2-Word and Non-Word Repetition Test in Kannada

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repetition scores across each of the syllable lengths; for the percentage of vowels and consonants correct across different syllable lengths for both words and nonwords; and also for the percentage of different types of errors namely syllable substitutions, omissions and additions in both words and nonwords (see Appendix B). The results revealed that the accuracy of the repetition scores was better for words on the whole and at all syllable lengths compared to nonwords for both age groups and gender which can be attributed to the effect of lexical status. Further the children in the higher age group performed better on the repetition of words and nonwords than the children in the lower age group. This shows that as children grow their phonological working memory also matures. Their better performance could be attributed to the more proficient articulatory abilities and better subvocal rehearsal mechanism of the phonological loop which helps to actively maintain the to-be-repeated 'skeleton' of sub-lexical components (e.g., syllables, onsets-rimes) (Gathercole & Baddeley, 1989). In general, the children in both the age groups performed better on the 2- and 3-syllable length nonwords than on 4- and 5-syllable length nonwords. This might be attributed to the lesser frequency of exposure of the children at this age to longer syllable length words.

Further the results indicated a significant difference between the performance of children of 4-5 and 5-6years age group on 2 and 3-syllable length words where in the performance of children in the higher age group was significantly better than that of the children in the lower age group. However, with respect to the repetition of nonwords, there was a significant difference between the children of the two age groups, on 3-, 4- and 5-syllable length nonwords. The results indicate that there is a greater development between age groups at 2 and 3 syllable length word level compared to the 4 and 5 syllable length word level. This indicates that the refining of the phonological working memory progresses in a step by step fashion from 2 and 3 syllable to 4 and 5 syllable level.

Further the scores were computed and compared across children from different age groups representing different socio-economic status (SES) which did not reveal any significant group differences on the Kruskal Wallis test for any of the parameters. The effect of gender was also not significant on any of the parameters of WNRT-K. The mean, SD values, chisquare and level of significance values have been depicted in Table 4.1.

Table 4.1. *Mean and Standard Deviation (SD) values for word and nonword accuracy at each syllable length for children from different socioeconomic status (SES).*

Syllable length	SES	4-5yrs				5-6yrs			
		Mean	SD	Chi square (df, 2)	p values	Mean	SD	Chi square (df, 2)	p values
WA2sy	1	9.93	0.26			10.00	0.00		
	2	9.78	0.42	2.49	0.29	9.91	0.29	2.03	0.36
	3	9.82	0.41			9.97	0.18		
WA3sy	1	9.39	0.88	2.03	0.36	9.74	0.56	2.74	0.25
	2	9.41	0.80			9.57	0.73		
	3	9.64	0.67			9.87	0.35		
WA4sy	1	9.61	0.88	3.54	0.17	9.69	0.67	0.62	0.73
	2	9.30	1.07			9.70	0.47		
	3	9.27	0.79			9.33	1.30		
WA5sy	1	8.96	2.63	0.76	0.69	9.37	0.60	0.32	0.85
	2	8.37	1.45			9.30	0.88		
	3	8.73	1.10			8.87	1.63		
OWA	1	37.54	2.59	2.28	0.32	38.90	1.10	0.27	0.87
	2	36.26	4.10			38.44	1.76		
	3	37.46	2.42			38.03	2.75		
NWA2sy	1	9.71	0.54	0.88	0.65	9.21	2.28	3.68	0.16
	2	9.44	0.89			9.74	0.54		
	3	9.46	1.21			9.90	0.31		
NWA3sy	1	9.36	0.91	0.42	0.42	9.63	0.50	1.08	0.58
	2	9.15	1.29			9.39	0.78		
	3	8.91	1.51			9.57	0.73		
NWA4sy	1	8.00	1.61	1.01	1.01	8.95	1.03	0.61	0.74
	2	8.26	1.68			9.13	0.97		
	3	8.18	2.27			9.03	1.33		
NWA5sy	1	5.50	2.05	0.99	0.99	6.53	2.22	0.51	0.77
	2	5.96	2.30			6.87	2.24		
	3	6.00	2.45			6.50	1.94		
ONWA	1	32.12	4.26	1.31	1.31	34.84	2.99	0.89	0.96
	2	32.74	4.72			35.22	3.07		
	3	32.55	6.70			34.90	3.29		

[W- words; NW- nonwords; 1- children of lower socioeconomic status; 2- children of middle socioeconomic status; 3- children of higher socioeconomic status; A2sy - accuracy at 2-syllable length; A3sy - accuracy at 3- syllable length; A4sy - accuracy at 4-syllable length; A5sy - accuracy at syllable length; OWA - overall accuracy for the entire words; ONWA - overall accuracy for the entire nonwords]

Psychometric properties of WNRT-K

Reliability

Reliability refers to how consistently any measurement estimates the characteristic in question. The different types of reliability measure considered here are:

- Test-retest: The consistency of test results produced across a given time interval.
- Inter-rater: The consistency in scoring between different raters.

According to Anastasi and Urbina (1997), coefficients at or above 0.80 are acceptable, while those of 0.90 and above are desirable.

Test-retest reliability

To examine the stability of the word and nonword repetition test performance across time, a subsample of 16 children (11%) of the total sample were retested by the same examiner within two weeks of the first test. Intra class correlations were computed for total word + nonword s[illegible] on the word and nonword repetition test. The test-retest reliability was calculated using the Cronbach's coefficient alpha which was found to be 0.80. This suggested acceptable levels of test-retest reliability for the overall test.

Inter-rater reliability

Randomly selected subsamples of recordings were used to assess inter-rater reliability. A sample of 14 children (10%) of the total sample was independently blind-rated by the examiner and a trained SLP. Their scores for key measures were compared with online scoring by testers. Acceptable levels of reliability were achieved wherein the Cronbach's coefficient alpha was 0.71.

Validity

Validity is defined as the extent to which a test measures the construct it purports to measure (Anastasi & Urbina, 1997). Test validation demonstrates whether or not appropriate and meaningful inferences can be made from the test.

The test developed was validated by administering it on ten typically developing children in each of the two age groups (4-5years and 5-6years) who were not a part of the earlier subject sample selected. The[illegible]venty children were selected from new schools other than the schools from where the earlier 138 children were selected to participate in the study. They were administered with the complete test of 40 words and 40 nonwords along with the practice items auditorily through h[illegible]hones using a laptop. They were given similar instruction as given to earlier set of children who participated in the study. The repeated responses of the children were transcribed verbatim using broad phonetic transcription online and were also recorded into the laptop. The responses were scored for both the accuracy of the responses and error analysis. The raw scores were calculated and the mean and SD values were computed using descriptive statistics. The mean values of the validation samples were lying within the mean plus or minus SD values or closer to the mean values of the earlier 138 samples children who were tested, suggesting a good validity of the test.

