

# Spoken Language Proficiency (Discourse Level) in Bilingual Children with Learning Disability

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## Abstract

*This study was mainly designed to investigate the language proficiency in bilingual children with Learning Disability (LD) and typically developing children. The study also aimed to identify and quantify the language impairment at discourse level in children with LD and typically developing children. It was compared across the group and language for two different tasks (picture description or story narration). The participants included a total of 60 school going children in the age range of 8 to 13 years. An attempt was made to investigate specifically, the aspects of discourse (propositional/non-propositional) that were affected in children with LD and typically developing children. The results indicated significant differences in the discourse of narrative productions in the LD compared with controls. The findings of this study support past literature, which calls for greater research in this area using stricter reliability measures.*

**Key words:** learning disability, language proficiency, discourse aspects/propositional & non-propositional

Language is like any other skill or aptitude; some people are proficient in languages, while others are better at math, science, or music. "Language is presumed to have developed on a solid foundation established during infancy and early childhood" (Nippold, 2006). Therefore, everyone has the potential to learn, but the fact is that some people are just more capable of learning language than others.

"Proficient" implies an advanced degree of competence acquired through training. Language proficiency skills is the knowledge and abilities which impact on the capacity of a given individual to communicate spontaneously, accurately, intelligibly, meaningfully and appropriately in a given language.

"Learning disability (LD) is a specific language disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction" (Lyon, Shaywitz & Shaywitz, 2003). Children with LD have the greatest problems like organizing in an appropriate sequence of words (Clifford, Reilly & Wulfeck, 1995; cited in Leonard & Kondrick, 1998). Paul and Smith (1993) reported difficulty of narrative skills in LD children, they pointed that language difficulty may be due to deficit

beyond language, difficulty in encoding, organizing, linking proposition and retrieval of words.

Chinn and Crossman (1995) described dyslexics as having difficulty in "finding the right word"- They know that they have a good idea but cannot find a way to communicate it to others. They describe how young dyslexics tend to be disadvantaged because of misperceptions misjudgements and misreading within the social sphere, and that this can continue into adulthood. Investigators have found that pre-school impairment in language skills are associated with later problems in reading and spelling, and that children with LD have particular problems with complex language demands such as narratives or storytelling, lexical retrieval and recognition of melody patterns (Denckla & Rudel, 1976; Donahue, 1984).

Language can be viewed and analyzed on many levels, one of which is "Language in use" (Frattali & Grafman, in press) compared to production of sounds, words, or sentences in isolation, discourse production. Discourse production which is an integrative and context driven construct, is also a representative of the complex communication needed for daily life activities. School age children are expected to comprehend and produce a range of discourse types (Nelson, 1993; Scott, 1994). These different discourse types included during assessment practices present in children speaking different languages may reveal conditions under which language production problems arise.

There is considerable research effort towards organization of several languages. There are numerous reasons to believe that the use of language as a medium for acquiring knowledge is crucial to academic success.

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Thus deficits in discourse may impact significantly on a child's academic achievement. Learning Disabled (LD) students, by definition, demonstrate primary problems in academic learning. Although the precise relationship between discourse and academic competencies is far from clear, a growing body of evidence suggests that LD students manifest problems in discourse. Conversation is one form of discourse in which deficits have been fairly well documented in LD children (e.g., Bryan, Donahue, Sturm & Pearl, 1981; Donahue, 1984). Another discourse form that poses problems for these students is the narrative.

In language competence, traditionally, the self assessment literature has used three distinct measures to index bilingual language competence: (a) language proficiency, (b) language dominance, and (c) language preference. Adding to the confusion is that researchers have also at times used language preference, instead of language proficiency or dominance, as the domain of interest (e.g., Marian & Neisser, 2000).

Hence, the study attempts to identify and quantify impairments in communication abilities of children with LD. The aim was to identify commonly shared discursive resources (shared patterns of talking). This study is formulated using Tamil which is a Dravidian language spoken mainly in the state of Tamil Nadu and English which is an Indo European language. It becomes interesting to study the differences in narrative skills in bilingual Tamil-English children and to check whether such findings support or refute the earlier findings that bilinguals lack language proficiency at discourse level.

Despite the growing body of literature on LD, there have been relatively few studies carried out in the Indian context. Recent research with regard to discourse in individuals with LD has confirmed deficits in the same. But, only few studies give information regarding the specific types of deficits in discourse of individuals with LD, especially with respect to differences in discourse deficits across monolingual and bilingual LD. The few studies reviewed revealed that impairment in discourse is one of the persisting, subtle and subclinical features in children with LD. Although there is much research in western countries in this area, limited literature is available in Indian context. An effort is made in these studies to analyze each feature of discourse and score them using perceptual rating scales. Thus in order to get a comprehensive picture of all the affected parameters at discourse level, this study was formulated.

