

## **A Malayalam screening tool for teachers to identify students with Learning Disability in primary schools**

**Ms. Nisha U V**

*Post Graduate Student*

*Dr. M.V. Shetty College of Speech and Hearing  
Malady Court, Kavoor, Mangalore-15*

**Dr. Vini Abhijith Gupta, Ph.D**

*Associate Professor*

*Dr. M.V.Shetty College of Speech and Hearing  
Malady Court, Kavoor, Mangalore-15*

**Ms. Nisha U V**

*Post Graduate Student*

*Dr. M.V. Shetty College of Speech and Hearing  
Malady Court, Kavoor, Mangalore-15*

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### **Abstract**

*Learning disability is a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical abilities. Teachers play a significant role in assisting students with LD. It is essential for classroom teachers to be aware of the challenges faced by students with LD and to conduct early screening and intervention to ensure that students with learning difficulties receive the required academic and emotional support. The present study aimed to translate and adapt an English screening tool for identifying LD into Malayalam language, to identify students with LD in primary school students in Kerala. Class teachers from primary school (1st and 2nd standard) were selected for the study from a private English medium school in Trivandrum district, Kerala. They administered the Malayalam screening tool for LD to their students in first standard (20 students) and second standard (20 students). The questionnaire consists of a total of 60 questions, which are formulated under 3 sections reading, writing, and behavior. The result revealed that 7 out of 40 students who were assessed are at risk of having LD suggesting that the Malayalam screening tool for LD is an effective tool for teachers to identify children with LD in classrooms.*

**Key words:** Malayalam screening tool for Learning Disability, Specific Learning Disorder, Learning Disability

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### **I. Introduction**

Specific learning disabilities (SLDs) are defined as a “heterogeneous group of conditions where in there is a deficit in processing language, spoken or written, that may manifest itself as a difficulty to comprehend, speak, read, write, spell, or to do mathematical calculations and includes such conditions as perceptual disabilities, dyslexia, dysgraphia, dyscalculia, dyspraxia, and developmental aphasia (Kohli 2018)

Learning disability (LD) is a general term that describes specific kinds of learning problems. Learning disability can cause a person to have trouble learning and using certain skills. The skills most often affected are reading, writing, listening, speaking, reasoning, and doing math. Learning disabilities vary from person to person. (National Information Center for Handicapped Children and Youth, NICHCY2004).

Diagnostic and Statistical Manual of Mental Disorders-V (DSM-5,2013) considers SLD to be a type of neurodevelopmental disorder. That impedes the ability to learn or use specific academic skills such as reading, writing, or arithmetic. These are the foundations for other academic learning. Early signs of learning difficulties may appear in the preschool years like difficulty in learning names of letters or counting objects, but they can only be diagnosed reliably after starting formal education.

Early diagnosis, appropriate intervention and support are critical for the individual with learning disability. Primary characteristics of specific learning disability are difficulties in the acquisition and use of listening, speaking, reading, and writing. Secondary consequences of learning disability are lack of motivation, self-esteem, self-efficacy and meta cognition. In a broader framework of specific learning disability

Learning disorders are categorized mainly into three dyslexia, dysgraphia, dyscalculia. (DSM V). Dyslexia is a term that refers to difficulty in acquiring and processing language that is typically manifested by the lack of proficiency in reading, spelling, and writing. Dysgraphia is a term used to describe difficulties with putting one's thoughts on to paper. Problems with writing can include difficulties with spelling, grammar, punctuation, and handwriting. Dyscalculia is a term used to describe difficulties learning number related concepts or using the symbols and functions to perform math calculations. Problems with math can include difficulties with number sense, memorizing math facts, math calculations, math reasoning and math problem solving.

