

# TAMAC-K

*by* Swapnan Saranyav

---

FILE	TAMAC-K.PDF (14.01M)	WORD COUNT	14499
TIME SUBMITTED	29-SEP-2014 03:40PM	CHARACTER COUNT	59886
SUBMISSION ID	458022038		

TEST FOR THE ASSESSMENT OF METASEMANTIC AWARENESS  
IN CHILDREN IN KANNADA (TAMAC-K)

Swapna

MANUAL

ಹಕ್ಕಿ-ಹಾರು

ಕ್ಯಾರೆಟ್

ದೊಡ್ಡ-ಬಟ್ಟೆ

ಹಾಲು-ಮುಟ್ಟಿ

ಬಿಳಿ-ಕಪ್ಪು

ಅಕ್ಕಿ-ತುಪ್ಪು

**Authors**

**Ms. Saranya. V.**

**Dr. Swapna. N.**



All India Institute of Speech and Hearing,  
Manasagangothri, Mysore 570006

Phone no : (0821)-2514449, 2515218, 2515805

Toll free no : 1800 425 5218

Email : director@aiishmysore.in

Website: www.aiishmysore.in

**TEST FOR THE ASSESSMENT OF  
METASEMANTIC AWARENESS IN CHILDREN  
IN KANNADA (TAMAC-K)**

**MANUAL**

**Authors**

**Ms. Saranya V.  
Dr. Swapna N.**



**6**

**All India Institute of Speech and Hearing**

**Manasagangothri, Mysore-570006**

Phone: 0821-2514449, 2515410, 2515805; Fax: 0821-2510515

Email: [director@aiishmysore.in](mailto:director@aiishmysore.in), Website: [www.aiishmysore.in](http://www.aiishmysore.in)

Toll free: 18004255218

Copyright © 2013

A Publication of the All India Institute of Speech and Hearing, Manasagangothri, Mysore – 570006

Under the title

Test for the Assessment of Metasemantic Awareness in Children in Kannada (TAMAC-K)

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording or any information storage or retrieval system, without permission in writing from the publisher.

Printed in India

Authors: Ms. Saranya V., Speech-Language Pathologist, CREDM, All India Institute of Speech and Hearing, Mysore

Dr. Swapna N., Lecturer in Speech Pathology, Dept. of Speech-Language Pathology, All India Institute of Speech and Hearing, Mysore

Editor: Dr. S. R. Savithri, Director, All India Institute of Speech and Hearing, Mysore

ISBN No. 978-93-81584-44-6

Price: ₹200



## PREFACE

This test on '*Metasemantic awareness for children in Kannada*' is a part of a dissertation carried out at the All India Institute of Speech and Hearing, Mysore. Ms. Saranya V. is a Speech-Language Pathologist working in the Centre for Rehabilitation and Education through Distance Mode, All India Institute of Speech and Hearing, Mysore. Dr. Swapna N. is a Lecturer in Speech Pathology in the Department of Speech-Language Pathology, All India Institute of Speech and Hearing, Mysore. She is specialized in the area of speech and its disorders, specifically fluency and motor speech disorders. She has various publications to her credit. She has 17 years of clinical experience in working with individuals with various speech and language disorders. She completed her Ph.D. on the topic *fine grained auditory discrimination in children with Learning Disability* at University of Mysore in 2005. The test on Metasemantic Awareness for Children in Kannada assesses the metalinguistic awareness in children speaking Kannada, which is a Dravidian language. The test consists of two practice items and six test items under each of the twelve metasemantic tasks. The test can be used with children in the age group of 8-11 years. I congratulate the authors for developing and standardizing the test. I request the Speech-Language Pathologists to use it extensively and send the feedback, if any, to [director@aiishmysore.in](mailto:director@aiishmysore.in)



Dr. S. R. Savithri  
DIRECTOR

## TABLE OF CONTENTS

CHAPTER	PARTICULARS	PAGE NO.
	<b>25</b> List of Tables	i
	List of Figures	ii
1	Introduction	1-3
2	Administration and Scoring	4-5
3	Interpretation	6-8
4	Professional information	9-22
	Appendix I	23-34
	Appendix II	35
	References	36-37

## LIST OF TABLES

Table No.	Title	Page No.
1	95% confidence interval for <sup>1</sup> mean and Standard Deviation (SD) for each grade, task and subtask.	6-8
2	Details of the Test for the Assessment of Metasemantic Awareness in children in Kannada.	12
3	Details regarding the number of typically developing participants (group I).	12
4	Details regarding the number of participants with learning disability (group II).	13
5	Percentage (%) <sup>1</sup> mean and Standard Deviation (SD) scores of group I of different grades across various subtasks on the entire test.	14
6	<sup>27</sup> Mean and Standard Deviation (SD) scores of group I across age groups on various tasks.	16-17
7	Results of two <sup>24</sup> MANOVA and post-hoc Duncan for group I across different tasks.	18
8	Mean and Standard Deviation (SD) score of group I children across different socioeconomic (SES).	19
9	Cronbach's alpha values across the three grades for group I.	20
10	<sup>1</sup> Mean, Standard Deviation (SD) scores and /z/ values of group I and group II across the three age groups across tasks.	21

## LIST OF FIGURES

<b>Figure No.</b>	<b>Title</b>	<b>Page No.</b>
1	Percentage (%) mean score of group I of different grades across various tasks.	15



## Chapter 1

### Introduction

Metalinguistic ability or awareness is said to be a “developmentally distinct kind of linguistic functioning that develops independently from and later than basic speaking and listening skills” (Tunmer, 1991). These skills allow an individual to think about the elements of language used by themselves and others and evaluate the utterances as correct or incorrect. One of the components of the metalinguistics is the metasemantic awareness which is the ability to analyse, extract and play with words, to recognize synonyms, antonyms, homonyms and multiple definitions, to segment sentences and phrases into words, to separate words from their referents, to substitute words etc. (Tunmer & Cole, 1985). The Test for the Assessment of Metasemantic Awareness for Children in Kannada (TAMAC-K) has been designed to assess the metasemantic awareness of children speaking Kannada, a South Indian Dravidian language. This test consists of twelve tasks: Semantic anomaly, Free word association task, Antonyms, Semantic contiguity, Paradigmatic relations, Analyze a sentence into lexical units/words, Identify the grammatical category, Syntagmatic relations, Synonyms, Homonyms, Define a word and Lexical/ referential arbitrariness. The response elicitation of the initial ten tasks is through a judgment and revision type of subtask and for the final two tasks is through a generation type of subtask. This test can be used to assess the age appropriateness of metasemantic awareness, identify difficulties if any, provide appropriate targets for intervention and monitor progress over time.

#### Test rationale

Studies on metaphonology and reading abilities in Kannada language contradicted the previously accepted notion that metaphonological abilities are a prerequisite for the acquisition of reading (Rekha, 1987, 1996). This was because the Indian scripts developed from Brahmi are semi-syllabic script which has highly transparent orthographies. Prema (1997) profiled the reading acquisition of children from Grade III to Grade VII and reported that the hierarchy of predictors of reading disability in Kannada were metasemantics, metasyntax and metaphonological skills. These findings highlighted the importance of the metasemantic ability in the Indian context, specifically in Kannada.

Although many tests are available to assess the linguistic skill, there are limited tests to assess the metalinguistic skill. In the Indian context, there are a few tests to assess metaphonological skill such as Reading Acquisition Profile-Kannada (Prema, 1997) and the Test for metaphonological skills (Karanth & Prakash, 1996). However, there are no tests to assess the metasemantic and metasyntactic abilities. Although tests such as Linguistic Profile Test (Karanth, Ahuja, Nagaraja, Pandith & Shivashankar, 1991) include a few tasks to assess the metasemantic skills such as semantic anomaly, semantic contiguity, synonyms, antonyms, paradigmatic relations, syntagmatic relations and homonyms, there are several other tasks such as analyse a sentence into words/ lexical units, free word association task (Brown & Berko, 1960), identify the grammatical category for a word, define a word and lexical/referential arbitrariness (Ben-Zeev, 1977) cited in the literature which fall under the domain of metasemantic skill, which however are not a part of the Linguistic Profile Test.

Further there are several reports of metasemantics being affected in children with communication disorders such as specific language impairment and learning disability (Kamhi, Lee & Nelson, 1985; Kamhi & Catts, 1989; van Kleeck, 1995; Priya & Manjula, 2000; Sharma, 2000).

A look into the literature suggests that the metalinguistic abilities are essential for the mastery of phonological, semantic and syntactic information. Further, metasemantics contributes to reading and writing success in Indian children compared to the other domains such as metaphonology or metasyntax. Hence there was a need felt to develop a test for assessing the metasemantic awareness in children which would in turn prove beneficial for the population with communication disorders. Hence this test was devised with the purpose of assessing the metasemantic abilities in Kannada speaking children.

This test provides a highly informative clinical and research tool <sup>18</sup> assessing the metasemantic awareness in children. It is recommended that the test <sup>8</sup> be incorporated in the assessment and treatment protocol of children with communication disorders. A large part of successful language intervention is centered on the child being aware of language and the components of language. Having an understanding of metalinguistic awareness abilities of the child allows the Speech-Language Pathologist to have a better sense of whether a child understood a given task, and whether that task is appropriate for a particular child. Further, research has shown that children who had made only minor or no apparent progress under other treatment regimens made rapid progress once the metalinguistic activities were initiated (as cited in Howell & Dean, 1994). This test would help Speech-Language Pathologists to assess the metasemantic ability of individuals with communication disorders in a systematic manner and select appropriate treatment programs for them. Specifically, this test would especially prove to be advantageous to assess and treat the metasemantic abilities of individuals with learning disability as metasemantics contribute to reading and writing. Further, certain tasks that are sensitive in predicting the reading success in children such as Semantic contiguity, Paradigmatic relations, Identify the grammatical category for a word, Syntagmatic relations, Synonyms, Homonyms, Define a word, and Lexical/referential arbitrariness can also be used to screen children who could be at risk for developing communication disorders.

#### Test description

<sup>10</sup> The TAMAC-K consists of two practice items and six test items under each of the twelve major metasemantic tasks summing up to a total of 72 test items. Each task (first ten) included three test items which were of the judgment type and three of the revision type. The final two tasks included six test items which were of the generation type. Specifically, the test included 30 test items, the responses for which were elicited through a judgment subtask, another 30 items for which the responses were elicited using a revision subtask and 12 under generation type subtask. In the judgment task, children have to say whether a given stimulus is right or wrong; in the revision task, children have to identify the error and revise the error, and in generation task, children have to produce an utterance. The responses for the initial ten tasks are elicited through a judgment and revision type of subtask and the responses for the final two tasks is elicited through a generation type of subtask. It takes approximately around 30 minutes to administer this test depending on the child's co-operation. The tasks incorporated under the metasemantic ability were collated after a literature review. The stimuli under each task were prepared from the textbooks in Kannada prescribed by the Karnataka Board of Primary and Secondary Education and from standardized tests previously developed and used for assessing language (Karanth, Ahuja, Nagaraja, Pandith & Shivashankar, 1991).

#### *Scoring of the TAMAC-K yields*

- a) Overall judgment score: Total number of correct items under judgment subtask.
- b) Overall revision score: Total number of correct items under revision subtask.



- c) Overall generation score: Total number of correct items under generation subtask.
- d) Overall score: Total number of correct items under the three subtasks mentioned above.

### **Test uses and users**

#### *Client group*

The TAMAC-K is intended to use with children between the ages of eight years to eleven years. The test is also recommended to be used with older children with learning disability and other children with communication disorders. This test has been standardized on children who have Kannada as their first language. This should be taken into account if the TAMAC-K is used with children for whom Kannada is not the first language. The information obtained from this test should be compiled with the results of other assessments to provide a full profile of a child's abilities.

#### *Uses*

The TAMAC-K can be used to assess the metasemantic awareness of individuals with learning disability as metasemantics contributes to reading and writing in Kannada in children with developmental dyslexia and it can also be used to assess metasemantic abilities of other children with communication disorders. Tasks that are sensitive in predicting the reading success in children obtained from TAMAC-K such as Semantic contiguity, Paradigmatic relations, Identify the grammatical category for a word, Syntagmatic relations, Synonyms, Homonyms, Define a word, and Lexical/referential arbitrariness can be used as a screening tool. It helps in identifying the areas of strengths and difficulties in a child with regard to metasemantics. It would also help the Speech-Language Pathologists to select appropriate treatment programs targeting the metasemantics for individuals with learning disability and other communication disorders.

#### *Professional users*

This test is designed to be used primarily by Speech and Language Pathologists/Therapists (SLP's/SLT's) to assess children's metasemantic awareness. SLP's have specific training and skills in linguistic and metalinguistic skill that is essential for the full analysis of performance on the TAMAC-K.