Table 4.2. *Mean and Standard Deviation (SD) values for the validation samples of the twenty children and the 138 typically developing children considered.*

	Validation samples		Mean of 138 children	
	Mean	SD	Lower bound	Upper bound
WA2sy	9.60	0.68	9.63	10.21
WA3sy	9.45	0.69	8.89	10.29
WA4sy	9.45	0.69	8.50	10.40
WA5sy	8.95	1.36	7.28	11.56
WOA	37.45	2.50	34.91	40.55
NWA2sy	9.30	0.80	8.56	10.68
NWA3sy	8.55	1.23	8.39	10.34
NWA4sy	8.45	1.57	7.10	10.12
NWA5sy	6.10	1.25	4.01	8.40
NWOA	32.35	3.38	29.54	38.00
WNWA2sy	18.90	1.12	18.78	20.40
WNWA3sy	18.00	1.59	17.64	20.30
WNWA4sy	17.85	1.84	16.06	20.12
WNWA5sy	15.25	2.05	11.83	18.21
TWNWA	69.60	5.27	64.79	77.73
WPVC2sy	99.75	1.12	99.53	100.39
WPVC3sy	99.83	0.75	98.63	100.93
WPVC4sy	99.13	1.47	98.59	100.79
WPVC5sy	99.70	0.98	96.16	101.82
WTPVC	99.57	0.71	98.59	100.47
NWPVC2sy	98.25	2.94	99.16	100.62
NWPVC3sy	100.00	0.00	98.71	100.67
NWPVC4sy	98.88	1.72	97.30	99.21
NWPVC5sy	95.50	2.59	92.70	99.54
NWTPVC	97.75	1.40	96.59	99.81
WPCC2sy	97.62	3.62	98.15	100.95
WPCC3sy	98.38	2.02	95.10	102.14
WPCC4sy	98.66	3.11	95.88	101.30
WPCC5sy	98.17	3.39	93.57	100.93
WTPCC	98.31	2.15	96.39	100.27
NWPCC2sy	97.38	3.62	95.13	101.98
NWPCC3sy	95.59	3.88	94.93	101.33
NWPCC4sy	96.83	3.97	92.16	100.99
NWPCC5sy	92.89	4.80	84.88	99.26
NWTPCC	95.27	3.05	91.80	99.66

[W- words; NW- nonwords; WNW- words and nonwords combined; A2sy - accuracy at 2-syllable length nonwords; A3sy - accuracy at 3-syllable length nonwords; A4sy - accuracy at 4-syllable length nonwords; A5sy - accuracy at syllable length nonwords; WOA - overall accuracy for words; NWOA - overall accuracy for nonwords; TWNWA- accuracy for the entire words and nonwords combined; PVC - percentage of vowels correct; TPVC - total percentage of vowels correct; PCC - percentage of consonants correct; TPCC - total percentage of consonants correct].

Clinical validity

Five children with language impairment were administered with the entire test developed i.e. the word and nonword repetition test to evaluate the clinical validity of the test. The children with the language delay were in the age range of 6.5-9ye[illegible]nd all of them had a language age of 5-6yrs. The children with a language delay included two children with specific language impairment (SLI) and three children with learning disability (LD) who were diagnosed by a qualified team of professionals including a speech-language pathologist and a clinical psychologist.

The repetition of words and nonwords by the children with language impairment were compared with the repetition scores of language age matched 5-6years old typically developing children. The two groups were compared on both the accuracy of the response, the percentage of vowels/consonants correct and also on the percentage of syllable substitution, omission or addition errors. The raw scores of repetition by both the groups were subjected to the descriptive statistics to obtain the mean and standard deviation values.

A. Accuracy of the responses:

The mean values indicated that the accuracy of repetition was higher in typically developing children compared to that of the children with language impairment at each syllable length and also on the overall scores in both words and nonwords which is depicted in Table 4.3 and Figures 4.1, 4.2, 4.3 and 4.4 respectively. Further the accuracy of scores decreased from 2 syllable to 5-syllable in both words and nonwords in both the groups. Also the accuracy scores were higher at each syllable length and also on the overall scores for words compared to that of nonwords in both the groups.

Table 4.3. *Mean and Standard Deviation (SD) values for accuracy of words and nonwords at each syllable length for typically developing children and children with language impairment.*

Accuracy in words and nonwords	Typically developing children (TD)		Children with language impairment (CLI)	
	Mean	SD	Mean	SD
WA2sy	9.96	0.20	9.80	0.45
WA3sy	9.74	0.56	9.00	1.23
WA4sy	9.54	0.95	9.40	1.34
WA5sy	9.14	1.21	7.80	2.28
WOA	38.39	2.11	36.00	4.58
NWA2sy	9.67	1.23	8.40	0.89
NWA3sy	9.53	0.69	8.00	1.58
NWA4sy	9.04	1.13	4.60	1.34
NWA5sy	6.63	2.09	3.00	1.87
NWOA	34.99	3.11	24.00	3.74
WNWA2sy	19.75	0.47	18.20	1.10
WNWA3sy	19.26	0.95	17.00	2.55
WNWA4sy	18.60	1.73	14.00	1.23
WNWA5sy	15.64	3.13	10.80	3.42
WNWOA	72.68	6.22	60.20	6.72

[W- words; NW- nonwords; WNW- words and nonwords combined; A2sy - accuracy at 2-syllable length nonwords; A3sy - accuracy at 3-syllable length nonwords; A4sy - accuracy at 4-syllable length nonwords; A5sy - accuracy at syllable length nonwords; WOA - overall accuracy for words; NWOA - overall accuracy for nonwords; WNWOA- overall accuracy for words and nonwords combined].

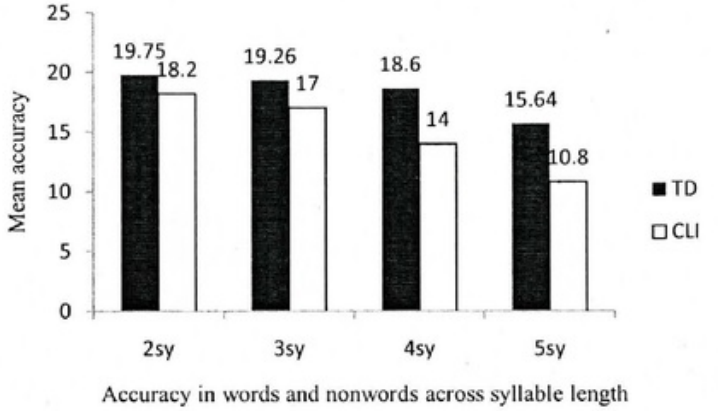


Figure 4.1. *Mean accuracy of word and nonword repetition across syllable length in both the groups (CLI- children with language impairment).*

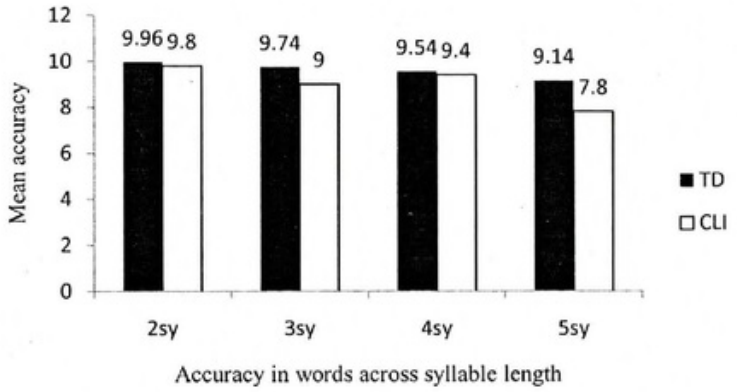


Figure 4.2. *Mean accuracy of word repetition across syllable length in both the groups (CLI- children with language impairment).*