To be diagnosed with a SLD, an individual must meet four criteria. According to DSM-5(2013) the diagnosis of a specific learning disorder includes the following symptoms: Persistent difficulties in reading, writing, arithmetic, or mathematical reasoning skills during formal years of schooling. Symptoms may include inaccurate or slow and effortful reading, poor written expression that lacks clarity, difficulties remembering number facts, or inaccurate mathematical reasoning. Current academic skills must be well below the average range of scores in culturally and linguistically appropriate tests of reading, writing, or mathematics. Accordingly, an individual who is dyslexic must read with great effort and not in the same manner as those who are typical readers. Learning difficulties begin during the school-age years. The individual's difficulties must not be better explained by developmental, neurological, sensory (vision or hearing), or motor disorders and must significantly interfere with academic achievement, occupational performance, or activities of daily living (APA, 2013). A diagnosis can be made through a combination of observation, interviews, family history and school reports.

The early childhood years are crucial for all children, but for the child who deviate from the norm in terms of physical, mental, behavioral, motivational development or motivational characteristics, these years are especially critical. By this time, such children reach school age. Teachers are often the first to notice that a child has a learning disorder. In primary school classrooms, teachers play a significant role in shaping the educational journey of young children. Apart from providing knowledge and encouraging academic advancement teachers also have responsibility to identify and address learning disabilities among their students. Early detection and intervention are essential in ensuring children with learning difficulties receive adequate academic and emotional assistance.

Roshni (1995) developed a screening tool for teachers for identification of LD in regular classroom. A questionnaire was constructed based on the characteristics features of LD (reading, writing and behavior). The questionnaire was administered on 90 typically developing (TD) children ages 8 to 11 years and results revealed that out of 90 students accessed 15 are at the risk of having LD.

Saigal (2005) translated an English screening tool into Malayalam for identification of students with LD in regular classroom. The screening was administered on 90 students from 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> standard in the age range of 8 to 11 years. The results revealed that 4 out of 90 students showed different scores indicating that they are at the risk of having LD.

Saravanan and Karanth(2005) translated an English screening tool into Tamil for identification of students with LD in regular classroom. The screening tool was administered on 90 students from 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> standard in the age range of 8 to 11 years and the results revealed that out of 90 students, three showed different scores. The results revealed that they are at risk of having LD.

### **Need of the study**

Teachers play a significant role in assisting students with LD. It is essential for classroom teachers to be aware of the challenges faced by students with LD and to conduct early screening and intervention to ensure that students with learning difficulties receive the required academic and emotional support.

### **Aim**

The present study aims to translate and adapt an English screening tool for identifying LD into Malayalam language, for the identification of students with LD in primary school students in Kerala.

### **Method**

Malayalam screening tool to identify students with LD was translated and adapted from the English screening tool developed by Roshni (1990). The role of screening tools in identifying the presence of LD in young children is crucial for early identification and better rehabilitation. The Malayalam screening tool for teachers was validated by 6 SLP who were fluent in both English and Malayalam language.

### **Participant selection**

Class teachers from primary school (1<sup>st</sup> and 2<sup>nd</sup> standard) were selected for the study from a private English medium school in Trivandrum district, Kerala. They administered the Malayalam screening tool for LD to their students in first standard (20 students) and second standard (20 students).

### **The screening tool and procedure used.**

The screening tool includes personal information such as details of the student's educational background, medical history, motor abilities, and any behavioral problems, if any. Information on the educational background includes the overall performance in school, any previous class failures, the number of attempts made in each class, the

marks obtained by the student in recent major examinations, regularity in attendance, and the language known and used by the student. Regarding sensory motor abilities, the presence of visual or hearing impairments, as well as any other physical handicaps, is ascertained. The student's handedness for activities like writing, drawing, playing, and eating is also noted. To detect the presence of behavioral problems, questions were included such as whether the parents complain of any behavioral problems at home and whether the student shows interest in studies and completing homework.

Class teachers administered the Malayalam screening tool for LD on their students in first standard and second standard respectively. A set of instructions is provided to teachers for answering the questions and space is provided to note down their remarks on the questionnaire.

The questionnaire consists of a total of 60 questions, which are formulated under 3 sections.