## Chapter 2

### Administration and Scoring

#### General guidelines

- 1) First, familiarize yourself with the test stimuli included in the test.
- 2) Be ready with the score sheet, pen to score the response and the test material.
- 3) Ideally, the test should be carried out in a noise free environment with no distractions. The stimuli should be presented one after another.
- 4) Present the practice items first to familiarize the child with the task on hand before presenting the test items.
- 5) Administer the entire test and if required provide adequate breaks in between.
- 6) Praise the child regardless of accuracy of response with no indication as to whether the response was right or wrong.
- 7) The TAMAC-K can be used to monitor any change or progress in the child's metasemantic abilities. We recommend re-administering the test after 3 to 6 months, depending on the age and developmental level of the child.

#### Administration

##### *Introducing the test to the child*

Provide instructions for each task and ask the child to listen carefully. Task wise instructions are provided in Appendix I.

##### *Administering the practice items*

Present the two practice items before presenting the test items to familiarize the child with the task on hand. If the child responds, continue with the test items and if the child does not respond, repeat the instruction and present the practice items once again.

##### *Where to begin*

Begin administering the test items from the first task, irrespective of the child's age.

##### *How to proceed*

For each task, begin with providing clear instructions to the child. Present the two practice items under each task to the child. The aim of this practice test is to familiarize the child with task on hand. If the child responds, continue with the test items. Record the child's responses immediately. In this manner administer the entire test consisting of twelve tasks and record the responses on the score sheet.

##### *When to discontinue*

Do not discontinue; instead continue with all tasks even if the child makes a number of errors.



## Scoring

- 1) As far as possible, score the responses immediately.
- 2) Score the first response of the child, unless the child spontaneously self-corrects, in which score the self-corrected response.
- 3) *For the first ten tasks,*

Give a score of '1', if the child's <sup>13</sup> response is correct,  
Give a score of '0', if the child's response is incorrect or no response.

*For the last two tasks,*

<sup>7</sup> Give a score of '2', if the child's response is correct,  
Give a score of '1', if the child's response is partially correct/only little information is provided,  
<sup>7</sup> Give a score of '0', if the child's response is incorrect or no response is obtained.

- 4) Calculate the overall judgment score, revision score, generation score and the total score.

## Chapter 3

### Interpretation

The TAMAC-K is designed to assess children's metasegmental awareness i.e. the ability to judge and revise the errors in an utterance and to produce an utterance (generation) given in the test. A score in the 95% confidence interval level is in the normal range which indicates that the child has age adequate metasegmental awareness.

Table 1: 95% confidence interval for mean and Standard Deviation (SD) for each grade, task and subtask.

Sl.No.	Task	Subtask	Grade	Mean	95% confidence interval for mean		SD
					Lower bound	Upper bound	
1	Semantic anomaly	J	3	2.66	2.54	2.79	0.51
			4	2.97	2.93	3.01	0.17
			5	2.98	2.95	3.02	0.12
		R	3	2.20	1.99	2.41	0.83
			4	2.83	2.72	2.94	0.45
			5	2.82	2.70	2.93	0.46
		O	3	4.86	4.58	5.14	1.14
			4	5.80	5.67	5.93	0.54
			5	5.80	5.67	5.93	0.51
2	Free word association task	J	3	2.86	2.76	2.96	0.39
			4	3.02	2.91	3.12	0.41
			5	2.95	2.89	3.02	0.28
		R	3	2.88	2.77	2.98	0.42
			4	2.91	2.82	2.99	0.34
			5	2.88	2.78	2.97	0.38
		O	3	5.74	5.57	5.91	0.69
			4	5.88	5.76	6.00	0.48
			5	5.85	5.71	5.98	0.54
3	Antonyms	J	3	2.06	1.94	2.18	0.50
			4	2.37	2.24	2.50	0.52
			5	2.77	2.66	2.87	0.43
		R	3	1.66	1.47	1.85	0.78
			4	2.32	2.12	2.52	0.81
			5	2.57	2.41	2.73	0.66
		O	3	3.72	3.45	3.99	1.08
			4	4.69	4.42	4.96	1.09
			5	5.29	5.05	5.54	1.00
4	Semantic contiguity	J	3	2.85	2.75	2.95	0.40
			4	2.98	2.95	3.02	0.12
			5	2.97	2.88	3.06	0.35
		R	3	2.63	2.46	2.80	0.70
			4	2.68	2.49	2.86	0.75
			5	2.85	2.71	2.98	0.54
		O	3	5.48	5.23	5.73	1.00

			4	5.66	5.46	5.86	0.82
			5	5.78	5.61	5.96	0.72
5	Paradigmatic relations	J	3	2.46	2.27	2.65	0.77
			4	2.72	2.56	2.88	0.65
			5	2.77	2.65	2.89	0.49
		R	3	0.91	0.67	1.14	0.95
			4	1.51	1.27	1.75	0.97
			5	2.17	1.93	2.41	0.98
		O	3	3.37	3.02	3.72	1.42
			4	4.22	3.89	4.54	1.32
			5	4.95	4.66	5.25	1.19
6	Analyze a sentence into word/ lexical units	J	3	2.25	2.03	2.46	0.87
			4	2.69	2.57	2.82	0.50
			5	2.78	2.67	2.90	0.45
		R	3	2.14	1.87	2.40	1.07
			4	2.66	2.45	2.87	0.85
			5	2.78	2.62	2.95	0.67
		O	3	4.38	3.94	4.83	1.80
			4	5.35	5.08	5.63	1.10
			5	5.57	5.33	5.81	0.97
7	Identify the grammatical category for a word	J	3	2.97	2.93	3.01	0.17
			4	3.00	3.00	3.00	0.00
			5	3.00	3.00	3.00	0.00
		R	3	2.95	2.90	3.01	0.21
			4	2.94	2.86	3.01	0.30
			5	2.98	2.95	3.02	0.12
		O	3	5.92	5.84	6.00	0.32
			4	5.94	5.86	6.01	0.30
			5	5.98	5.95	6.02	0.12
8	Syntagmatic relations	J	3	2.49	2.35	2.63	0.56
			4	2.74	2.62	2.86	0.48
			5	2.77	2.66	2.87	0.43
		R	3	2.35	2.17	2.54	0.76
			4	2.86	2.76	2.96	0.39
			5	2.91	2.81	3.00	0.38
		O	3	4.85	4.55	5.14	1.19
			4	5.60	5.44	5.76	0.63
			5	5.68	5.51	5.84	0.66
9	Synonyms	J	3	2.72	2.60	2.85	0.52
			4	2.86	2.78	2.95	0.35
			5	2.94	2.88	3.00	0.24
		R	3	1.57	1.38	1.76	0.77
			4	2.02	1.82	2.21	0.78
			5	2.32	2.13	2.52	0.79
		O	3	4.29	4.03	4.55	1.04
			4	4.88	4.65	5.10	0.91
			5	5.26	5.05	5.48	0.87
10	Homonyms	J	3	2.72	2.60	2.84	0.48
			4	2.92	2.84	3.00	0.32
			5	2.91	2.84	2.98	0.29
		R	3	2.23	2.02	2.44	0.84

			4	2.57	2.39	2.74	0.71
			5	2.86	2.76	2.96	0.39
		O	3	4.95	4.68	5.23	1.11
			4	5.49	5.28	5.71	0.87
			5	5.77	5.64	5.90	0.52
11	Define a word	G	3	10.42	9.98	10.85	1.74
			4	11.31	11.01	11.61	1.21
			5	11.40	11.03	11.77	1.50
12	Lexical/referential arbitrariness	G	3	10.25	9.67	10.82	2.31
			4	11.26	10.84	11.69	1.72
			5	11.46	11.11	11.81	1.43
	Jt		3	26.05	25.29	26.81	3.06
			4	28.22	27.79	28.64	1.72
			5	28.86	28.49	29.24	1.52
	Rt		3	21.65	20.56	22.74	4.40
			4	25.35	24.34	26.37	4.11
			5	27.14	26.18	28.09	3.85
	G		3	19.71	21.56	19.71	3.73
			4	21.89	23.22	21.89	2.69
			5	22.20	23.53	22.20	2.68
	Total		3	68.32	65.72	70.93	10.51
			4	76.12	74.20	78.05	7.76
			5	78.86	76.95	80.77	7.71

\*J- judgment; R- revision; O-overall; Jt- total Judgment; Rt- total revision; G- total generation

#### *Interpreting low scores*

If the scores are less than Mean minus 2\*SD, then the child's scores are less than the normal score which indicate deficits in metasegmental awareness.

#### *Unreliable test result*

If the child's score does not reflect his/her true ability, the test should be re-administered within a span of one week to determine the reliability of the result obtained during the first evaluation.

In addition the results of this test should be interpreted along with the detailed results of other assessment procedures.



## Chapter 4

### Professional Information

#### Sampling procedure

A total of one hundred and eighty typically developing Kannada speaking children participated in the study. They were divided into three groups of sixty children each according to the grades i.e. sixty children in III grade (age range: 8.0-8.11 years), sixty children in IV grade (age range: 9.0-9.11 years) and sixty children in V grade (age range: 10.0-10.11 years). Children were selected from various state board English medium schools in the city of Mysore. NIMH Socio Economic Status scale by Venkatesan (2009) was used to select children from various socio economic backgrounds and WHO disability screening checklist (Singhi, Kumar, Malhi, & Kumar, 2007) was used to rule out the presence of any disability. The subjects were randomly selected from various schools and various socio economic backgrounds to ensure the representativeness of the sample. Children with no evidence of sensory, neurological, motor, social-emotional, cognitive, behavioural, speech-language or learning or learning deficits were selected. Ethical guidelines were followed. The school principal and parents were explained about the purpose of the study and an informed written consent was obtained. The study was undertaken in the following phases:

Phase I: Construction of the Test.

Phase II: Standardization on typically developing children.

Phase III: Test-retest reliability.

Phase IV: Validation of the test.

**Phase I: Construction of the Test:** As a part of construction of the test, the following research steps were undertaken:

**Step 1: Development of the assessment tool:** This step involved the development of the test for the assessment of metasegmental awareness in children in Kannada. The tasks to be incorporated under the metasegmental ability were collated after a review of the relevant literature. A total of fifteen tasks were compiled. Tasks 1 to 13 were designed to be elicited through a judgment and a revision type of subtask and task 14 and 15 were designed to be elicited through a generation type of subtask. The judgment type of subtask required the participants to judge whether a given utterance was correct or wrong; the revision type of subtask required the participants to correct the wrong utterance; and the generation type of task required the participants to produce an utterance. The details of the tasks included were as follows:

**Task 1: Analyze a sentence into lexical units/ words:** This task checks the ability of the participants to count the number of words present in a sentence. E.g. sure:ja angaḍiyalli kelasa ma:ḍutta:ne.

**Task 2: Word association task:**

a: This checks the ability of the participants to say the items that belong to a particular category. E.g. pra:nigalu.

b: This checks the ability to categorize the words according to its super ordinate. E.g. huli.

Task 3: **Word concept awareness:** This checks the ability of the participants to decide whether the target stimulus is a word or not. E.g. mara.

Task 4: **Free word association task:** This checks the ability of the participants to say a related word that comes to their mind when they hear a target word. E.g. hasiru.

Task 5: **Synonyms:** This task checks the ability of the participants to say a word equivalent to the target word. E.g. ka:ḍu-vana, aranya.

Task 6: **Antonyms:** This checks the ability of the participants to say a word opposite to the target word. E.g. kaṣṭa-sukha.

Task 7: **Homonyms:** This task tests the ability of the participants to give multiple meaning of a word. E.g. ettu.

Task 8: **Identify the grammatical category for a word:** This task assesses the participant's ability to name the grammatical category of a word. E.g. o:danu.

Task 9: **Semantic anomaly:** This task checks the participant's ability to comment on the acceptability of a sentence. E.g. sakkare kahiyagiratade.

Task 10: **Paradigmatic relations:** This task tests the ability of the participants to understand the categorical relationship between the first set of paired words and give a word to complete the second pair. E.g. ta:yi-tande; aji-\_\_\_\_\_.

Task 11: **Syntagmatic relations:** This task assesses the participant's ability to understand the functional relationship between the first set of paired words and give a word to complete the second set of paired words on the same lines. E.g. ele-hasiru; bale-\_\_\_\_\_.

Task 12: **Semantic contiguity:** This task assesses the participant's skill to provide a word which is related to the target word. E.g. ka:yi-haṇṇu.

Task 13: **Semantic similarity:** This task assesses the participant's ability to provide semantically similar words. E.g. o:du-o:ta.