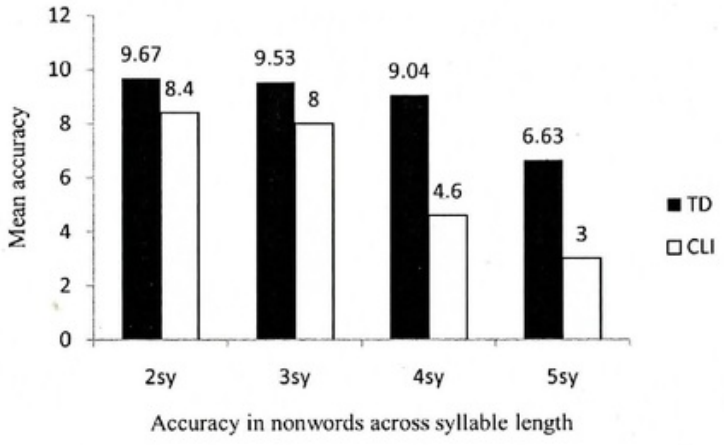
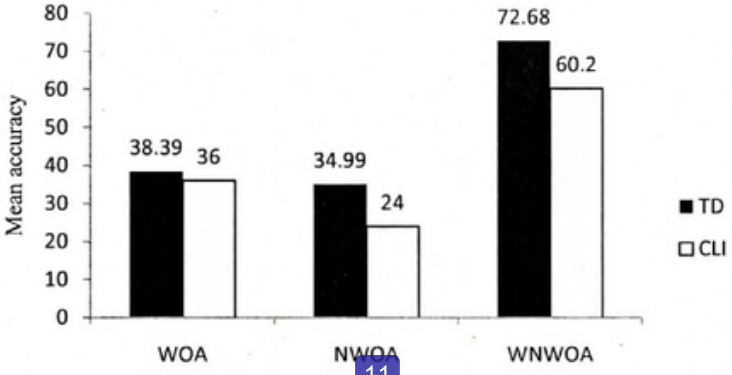


Figure 4.3. *Mean accuracy of nonword repetition across syllable length in both the groups (CLI- children with language impairment).*



Overall accuracy in words, nonwords, and words and nonwords combined

Figure 4.4. *Mean accuracy of words, nonwords and words and nonwords combined across syllable length in both the groups (CLI- children with language impairment).*

The results of Mann-Whitney U test indicated a significant difference existed between children with language impairment and typically developing children in the accuracy of the responses in words only at 3syllable length, where the typically developing children obtained higher scores than that of children with language impairment at $p<0.05$. However, there was no significant difference in the accuracy of words at other syllable lengths and also on the overall scores.

Further, there was a significant difference in the performance between the two groups on the accuracy of nonwords at all the syllable lengths viz. 2-, 3-, 4-, 5-syllable lengths and also on the overall accuracy scores on nonwords. The typically developing children performed significantly better compared to the children with language impairment on the nonwords. In addition, they obtained significantly higher scores on the total words and nonwords at each of the syllable lengths and also on the overall accuracy of repetition of total words and nonwords at $p<0.01$. The /z/ values and the level of significance values have been shown in Table 4.4.

Table 4.4. *Results of the Mann-Whitney U test for the accuracy of word and nonword repetition between typically developing and children with language impairment.*

Words and nonwords at different syllable lengths	/z/ values	p values
WA2sy	1.53	0.13
WA3sy	2.07	0.04*
WA4sy	0.17	0.86
WA5sy	1.85	0.06
WOA	1.82	0.07
NWA2sy	4.22	0.00**
NWA3sy	2.62	0.01*
NWA4sy	3.85	0.00**
NWA5sy	2.99	0.00**
NWOA	3.73	0.00**
WNW2sy	4.02	0.00**
WNW3sy	2.54	0.01*
WNW4sy	3.60	0.00**
WNW5sy	2.96	0.00**
WNWOA	3.38	0.00**

[W- words; NW- nonwords; WNW- words and nonwords combined; A2s- accuracy at 2-syllable length nonwords; A3s-accuracy at 3-syllable length nonwords; A4s- accuracy at 4-syllable length nonwords; A5s-accuracy at syllable length nonwords; WOA - overall accuracy for words; NWOA - overall accuracy for nonwords; WNWOA- overall accuracy for words and nonwords combined; ** p<0.01; * p<0.05].

The results indicated a poorer performance of children with language impairment especially on nonwords at all syllable lengths. This suggests that the entire nonword repetition task viz. even the shorter syllable length nonwords were useful in differentiating children with language impairment from the language matched typically developing children.

B. Percentage of phonemes correct:

The mean and the SD values for the percentage of phonemes correct were computed using descriptive statistics. The percentage of vowels/consonants correct was compared between the two groups and is shown in Table 4.5. Both the groups obtained higher percentage of vowels correct compared to that of consonants. This has been depicted in Figure 4.5.

The mean values of PVC (percentage of vowels correct) in words indicated that the children with language impairment obtained lower PVC at 5syllable length in words, whereas typically developing children obtained similar mean scores at all the syllable lengths in words. A similar pattern was observed in nonwords. Further the PVC in nonwords were higher for typically developing children compared to the children with language impairment as can be observed from the mean values. The typically developing children attained similar means of PVC on 2-, 3-, and 4-syllable lengths nonwords but achieved lower PVC mean scores on only 5-syllable length nonwords, while the children with language impairment obtained lower mean PVC scores on 2, 4, and also on 5-syllable length nonwords.

The mean values of the PCC (percentage consonants correct) indicated that the PCC was higher in words compared to that of nonwords in both typically developing children and children with language impairment. The mean PCC values in nonwords decreased from 2-syllable length nonwords to 5-syllable length nonwords. The children with language impairment obtained very less PCC scores at 5-syllable length nonwords compared to the typically developing children. The same is shown in Table 4.5.

Table 4.5. *Mean and Standard Deviation (SD) for PVC and PCC in words and nonwords at each syllable length for typically developing children and children with language impairment.*

	Typically developing children (TD)		Children with language impairment (CLI)	
	Mean	**SD**	**Mean**	**SD**
WPVC2sy	99.93	0.59	100.00	0.00
WPVC3sy	99.91	0.55	99.33	1.49
WPVC4sy	99.72	1.30	100.00	0.00
WPVC5sy	99.58	1.11	97.60	2.61
WTPVC	99.72	0.64	99.00	1.08
NWPVC2sy	99.79	1.01	95.00	6.12
NWPVC3sy	99.68	0.99	98.67	1.83
NWPVC4sy	99.34	1.39	93.50	2.85
NWPVC5sy	96.25	3.47	93.20	5.93
NWTPVC	98.41	1.44	96.29	1.17
WPCC2sy	99.80	0.96	99.05	2.13
WPCC3sy	98.94	3.99	96.47	6.38
WPCC4sy	98.85	2.56	98.05	4.36
WPCC5sy	97.84	3.11	91.54	11.59
WTPC	98.76	1.67	95.54	6.61
NWPCC2sy	99.27	2.06	94.29	3.98
NWPCC3sy	98.69	2.41	93.53	4.83
NWPCC4sy	97.76	3.44	84.89	9.51
NWPCC5sy	93.43	5.96	77.69	8.88
NWTPCC	96.87	2.82	85.68	6.83