1. Reading
2. Writing
3. Behavior and social competence

### 1. Reading

The question was formulated based on the reading characteristics of children with learning disabilities. The screening tool requires information about students' performance in simple reading tasks and complex tasks. The initial set of questions pertains to students' behavior during reading tasks, such as any signs of reluctance or letter reversals. The following questions assess whether the student demonstrates letter or word reversals, omissions, or substitutions. The final set of questions primarily focuses on determining whether the student comprehends the reading materials, follows the sequence of a story, and can draw inferences to reach conclusions from the passage.

### 2. Writing

This section primarily evaluates the writing attributes of students with LD, such as their handwriting, writing speed, ability to write within lines, maintain margins, color within outlines, and copy simple figures. The following questions include dictation writing, presence of letter reversals, inversions, omissions, and inappropriate use of lowercase and uppercase letters.

### 3. Behavioral and social competence

This section includes questions related to student behavior. Which is noticed by classroom teachers. Questions include regarding to student's attention span, presence of mood swings, distractibility for visual, auditory stimuli and Impulsivity. Other questions assess student's conversational abilities, social abilities, reaction to social settings, social abilities, motivation, and ability to organize work.

#### Procedure

Every teacher is required to administer the questionnaire to 30 students. If a teacher had any doubts about a student's performance on a specific question, they were instructed to have the student carry out the activity to assess their performance.

#### Scoring

Three sections have 20 questions each. All questions are closed set questions, and three alternative choices are given for each question. The choice ranges from whether the behavior is present often, sometimes, or never. The scoring is as follows: Often -2, Sometimes -1, Never - 0.

#### Statistical analysis:

The collected data were summarized by using the Descriptive Statistics: frequency, percentage, mean, and S.D. The Fisher's exact test or Chi square test was used for comparisons. Cronbach's alpha was used for the reliability analysis. Spearman's ratio was used to find the relation between the cumulative scores of reading, writing and behavior. The p value < 0.05 was considered as significant. Data were analyzed by using the SPSS software (SPSS Inc.; Chicago, IL) version 26.0.

## II. Result and discussion

Table 1 shows the percentage of reading performance among students in the classroom.

Reading		First standard class teacher		Second standard class teacher		Fisher's exact test	p value	Significance
		n	%	n	%			
Does the student skip lines while reading?	Yes	5	25	3	15	0.23	0.695	NS
	No	15	75	17	85			

*A Malayalam screening tool for teachers to identify students with Learning Disability in ..*

Does the student reread lines while reading	Yes	5	25	0	0	0.02	0.047	NS
	No	15	75	20	100			
Is there a reluctance on the part of the student to read?	Yes	5	25	3	15	0.23	0.695	NS
	No	15	75	17	85			
Does the student yawn or complain that eyes hurt, itch or the print appears blurred while reading?	Yes	0	0	0	0	--	--	--
	No	20	100	20	100			
Does the student turn his head or paper at odd angles while reading?	Yes	0	0	0	0	--	--	--
	No	20	100	20	100			
Does the student lose the place of reading frequently?	Yes	0	0	3	15	0.12	0.231	NS
	No	20	100	17	85			
Does the student show reversals (E.g., Reading b for d, p for q) or inversions (E.g., Reading u for n, w for m) while reading?	Yes	5	25	3	15	0.23	0.695	NS
	No	15	75	17	85			
Does the student's reading improve with large print/fewer items on a page or when a marker is used to indicate position in a page?	Yes	5	25	0	0	0.02	0.047	S
	No	15	75	20	100			
Does the student show errors like reading 'was' for 'saw', 'on' for 'no' etc.	Yes	0	0	1	5	0.50	1	NS
	No	20	100	19	95			
The student cannot understand the material he/she reads	Yes	5	25	3	15	0.23	0.695	NS
	No	15	75	17	85			
Does the student read letter by letter, or read very slowly?	Yes	5	25	3	15	0.23	0.695	NS
	No	15	75	17	85			
Does the student show reversals (E.g., Reading b for d, p fro q) or inversions (E.g., Reading u for n, w for m) while reading?	Yes	5	25	2	10	0.16	0.407	NS
	No	15	75	18	90			
While reading student does not notice facts and important details	Yes	0	0	0	0	--	--	--
	No	20	100	20	100			
The student is not able to grasp the main idea of a text	Yes	5	25	0	0	0.02	0.407	NS
	No	15	75	20	100			
The student is not able to follow events in sequence on steps from a cartoon/story	Yes	5	25	0	0	0.02	0.407	NS
	No	15	75	20	100			
The student cannot draw inferences from the read material. (E.g., What does the author mean?)	Yes	5	25	0	0	0.02	0.407	NS
	No	15	75	20	100			
The student is not able to reach conclusions.	Yes	0	0	0	0	--	--	--
	No	20	100	20	100			
The student cannot identify commonly occurring words	Yes	0	0	0	0	--	--	--
	No	20	100	20	100			
The student cannot identify infrequently occurring words in a text	Yes	0	0	0	0	--	--	--
	No	20	100	20	100			