The aim of the current study was to explore and compare the language characteristics and deficits in

spoken language proficiency at discourse level in the children with LD whose mother tongue was Tamil and who had acquired English in formal education set up. Discourse skills were examined because the ability to initiate and maintain a conversation is essential for social communication and communication effectiveness. The study aimed to assess the discourse deficits in children with LD and to compare with narrative discourse of typically developing children across both the languages (Tamil-English) and various age groups (8 to 13 years) and across various tasks (picture description or story narration). This study was designed to specifically find which aspects of discourse (propositional/non-propositional) are affected in children with LD and typically developing children.

## Method

**Participants:** The study was conducted on two groups of subjects, one experimental and one control group. The experimental group consisted of 30 dyslexics in the age range of 8 to 13 years. Age, gender and education matched 30 normal subjects served as the participants for control group. All the subjects included in the study were Tamil-English bilinguals. Apart from the mother tongue the other language to which the children were exposed to was English, which was learnt as a language as well as a medium of instruction in school.

All the children who participated in the study were right handed with normal hearing thresholds in both the ears and had average intelligence as verified on observation and parental/teacher interview and no formal tests however, were administered.

Those who had no known sensory deficits and neurological impairment were selected. The subjects used no other language in their daily communication other than Tamil and English. They had acquired English as their second language (L2-English for all the participants) both for academic and communicative purposes.

Table 1. *Details of the participants of the study*

Type of Population	Age Range (in years)	Males	Females	Total
Normal participants	8-10	8	8	16
	11-13	8	6	14
Persons with LD	8 - 13	19	11	30

**Experimental / clinical group:** A total of 30 children with LD were carefully selected from specialized schools, or units within mainstream schools, that were organized to support children with the learning



disabilities. Children with behavioural disorders, sensory deficits, cognitive and neurological impairment were excluded from the study.

Only children for whom an Educational Psychologists' and Speech-Language Pathologists' (SLPs) assessment report was available were included in the LD group. In addition, LD children had, prior to this study received at least one year of special teaching support and had been attending their current school for at least two terms. Selection procedures targeted a relatively focused age range to ensure that similar curriculum levels had been met by all LD children. It was ensured that no undiagnosed dyslexics found their way into the clinical group.

**Control group:** The child's age at the time of full assessment considered in this study varied considerably within these groups (from 8 to 13 years of age). Control group subjects consisted of 30 volunteers were selected from mainstream schools. They were screened for any speech and language, cognitive-linguistic and hearing impairment using assessment battery developed by the institution. Parental/guardian permission formed part of the criteria on which the control children were selected. Teachers were consulted to ensure that there was no reported evidence of learning difficulties or concerns about the acquisition of reading/writing skills. All control children were meeting school achievement levels based on their current and previous curriculum-based tests. Finally, control children were selected to mirror age levels and sex ratios of the LD groups.

**Procedure:** Testing environment was chosen with minimum distraction. Children were given the tasks individually in a quiet room. Testing took place on several different days over the period of 2-3 weeks. Each test session lasted no longer than 30 min. The narrative task and other tests were conducted solely by the examiner. Participants were selected by ethical procedures. The current study was carried out in different levels as discussed further.

**Material:** Initially both the experimental and control group was subjected to Language Proficiency Rating Scale (LPRS) (Vishnu, Deepa, Hema & Chengappa, 2010). The participants or the parents of the participants rated LPRS based on the proficiency scales, in both Tamil and English. Overall scores were calculated and converted into percentage score. Subjects were verified whether they score 90% to 100% which indicated higher language proficiency. Pursued by the judgment of the language proficiency of all the participants, further each participants were provided with a creative picture description (Western Aphasia Battery by Kertesz, 1982) task followed by

a story narration task. Duration of five minutes was given for picture description task where the children were asked to narrate gist of information about the picture. Warm up time of approximately 2-3 minutes was provided for each child before the commencement of the tasks. At the same time recording was done.

The testing was done first in Tamil and second in English for both the tasks. While testing in Tamil, all conversations, instructions was given only in Tamil and similarly English was used exclusively for testing in English. All the narratives were videotaped for further transcription and analysis.

Discourse analysis procedure was used to assess the discourse ability in individuals with LD and normal speakers who were Tamil-English bilinguals. Various speech discourse parameters under the propositional and non-propositional aspects of conversation and picture description tasks were analyzed. Discourse Analysis Scale, (Hema, 2008) was used.

**Transcription procedure:** The participants' spoken narratives were transcribed according to the conventions of the discourse analysis. From the recorded audio sample, transcription was done for picture description and story narration task individually using broad International Phonetic Alphabet, 2007. During transcription, initiation time, pause time, filled pauses, unfilled pauses and false starts etc were carefully noted for each episode.