[W - words; NW - nonwords; 2sy - 2-syllable length, 3sy - 3-syllable length; 4sy - 4-syllable length; 5sy - 5-syllable length; PVC - percentage of vowels correct; TPVC - total percentage of vowels correct; PCC - percentage of consonants correct; TPCC - total percentage of consonants correct]

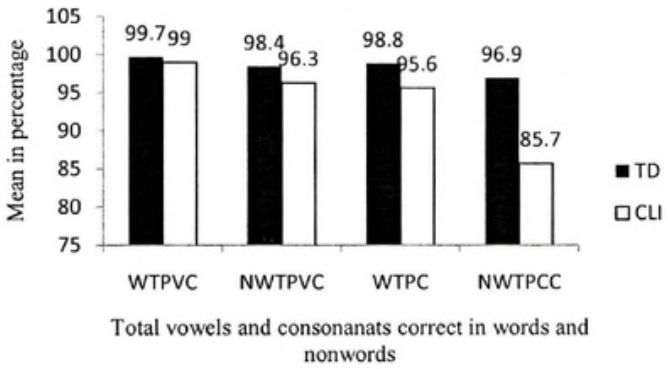


Figure 4.5. *Total percentage of vowels and consonants correct in words and nonwords in both the groups (CLI- children with language impairment).*

Mann-Whitney U test was carried out to find out the significant difference, if any, in the PVC between the two groups in both words and nonwords. The results indicated that there was a significant difference in the PVC in words only at 5-syllable length and also at the total PVC in words between the two groups ($p<0.05$). The PVC in nonwords was significantly different between the children with language impairment and typically developing children at 2-, 3-, 4-, and total PVC in nonwords. That is the children with language impairment lower PVC scores than the typically developing children at 2-, 3-, 4-, and total PVC in nonwords. However there was no significant

difference in the PVC between the two groups at 5-syllable length nonwords. The /z/ and p values have been depicted in Table 4.6. The lesser PVC in children with language impairment than the typically developing children suggests the relatively weaker phonological encoding in children with language impairment during the repetition tasks.

The PCC in words between the groups compared using Mann-Whitney U test indicated that there was no significant difference in the PCC between the two groups at any of the syllable lengths. However the PCC in nonwords were significantly different between the two groups at all the syllable lengths, and also on the overall PCC in nonwords. The /z/ and p values have been depicted in Table 4.6. The children in both the groups obtained higher PVC than the PCC.

Table 4.6. *Results of Mann-Whitney U test for the PVC and PCC between typically developing children and children with language impairment.*

PVC and PCC for words and nonwords	/z/ values	p values
WPVC2sy	0.26	0.79
WPVC3sy	1.91	0.06
WPVC4sy	0.61	0.55
WPVC5sy	2.79	0.01*
WTPVC	2.21	0.03*
NWPVC2sy	4.54	0.00**
NWPVC3sy	2.06	0.04*
NWPVC4sy	4.53	0.00**
NWPVC5sy	1.31	0.19
NWTPVC	2.90	0.00**
WPCC2sy	1.53	0.13
WPCC3sy	1.21	0.23
WPCC4sy	0.06	0.96
WPCC5sy	1.93	0.05
WTPC	1.90	0.06
NWPCC2sy	4.02	0.00**
NWPCC3sy	2.88	0.00**
NWPCC4sy	3.62	0.00**
NWPCC5sy	3.39	0.00**
NWTPCC	3.60	0.00**

[W - words; NW - nonwords; 2sy - 2-syllable length, 3sy - 3-syllable length; 4sy - 4-syllable length; 5sy - 5-syllable length; PVC - percentage of vowels correct; TPVC - total percentage of vowels correct; PCC - percentage of consonants correct; TPCC - total percentage of consonants correct; ** p<0.01; * p<0.05]

C. Percentage of errors:

The errors such as syllable substitutions, omissions and additions were noted and converted into percentage values. The mean and SD values were computed using the descriptive statistics for all the errors in both the groups which have been depicted in Table 4.7. The mean values suggested that the syllable substitutions were the most frequent type of errors seen in the repetition of words and nonwords in both the groups compared to the syllable omissions and additions. The percentage of syllable substitutions (PSS) was more in nonwords than words in both the groups. Also the PSS errors increased with the increase in the syllable length in both the groups. Furthermore the mean values of PSS indicated a higher percentage of errors in the children with language impairment compared to the typically developing children. This has been depicted in Figure 4.6.

Table 4.7. *Mean and Standard Deviation (SD) values for percentage of differ errors in words and nonwords at each syllable length for typically developing and children with language impairment.*

Errors	Typically developing children (TD)		Children with language impairment (CLI)	
	Mean	SD	Mean	SD
WPSS2sy	0.2	1.01	1.00	2.24
WPSS3sy	1.0	2.14	4.00	5.48
WPSS4sy	1.15	2.52	2.00	4.47
WPSS5sy	2.28	3.43	6.80	10.83
WTPSS	1.36	1.84	4.00	6.17
NWPSS2sy	0.83	2.22	8.00	6.71
NWPSS3sy	1.53	2.68	8.00	7.67
NWPSS4sy	2.50	3.36	18.50	7.42
NWPSS5sy	8.97	6.94	24.40	5.90
NWTPSS	4.37	3.20	16.88	5.52
WPSO2sy	0.14	1.19	0.00	0.00
WPSO3sy	0.00	0.00	0.00	0.00
WPSO4sy	0.17	1.21	0.00	0.00
WPSO5sy	0.36	1.44	1.20	1.79
WTPSO	0.12	0.44	0.43	0.64
NWPSO2sy	0.00	0.00	0.00	0.00
NWPSO3sy	0.00	0.00	0.67	1.49
NWPSO4sy	0.03	0.30	0.00	0.00
NWPSO5sy	0.58	1.14	2.00	3.46
NWTPSO	0.22	0.41	0.00	0.00
WPSA2sy	0.07	0.59	0.00	0.00
WPSA3sy	0.00	0.00	0.00	0.00
WPSA4sy	0.03	0.29	0.00	0.00
WPSA5sy	0.06	0.33	0.40	0.89
WTPSA	0.04	0.16	0.14	0.32
NWPSA2sy	0.42	1.63	1.00	2.24
NWPSA3sy	0.09	0.55	0.00	0.00
NWPSA4sy	0.14	0.58	0.50	1.12
NWPSA5sy	0.28	0.79	0.80	1.10
NWTPSA	0.21	0.39	0.57	0.60

[W-words; NW- nonwords; 2sy - 2-syllable length, 3sy - 3-syllable length; 4sy - 4-syllable length; 5sy - 5-syllable length; PSS - percentage of syllable substitutions; TPSS -Total percentage of syllable substitutions; PSO - percentage of syllable omissions; TPSO -Total percentage of syllable omissions; PSA - percentage of syllable additions; TPSA -Total percentage of syllable additions]