Task 14: **Define a word:** This task tests the skill of the participants to provide a well formed definition of a given word with a general information and super ordinate category. E.g. hasu.

Task 15: **Lexical/referential arbitrariness:** This task tests the ability of the participants to ignore the meaning of a sentence by substituting a word/symbol and answering to the question asked at the end of symbol substitution. E.g. ni:ru-halu. bha:viyoḷage ni:ru ka:nisuttade. bha:viyoḷage e:nu ka:nisuttade?

A total of 15 items (test stimuli) were included under each task. The test stimuli under each task were prepared from the textbooks in Kannada prescribed by the Karnataka Board of Primary and Secondary Education and from the standardized tests previously developed and used for assessing language (Linguistic Profile Test; Karanth, Ahuja, Nagaraja, Pandith & Shivashankar, 1991). A score sheet was also prepared to document the children's responses under each task. Instructions were prepared for each task. The following scoring pattern was designed to score all the tasks except for the word definition task and lexical/referential arbitrariness task: 1 for a correct response and 0 for a no response/incorrect response. For the word definition task and lexical/referential arbitrariness task the scoring pattern adopted



was: 2-Correct response, 1-partially correct/only little information provided, and 0-no response/incorrect response.

### **Step 2: Content validity check**

The tasks included under the test were given to three Speech-Language Pathologists who had more than five years of teaching, research and clinical experience in various aspects of language for their feedback on the contents (appropriateness of the tasks included in the test and the items under each task). The feedback was collected from various tasks of the test using a 3 point rating scale ranging from the contents are not very valid (score 0) to all the contents are valid (score 2). Based on the feedback, two tasks (word association task and word concept awareness task) were deleted from the test as it was rated as not very valid by two of the three judges.

### **Step 3: Familiarity rating**

The prepared test items under each task were subjected to familiarity rating. The stimuli were given to the teachers working in the state board English medium schools who taught Kannada for the III, IV, and V grade and they were asked to rate each stimulus on a 3 point rating scale ranging from most familiar to unfamiliar. The stimuli that were rated as most familiar by teachers were selected as the final stimuli. There were 15 stimuli under each task initially and finally, 8 stimuli that were rated as most familiar only were retained.

### **Step 4: Pilot study**

A pilot study was carried out in which TAMAC-K was administered on six typically developing Kannada speaking children in the age range of 8 to 11 years from grade III, IV, and V with two children in each grade. The pilot study was conducted to check the ease with which the test material could be administered, the appropriateness of the test, and the approximate time required by the children to complete the test. This was also carried out so that the experimenter becomes experienced in the test administration and response recording. Following this, the task on semantic similarity was deleted from the test since even the V grade students responded poorly i.e. they obtained a score of '0' on the entire item. The final form of the test thus developed contained 12 tasks with 8 items (3 test items under each type of subtask i.e. judgment and revision subtask and 2 sample items) under each task. The tasks and the scoring pattern adopted for each task included in the final form of the test are provided in the table 2. The final form of the complete test of metasemantic awareness in Kannada along with the stimuli and instructions has been provided in the Appendix I.

Table 2: Details of the Test for the Assessment of Metasemantic Awareness in children in Kannada.

Sl. No.	Task	No. of items	Score for each correct response	Total score
1	Analyze a sentence into lexical units/words	06	1	06
2	Free word association task	06	1	06
3	Synonyms	06	1	06
4	Antonyms	06	1	06
5	Homonyms/lexically ambiguous words	06	1	06
6	Identify the grammatical category	06	1	06
7	Semantic anomaly	06	1	06
8	Paradigmatic relations	06	1	06
9	Syntagmatic relations	06	1	06
10	Semantic contiguity	06	1	06
11	Define a word	06	2	12
12	Lexical/referential arbitrariness	06	2	12
<b>Total score</b>				<b>84</b>

#### Phase II: Standardization of TAMAC-K on typically developing children

**Participants:** TAMAC-K was administered on 180 typically developing Kannada speaking children (group I), across grade III (age group: 8-8.11 years), IV (age group: 9-9.11 years) and V (age group: 10-10.11 years) with 60 participants in each grade. Equal number of boys and girls were considered in each age group. These children were selected from different state board English medium schools in Mysore. The details of the participants have been provided in the Table 3.

Table 3: Details regarding the number of typically developing participants (group I).

Grade	Boys	Girls	Total
III	30	30	60
IV	30	30	60
V	30	30	60
Total	90	90	180

**Inclusion criteria:** The following criteria were adhered to while selecting the participants.

1. The participants should be a native speaker of Kannada and English should be the medium of instruction at school.
2. They should have had a minimum of two years of formal training at school.
3. Participants should have had no history of neurological, communicative, cognitive, or sensorimotor, and academic impairment. This was ensured using the 'WHO Ten-question disability screening checklist' (Singhi, Kumar, Malhi & Kumar, 2007).
4. Participants should have had age adequate language abilities which were ascertained using Linguistic Profile Test (Karanth, Ahuja, Nagaraja, Pandith & Shivashankar, 1991). This is a test developed to assess the phonology, semantic and syntactic aspects of the Kannada language in children above six years. The Linguistic Profile Test has items for phonemic discrimination and

phonetic expression; sentence structure covering the core syntactic features of the language; various semantic categories and relationships to evaluate individual's semantic knowledge.

5. Participants should have had adequate scholastic performance which was ascertained by obtaining the opinion regarding the academic performance from the class teacher. Children with adequate scholastic performance only were selected.

**Procedure:** Initially the examiner engaged the child in a general conversation to build a rapport. After the initial phase of rapport building, WHO disability checklist, NIMH SES Scale and LPT in Kannada were administered. Following this, each participant was tested on the TAMAC-K individually in a relatively noise free environment with minimum distractions. The instruction for different tasks was given in Kannada and they were repeated only once. Two practice stimuli were also provided to familiarize the child with the tasks on hand. Once the child was familiar with the type of task, the test stimuli under each task was presented one at a time and their responses were documented in the score sheet. Adequate breaks were provided in between the testing sessions. The approximate time for testing was around 25-30 minutes. Positive reinforcements like verbal and social reinforcements were provided to maintain the interest and motivation of the child throughout the test administration. At the end of the administration, a tangible reinforcement (chocolate) and token reinforcement (pencil) were provided to the child.

#### **Phase III: Test-retest reliability**

The TAMAC-K was re-administered on 33.3% (60 participants) of the participants selected randomly within a period of 10-15 days and the scores were subjected to statistical procedures. Equal number of boys and girls were selected for assessing the test-retest reliability.

#### **Phase IV: Validation of the test**

Any newly developed screening/diagnostic test, developed by measuring the typical behaviour in normal children (normative group) with a view to use it for screening deviant behaviour, must be used for testing clients with disorders (Hegde, 1994). Therefore, TAMAC-K was administered on 15 Kannada speaking children with learning disability (group II) in the age group of 8-11 years. The children were diagnosed to have learning disability using Early Reading Skills (ERS) (Loomba, 1995) in a clinical set up by a multidisciplinary team of qualified specialists including a Speech-Language Pathologist and a Clinical Psychologist. They functioned two grades or more below their expected grade. The details of the participants are depicted in Table 4.

Table 4: *Details regarding the number of participants with learning disability (group II).*

<b>Grade</b>	<b>Boys</b>	<b>Girls</b>	<b>Total</b>
III	3	2	5
IV	4	1	5
V	5	0	5
Total	12	3	15

The participants were selected based on the following criteria:

1. They should be a native speaker of Kannada and English should be the medium of instruction at school.
2. They should have had no history of neurological, cognitive or sensorimotor impairment based on history, the assessment report and reports from parents and school teachers.
3. They should have had a minimum of two years of formal training at school.



None of the participants had attended speech-language therapy but they had received guidelines and counselling regarding the activities to be carried out to improve academic skills. The procedure used for selection of participants from all socioeconomic status was the same as in the typically developing group. Each group comprised of children from low, middle and upper socioeconomic statuses according to the NIMH SES scale (Venkatesan, 2009). TAMAC-K was administered on the selected participants. The procedure of administration was similar to that in the typically developing group. All ethical standards were met for subject selection and their participation. Prior to testing, a written consent was obtained from the school authorities and parents of the participants after explaining the purpose of the administration of the test.

#### Derivation of norms

The mean and standard deviation (SD) values were computed for children across all the grades and tasks and across both the gender. The results revealed that in the typically developing children (group I) the mean scores increased with an increase in age i.e., a developmental trend was seen on the entire test across all the subtasks (judgment, revision and generation). The percentage mean and standard deviation scores of the typically developing children on the entire test across the three grades on various subtasks have been given in table 5. It was also found that the mean scores obtained on the judgment and generation subtasks were higher compared to the revision subtask, i.e., the children performed better on the judgment and generation type of subtasks and revision type of subtask was difficult compared to other two subtasks which is depicted in the figure 1.

Table 5: Percentage (%) mean and Standard Deviation (SD) scores of group I of different grades across various subtasks on the entire test.

Subtask	III Grade		IV Grade		V Grade	
	% Mean	SD	% Mean	SD	% Mean	SD
<b>Judgment</b>	89.11	5.88	95.28	3.59	97.39	2.46
<b>Revision</b>	75.17	9.81	87.78	6.83	93.79	4.81
<b>Generation</b>	89.79	7.80	96.94	4.05	98.19	2.80
<b>Total</b>	84.32	6.43	93.08	3.07	96.33	2.54

ANOVA was used to analyze the performance of the participants of different grades on the total score with grade as the independent factor. Results revealed a statistically significant main effect of grade on the performance of the participants [ $F(2, 177) = 121.062, p < 0.001$ ]. Pairwise comparison was done using Duncan test which revealed a statistically significant difference between all the three grades ( $p < 0.05$ ).

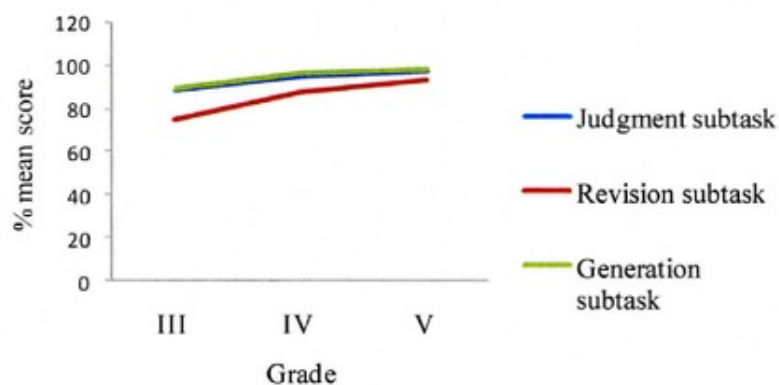


Figure 1: Percentage (%) mean score of group I of different grades across various subtasks.

The performance of the typically developing children on each individual metasemantic task included in the test was compared across the three different age groups. The comparison was made separately for the judgment and the revision subtasks for the first ten tasks. On the 11<sup>th</sup> and 12<sup>th</sup> task, a generation subtask was used, for which again a comparison of the typically developing children across age groups was made. The mean scores for boys and girls across the three grades separately for each task is shown in table 6.