**Scoring and statistical analysis:** Statistical analysis was done using SPSS software 16 version. Test measures were selected to cover different aspects of language ability in Tamil-English bilingual LD and normal individuals. Individual scores were calculated, Mann Whitney-U test and Wilcoxon's signed Rank test was applied for the sub-parameter of the following parameters to measure the significance of the value obtained. Nonparametric tests were used to find significant difference within LD group and control group across languages and tasks. Independent t-test was applied for the percentage scores of the following parameters to find the significant difference between the LD and normal speakers across two tasks (picture description/ story narration) and two domains (propositional/ non-propositional).

The investigator repeated the process of transcription of discourse sample i.e., the story narration and picture description sample of five children with LD and five normal subjects for verification of transcription, scoring, and reporting of the features. The findings were found to be correlating in both instances.



## Results and Discussion

The performance of LD subjects as compared to typically developing children are presented and discussed in detail under various sections as follows.

**Comparison between LD children and normal speakers for percentage scores:** The raw scores obtained from each subsection of discourse analysis were converted into percentage score and was statistically analyzed to see the significant difference between the two groups.

Table 2. Mean and Standard deviation (SD) for percentage scores across subjects, languages & tasks

Parameters*	Experimental group		Control group	
	Mean	SD	Mean	SD
Epdprper	50.96	3.70	84.04	7.39
Epdnprr	31.67	8.34	70.33	9.28
Esprper	51.54	3.05	84.04	7.39
Esnprper	31.67	7.91	70.33	9.28
Tpdprper	49.23	4.62	88.91	2.97
Tpdnprr	30.00	12.03	74.33	10.73
Tsprper	48.97	4.56	90.00	2.69
Tsnprper	31.00	12.96	74.33	10.73

\*(Epdprper- English picture description proportional percentage score, Epdnpprr-English picture description non-proportional percentage score, Esprper- English story narration proportional percentage score, Esnprper- English story narration non-proportional percentage score, Tpdprper-Tamil picture description proportional percentage score, Tpdnprr- Tamil picture description non-proportional percentage score, Tsprper- Tamil story narration proportional percentage score, Tsnprper- story narration non-proportional percentage score).

The mean and standard deviation across children with LD and typically developing children across both the languages (Tamil and English) and across two aspects of discourse (propositional and non-propositional) using two different tasks are represented in Table 2. The values are shown as percentage scores and are graphically illustrated in the Figure 1.

The mean scores differed significantly from each other and also with the LD group and typically developing children. However, there were variations in the scores obtained among the two tasks. The findings also indicated that the performance varied greatly across the two languages. Thus, the pattern of scoring across the tasks and languages is similar for children belonging to experimental group and control group.

The present study disclosed a trend in the performance of the LD children and typically developing children, in language proficiency. Although LD children did not perform on par with typically developing children, they were certainly better in propositional than non-propositional aspects. This result is in harmony with Laughton and Morris (1989) where the children with LD have lower values and discourse deficits compared to typically developing children.

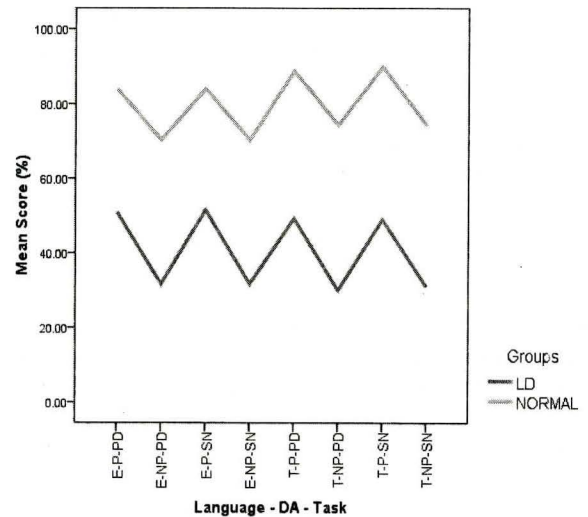


Figure 1. The mean percentage score compared with languages, tasks and discourse aspects for LD and normal.

LD children and typically developing children were compared using Wilcoxon signed rank test across the two languages and tasks based on their percentage scores. Significant difference was present between propositional and non propositional aspects of discourse across both the groups and languages.

In summary, the study discovered mixed results where two groups demonstrated significant differences between languages and some for tasks which could be due to factors such as linguistic, social and environmental influences experienced by the child in their day to day life. However, the review of literature lacks studies examining whether the discourse skills of children with LD are similar to the discourse deficits of typically developing children and if these discourse skills differ from those of either picture description task or story narration task in Tamil or English. The same need to be studied and well documented in Indian languages.