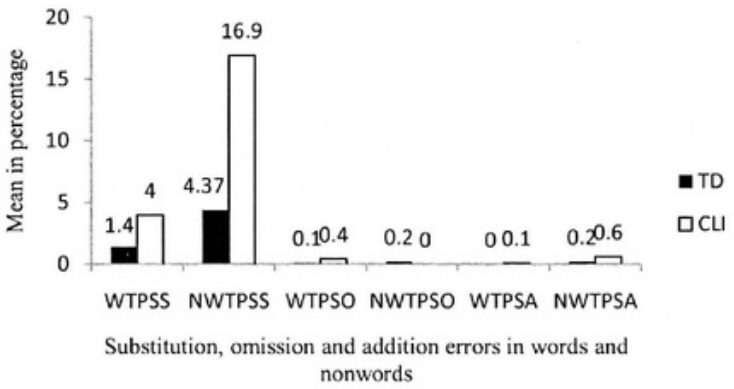


Figure 4.6. *Total percentage of errors (PSS, PSO & PSA) in both the groups of children for words and nonwords (CLI- children with language impairment).*

The Mann-Whitney U test suggested a significant difference in the PSS errors in nonwords at each of the syllable length between the children with language impairment and typically developing children ($p<0.05$). However, the results showed no significant difference in the PSS in words at different syllable lengths. The PSO (percentage of syllable omissions) was significantly different between the two groups at only 5-syllable length words and also at only 3-syllable length nonwords. The /z/ and the /p/ values of PSS and PSO have been depicted in Table 4.8. The PSO were observed less frequently than the PSS in repetition tasks. This could be attributed to the fact that, as the length of the nonword increased, the participants experienced difficulty with forming or holding detailed phonological representations in working memory. Nevertheless no significant difference was found in PSA (percentage of syllable additions) between the two groups at different syllable lengths in both words and nonwords as the PSA were very less frequently seen during the repetition tasks.

Table 4.8. *Results of the Mann-Whitney U test for the percentage of errors between typically developing children and children with language impairment.*

Percentage of errors in words & nonwords	/z/ values	p values
WPSS2sy	1.53	0.13
WPSS3sy	1.95	0.05
WPSS4sy	0.16	0.87
WPSS5sy	1.31	0.19
WTPSS	1.47	0.14
NWPSS2sy	4.68	0.00**
NWPSS3sy	2.75	0.01*
NWPSS4sy	3.85	0.00**
NWPSS5sy	3.35	0.00**
NWTPSS	3.72	0.00**
WPSO2sy	0.26	0.79
WPSO3sy	0.00	1.00
WPSO4sy	0.38	0.71
WPSO5sy	2.19	0.03*
WTPSO	2.00	0.05
NWPSO2sy	0.00	1.00
NWPSO3sy	3.80	0.00**
NWPSO4sy	0.26	0.79
NWPSO5sy	0.99	0.32
NWTPSO	1.26	0.21
WPSA2sy	0.26	0.79
WPSA3sy	0.00	1.00
WPSA4sy	0.26	0.79
WPSA5sy	1.91	0.06
WTPSA	1.26	0.21
NWPSA2sy	1.02	0.31
NWPSA3sy	0.38	0.71
NWPSA4sy	1.26	0.21
NWPSA5sy	1.56	0.11
NWTPSA	1.80	0.07

[W-words; NW- nonwords; 2sy - 2-syllable length, 3sy - 3-syllable length; 4sy - 4-syllable length; 5sy - 5-syllable length; PSS - percentage of syllable substitutions; TPSS -Total percentage of syllable substitutions; PSO - percentage of syllable omissions; TPSO -Total percentage of syllable omissions; PSA - percentage of syllable additions; TPSA -Total percentage of syllable additions; ** p<0.01; * p<0.05]

To summarize, the findings from the standardization sample demonstrate that the reliability and validity of the WNRT-K are adequate and confirm that this test is psychometrically robust.

APPENDIX A

WORD SCORE SHEET

Practice Items	Number of Presentations	Discontinue Rule	Accuracy & Error Analysis
1. ʈaʈʈe 2. ɳaviɻu 3. bha:ɳuva:ra 4. meʈʈiɻugaɻu 5. baʈa:ɳigaɻu Correct responses are not required to proceed to the test items.	If the child does not respond to a practice item allow up to two further presentations.	None: Attempt to administer all items.	Calculate a) Accuracy- i) total number of words correct and also number of words correct at each syllable length; ii) total number and percentage of vowels and consonants correct; b) Error analysis- total number and percentage of syllable substitutions, omissions and additions. All the measures should be calculated at each of the syllable length and on overall word test items.

Item Score: Circle/Tick 1 if the child repeats the item correctly, with all phonemes of the target present in the correct order (allowing for only systematic/consistent substitutions due to phonological processes and dialectal influences). Circle/Tick 0 if the response is not a correct repetition. Circle/Tick NR if the child refuses to attempt a repetition. If the child scores 0, transcribe response in the space provided. If the child self-corrects, score the self-corrected response. For vowels and consonants correct and types of errors, calculate the number and then convert it into percentage.

No	Target	Score			Transcription	Score by item length				No. vowels correct				No. consonants correct			
						2sy	3sy	4sy	5sy	2sy	3sy	4sy	5sy	2sy	3sy	4sy	5sy
1	maɲe	1	0	NR													
2	ʧappaɻi	1	0	NR													
3	ʈaraka:ri	1	0	NR													
4	ʧamaʧagaɻu	1	0	NR													
5	ʧa:pe	1	0	NR													
6	kaʈʈaɻe	1	0	NR													
7	garagasa	1	0	NR													
8	vima:ɳagaɻu	1	0	NR													
9	ɲi:ɻi	1	0	NR													
10	ʈabaɻa	1	0	NR													
11	maɲejaɻɻi	1	0	NR													
12	ʧiraʈegaɻu	1	0	NR													
13	ɖa:ra	1	0	NR													
14	kaɖime	1	0	NR													
15	ɖi:pagaɻu	1	0	NR													
16	ɲo:ɖuʈiɖɖa:ɲe	1	0	NR													
17	beɳɳu	1	0	NR													
18	ʈakkaɖi	1	0	NR													
19	maɻagiɖe	1	0	NR													
20	baɻapagaɻu	1	0	NR													
21	mi:ɳu	1	0	NR													
22	ʧapa:ʈi	1	0	NR													
23	ʃaɳiva:ra	1	0	NR													
24	ma:viɳamara	1	0	NR													
25	waɖe	1	0	NR													
26	ʧakkuɻi	1	0	NR													
27	maɲegaɻu	1	0	NR													
28	kuɖuregaɻu	1	0	NR													
29	ɖi:pa	1	0	NR													
30	basava	1	0	NR													
31	bi:gagaɻu	1	0	NR													
32	tagijuvuɖu	1	0	NR													
33	ka:ge	1	0	NR													
34	gaɲe:ʃa	1	0	NR													
35	baɻegaɻu	1	0	NR													
36	kaɳɳadigaɻu	1	0	NR													
37	ba:ji	1	0	NR													
38	beraɻu	1	0	NR													
39	maragaɻu	1	0	NR													
40	baɖaneka:ji	1	0	NR													
	Word total	40				/10	/10	/10	/10	/20	/30	/40	/50	/20	/30	/40	/50
										%	%	%	%	%	%	%	%
						/40				/140				/140			
										%				%			

NONWORD SCORE SHEET

Practice Items	Number of Presentations	Discontinue Rule	Accuracy & Error analysis
1. ʄeʈʈa 2. ɳaɻuvi 3. va:bha:ɳura 4. ɻuʈʈiɻugame 5. ʈa:baɻuɳiga Correct responses are not required to proceed to the test items.	If the child does not respond to a practice item allow up to two further presentations.	None: attempt to administer all items.	Calculate a) Accuracy- i) total number of nonwords correct and also number of nonwords correct at each syllable length; ii) total number and percentage of vowels and consonants correct; b) Error analysis- total number and percentage of syllable substitutions, omissions and additions. All the measures should be calculated at each of the syllable length and on overall nonword test items.