Table 1 shows that 5% of students responded to questions 1, 2, 3, 7, 8, 10, 11, 12, 14, 15, and 16 in the first standard, whereas 15% of students responded to questions 1, 3, 6, 7, 10, and 11 in the second standard, and 5% of students responded to the 12th question.

**Table 2 shows the percentage of writing performance of students in classroom.**

Writing		First standard class teacher		Second standard class teacher		Fisher's exact test	p value	Significance
		n	%	n	%			
The students handwriting is illegible and produces messy papers.	Yes	0	0	4	20	0.05	0.106	NS
	No	20	100	16	80			
Does the student hold the pencil too tightly while writing? (Break pencil point, crayons etc.)	Yes	1	5	4	20	0.15	0.342	NS
	No	19	95	16	80			
Are the letters not on line, while writing?	Yes	5	25	4	20	0.27	1	NS
	No	15	75	16	80			
Does the student form letter in a strange way?	Yes	4	20	0	0	0.05	0.106	NS
	No	16	80	20	100			
Does he show reversals (e.g., writing b for d, p for q) and inversions (writing n for u, w for m) while writing?	Yes	2	10	3	15	0.33	1	NS
	No	18	90	17	85			
Does the student show an inability to colour within outlines in a picture?	Yes	4	20	4	20	0.31	1	NS
	No	16	80	16	80			
Is the student slow in writing?	Yes	2	10	4	20	0.24	0.661	NS
	No	18	90	16	80			
Does the student show difficulty in writing skills like maintaining margins	Yes	5	25	4	20	0.27	1	NS
	No	15	75	16	80			
Does the student make spelling mistakes while writing?	Yes	5	25	4	20	0.27	1	NS
	No	15	75	16	80			
Does the student have difficulty in writing and spelling even common words (e.g., at, an, that, the etc.)	Yes	5	25	4	20	0.27	1	NS
	No	15	75	16	80			
Does student show reversals (e.g., writing b for d, p for q) and inversions (writing n for u, w for m) while writing?	Yes	6	30	4	20	0.22	0.716	NS
	No	14	70	16	80			
margin settings and space between letters and words etc?	Yes	5	25	4	20	0.27	1	NS
	No	15	75	16	80			
Does the student have difficulty in spelling infrequently occurring words?	Yes	5	25	0	0	0.02	0.047	S
	No	15	75	20	100			
Does the student show varying spelling for one word? (e.g., 'AFFEL', 'OFFEL' and 'OFFLE' for 'AWFUL')	Yes	5	25	3	15	0.23	0.695	NS
	No	15	75	17	85			
Does the student make mistakes such as 'ranaeg' fro 'orange', 'Ighit' for 'light', 'hcows' for 'whose' etc.?	Yes	5	25	4	20	0.27	1	NS
	No	15	75	16	80			
Is the student able to spell orally better than in writing.	Yes	5	25	1	5	4.25	0.182	NS
	No	15	75	19	95			
Does the student show omission for beginning or end letters.	Yes	5	25	0	0	0.02	0.047	S
	No	15	75	20	100			
Does the student show inappropriate use of small or capital letters.	Yes	6	30	3	15	0.16	0.451	NS
	No	14	70	17	85			
Does the student show difficulty in copying simple figures?	Yes	0	0	0	0	--	--	--
	No	20	100	20	100			

Table 2 reveals that 25% of students responded to questions 3, 7, 8, 9, 10, 13, 14, 15, 16, and 17 in the first standard. 10% of students responded to questions 5 and 6, while 5% responded to questions 2 and 12. 20% of students responded to question 4, and 30% responded to question 18. While 20% of students in second grade responded to questions 1, 2, 6, 7, 8, 9, 10, 11, 12, 15, and 18, 15% of students responded to questions 5, 14, and 18, while 5% responded to question 16.

