths and target their weaknesses. Since phonology and certain semantic categories seem to be areas of strength, these were used to develop further linguistic skills of morphology and syntax in a follow-up study (which is beyond the scope of this article). The language profiles of children so derived are also a useful starting point for intervention and further assessment. Intervention efforts in inclusive settings and those that are community based should be founded on intensive evaluation of language skills in all areas, to establish relative strengths and weaknesses. Since these vary greatly with age, it is important to identify the requirement for each individual child, before remedial efforts begin.

Certain linguistic features also impact the impairment. With Kannada, sequencing the linguistic components based on the difficulty level provides a structure to

further remedial programmes. Similarly, other languages should be investigated to identify potential linguistic features and to identify a hierarchy of difficult components.

Limitations

In the absence of standardised measures for assessing language, a combination of standardised tests, teacher- and parent-report measures were used to assess specific language areas. Although the reliability of such an identification and assessment can be challenged, the ultimate goal of the study was not to label the child, but to give an insight into specific skills of language and provide remediation. A study on the intervention that was attempted, based on these language assessments, is beyond the scope of this paper. This research focused on quantitative analysis of data which was further limited by the limitations of the tests. Qualitative analysis of language samples should be done to yield valuable data on the use and functional aspect of language. Further research is necessary to compare the language skills of children with language impairments and their non-impaired counterparts, and to analyse the specific differences.

This study can be replicated in many languages as it is a comprehensive method of language analysis, despite its limitations. Understanding the profiles of children with language impairments in varied languages will lead to better assessments and interventions.

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