Item Score
Circle/Tick 1 if the child repeats the item correctly, with all phonemes of the target present in the correct order (allowing for only systematic/consistent substitutions due to phonological processes and dialectal influences). Circle/Tick 0 if the response is not a correct repetition. Circle/Tick NR if the child refuses to attempt a repetition. If the child scores 0, transcribe response in the space provided. If the child self-corrects, score the self-corrected response. For vowels and consonants correct and types of errors, calculate the number and then convert it into percentage.

No.	Target	Score			Transcription	Score by item length				No. vowels correct				No. consonants correct			
						2sy	3sy	4sy	5sy	2sy	3sy	4sy	5sy	2sy	3sy	4sy	5sy
1	meɳa	1	0	NR													
2	ɟippaʧa	1	0	NR													
3	raka:ʈari	1	0	NR													
4	ʧaga|umaʧa	1	0	NR													
5	ʧe:pa	1	0	NR													
6	ɟeʈʈaka	1	0	NR													
7	ga rasaga	1	0	NR													
8	ma:|avigaɳa	1	0	NR													
9	ɲo:ɟi	1	0	NR													
10	ɟabaja	1	0	NR													
11	ja|ɟipema	1	0	NR													
12	ʧi|uʈeraga	1	0	NR													
13	ɖe:ra	1	0	NR													
14	ɖikame	1	0	NR													
15	paɖi:gaɻa	1	0	NR													
16	ɲo:tiɲoɖda:ɖu	1	0	NR													
17	buɲɲe	1	0	NR													
18	ɖikkaʈa	1	0	NR													
19	giɻaɖema	1	0	NR													
20	paba|uga|a	1	0	NR													
21	mu:ɳi	1	0	NR													
22	ʈipa:ʧa	1	0	NR													
23	ɲiva:ʃara	1	0	NR													
24	ma:raviɲama	1	0	NR													
25	weɖa	1	0	NR													
26	ɟikkuʧa	1	0	NR													
27	ma|uɲega	1	0	NR													
28	gare|ukuɖu	1	0	NR													
29	ɖa:pi	1	0	NR													
30	Sabava	1	0	NR													
31	gabi:ɟuga	1	0	NR													
32	ɖugijuʈavu	1	0	NR													
33	ke:ga	1	0	NR													
34	ʃaɲe:ga	1	0	NR													
35	ga|eba|u	1	0	NR													
36	ɖiɲɲakaga|u	1	0	NR													
37	bi:ja	1	0	NR													
38	be|ura	1	0	NR													
39	ma|ugara	1	0	NR													
40	ɖabaka:ɲeji	1	0	NR													
	Nonword total	**40**				/10	/10	/10	/10	/20	/30	/40	/50	/20	/30	/40	/50
	Word total	**40**								%	%	%	%	%	%	%	%
	Word + Nonword Score	**80**				/40				/140				/440			
										%				%			

WORD SCORE SHEET: TYPES OF SYLLABLE ERRORS

No.	Word Response Transcribed	No. Syllable Substitutions				No. Syllable Omissions				No. Syllable Additions				Phonological processes
		2sy	3sy	4sy	5sy	2sy	3sy	4sy	5sy	2sy	3sy	4sy	5sy	
1														
2														
3														
4														
5														
6														
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37														
38														
39														
40														
		/20	/30	/40	/50	/20	/30	/40	/50	/20	/30	/40	/50	
		/140				/140				/140				
		%				%				%				

NONWORD SCORE SHEET: TYPES OF SYLLABLE ERRORS

No.	Nonword Response Transcribed	No. Syllable Substitutions				No. Syllable Omissions				No. Syllable Additions				Phonological processes
		2sy	3sy	4sy	5sy	2sy	3sy	4sy	5sy	2sy	3sy	4sy	5sy	
1														
2														
3														
4														
5														
6														
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35														
36														
37														
38														
39														
40														
		/20	/30	/40	/50	/20	/30	/40	/50	/20	/30	/40	/50	
		/140				/140				/140				
		%				%				%				

Appendix B

Table B.1. *Mean and Standard Deviation (SD) for words and nonwords separately across different syllable length, age and gender.*

Syllable length	Age group	Gender				Total	
		Males		Females			
		Mean	SD	Mean	SD	Mean	SD
	4-5yrs	9.84	0.37	9.85	0.36	9.85	0.36
WA2sy	5-6yrs	9.93	0.25	9.98	0.15	9.96	0.20
	Total	9.89	0.32	9.92	0.27	9.91	0.29
	4-5yrs	9.38	0.87	9.50	0.75	9.44	0.81
WA3sy	5-6yrs	9.63	0.67	9.81	0.46	9.74	0.56
	Total	9.50	0.78	9.67	0.62	9.59	0.70
	4-5yrs	9.38	1.07	9.47	0.83	9.42	0.95
WA4sy	5-6yrs	9.63	0.89	9.48	0.99	9.54	0.95
	Total	9.50	0.99	9.47	0.92	9.49	0.95
	4-5yrs	8.47	1.41	8.88	2.42	8.68	1.99
WA5sy	5-6yrs	9.13	1.17	9.14	1.26	9.14	1.21
	Total	8.79	1.33	9.03	1.86	8.92	1.64
	4-5yrs	**36.56**	**4.03**	**37.41**	**2.38**	**37.00**	**3.29**
WOA	**5-6yrs**	**38.33**	**2.17**	**38.43**	**2.10**	**38.89**	**2.11**
	Total	**37.42**	**3.36**	**37.97**	**2.27**	**37.00**	**3.29**
	4-5yrs	9.53	0.80	9.59	0.86	9.56	0.83
NWA2sy	5-6yrs	9.77	0.50	9.60	1.56	9.67	1.23
	Total	9.65	0.68	9.60	1.29	9.62	1.06
	4-5yrs	9.13	1.24	9.27	1.34	9.20	1.18
NWA3sy	5-6yrs	9.50	0.78	9.55	0.63	9.53	0.69
	Total	9.31	1.05	9.42	0.90	9.37	0.97
	4-5yrs	7.88	1.60	8.38	1.84	8.12	1.74
NWA4sy	5-6yrs	8.77	1.36	9.24	0.91	9.04	1.13
	Total	8.31	1.54	8.86	1.46	8.61	1.52
	4-5yrs	5.50	2.14	6.03	2.25	5.77	2.20
NWA5sy	5-6yrs	6.13	2.32	6.98	1.87	6.63	2.09
	Total	5.81	2.23	6.55	2.09	6.22	2.18
	4-5yrs	**31.50**	**4.65**	**33.32**	**4.93**	**32.44**	**4.85**
NWOA	**5-6yrs**	**34.20**	**3.40**	**35.55**	**2.79**	**34.99**	**3.11**
	Total	**32.81**	**4.28**	**34.55**	**4.03**	**33.77**	**4.21**