**Table 6: Mean and Standard Deviation (SD) scores of group I across age groups on various tasks.**

T*	ST*	8.0-8.11 years (III Grade)						9.0-9.11 years (IV Grade)						10.0-10.11 years (V Grade)					
		Boys		Girls		Total		Boys		Girls		Total		Boys		Girls		Total	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
1	J	2.70	0.47	2.70	0.47	2.70	0.46	3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00
	R	2.30	0.79	2.10	0.89	2.20	0.84	2.90	0.31	2.80	0.48	2.85	0.40	2.87	0.35	2.93	0.25	2.90	0.30
	O	5.00	1.11	4.80	1.13	4.90	1.12	5.90	0.31	5.80	0.48	5.85	0.40	5.87	0.35	5.93	0.25	5.90	0.30
2	J	2.93	0.25	2.93	0.25	2.93	0.25	3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00
	R	2.97	0.18	2.90	0.40	2.93	0.31	2.97	0.18	2.97	0.18	2.97	0.18	2.90	0.31	3.00	0.00	2.95	0.22
	O	5.90	0.40	5.83	0.46	5.87	0.43	5.97	0.18	5.97	0.18	5.97	0.18	5.90	0.25	6.00	0.00	5.95	0.18
3	J	2.23	0.43	2.00	0.46	2.12	0.45	2.37	0.49	2.47	0.51	2.42	0.50	2.77	0.43	2.87	0.35	2.82	0.39
	R	1.90	0.66	1.67	0.66	1.78	0.67	2.50	0.73	2.37	0.67	2.43	0.70	2.83	0.38	2.57	0.50	2.70	0.46
	O	4.13	0.78	3.67	0.96	3.90	0.90	4.87	0.94	4.83	0.91	4.85	0.92	5.60	0.56	5.44	0.92	5.42	0.77
4	J	2.90	0.31	2.90	0.31	2.90	0.30	2.97	0.18	3.00	0.00	2.98	0.13	2.97	0.18	3.00	0.00	3.00	0.00
	R	2.73	0.52	2.80	0.41	2.77	0.47	2.80	0.61	2.83	0.38	2.82	0.50	2.97	0.18	2.93	0.25	2.95	0.22
	O	5.63	0.72	5.70	0.54	5.67	0.63	5.77	0.77	5.83	0.38	5.80	0.61	5.94	0.25	5.93	0.40	5.95	0.33
5	J	2.60	0.62	2.63	0.49	2.62	0.56	2.70	0.54	3.00	0.00	2.85	0.40	2.87	0.35	2.77	0.43	2.82	0.39
	R	0.87	0.94	1.10	0.96	0.98	0.95	1.33	0.92	1.90	0.85	1.62	0.92	2.20	0.85	2.43	0.82	2.32	0.83
	O	3.47	1.17	3.73	1.26	3.60	1.21	4.03	1.07	4.90	0.82	4.47	1.03	5.07	1.02	5.20	0.82	5.14	0.92
6	J	2.23	0.94	2.40	0.77	2.32	0.85	2.73	0.45	2.73	0.45	2.73	0.45	2.87	0.35	2.83	0.38	2.85	0.36
	R	2.20	1.10	2.37	0.85	2.28	0.98	2.90	0.31	2.83	0.59	2.87	0.47	2.97	0.18	2.97	0.18	2.97	0.18
	O	4.43	1.87	4.77	1.50	4.60	1.69	5.63	0.62	5.56	0.73	5.60	0.67	5.83	0.38	5.80	0.48	5.82	0.43
7	J	3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00
	R	3.00	0.00	2.97	0.18	2.98	0.13	3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00
	O	6.00	0.00	5.97	0.18	5.98	0.13	6.00	0.00	6.00	0.00	6.00	0.00	6.00	0.00	6.00	0.00	6.00	0.00
8	J	2.53	0.51	2.60	0.50	2.57	0.50	2.67	0.55	2.83	0.38	2.75	0.47	2.80	0.41	2.83	0.38	2.82	0.39
	R	2.40	0.68	2.53	0.63	2.47	0.65	2.87	0.35	3.00	0.00	2.93	0.25	3.00	0.00	3.00	0.00	3.00	0.00
	O	4.93	0.98	5.13	1.01	5.03	0.99	5.54	0.57	5.83	0.38	5.68	0.50	5.80	0.41	5.83	0.38	5.82	0.39
J	2.77	0.43	2.87	0.35	2.82	0.39	2.97	0.18	2.83	0.38	2.90	0.30	2.97	0.18	2.97	0.18	2.97	0.18	

9	R	1.57	0.77	1.73	0.69	1.65	0.73	2.10	0.71	2.10	0.76	2.10	0.73	2.47	0.73	2.40	0.68	2.43	0.70
	O	4.33	0.84	4.60	0.86	4.47	0.85	5.07	0.69	4.93	0.87	5.00	0.78	5.43	0.77	5.37	0.67	5.40	0.72
	J	2.87	0.35	2.67	0.48	2.77	0.43	2.97	0.18	2.97	0.18	2.97	0.18	2.90	0.31	2.97	0.18	2.93	0.25
	R	2.47	0.63	2.27	0.74	2.37	0.69	2.77	0.43	2.60	0.56	2.68	0.50	2.93	0.25	2.90	0.31	2.92	0.28
10	O	5.33	0.80	4.93	0.91	5.13	0.87	5.74	0.45	5.57	0.63	5.65	0.55	5.83	0.38	5.87	0.43	5.85	0.40
11		10.83	1.23	10.80	0.85	10.82	1.05	11.67	0.61	11.50	0.78	11.58	0.70	11.73	0.45	11.83	0.46	11.78	0.45
12		10.63	1.38	10.90	1.32	10.77	1.35	11.50	0.82	11.90	0.31	11.7	0.65	11.8	0.48	11.77	0.57	11.78	0.52
	Jt	26.77	1.83	26.70	1.73	26.73	1.77	28.33	0.96	28.83	1.15	28.58	1.08	29.20	0.61	29.23	0.86	29.22	0.74
	Rt	22.47	2.85	22.63	3.08	22.55	2.48	26.20	2.17	26.47	1.94	26.33	2.05	28.13	1.41	28.13	1.50	28.13	1.44
	G	21.50	2.13	21.60	1.61	21.55	1.87	23.13	1.07	23.40	0.86	23.27	0.97	23.53	0.63	23.60	0.72	23.57	0.67

\*Jt- task; ST- subtask; J- judgment; R- revision; O-overall; Jt- total Judgment; Rt- total revision; G- total generation; 1-Analyze a sentence into lexical units/words; 2- Free word association task; 3- Synonyms; 4- Antonyms; 5- Homonyms; 6- Identify the grammatical category for a word; 7- Semantic anomaly; 8- Paradigmatic relations; 9- syntagmatic relations; 10- Semantic contiguity; 11- Define a word; 12- Lexical/referential arbitrariness



23 Results of two-way MANOVA 16 indicated significant main effect of grade on scores except for tasks 2, 4 J (Judgment) and 7. Further, results of post-hoc Duncan's test indicated significant difference between grade III and V on all tasks except for tasks 2, 4 J (Judgment) and 7. No significant difference between genders was observed except on tasks 3 R (Revision) and 5 R (Revision). Table 7 shows the F and p values on Two-way MANOVA and results of post-hoc Duncan across different tasks.

Table 7: Results of two-way MANOVA, post-hoc Duncan for group I across different tasks.

Task	Subtask	F value (2,174)	p value	Post-hoc Duncan	Gender difference
1	J	24.857	<0.001	15 .05 except IV vs. V	NS
	R	28.515	<0.001	p<0.05 except IV vs. V	NS
2	J	2.877	>0.05	-	NS
	R	0.282	>0.05	-	NS
3	J	37.178	<0.001	p<0.05	NS
	R	35.507	<0.001	P<0.05	S
4	J	2.436	>0.05	2 -	NS
	R	3.078	<0.05	p<0.05 for III vs. V	NS
5	J	4.710	<0.05	p<0.05 except IV vs. V	NS
	R	33.725	<0.001	p<0.05	S
6	J	13.251	<0.01	p<0.05 except IV vs. V	NS
	R	20.151	<0.001	p<0.05 except IV vs. V	NS
7	J	NS	-	-	NS
	R	1.00	>0.05	-	NS
8	J	4.798	<0.01	p<0.05 except IV vs. V	NS
	R	31.336	<0.001	p<0.02 except IV vs. V	NS
9	J	3.709	<0.05	p<0.05 for III vs. V	NS
	R	17.671	<0.001	p<0.05	NS
10	J	7.619	<0.001	p<0.05 except IV vs. V	NS
	R	17.121	<0.001	p<0.05	NS
11		25.847	<0.001	p<0.05 except IV vs. V	NS
12		23.094	<0.001	p<0.05 except IV vs. V	NS

\*J-Judgment, R-Revision, NS-Not significant, S-Significant

The results of repeated measure ANOVA and the mean values were used to arrange the tasks in a hierarchy starting from the least difficult to the most difficult. The tasks were arranged in an ascending order starting with Semantic anomaly followed by Free word association task, Antonyms, Semantic contiguity, Paradigmatic relations, Analyze a sentence into lexical units/words, Identify the grammatical category, Syntagmatic relations, Synonyms and finally the Homonyms.

#### Comparison across socioeconomic status

Results of Kruskal-Wallis test did not reveal any significant effect of the socioeconomic status on various tasks of the test. The mean and standard deviation scores are shown in table 8.

**Table 8: Mean and Standard Deviation (SD) score of group I across different socioeconomic status (SES).**

Task	Subtask*	Lower SES		Middle SES		Higher SES		Asymp. Sig.
		Mean	SD	Mean	SD	Mean	SD	
1	J	2.88	0.33	2.92	0.28	2.86	0.36	0.61
	R	2.53	0.71	2.64	0.67	2.82	0.39	0.24
	O	5.41	0.93	5.56	0.85	5.68	0.67	0.41
2	J	2.97	0.17	3.01	0.31	2.96	0.19	0.65
	R	2.94	0.34	2.95	0.22	2.96	0.19	0.86
	O	5.91	0.38	5.91	0.27	5.93	0.26	0.91
3	J	2.38	0.55	2.47	0.52	2.43	0.57	0.70
	R	2.35	0.69	2.31	0.76	2.21	0.63	0.56
	O	4.74	1.02	4.76	1.12	4.64	0.99	0.80
4	J	2.97	0.17	2.96	0.30	2.96	0.19	0.87
	R	2.79	0.41	2.86	0.42	2.86	0.45	0.47
	O	5.76	0.43	5.80	0.56	5.82	0.61	0.42
5	J	2.74	0.45	2.77	0.48	2.75	0.44	0.76
	R	1.41	1.05	1.67	1.05	1.79	1.07	0.34
	O	4.18	1.22	4.44	1.22	4.50	1.29	0.47
6	J	2.65	0.69	2.60	0.66	2.75	0.44	0.59
	R	2.59	0.86	2.70	0.70	2.86	0.45	0.39
	O	5.24	1.40	5.31	1.24	5.61	0.63	0.74
7	J	3.00	0.00	3.00	0.00	3.00	0.00	1.00
	R	3.00	0.00	2.99	0.09	3.00	0.00	0.77
	O	6.00	0.00	5.99	0.00	6.00	0.00	0.77
8	J	2.82	0.39	2.68	0.47	2.71	0.54	0.25
	R	2.82	0.39	2.79	0.49	2.82	0.48	0.91
	O	5.65	0.54	5.47	0.82	5.54	0.69	0.76
9	J	2.91	0.29	2.88	0.33	2.93	0.26	0.72
	R	2.09	0.79	2.02	0.77	2.21	0.83	0.40
	O	5.00	0.89	4.90	0.85	5.14	0.93	0.30
10	J	2.85	0.36	2.88	0.33	2.96	0.19	0.35
	R	2.50	0.66	2.70	0.53	2.64	0.56	0.21
	O	5.35	0.85	5.58	0.68	5.61	0.57	0.32
11		11.32	0.98	11.39	0.86	11.50	0.84	0.71
12		11.29	1.14	11.45	1.03	11.43	0.79	0.63
	Jt	28.15	1.76	28.15	1.68	28.32	1.39	0.97
	Rt	25.12	3.33	25.71	3.26	26.18	2.89	0.35
	G	22.62	1.79	22.81	1.54	22.93	1.33	0.83
	Total	75.88	6.18	76.68	5.61	77.43	4.95	0.55

\* J- judgment; R- revision; O-overall; Jt- total Judgment; Rt- total revision; G- total generation

**1** The mean and standard deviation scores obtained for the typically developing children on the entire test forms the “norm” for each grade and have been provided in the Appendix II. The values obtained from these typically developing participants can be used as norms to compare children with communication disorders who exhibit a deficit in the metasegmental tasks.

### Test-retest reliability

Test-retest reliability was assessed using the Cronbach's alpha test and the cronbach's alpha values have been depicted for the third, fourth and fifth grade across all the tasks in table 9. The results revealed that all the tasks across the three grades have a high degree of test-retest reliability except for the second task in III grade which has moderate degree of test-retest reliability.

Table 9: Cronbach's alpha values across the three grades for group I.

Task	III Grade	IV Grade	V Grade	Overall
1	0.73	1	1	0.80
2	0.65	1	1	0.85
3	0.95	0.98	0.96	0.98
4	0.91	0.91	1	0.92
5	0.79	0.92	0.93	0.92
6	0.81	0.95	1	0.89
7	1	1	1	1
8	0.88	0.94	0.93	0.90
9	0.91	0.97	0.85	0.91
10	0.90	0.94	1	0.90
11	0.94	0.97	1	0.94
12	0.85	0.95	1	0.85

### Clinical Validity

The results revealed that the children with learning disability performed poorer compared to the typically developing children on all the tasks across all the grades. This shows that the test has good discriminant validity. The same developmental trend was seen in children with learning disability wherein the scores increased with increase in the age. Across all grades, judgment subtask was easier than the revision and the generation subtasks. The performance of typically developing children (group I) and children with learning disability (group II) were compared across the different age groups for different tasks using Mann-Whitney U test. Table 10 shows the mean, SD and the /z/ values for both the groups. The results of the Mann-Whitney U test revealed a significant difference between the groups for all the tasks except for 1 J (Judgment) in third grade, 1 R (Revision) in third and fourth grade, 4 J (Judgment) in fourth grade, 5 J (Judgment) in fifth grade, 6 J (Judgment) in fourth grade, 7 J (Judgment) in fourth and fifth grade and in 8 J (Judgment) in fourth grade.