**Comparison within LD group and control group of normal children:** In this section, propositional aspects like Failure to Structure Discourse, Communication



intent, Topic management, Information content, Information adequacy, Message Inaccuracy, Use of nonspecific vocabulary, Linguistic Non-fluency, Inappropriate Speech Style, Inappropriate Intonation Contour were compared within typically developing children as well as children with LD. Non-propositional aspects like delay in describing picture, Repair strategy, Revision behaviors and Gist of Information was also carried out within the groups.

Wilcoxon signed rank test was carried out for children with LD and typically developing children across language and task. Significant difference at  $p < 0.05$  level of significance in structuring discourse for both the tasks under same language, Tamil but not English was noted in all the parameters (propositional and non propositional). Parameters like Inappropriate Speech Style, Coherence, Inappropriate Intonation Contour and Delay in describing did not show significant difference among the subjects with LD.

#### **Comparison of propositional aspects and non-propositional aspects of discourse percentage scores across LD and typically developing children:**

**LD Children and typically developing children** were compared using Wilcoxon signed rank test across the two languages and tasks based on their percentage scores. Significant difference was present between propositional and non-propositional aspects of discourse across both the groups and languages. Children with identified learning difficulties are known to show impaired performance on oral narrative tasks compared to their peers with typically developing skills throughout their primary school years. More specifically, children with reading disability use fewer words (Feagans, Garvey & Golinkoff, 1984) and include fewer of the original propositions when retelling a story compared to age-matched peers (Feagans, Garvey, & Golinkoff, 1984; Roth & Spekman, 1986). Moreover, in a cross-sectional study, Snyder (1978) found that oral narrative ability (as measured by the number of original propositions included in a story retell) accounted for more of the variance in reading comprehension in 11- to 14-year-old children with reading disability than it did for the 8- to 11-year-old age group of children with reading disability. These findings suggest that oral narrative difficulties in children with reading disability do not spontaneously improve over time, and stress the importance of investigating and remediating the oral narrative skills during the early school years.

Black and Logan (1995) found that these patterns in parent-child interaction, among others such as appropriate turn-taking, are linked to children's conversational skills and peer acceptance. Children's

conversational patterns were similar to those of their parents. Parents of rejected children were more likely to make more demands and closed requests, take irrelevant turns, interrupt, and not leave time for a response after taking a turn.

Delgado, Guerrero, Goggin and Ellis, (1999) tested Spanish-English bilinguals and correlated self assessed proficiency in English and Spanish with performance on the Woodcock- Muñoz Language Survey (Woodcock & Muñoz-Sandoval, 1993). Delgado et al. (1999) found that participants assessed first- language (L1) skills more accurately than they did second-language (L2) skills. Woodcock-Muñoz scores correlated with all self reported measures of L1 proficiency but with only self reported measures of L2 reading and writing (and not with L2 speaking and understanding). Similarly, Bahrlick, Hall, Goggin, Bahrlick and Berger, (1994) found that language dominance ratings correlated highly with performance on some tasks (e.g., category generation and vocabulary recognition) but correlated less with performance on other tasks (e.g., oral comprehension). Together, studies of domain-general self-assessment in bilinguals suggest that the relationship between self-reported and behavioural measures of language performance varies across languages and tasks (e.g., Bahrlick et al., 1994; Delgado et al., 1999).

In summary, the study discovered mixed results where the two groups demonstrated significant differences between languages and some for tasks which could be due to factors such as linguistic, social and environmental influences experienced by the child in their day to day life. However, the review of literature markedly lacks studies examining whether the discourse skills of children with LD are similar to the discourse deficits of typically developing children and if these discourse skills differ from those of either picture description task or story narration task in Tamil or English. The same need to be studied and well documented in the Indian languages.

### **Conclusions**

The current study was mainly designed to investigate the language proficiency in bilingual children with LD and typically developing children. The study also aimed to identify and quantify the language impairment at discourse level in LD and typically developing children and also was compared across the group and language for two different tasks. The results revealed a significant difference between the experimental group (LD) and the control group (typically developing children), wherein the overall performance of the experimental group was poorer as compared to the control group.



Within the experimental group, significant difference was noticed between the languages with better scores in Tamil as compared to English. However, they did not show a significant difference among tasks. Within the control group, similar pattern was observed as that of the experimental group.

The results thus correlate with the language proficiency rating which was explored in Phase I. L1 proficiency was reported to be better than L2 proficiency. It was also found that self-reported reading proficiency was a more accurate predictor of first-language performance, and self-reported speaking proficiency that of second-language performance. Family based experiences, years spent in a L1 region may have contributed to L1 competence and proficiency while L2 was mainly school based and learnt later in a successive context, hence less proficient. It can be concluded that higher language proficiency reflects greater performance in spoken discourse among children with LD and typically developing children.

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