[W- words; NW- nonwords; A2sy-accuracy at 2-syllable length; A3sy-accuracy at 3-syllable length; A4sy- accuracy at 4-syllable length; A5sy-accuracy at syllable length; WOA - overall accuracy for words; NWOA - overall accuracy for nonwords]

Table B.2. *Mean and Standard Deviation (SD) values for word and nonword accuracy combined at each syllable length for both the age groups across gender.*

Syllable length	Age group	Females		Males		Total	
		Mean	SD	Mean	SD	Mean	SD
WNWA2sy	4-5yrs	19.44	1.08	19.38	1.01	19.41	1.04
	5-6yrs	19.79	0.42	19.70	0.54	19.75	0.47
	Total	19.63	0.80	19.53	0.82	19.59	0.81
WNWA3sy	4-5yrs	18.77	1.67	18.53	1.55	18.65	1.60
	5-6yrs	19.36	0.76	19.13	1.17	19.26	0.95
	Total	19.09	1.28	18.82	1.40	18.97	1.33
WNWA4sy	4-5yrs	17.82	2.34	17.25	2.02	17.55	2.19
	5-6yrs	18.74	1.53	18.40	1.98	18.60	1.73
	Total	18.33	1.98	17.81	2.06	18.09	2.03
WNWA5sy	4-5yrs	14.65	3.19	14.00	3.10	14.33	3.14
	5-6yrs	15.91	3.28	15.27	2.94	15.64	3.13
	Total	15.34	3.28	14.61	3.06	15.02	3.19
TWNWA	**4-5yrs**	**70.62**	**6.68**	**68.75**	**6.08**	**69.71**	**6.42**
	5-6yrs	**73.12**	**6.97**	**72.07**	**5.04**	**72.68**	**6.22**
	Total	**72.00**	**6.91**	**70.36**	**5.80**	**71.26**	**6.47**

[WNW- words and nonwords combined; A2sy - accuracy at 2-syllable length; A3sy - accuracy at 3-syllable length; A4sy - accuracy at 4-syllable length; A5sy - accuracy at syllable length, TWNWA- accuracy for the entire words and nonwords combined]

Table B.3. *Mean and Standard Deviation (SD) values for PVC in both words and nonwords at different syllable lengths for both the age groups and gender.*

W/NW different syllable lengths	CA	Females		Males		Total	
		Mean	SD	Mean	SD	Mean	SD
	4-5yrs	100.00	0.00	100.00	0.00	100.00	0.00
WPVC2sy	5-6yrs	100.00	0.00	99.83	0.91	99.93	0.59
	Total	100.00	0.00	99.92	0.64	99.96	0.43
	4-5yrs	99.90	0.57	99.38	2.15	99.65	1.56
WPVC3sy	5-6yrs	100.00	0.00	99.78	0.85	99.91	0.55
	Total	99.96	0.38	99.57	1.65	99.78	1.15
	4-5yrs	99.71	0.82	99.61	0.92	99.66	0.87
WPVC4sy	5-6yrs	99.58	1.65	99.92	0.46	99.72	1.30
	Total	99.64	1.34	99.76	0.75	99.69	1.12
	4-5yrs	98.00	4.85	98.69	2.36	98.33	3.84
WPVC5sy	5-6yrs	99.67	0.98	99.47	1.28	99.58	1.11
	Total	98.92	3.40	99.07	1.94	98.99	2.83
	4-5yrs	**99.37**	**0.976**	**99.29**	**1.32**	**99.33**	**1.15**
WTPVC	**5-6yrs**	**99.76**	**0.58**	**99.67**	**0.72**	**99.72**	**0.64**
	Total	**99.59**	**0.80**	**99.47**	**1.08**	**99.53**	**0.94**
	4-5yrs	100.00	0.00	100.00	0.00	100.00	0.00
NWPVC2sy	5-6yrs	99.88	0.77	99.67	1.27	99.79	1.01
	Total	99.93	0.574	99.84	0.89	99.89	0.73
	4-5yrs	99.71	0.96	99.69	0.99	99.70	0.97
NWPVC3sy	5-6yrs	99.68	0.99	99.67	1.017	99.68	0.99
	Total	99.69	0.97	99.68	0.99	99.69	0.98
	4-5yrs	98.82	2.24	98.60	1.79	98.71	2.02
NWPVC4sy	5-6yrs	99.23	1.61	99.50	1.02	99.34	1.39
	Total	99.05	1.91	99.03	1.53	99.04	1.74
	4-5yrs	95.94	3.67	96.00	3.09	95.97	3.37
NWPVC5sy	5-6yrs	96.57	2.77	95.80	4.28	96.25	3.47
	Total	96.29	3.20	95.90	3.68	96.12	3.41
	4-5yrs	**98.13**	**1.72**	**97.81**	**1.80**	**97.98**	**1.75**
NWTPVC	**5-6yrs**	**98.54**	**1.23**	**98.24**	**1.70**	**98.41**	**1.44**
	Total	**98.36**	**1.48**	**98.02**	**1.75**	**98.20**	**1.61**

[W - words; NW - nonwords; CA- Chronological age, PVC - percentage of vowels correct; TPVC - total percentage of vowels correct; 2sy - 2-syllable length, 3sy - 3-syllable length; 4sy - 4-syllable length; 5sy - 5-syllable length]

Table B.4. *Mean and Standard Deviation (SD) values for the PCC in both words and nonwords at different syllable lengths for both the age groups and gender.*

W/NW at different syllable lengths	Chronological age	Females		Males		Total	
		Mean	SD	Mean	SD	Mean	SD
	4-5yrs	100.00	0.00	100.00	0.00	100.00	0.00
WPCC2sy	5-6yrs	100.00	0.00	99.83	0.91	99.93	0.59
	Total	100.00	0.00	99.92	0.64	99.96	0.43
	4-5yrs	99.90	0.57	99.38	2.15	99.65	1.56
WPCC3sy	5-6yrs	100.00	0.00	99.78	0.85	99.91	0.55
	Total	99.96	0.38	99.57	1.65	99.78	1.15
	4-5yrs	99.71	0.82	99.61	0.92	99.66	0.87
WPCC4sy	5-6yrs	99.58	1.65	99.92	0.46	99.72	1.30
	Total	99.64	1.34	99.76	0.75	99.69	1.12
	4-5yrs	98.00	4.85	98.69	2.36	98.33	3.84
WPCC5sy	5-6yrs	99.67	0.98	99.47	1.28	99.58	1.11
	Total	98.92	3.40	99.07	1.94	98.99	2.83
	4-5yrs	**99.37**	**0.976**	**99.29**	**1.32**	**99.33**	**1.15**
WTPCC	**5-6yrs**	**99.76**	**0.58**	**99.67**	**0.72**	**99.72**	**0.64**
	Total	**99.59**	**0.80**	**99.47**	**1.08**	**99.53**	**0.94**
	4-5yrs	100.00	0.00	100.00	0.00	100.00	0.00
NWPCC2sy	5-6yrs	99.88	0.77	99.67	1.27	99.79	1.01
	Total	99.93	0.574	99.84	0.89	99.89	0.73
	4-5yrs	99.71	0.96	99.69	0.99	99.70	0.97
NWPCC3sy	5-6yrs	99.68	0.99	99.67	1.017	99.68	0.99
	Total	99.69	0.97	99.68	0.99	99.69	0.98
	4-5yrs	98.82	2.24	98.60	1.79	98.71	2.02
NWPCC4sy	5-6yrs	99.23	1.61	99.50	1.02	99.34	1.39
	Total	99.05	1.91	99.03	1.53	99.04	1.74
	4-5yrs	95.94	3.67	96.00	3.09	95.97	3.37
NWPCC5sy	5-6yrs	96.57	2.77	95.80	4.28	96.25	3.47
	Total	96.29	3.20	95.90	3.68	96.12	3.41
	4-5yrs	**98.13**	**1.72**	**97.81**	**1.80**	**97.98**	**1.75**
NWTPCC	**5-6yrs**	**98.54**	**1.23**	**98.24**	**1.70**	**98.41**	**1.44**
	Total	**98.36**	**1.48**	**98.02**	**1.75**	**98.20**	**1.61**