1  
 Table 10: Mean, Standard Deviation (SD) scores and /z/ values of group I and group II across the three age groups across tasks.

Task	Subtask	Group	III Grade			IV Grade			V Grade		
			Mean	SD	/z/	Mean	SD	/z/	Mean	SD	/z/
1	J	I	2.70	0.46	1.64	3.00	0.00	4.94*	3.00	0.00	3.46*
		II	2.20	0.84		2.60	0.55		2.80	0.45	
	R	I	2.20	0.84	0.05	2.84	0.40	0.55	2.90	0.30	4.36*
		II	2.20	0.84		2.60	0.89		1.80	0.84	
2	J	I	2.93	0.25	4.84*	3.00	0.39	4.17*	3.00	0.00	4.94*
		II	2.00	0.71		2.60	0.55		2.40	0.89	
	R	I	2.93	0.31	4.05*	2.97	0.18	4.58*	2.95	0.22	5.22*
		II	2.20	0.84		2.20	0.84		2.00	0.71	
3	J	I	2.12	2.12	3.02*	2.42	0.50	2.31*	2.82	0.39	3.12*
		II	1.40	1.40		1.40	0.45		2.20	0.45	
	R	I	1.78	1.78	3.76***	2.43	0.70	3.07***	2.70	0.46	4.13***
		II	0.20	0.20		0.20	0.20		2.70	0.46	
4	J	I	2.90	0.30	3.21**	2.98	0.13	0.29	3.00	0.32	3.01*
		II	2.20	0.84		3.00	0.00		2.60	0.55	
	R	I	2.77	0.30	4.26**	2.82	0.50	3.97**	2.95	0.22	4.27**
		II	1.00	1.00		1.00	1.23		1.60	1.34	
5	J	I	2.62	0.56	4.16***	2.85	0.40	4.17*	2.82	0.39	1.54
		II	0.60	0.55		1.20	1.10		2.20	1.10	
	R	I	0.98	0.95	2.49*	1.62	0.99	3.06**	2.32	0.83	3.36***
		II	0.00	0.00		0.20	0.45		0.40	0.89	
6	J	I	2.32	0.85	2.59*	2.73	0.45	1.81	2.85	0.36	3.62**
		II	1.40	0.55		2.20	0.84		2.00	0.71	
	R	I	2.28	0.98	3.37**	2.87	0.49	5.55**	2.97	0.18	6.86**
		II	0.40	0.55		5.60	0.67		5.82	0.43	
7	J	I	3.00	0.00	4.94*	3.00	0.00	0.00	3.00	0.00	0.00
		II	2.60	0.55		3.00	0.00		3.00	0.00	
	R	I	2.98	0.13	3.90*	3.00	0.00	6.09*	3.00	0.00	3.46*
		II	2.60	0.55		2.20	0.84		2.80	0.45	
8	J	I	2.57	0.50	3.12*	2.75	0.47	0.79	2.82	0.39	3.12*
		II	1.60	0.55		2.60	0.55		2.20	0.45	
	R	I	2.47	0.65	3.43**	2.93	0.25	4.84**	3.00	0.00	7.09**
		II	1.00	0.71		2.00	0.55		1.80	0.84	
9	J	I	2.82	0.39	4.39**	2.90	0.30	3.09*	2.97	0.18	3.25**
		II	1.60	0.55		2.40	0.55		2.60	0.55	
	R	I	1.65	0.73	2.82*	2.10	0.73	2.73*	2.43	0.70	3.31**
		II	0.60	0.55		1.00	0.71		1.00	0.71	
10	J	I	2.77	0.43	2.00*	2.97	0.18	3.31***	2.93	0.25	2.46*
		II	2.20	0.84		2.40	0.89		2.60	0.55	
	R	I	2.37	0.69	3.40***	2.68	0.50	3.00**	2.92	0.28	3.46***
		II	0.60	0.89		1.20	1.30		2.20	0.84	
11		I	10.82	1.05	3.82*	11.58	0.70	4.24*	11.78	0.45	4.80*
		II	5.60	0.89		6.00	1.23		6.80	2.05	
12		I	10.77	1.35	3.84*	11.70	0.65	4.69*	11.78	0.52	3.94*
		II	4.00	2.35		6.00	1.87		7.60	2.88	
	Jt	I	26.73	1.77	3.74*	28.14	2.67	3.67*	29.22	0.74	3.94*
		II	17.80	3.49		23.80	1.92		24.60	2.07	
	Rt	I	22.55	2.94	3.69*	25.67	5.02	3.71*	28.13	1.44	3.79*
		II	10.80	4.76		13.60	4.62		15.20	3.70	
	G	I	21.55	1.87	3.74*	22.22	3.64	3.98*	23.57	0.67	4.25*
		II	9.60	2.51		14.00	1.58		14.40	3.36	
	Total	I	70.83	5.40	3.70*	78.18	2.58	3.72*	80.92	2.13	3.73*
		II	38.20	10.40		51.40	6.19		54.20	7.79	

\*J-Judgment, R-Revision, Jt- total Judgment; Rt- total revision; G- total generation



The mean score for children with learning disability was lower for the lowest grade and higher for the highest grade. The performance was analysed using Kruskal-Wallis test. On the judgment task, a significant difference between tasks across grades was observed. Pairwise comparison was made using Mann-Whitney U test and the results showed a significant difference between scores of third and fourth grade and fourth and fifth grade children at  $p < 0.05$ . No significant difference between grades was noticed on revision task. A significant difference between third and fourth grade was noticed on generation task at  $p < 0.05$ . Comparison of performance of children with learning disability within each grade on different tasks revealed that the performance of children with learning disability on the revision and generation subtasks were similar and they were different from the judgment subtask which was relatively simpler compared to the other two tasks.

## APPENDIX I

### Test for the Assessment of Metasemantic Awareness in children in Kannada (TAMAC-K)

Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Age/Gender: \_\_\_\_\_ Examiner: \_\_\_\_\_  
 Class: \_\_\_\_\_ Other languages known if any: \_\_\_\_\_  
 School: \_\_\_\_\_  
 Mother tongue: \_\_\_\_\_

**Instructions for the examiner:** The responses for the first ten tasks have to be elicited through a judgment and revision subtask. The first three items under each of the ten tasks have to be elicited through a judgment subtask, where in the child has to judge whether the given stimuli is right or wrong and the next three items have to be elicited through a revision subtask, wherein the child has to correct the error in the stimuli. For the first three items, score only for the judgment subtask and for the last three items score only for the revision subtask. The last two tasks are elicited through a generation subtask wherein participants have to answer appropriately to the questions asked.

#### Task 1: Semantic Anomaly

**Instruction:** ನಾನು ಈಗ ಒಂದು ವಾಕ್ಯವನ್ನು ಹೇಳುತ್ತೇನೆ. ನಾನು ಹೇಳುವ ವಾಕ್ಯದ ಅರ್ಥ ಸರಿಯಾಗಿದೆಯೋ ಎಂದು ತಿಳಿಸಿ. ತಪ್ಪಾಗಿದ್ದಲ್ಲಿ, ನಾನು ಹೇಳುವ ವಾಕ್ಯದ ಅರ್ಥವನ್ನು ಸರಿ ಪಡಿಸಿ ಹೇಳಿ.

You will be hearing a sentence now. After hearing the sentence, judge if the meaning of the sentence is right or wrong. If it is wrong, correct the meaning of the given sentence.

**Scoring:** Give a score of 1 for the correct response and 0 for incorrect or no response.

- Practice items: 1. ಮೀನು ನೀರಿನಲ್ಲಿ ಹಾರುತ್ತದೆ.  
 /mi:nu ni:rinalli ha:ruttade/  
 2. ಲತಾ ನನ್ನ ಅಣ್ಣ.  
 /latha nanna aṇṇa/

Subtask	Stimulus	Scoring	
		Correct response	Incorrect / no response
Judgment	೧. ಬೆಕ್ಕು ಬೊಗಲುತ್ತುದೆ 1. /bekku bogaluttade/		
	೨. ಸಕ್ಕರೆ ಕಹಿಯಾಗಿರುತ್ತುದೆ 2. /sakkare kahiyagirattade/		
	೩. ಹುಲಿ ಹುಲ್ಲನ್ನು ತಿನ್ನುತ್ತುದೆ 3. /huli hullannu thinnuttade/		
Revision	೧. ಚಂದ್ರ ಬೆಳಗ್ಗೆ ಹುಟ್ಟುತ್ತಾನೆ 1. /candra beḷigge huṭṭutta:ne/		
	೨. ಹಾಲಿನ ಬಣ್ಣ ಕಪ್ಪು 2. /halina baṇṇa kappu/		
	೩. ಐಸ್‌ಕ್ರೀಮ್ ಬಿಸಿಯಾಗಿರುತ್ತುದೆ 3. /aiskri:m bisiyagiruttade/		

Max score: 6

Score: \_\_\_\_\_

### Task 2: Free word association task

Instruction: ನಾನು ಈಗ ಎರಡು ಪದಗಳನ್ನು ಹೇಳುತ್ತೇನೆ. ಹೇಳಿದ ಎರಡು ಪದಗಳಿಗೆ ಹೋಲಿಕೆ (ಸಂಬಂಧ) ಇದೆಯೇ ಅಥವಾ ಇಲ್ಲವೆಂದು ಗುರುತಿಸಿ ಹೇಳಿ. ನಾನು ಹೇಳುವ ಎರಡು ಪದಗಳಿಗೆ ಹೋಲಿಕೆ (ಸಂಬಂಧ) ಇಲ್ಲದಿದ್ದಲ್ಲಿ, ಹೇಳಿದ ಪದಕ್ಕೆ ಹೋಲಿಕೆಯಾಗಿ ಬರುವ ಇನ್ನೊಂದು ಪದವನ್ನು ಹೇಳಿ.

I will be saying a pair of words and you have to judge if there is any relation between the two given words. If there is no relationship between the two given words, then you have to come up with a word that comes to your mind as soon as you hear the target word.

Scoring: Give a score of 1 for the correct response and 0 for incorrect or no response.

- Practice items: 1. ಹಸಿರು-ಕೆಂಪು  
/hasiru - kempu/  
2. ಹಸು- ಪೆನ್ನು  
/hasu - pennu/

Subtask	Stimulus	Scoring	
		Correct response	Incorrect / no response
Judgment	೧. ಹಕ್ಕಿ-ಹಾರು. 1. /hakkī - haru/		
	೨. ಪೆನ್ಸಿಲ್-ನರಿ. 2. /pensil - nari/		
	೩. ಕಾರು-ವಾಹನ. 3. /karu - vahana/		
	Revision	೧. ನಾಯಿ- ಚಂದ್ರ. 1. /nayi - candra/	
	೨. ಟೊಮೋಟೋ-ಪೆನ್ನು. 2. /tomato - pennu/		
	೩. ಕಿತ್ತಳೆ-ನಾಯಿ. 3. /kittale - na:yi/		

Max score: 6

Score:

### Task 3: Antonyms

Instruction: ನಾನು ಈಗ ಎರಡು ಪದಗಳನ್ನು ಹೇಳುತ್ತೇನೆ. ನಾನು ಹೇಳುವ ಈ ಪದಗಳು ವಿರುದ್ಧಾರ್ಥಕವಾಗಿದೆಯೋ ಇಲ್ಲವೋ ಎಂದು ತಿಳಿಸಿ. ವಿರುದ್ಧಾರ್ಥಕ ಪದಗಳು ಆಗದಿದ್ದಲ್ಲಿ, ಮೊದಲನೆಯ ಪದಕ್ಕೆ ವಿರುದ್ಧಾರ್ಥಕ ಪದಕೊಡಿ.

I will be saying a pair of words and you have to judge if the given pair is an opposite or not. If they are not opposite, you have to give an opposite word to the first word.

Scoring: Give a score of 1 for the correct response and 0 for incorrect or no response.