[W - words; NW - nonwords; PCC - percentage of consonants correct; TPC - total percentage of consonants correct; 2sy - 2-syllable length, 3sy - 3-syllable length; 4sy - 4-syllable length; 5sy - 5-syllable length]

Table B.5. *Mean, median and Standard Deviation (SD) values for the errors at each syllable length in words and nonwords for both the age groups.*

	Chronological age								
	4-5years			5-6years			Total		
	Mean	**Median**	**SD**	**Mean**	**Median**	**SD**	**Mean**	**Median**	**SD**
WPSS2sy	0.83	0.00	1.88	0.21	0.00	1.01	0.51	0.00	1.52
WPSS3sy	2.02	0.00	3.35	1.02	0.00	2.14	1.50	0.00	2.82
WPSS4sy	1.90	0.00	3.22	1.15	0.00	2.52	1.50	0.00	2.89
WPSS5sy	3.06	2.00	3.37	2.28	2.00	3.43	2.65	2.00	3.41
WTPSS	**2.08**	**1.43**	**2.07**	**1.36**	**0.71**	**1.84**	**1.70**	**1.07**	**1.98**
NWPSS2sy	2.65	0.00	4.90	0.83	0.00	2.22	1.70	0.00	3.84
NWPSS3sy	2.93	0.00	4.28	1.53	0.00	2.68	2.20	0.00	3.59
NWPSS4sy	5.46	2.50	5.22	2.50	2.50	3.36	3.91	2.50	4.58
NWPSS5sy	11.55	10.00	8.38	8.97	8.00	6.94	10.21	8.00	7.75
NWTPSS	**6.73**	**5.00**	**5.18**	**4.37**	**3.57**	**3.20**	**5.50**	**4.29**	**4.41**
WPSO2sy	0.00	0.00	0.00	0.14	0.00	1.18	0.07	0.00	0.85
WPSO3sy	0.10	0.00	0.58	0.00	0.00	0.00	0.05	0.00	0.40
WPSO4sy	0.11	0.00	0.53	0.17	0.00	1.21	0.15	0.00	0.94
WPSO5sy	0.64	0.00	1.50	0.36	0.00	1.44	0.49	0.00	1.47
WTPSO	**0.28**	**0.00**	**0.64**	**0.12**	**0.00**	**0.44**	**0.20**	**0.00**	**0.55**
NWPSO2sy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NWPSO3sy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NWPSO4sy	0.19	0.00	1.01	0.04	0.00	0.30	0.11	0.00	0.73
NWPSO5sy	0.85	0.00	1.53	0.58	0.00	1.14	0.71	0.00	1.34
NWTPSO	**0.35**	**0.00**	**0.64**	**0.22**	**0.00**	**0.41**	**0.28**	**0.00**	**0.54**
WPSA2sy	0.08	0.00	0.62	0.07	0.00	0.59	0.07	0.00	0.60
WPSA3sy	0.05	0.00	0.41	0.00	0.00	0.00	0.02	0.00	0.28
WPSA4sy	0.04	0.00	0.31	0.04	0.00	0.30	0.04	0.00	0.30
WPSA5sy	0.15	0.00	0.53	0.06	0.00	0.33	0.10	0.00	0.44
WTPSA	**0.09**	**0.00**	**0.27**	**0.04**	**0.00**	**0.16**	**0.06**	**0.00**	**0.22**
NWPSA2sy	0.00	0.00	0.00	0.42	0.00	1.63	0.22	0.00	1.19
NWPSA3sy	0.15	0.00	0.70	0.09	0.00	0.55	0.12	0.00	0.63
NWPSA4sy	0.30	0.00	0.82	0.14	0.00	0.58	0.22	0.00	0.71
NWPSA5sy	0.80	0.00	1.65	0.28	0.00	0.79	0.53	0.00	1.30
NWTPSA	**0.36**	**0.00**	**0.58**	**0.21**	**0.00**	**0.39**	**0.28**	**0.00**	**0.49**

[W-words; NW- nonwords; 2sy- 2-syllable length, 3sy- 3-syllable length; 4sy-4-syllable length; 5sy-5-syllable length; PSS - percentage of syllable substitutions; TPSS -Total percentage of syllable substitutions; PSO - percentage of syllable omissions; TPSO -Total percentage of syllable omissions; PSA - percentage of syllable additions; TPSA -Total percentage of syllable additions]

Appendix C

Table C.1. *Percentile scores for the overall word accuracy scores.*

Percentile Scores	Overall word accuracy scores	
	4-5years	5-6years
5	30.70	33.00
10	33.00	35.30
25	36.00	38.00
50	38.00	39.00
75	39.00	40.00
90	40.00	40.00
95	40.00	40.00
100	40.00	40.00

Note: Percentile '5' indicates that only 5% of the children are scoring less than 30.70 in 4-5years age group and less than 33.00 in 5-6years age group in the repetition of words.

Table C.2. *Percentile scores for the overall nonword accuracy scores.*

Percentile	Overall nonword accuracy scores	
	4-5years	5-6years
5	21.05	29.00
10	24.70	30.00
25	30.00	33.00
50	34.00	35.00
75	36.00	37.75
90	37.30	39.00
95	38.00	39.00
100	40.00	40.00

Note: Percentile '5' indicates that only 5% of the children are scoring less than 21.05 in 4-5years age group and less than 29.00 in 5-6years age group in the repetition of nonwords.

Table C.3. *Percentile scores for the overall word and nonword accuracy scores.*

Percentile	Overall word and nonword accuracy scores	
	4-5years	5-6years
5	56.70	61.95
10	59.70	67.00
25	65.75	71.00
50	71.50	74.00
75	75.00	76.75
90	76.30	78.00
95	77.00	79.00
100	80.00	80.00

Note: Percentile '5' indicates that only 5% of the children are scoring less than 56.70 in 4-5years and in 5-6years only 5% of the children are scoring less than 61.95 in the overall task of word and nonword repetition.

Table C.4. *Interpretation of the percentile ranks.*

Percentile Ranks	Classification
90-100	Above average performance
50- 89	Average performance
5-49	Poor performance

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