- Practice items: 1. ಹೊರಗೆ- ಒಳಗೆ  
/horage - o|age/  
2. ಮುಂದೆ-ಒಂದೆ  
/munde - hinde/

Subtask	Stimulus	Scoring	
		Correct response	Incorrect / no response
Judgment	೧. ಬಿಳಿ-ಕಪ್ಪು 1. /bilɪ - kappu/		
	೨. ನಗು-ಹಿಂದೆ 2. /nagu - hinde/		
	೩. ಬೆಳಗ್ಗೆ-ರಾತ್ರಿ 3. /beɻigge - ra:tri/		
Revision	೧. ಸಿಹಿ-ದುಃಖ 1. /sihi - duhkha/		
	೨. ದೊಡ್ಡ-ಒಳಗೆ 2. /doɻɖa - oɻage/		
	೩. ಹತ್ತಿರ-ಮುಂದೆ 3. /hattira - munde/		

Max score: 6

Score:

#### Task 4: Semantic Contiguity

Instruction: ನಾನು ಈಗ ಎರಡು ಪದಗಳನ್ನು ಹೇಳುತ್ತೇನೆ. ಅದರಲ್ಲಿ ಒಂದು ಪದದಿಂದ ಇನ್ನೊಂದು ಪದದ ಅರ್ಥ ಬರುತ್ತದೆಯೋ ಇಲ್ಲವೋ ಎಂದು ಯೋಚಿಸಿ, ಒಂದರಿಂದ ಇನ್ನೊಂದು ಪದದ ಅರ್ಥ ಬರದಿದ್ದಲ್ಲಿ, ಕೊಟ್ಟಿರುವ ಪದದಿಂದ ಮಾಡುವ / ತಯಾರಾಗುವ ವಸ್ತುಗಳನ್ನು ಹೇಳಿ.

I will be telling you two words and you have to judge whether the given two words have any relationship between them or not. If there is no relationship between the given two words, give a word to the first word such that the words are related.

Scoring: Give a score of 1 for the correct response and 0 for incorrect or no response.

Practice items: 1. ಬೀಜ-ಮರ  
/bi:dza - mara/  
2. ಮೋಡ-ಮಳೆ  
/mo:ɖa - maɻe/



Subtask	Stimulus	Scoring	
		Correct response	Incorrect / no response
Judgment	೧. ಕಾಯಿ-ಹಣ್ಣು 1. /ka:yi – haṇṇu/		
	೨. ಬೆಣ್ಣೆ-ಕಲ್ಲು 2. /beṇṇe – kallu/		
	೩. ಮಣ್ಣು-ಮಡಿಕೆ 3. /maṇṇu – maḍike/		
Revision	೧. ಹಾಲು-ಮಳೆ 1. /ha:lu – ma e/		
	೨. ಗೋಧಿ-ಉಪ್ಪು 2. /go:ḍhi – uppu/		
	೩. ಅಕ್ಕಿ-ತುಪ್ಪು 3. /akki – tuppa/		

Max score: 6

Score:

### Task 5: Paradigmatic Relations

Instruction: ನಾನು ಈಗ ಎರಡು ಜೋಡಿ ಪದಗಳನ್ನು ಹೇಳುತ್ತೇನೆ. ನಾನು ಹೇಳುವ ಎರಡು ಜೋಡಿ ಪದಗಳು ಒಂದೇ ರೀತಿಯ ಗುಂಪಿಗೆ ಸೇರುವುದೋ ಇಲ್ಲವೋ ಎಂದು ಯೋಚಿಸಿ ಹೇಳಿ. ಎರಡನೆಯ ಜೋಡಿ ಪದಗಳು ಮೊದಲನೆಯ ಜೋಡಿ ಪದಗಳ ಸಂಬಂಧಿಸಿದ ಇದ್ದರೆ ಸರಿಪಡಿಸಿ ಹೇಳಿ.

First, a pair of words will be given, followed by which one more pair of words will be given. You have to judge whether the second pair of words has the same relation as the first word pair. If the second word pair is judged wrong or if it does not follow the same relationship as the first word pair, you have to give a word such that it follows the same relation as the first pair.

Scoring: Give a score of 1 for the correct response and 0 for incorrect or no response.

Practice items: 1. ಅಮ್ಮ-ಅಪ್ಪ :: ಅತ್ತೆ-ಮಾವ  
/amma-appa :: atte-mava/  
2. ಕಿತ್ತಳೆ-ಹಣ್ಣು :: ನಾಯಿ-ಪ್ರಾಣಿ  
/kitta|e – haṇṇu :: na:yi – pra:ṇi/

Subtask	Stimulus	Scoring	
		Correct response	Incorrect / no response
Judgment	೧. ಸಂಪಿಗೆ-ಹೂವು :: ಸೇಬು-ಹಣ್ಣು 1. /sampige – hu:vu :: se:bu – haṇṇu/		
	೨. ಗುಲಾಬಿ-ಹೂವು :: ಅಕ್ಕಿ-ಕಾಳು 2. /gula:bi – hu:vu :: akki – ka: u/		
	೩. ದ್ರಾಕ್ಷಿ-ಹಣ್ಣು :: ಆಲೂಗಡ್ಡೆ-ಹೂವು 3. /dra:kʃi – haṇṇu :: a:lu:geḍḍe – hu:vu/		
Revision	೧. ತಾಯಿ-ತಂದೆ :: ಅಜ್ಜಿ-ಅಪ್ಪ 1. /ta:yi – tande :: adzi – appa/		
	೨. ಅಕ್ಕ-ತಂಗಿ :: ಅಣ್ಣ-ಪಾಪು 2. /akka – tangi :: aṇṇa – papu/		
	೩. ಕಾಗೆ-ಹಕ್ಕಿ :: ಕೋತಿ-ಪೆನ್ನು 3. /ka:ge – hakki :: ko:ti- pennu/		

Max score: 6

Score:

### Task 6: Analyze a sentence into lexical units/words

Instruction: ನಾನು ಈಗ ಒಂದು ವಾಕ್ಯವನ್ನು ಹೇಳುತ್ತೇನೆ. ಅದರಲ್ಲಿ ಎಷ್ಟು ಪದಗಳಿವೆ ಎಂದು ಮನಸ್ಸಿನಲ್ಲಿ ಲೆಕ್ಕ ಮಾಡಿಕೊಳ್ಳಿ. ನಾನು ಈಗ ಹೇಳಿದಂತಹ ವಾಕ್ಯದಲ್ಲಿ ಎಷ್ಟು ಪದಗಳಿವೆ ಎಂದು ಹೇಳುತ್ತೇನೆ. ನಾನು ಹೇಳಿದ್ದು ಸರಿಯಾಗಿದೆಯೋ ಅಥವಾ ತಪ್ಪಾಗಿದೆಯೋ ಎಂದು ಹೇಳಿ. ತಪ್ಪಿದ್ದಲ್ಲಿ ಅದನ್ನು ಸರಿಯಾದ ಉತ್ತರ ಕೊಟ್ಟು ಸರಿಪಡಿಸಿ.

You will be hearing sentences made up of many words. You have to count the number of words in a sentence as soon as you hear them. I will be telling you the number of words in the sentence and you have to say whether the number of words told by me is right or wrong and if it is wrong, correct them by giving the correct number of words.

Scoring: Give a score of 1 for the correct response and 0 for incorrect or no response.

Practice items: 1.ಸುರೇಶ ಅಂಗಡಿಯಲ್ಲಿ ಕೆಲಸ ಮಾಡುತ್ತಾನೆ.

/sure:ʃa angaḍiyalli kelasa ma:ḍutta:ne/

2. ಹಾಗಲಕಾಯಿ ಒಂದು ತರಕಾರಿ ಆದರೆ ಸೀಬೆಕಾಯಿ ಅಲ್ಲ.

/ha:galaka:yi ondu taraka:ri a:dare si:be: ka:yi alla/

Subtask	Stimulus	Scoring	
		Correct response	Incorrect / no response
Judgment	೧. ರಾಮನು ಪುಸ್ತಕವನ್ನು ಓದಿದನು. 1. /ramanu pustakavannu o:didanu/		
	೨. ಇಟ್ಟಿಗೆಯಿಂದ ಮನೆಯನ್ನು ಕಟ್ಟಿಸುವರು. 2. /ittigeyinda maneyannu kattisuvaru/		
	೩. ಲತ ದೇವಸ್ಥಾನಕ್ಕೆ ಹೋಗಿ ಪೂಜೆ ಮಾಡುತ್ತಾಳೆ. 3. /lata de:vastha:nakke ho:gi pu:dze ma:dutta:le/		
Revision	೧. ಇಬ್ಬರ ಜಗಳ ಮೂರನೆಯವನಿಗೆ ಲಾಭ. 1. /ibbara dzaga a mu:raneyavanige la:bha/		
	೨. ಕೊಕ್ಕರೆಗೆ ಉದ್ದವಾದ ಕಾಲು ಮತ್ತು ಕತ್ತು ಇರತ್ತದೆ. 2. /kokkarege uddava:da ka:lu mattu kattu iruttade/		
	೩. ಸೀತ ಮತ್ತು ಅವಳ ತಂಗಿ ಬೆಂಗಳೂರಿಗೆ ಹೊರಟಿದ್ದರು. 3. /si:ta mattu ava a tangi bengalu:rige hora iddaru/		

Max score: 6

Score:

#### Task 7: Identify the grammatical category for a word

Instruction: ನಾನು ಈಗ ನಾಲ್ಕು ಪದಗಳನ್ನು ಹೇಳುತ್ತೇನೆ. ಈ ನಾಲ್ಕು ಪದಗಳು ಒಂದೇ ಗುಂಪಿಗೆ ಸೇರಿದೆಯೋ ಇಲ್ಲವೋ ಎಂದು ತಿಳಿಸಿ. ಪದ ಗುಂಪಿಗೆ ಸೇರದಿದ್ದಲ್ಲಿ, ಅದೇ ಗುಂಪಿಗೆ ಸೇರಿದ ಇನ್ನೊಂದು ಪದವನ್ನು ಹೇಳಿ.

I will be giving you four words. You have to judge whether all the four words belong to the same grammatical category. If a word does not belong to the same category then you have to provide a word which belongs to the same category.

Scoring: Give a score of 1 for the correct response and 0 for incorrect or no response.

Practice items: 1. ಪಸು, ನಾಯಿ, ಬೆಕ್ಕು, ನಾನು.

/hasu, na:yi, bekku, na:nu/

2. ಮಾಡಿದನು, ತಿಂದನು, ಹೋದನು, ಬಂದನು.

/ma:didanu, tindanu, ho:danu, bandanu/

Subtask	Stimulus	Scoring	
		Correct response	Incorrect / no response
Judgment	೧. ನಡೆದ, ಮಾಡಿದ, ಓದಿದ, ಓದಿದ 1. /naɖeda, ma:ɖida, o:ɖida, o:ɖida/		
	೨. ಅವಳು, ನಾನು, ಇವನು, ಅವನು 2. /avaɭu, na:nu, ivanu, avanu/		
	೩. ಬಂದನು, ಸೀತ, ತಂದನು, ನಡೆದನು 3. /bandanu, si:ta, tandanu, naɖedanu/		
Revision	೧. ಸಂತೋಷ, ಸೀತ, ರಾಮ, ನಡೆದ 1. /santo:ʃa, si:ta, ra:ma, naɖeda/		
	೨. ನಾನು, ತಾವು, ಅವನು, ನದಿ 2. /na:nu, ta:vu, avanu, nadi/		
	೩. ಬಂದನು, ಸೀತ, ತಂದನು, ನಡೆದನು 3. /bandanu, si:ta, tandanu, naɖedanu/		

Max score: 6

Score:

### Task 8: Syntagmatic Relations

Instruction: ನಾನು ಈಗ ಎರಡು ಜೋಡಿ ಪದಗಳನ್ನು ಹೇಳುತ್ತೇನೆ. ನಾನು ಹೇಳುವ ಎರಡು ಜೋಡಿ ಪದಗಳು ಒಂದೇ ರೀತಿಯ ಸಂಬಂಧ ಕೋಡುತ್ತದೆಯೋ ಇಲ್ಲವೋ ಎಂದು ಯೋಚಿಸಿ ಹೇಳಿ. ಒಂದೇ ರೀತಿಯ ಸಂಬಂಧ ಕೊಡದಿದ್ದಲ್ಲಿ, ಅದನ್ನು ಸರಿ ಪಡಿಸಿ ಹೇಳಿ.

First, a pair of words will be given, followed by which one more pair of words will be given. You have to judge whether the second pair of words has the same relation as the first word pair. If the second word pair is judged wrong or if it does not follow the same relationship as the first word pair, you have to give a word such that it follows the same relation as the first pair.

Scoring: Give a score of 1 for the correct response and 0 for incorrect or no response.

- Practice items: 1. ಪೆನ್ಸಿಲ್ - ಬರೆಯುವುದು :: ಪುಸ್ತಕ - ಓದುವುದು  
/pensil - bareyuvudu :: pustaka - o:duvudu/  
2. ಎಲೆ - ಹಸಿರು :: ಬಾಳೆಹಣ್ಣು - ಹಳದಿ  
/ele - hasiru :: ba:lehaṅṅu - haɭadi/



Subtask	Stimulus	Scoring	
		Correct response	Incorrect / no response
Judgment	೧. ಹಾಲು-ಕುಡಿ :: ಅನ್ನ-ತಿನ್ನು 1. /ha:lu – kuḍi :: anna – tinnu/		
	೨. ಮೊಲ-ಬೇಗ :: ಆಮೆ-ಓಡು 2. /mola- be:ga :: a:me – o:ḍu/		
	೩. ಕಾಫಿ-ಬಿಸಿ :: ಐಸ್‌ಕ್ರೀಮ್-ಖಾರ 3. /ko:fi – bisi :: aiskri:m – kha:ra/		
Revision	೧. ಮೇ-ತಿಂಗಳು :: ಬುಧವಾರ- ದಿನಾಂಕ 1. /me:- tingaḷu :: budhava:ra – dina:nka/		
	೨. ಫ್ಯಾನು-ಗಾಳಿ :: ದೀಪ-ಬೇಬಲ್ 2. /fa:nu –ga:ḷi :: di:pa – te:bal/		
	೩. ಕ್ಯಾರಟ್-ಸಿಹಿ :: ಹಾಗಲಕಾಯಿ-ಉಪ್ಪು 3. /kya:raṭ – sihi :: ha:galaka:yi – uppu/		

Max score: 6

Score:

### Task 9: Synonyms

Instruction: ನಾನು ಹೇಳುವ ಪದಗಳು ಸಮನಾರ್ಥಕ ಪದಗಳೆ ಎಂದು ತಿಳಿಸಿ. ಅವುಗಳು ಸಮನಾರ್ಥಕ ಪದಗಳು ಇಲ್ಲವಾದಲ್ಲಿ, ಮೊದಲನೆಯ ಪದಕ್ಕೆ ಸಮನಾರ್ಥಕ ಪದ ಕೊಡಿ.

I will be saying a pair of words and you have to judge if the two words have similar meaning or not. If they do not have the same meaning, you have to come up with a word that has the same meaning as the target word.

Scoring: Give a score of 1 for the correct response and 0 for incorrect or no response.

Practice items: 1. ಸ್ನೇಹ-ಗೆಲೆತನ  
/sne:ha – geletana/  
2. ಕಾಡು-ವನ  
/ka:ḍu - vana/

Subtask	Stimulus	Scoring	
		Correct response	Incorrect / no response
Judgment	೧. ಆನಂದ-ಸಂತೋಷ 1. /a:nanda – santo:ʃa/		
	೨. ಮಂಗ-ಕಾರು 2. /manga – ka:ru/		
	೩. ಮನೆ-ಗೃಹ 3. /mane – gruha/		
	೧. ತಾಯಿ- ಗೆಳೆಯ 1. /ta:yi – geleya/		
Revision	೨. ಮೃಗ- ಅಮ್ಮ 2. /mruga – amma/		
	೩. ಅರಸ-ಪ್ರಾಣಿ 3. /arasa – prani/		

Max score: 6

Score:

### Task 10: Homonyms

Instruction: ನಾನು ಈಗ ಒಂದು ಪದ ಹೇಳುತ್ತೇನೆ. ಒಂದು ಪದಕ್ಕೆ ನಾನು ಬೇರೆ ಬೇರೆ ಅರ್ಥಗಳು ಹೇಳುತ್ತೇನೆ, ಹೇಳುವ ಬೇರೆ ಬೇರೆ ಅರ್ಥಗಳು ಸರಿಯಾಗಿದೆಯೋ ಅಥವಾ ಇಲ್ಲವೋ ಎಂದು ತಿಳಿಸಿ. ನಾನು ಹೇಳುವ ಬೇರೆ ಬೇರೆ ಅರ್ಥಗಳು ಸರಿ ಇಲ್ಲದಿದ್ದಲ್ಲಿ, ಸರಿಯಾದ ಬೇರೆ ಅರ್ಥಗಳನ್ನು ತಿಳಿಸಿ.

You will be hearing a target word followed by two different words with different meanings for the target word. You have to judge whether the target word has different meanings as indicated by the given two words. If not provide the correct meaning for the target word.

Scoring: Give a score of 1 for the correct response and 0 for incorrect or no response.

- Practice items: 1. ಎತ್ತು- ಹಸು, ಎತ್ತುವುದು  
/ettu/- /hasu, ettuvudu/  
2. ಅರಸ- ರಾಜ, ಮನೆ  
/arasa/ - /ra:dza, mane/

Subtask	Stimulus	Scoring	
		Correct response	Incorrect / no response
Judgment	೧. ಕರಿ-ಕಪ್ಪು, ಕರಿಯುವುದು 1. /kari – kappu, kariyuvudu/		
	೨. ಹತ್ತು-೧೦, ಮೆಟ್ಟಿಲು ಹತ್ತು 2. /hattu – 10, mettilu hattu/		
	೩. ಹತ್ತಿ- ಬಟ್ಟೆ, ಹತ್ತುವುದು. 3. /hatti – batte, hatuvudu/		
Revision	೧. ಅಡು-ಪಕ್ಷಿ, ಅಟ ಅಡು 1. /a:du – pakṣi, a:ṭa a:du/		
	೨. ಏಳು-ಎದ್ದೇಳು, ನಡಿಯುವುದು 2. /e:lu – edde:lu, naḍiyuvudu/		
	೩. ಹೊಳೆ-ಹೊಳೆಯುವುದು, ನಲ್ಲಿ 3. /ho:le –ho:leyuvudu, nalli/		

Max score: 6

Score:

### Task 11: Define a word

Instruction: ನಾನು ಒಂದು ಪದವನ್ನು ಹೇಳುತ್ತೇನೆ. ನಾನು ಹೇಳುವ ಪದವನ್ನು ವಿಸ್ತರಿಸಿ ಅಥವಾ ಅದರ ವಿವರಣೆ ಕೊಡಿ.

I will be telling you a word. After listening to the word, tell me what all you know about the word heard.

9

Scoring: Give a score of 2 for correct response, 1 for partially correct/only little information was provided, and 0 for no response/incorrect response.

Practice items: 1. ತಾಯಿ

/ta:yi/

2. ಬಾಳೆಹಣ್ಣು

/ba:|ehaṅṅu/

Sl. No.	Stimulus	Scoring		
		Correct response	Partially correct/only little information	Incorrect / no response
1.	ಹಸು /hasu/			
2.	ಕ್ಯಾರಾಟ್ /kya:raṭ/			
3.	ಬಸ್ಸು /bassu/			
4.	ಸೇಬು /se:bu/			
5.	ನವಿಲು /navilu/			
6.	ಟೀಚರ್ /ti:tʃa: /			

Max score: 12

Score:

### Task 12: Lexical/Referential Arbitrariness

Instruction: ನಾನು ಈಗ ಎರಡು ಪದಗಳನ್ನು ಹೇಳುತ್ತೇನೆ. ಆ ಎರಡು ಪದಗಳಲ್ಲಿ ಒಂದು ಪದಕ್ಕೆ ವಾಕ್ಯ ಹೇಳುತ್ತೇನೆ. ಆ ಪದದ ಬದಲಾಗಿ, ನೀವು ಇನ್ನೊಂದು ಪದವನ್ನು ಉಪಯೋಗಿಸಿ, ಅದೇ ವಾಕ್ಯವನ್ನು ಹೇಳಿ. ವಾಕ್ಯದ ಅರ್ಥ ತಪ್ಪಾದರೆ ಅದಕ್ಕೆ ಗಮನ ಕೊಡಬೇಡಿ. ನಂತರ ನಾನು ಕೇಳಿದ ಪ್ರಶ್ನೆಗೆ ಅನುಗುಣವಾಗಿ ಸರಿಯಾದ ಉತ್ತರವನ್ನು ಕೊಡಿ.

You will hear a pair of words now. I will be telling you a sentence. Whenever you hear any one word of the pair in that sentence you have to substitute it with another word. Then you have to answer to the question asked.

Scoring: Give a score of 2 for correct response, 1 for partially correct/only little information was provided, and 0 for no response/incorrect response.

Practice items:

- ಆಪ್ತ-ಮಕ್ಕಳು /appa – makka|u/  
ಸಂಜೆ ಅಪ್ತ ಮನೆಗೆ ಬರುತ್ತಾರೆ/sandze appa manege barutta:re/  
ಸಂಜೆ ಯಾರು ಮನೆಗೆ ಬರುತ್ತಾರೆ? /sandze ya:ru manege barutta:re ? /
- ಸಕ್ಕರೆ -ಉಪ್ಪು /sakkare – uppu/  
ಸಕ್ಕರೆ ಸಿಹಿಯಾಗಿರುತ್ತದೆ /sakkare sihiya:giruttade/  
ಯಾವುದು ಸಿಹಿಯಾಗಿರುತ್ತದೆ? /ya:vudu sihiya:giruttade ? /

SI No.	Stimulus	Scoring		
		Correct response	Partially correct/only little information	Incorrect / no response
1.	ನೀರು-ಹಾಲು /ni:ru – ha:lu/ ಬಾವಿಯೊಳಗೆ ನೀರು ಕಾಣಿಸುತ್ತದೆ /baviyo age ni:ru ka:nisuttade/ ಬಾವಿಯೊಳಗೆ ಏನು ಕಾಣಿಸುತ್ತದೆ? / baviyo age e:nu ka:nisuttade?/			
2.	ಸಿಹಿ-ಉಪ್ಪು /sihi – uppu/ ಸಮುದ್ರದ ನೀರು ಉಪ್ಪಾಗಿರುತ್ತದೆ. /samudrada ni:ru uppa:giruttade/. ಸಮುದ್ರದ ನೀರು ಕುಡಿಯಲು ಹೇಗಿರುತ್ತದೆ? / samudrada ni:ru kuḍiyalu hegiruttade?/			
3.	ಬೆಂಕಿ-ನೀರು /benki – ni:ru/ ಬೆಂಕಿ ಕೈಯನ್ನು ಸುಡುತ್ತದೆ /benki kaiyannu suḍattade/ ಯಾವುದು ಕೈಯನ್ನು ಸುಡುತ್ತದೆ /ya:vudu kaiyannu suḍattade ?/			
4.	ಕೈ-ಕಾಲು /kai – ka:lu/ ಕೈಯಿಂದ ಚಪ್ಪಾಳೆ ತಟ್ಟುತ್ತೇವೆ /kaiyinda tʃappa: e taṭṭutte:ve/ ಯಾವುದರಿಂದ ಚಪ್ಪಾಳೆ ತಟ್ಟುತ್ತೇವೆ /ya:vudarinda tʃappa: e taṭṭutte:ve /			



5.	ಡಾಕ್ಟರ್-ಟೀಚರ್ /da:ktar -ti:tʃɑr/ ಡಾಕ್ಟರ್ ಸೂಜಿ ಚುಚ್ಚುತ್ತಾರೆ /da:ktar su:dzi cuccutta:re/ ಯಾರು ಸೂಜಿ ಚುಚ್ಚುತ್ತಾರೆ? /ya:ru su:dzi cuccutta:re?/			
6.	ಲೈಟು-ಫ್ಯಾನು /laiʈu- fa:nu/ ಲೈಟಿನಿಂದ ಬೆಳಕು ಬರುತ್ತದೆ /laiʈininda beʃaku baruttade/ ಯಾವುದರಿಂದ ಬೆಳಕು ಬರುತ್ತದೆ? /ya:vudarinda beʃaku baruttade?/			

Max score: 12

Score:

#### Test results

Task	Max score	Total Score
Overall judgment score	30	
Overall revision score	30	
Overall generation score	24	
Total	84	

#### Interpretation:

### Appendix II (Norms)

SI No.	Task	S T	III Grade		IV Grade		V Grade	
			Mean	SD	Mean	SD	Mean	SD
		J	3.00	0.00	3.00	0.00	3.00	0.00
1	Semantic anomaly	R	2.98	0.13	3.00	0.00	3.00	0.00
		O	5.98	0.13	6.00	0.00	6.00	0.00
		J	2.93	0.25	3.00	0.00	3.00	0.00
2	Free word association task	R	2.93	0.31	2.97	0.18	2.95	0.22
		O	5.87	0.43	5.97	0.18	5.95	0.18
		J	2.90	0.30	2.98	0.13	3.00	0.00
3	Antonyms	R	2.77	0.47	2.82	0.50	2.95	0.22
		O	5.67	0.63	5.80	0.61	5.95	0.33
		J	2.77	0.43	2.97	0.18	2.93	0.25
4	Semantic contiguity	R	2.37	0.69	2.68	0.50	2.92	0.28
		O	5.13	0.87	5.65	0.55	5.85	0.40
		J	2.57	0.50	2.75	0.47	2.82	0.39
5	Paradigmatic relations	R	2.47	0.65	2.93	0.25	3.00	0.00
		O	5.03	0.99	5.68	0.50	5.82	0.39
		J	2.70	0.46	3.00	0.00	3.00	0.00
6	Analyze a sentence into words/lexical units	R	2.20	0.84	2.85	0.40	2.90	0.30
		O	4.90	1.12	5.85	0.40	5.90	0.30
		J	2.32	0.85	2.73	0.45	2.85	0.36
7	Identify the grammatical category for a word	R	2.28	0.98	2.87	0.47	2.97	0.18
		O	4.60	1.69	5.60	0.67	5.82	0.43
		J	2.82	0.39	2.90	0.30	2.97	0.18
8	Syntagmatic relations	R	1.65	0.73	2.10	0.73	2.43	0.70
		O	4.47	0.85	5.00	0.78	5.40	0.72
		J	2.12	0.45	2.42	0.50	2.82	0.39
9	Synonyms	R	1.78	0.67	2.43	0.70	2.70	0.46
		O	3.90	0.90	4.85	0.92	5.42	0.77
		J	2.62	0.56	2.85	0.40	2.82	0.39
10	Homonyms	R	0.98	0.95	1.62	0.92	2.32	0.83
		O	3.60	1.21	4.47	1.03	5.14	0.92
		J	2.62	0.56	2.85	0.40	2.82	0.39
11	Define a word		10.82	1.05	11.58	0.70	11.78	0.45
12	Lexical/ referential arbitrariness		10.77	1.35	11.70	0.65	11.78	0.52
	Overall judgment		26.73	1.77	28.58	1.08	29.22	0.74
	Overall revision		22.55	2.48	26.33	2.05	28.13	1.44
	Overall generation		21.55	1.87	23.27	0.97	23.57	0.67
	Total		84.32	6.43	93.08	3.07	96.33	2.54

\*ST-Subtask, J-Judgment, -Revision, O-Overall

## References

- Ben Zeev, S. (1977). The influence of bilingualism on cognitive strategy and cognitive development. *Child Development*, 48, 1009-1018.
- Brown, R., & Berko, J. (1960). Word association and the acquisition of grammar. *Child Development*, 31, 1-14.
- Hedge, M. N. (1994). *Clinical research in communication disorders* (2<sup>nd</sup>edn). Texas: Pro-ed. Publishers.
- Howell, J., & Dean, E. (1994). *Treating phonological disorders in children: Metaphon-theory to Practice*, 2<sup>nd</sup>edition. London, Whurr publishers.
- Kamhi, A., & Catts, H. (1989). *Reading disabilities: A developmental language perspective*. Boston: College-Hill Press.
- Kamhi, A., Lee, R., & Nelson, L. (1985). Word, syllable, and sound awareness in language disordered children. *Journal of Speech and Hearing Disorders*, 50, 207-212.
- Karant, P., Ahuja, G. K., Nagaraja, D., Pandith, R., & Shivashankar, N. (1991). *Language disorder in Indian neurological patients- A study in the neurolinguistics in Indian context*. (Project No. 5/8/10-1(Oto)/84-NCD-I IRIS Cell). New Delhi: (Indian Council of Medical Research 8403810).
- Karant, P., & Prakash, P. (1996). *A developmental investigation of onset, progress and stages in the acquisition of literacy*. Project funded by NCERT, India.
- Loomba, M. (1995). *Sequential reading skills among Indian children*. An unpublished Masters Dissertation, University of Mysore.
- Prema, K. S. (1997). *Reading acquisition profile-Kannada*. A thesis submitted to the University of Mysore, Mysore.
- Priya, M. B., & Manjula, R. (2009). *Metalinguistic abilities in children with developmental dyslexia: Implications for reading and writing*, Student research at AIISH Mysore (articles based on dissertation done at AIISH) volume VII: 2008-2009, Part B, 200-213.
- Rekha, D. (1987). *A study on development of reading and phonological awareness in Kannada speaking children*. Unpublished Master's Dissertation, University of Mysore, Mysore.
- Rekha, D. (1996). *Reading acquisition and metaphonological awareness: A longitudinal study*. Unpublished Doctoral dissertation submitted to the University of Mysore, Mysore.
- Sharma, M. (2000). *Language skills in children with learning disability*. Unpublished Master's Dissertation submitted to the University of Mangalore, Mangalore.
- Singhi, P., Kumar, M., Malhi, P., & Kumar, R. (2007). Utility of the WHO ten questions screen for disability detection in a rural community—the North Indian experience. *Journal of Tropical Pediatrics*, 53, 6, 383-387.
- Tunmer, W. E. (1991). Phonological awareness and literacy acquisition. In L. Rieben & C. Perfetti (Eds.), *Learning to read: Basic research and its implications*. Hillsdale, NJ: Lawrence Erlbaum.

- Tunmer, W. E., & Cole, P. G. (1985). Learning to read: A metalinguistic act. In C. S. Simon (Ed.), *Communication skills and classroom success: Assessment and therapy methodologies for language and learning disabled students*. Eau Claire, WI: Thinking Publishers.
- van Kleeck, A. (1995). Emphasizing form and meaning separately in prereading and early reading instructions. *Topics in Language Disorders*, 16 (1), 27-49.
- Venkatesan, S. (2009). *Children with developmental disabilities: A training guide for parents, teachers and caregivers*. New Delhi: Sage Publications.



# AIISH GENESIS AND GROWTH

The All India Institute of Speech and Hearing is a premier institute in the country imparting training in the field of speech and hearing. Established on 9<sup>th</sup> August 1965 as an autonomous organization, it aims at training/manpower development, research and rehabilitation in the area of communication disorders. The institute is located on a sprawling area of 32 acres (two campuses) in Mysore. The institute is registered as a Society under the Societies Registration Act XXI of 1860 (Punjab Amendment) Act, 1957 and is functioning as an autonomous body under the aegis of the Union Ministry of Health and Family Welfare.

Established primarily as a training institute, it started training programs at postgraduate level in 1967. B.Sc. (Speech and Hearing) followed in 1968. The institute now offers three Diploma Programs: Diploma in Hearing Aid & Ear-mould Technology (DHA & ET), Diploma in Training Young Deaf and Hard of Hearing (DTYDHH), Diploma in Hearing, Language and Speech through distance mode (DHLS); two Graduate Programs: B.Sc. in Speech and Hearing and B.S.Ed (Hearing Impairment), three Masters Programs (M.Sc. in Audiology, M.Sc. in Speech-Language Pathology and M.S.Ed. in Hearing Impairment) and Doctoral Programs: Ph.D in Audiology and Ph.D in Speech-Language Pathology. Three PG Diploma programs -PG Diploma in Forensic Speech Sciences and Technology (PGFSST), PG Diploma in Clinical Linguistics for SLP (PGDCL-SLP), PG Diploma in Neuro Audiology (PGDNA), and a Post Doctoral fellowship have also been initiated. The Institute proposes to initiate one more PG Diploma Program in Augmentative and Alternative Communication(PGDAAC). The institute also conducts short term training and orientation programs for professionals in allied specialties

The institute is recognized as a reputed organization for training manpower in the field of speech and hearing and related areas throughout the country. The institute has been recognized as a Centre of Excellence in the Area of Deafness (WHO), as a Center for Advanced Research (UGC) and as a Science and Technology Institute (DST). The institute is affiliated to the University of Mysore for the award of degrees. The academic programs of the institute have the recognition of Rehabilitation Council of India, a statutory body in the area of rehabilitation sciences.

The institute is wholly financed by the Government of India. The functioning of the institute is under the direction of the Executive Council with the Hon'ble Union Minister for Health and Family Welfare as the Chairman and the Hon'ble Minister of Health and Family Welfare, Government of Karnataka, as the Vice-Chairman. The other statutory bodies of the institute are the Finance Committee and the Academic Committee.



All India Institute of Speech and Hearing,  
Manasagangothri, Mysore 570006

**Phone no :** (0821)-2514449, 2515218, 2515805

**Toll free no : 1800 425 5218**

**Website:** [www.aiishmysore.in](http://www.aiishmysore.in) **Email :** [director@aiishmysore.in](mailto:director@aiishmysore.in)



# TAMAC-K

## ORIGINALITY REPORT

4%

SIMILARITY INDEX

3%

INTERNET SOURCES

3%

PUBLICATIONS

1%

STUDENT PAPERS

## PRIMARY SOURCES

1

[aiishmysore.in](http://aiishmysore.in)

Internet Source

2%

2

Buckton, G.. "Effects of cyclazocine and scopolamine on swim-to-platform performance in rats", Brain Research, 20011220

Publication

<1%

3

[www.inventati.org](http://www.inventati.org)

Internet Source

<1%

4

[retrospec.sgn.net](http://retrospec.sgn.net)

Internet Source

<1%

5

Submitted to All India Institute of Speech & Hearing

Student Paper

<1%

6

[www.aiishmysore.in](http://www.aiishmysore.in)

Internet Source

<1%

7

Submitted to Bridgepoint Education

Student Paper

<1%

8

Submitted to William Carey University

Student Paper

<1%

9

[nflrc.hawaii.edu](http://nflrc.hawaii.edu)

Internet Source

<1%

10

Dang, Cai-Ping, Johan Braeken, Emilio Ferrer, and Chang Liu. "Unitary or non-unitary nature of working memory? Evidence from its relation to general fluid and crystallized intelligence", Intelligence, 2012.

Publication

<1%

---

11	Lee, Y.L.. "Usability study of text-based CAPTCHAs", Displays, 201104 Publication	<1%
12	Uthappa, Varun; Shailat, Priyanka and Thomas, Jaslin. "Segmental Overlap as a Function of Prime Duration in Simple and Complex Monosyllabic Word Naming in Speakers of English as Second Language", Language in India, 2013. Publication	<1%
13	Submitted to Loyola College Student Paper	<1%
14	<a href="http://www.aare.edu.au">www.aare.edu.au</a> Internet Source	<1%
15	Connor, W.E.. "The effect of shellfish in the diet upon the plasma lipid levels in humans", Metabolism, 198210 Publication	<1%
16	<a href="http://aiish.ac.in">aiish.ac.in</a> Internet Source	<1%
17	Inkielewicz-Stepniak, I.. "Oxidative stress parameters in rats exposed to fluoride and caffeine", Food and Chemical Toxicology, 201006 Publication	<1%
18	<a href="http://www.indiana.edu">www.indiana.edu</a> Internet Source	<1%
19	Sengottuvel, Kuppuraj, and Prema K.S. Rao. "Aspects of grammar sensitive to procedural memory deficits in children with specific language impairment", Research in Developmental Disabilities, 2013. Publication	<1%

---

20 Devaraju, Dhatri S.; Vrinda R.; Shanbal, Jayashree C.; Mamatha N. M. and Gopi Sankar R.. "LEXICAL PROCESSING IN 8-10 YEAR OLD CHILDREN: EVIDENCE THROUGH BEHAVIORAL AND ERP MEASURE", Journal of the All India Institute of Speech & Hearing, 2012.  
Publication <1%

---

21 Shukla, Shailaja; Manjula, R. and Praveen, H. R.. "PHONOTACTIC PATTERNS IN CONVERSATIONAL SPEECH OF TYPICALLY DEVELOPING CHILDREN AND CHILDREN WITH PHONOLOGICAL IMPAIRMENT: A COMPARISON", Journal of the All India Institute of Speech & Hearing, 2011.  
Publication <1%

---

22 [www.proteomesci.com](http://www.proteomesci.com)  
Internet Source <1%

---

23 [www.springerlink.com](http://www.springerlink.com)  
Internet Source <1%

---

24 [www.enl.auth.gr](http://www.enl.auth.gr)  
Internet Source <1%

---

25 [prp.hec.gov.pk](http://prp.hec.gov.pk)  
Internet Source <1%

---

26 G. P. Wallach. "Over the Brink of the Millennium: Have We Said All We Can Say About Language-Based Learning Disabilities?", Communication Disorders Quarterly, 01/01/2004  
Publication <1%

---

27 Hema, N. and Shymala, K. C.. "A COMPARATIVE STUDY IN NARRATIVE DISCOURSE OF KANNADAENGLISH BILINGUAL NORMAL ADULTS", Journal of the <1%



28

Journal of Financial Management of Property  
and Construction, Volume 19, Issue 1 (2014-  
03-28)

Publication

---

<1%

---

EXCLUDE QUOTES ON

EXCLUDE MATCHES OFF

EXCLUDE  
BIBLIOGRAPHY ON