**Table3 showing behavioral response of students in the classroom.**

Behavior		First standard class teacher		Second standard class teacher		Fisher's exact test	p value	Significance
		n	%	N	%			
Is the student fidgety?	Yes	5	25	0	0	0.02	0.047	S
	No	15	75	20	100			
Does the student have a very short attention for activities?	Yes	5	25	3	15	0.23	695	NS
	No	15	75	17	85			
Does the student exhibit mood swings?	Yes	0	0	1	5	0.50	1	NS
	No	20	100	19	95			
Does the student show highly inappropriate behavior in the classroom?	Yes	0	0	3	15	0.12	0.231	NS
	No	20	100	17	85			
Does the student have difficulty in standing or sitting still in one place ?	Yes	0	0	4	20	0.05	0.106	NS
	No	20	100	16	80			
Is the student very impulsive (acts without thinking about the consequences)	Yes	5	25	4	20	0.27	1	NS
	No	15	75	16	80			
The student fails to finish assignments in the allotted time	Yes	0	0	2	10	0.24	0.487	NS
	No	20	100	18	90			
Is the student visually distractible	Yes	5	25	1	5	0.08	0.182	NS
	No	15	75	19	95			
Does the student appear confused and tired (i.e., does not sit up, puts his head on the desk etc.)	Yes	5	25	0	0	0.02	0.047	S
	No	15	75	20	100			
The student daydreams and produces little work.	Yes	0	0	0	0	--	--	--
	No	20	100	20	100			
Student overreacts to stimuli (i.e., shows excessive anger, fear etc.)	Yes	0	0	0	0	--	--	--
	No	20	100	20	100			
The student is highly disorganized	Yes	0	0	0	0	--	--	--
	No	20	100	20	100			
The student keeps a blank or expressionless face.	Yes	0	0	0	0	--	--	--
	No	20	100	20	100			
The student does not exhibit turn taking behaviors during conversation (i.e., does not wait for his turn to speak during conversations)	Yes	5	25	0	0	0.02	0.047	S
	No	15	75	20	100			
The student is unable to judge moods and attributes of people	Yes	5	25	0	0	0.02	0.047	S
	No	15	75	20	100			
Does the student make remarks or say things which is inappropriate for a situation?	Yes	0	0	0	0	--	--	--
	No	20	100	20	100			
Does the student make remarks or say things which is inappropriate	Yes	0	0	0	0	--	--	--
	No	20	100	20	100			



Does the student have problems in socializing and making friends?	Yes	0	0	0	0	--	--	--
	No	20	100	20	100			
The student does not show motivation to learn or to take part in other activities like games, competitions etc.	Yes	0	0	0	0	--	--	--
	No	20	100	20	100			
Does the student show insensitivity to the atmosphere of a social situation (e.g., if one of his/her classmates is unwell, he fails to help	Yes	0	0	0	0	--	--	--
	No	20	100	20	100			

Table 3 shows 5% of students in the first standard responded to questions 1, 2, 6, 8, 9, 14, 15, and 16. While 15% of students in the second standard responded to questions 2 and 4, 5% responded to questions 3 and 8, 20% responded to questions 5 and 6, and 10% responded to the seventh question.

Table 4 shows the overall performance of reading, writing, and behavioral response of first and second standard students.

Overall	NO		YES	
	N	%	N	%
Reading	7	16.6	33	83.4
Writing	8	19.4	32	80.6
Behavior	6	14.7	34	85.3

Figure 1 shows the overall performance of reading, writing and behavioral response of first and second standard students.

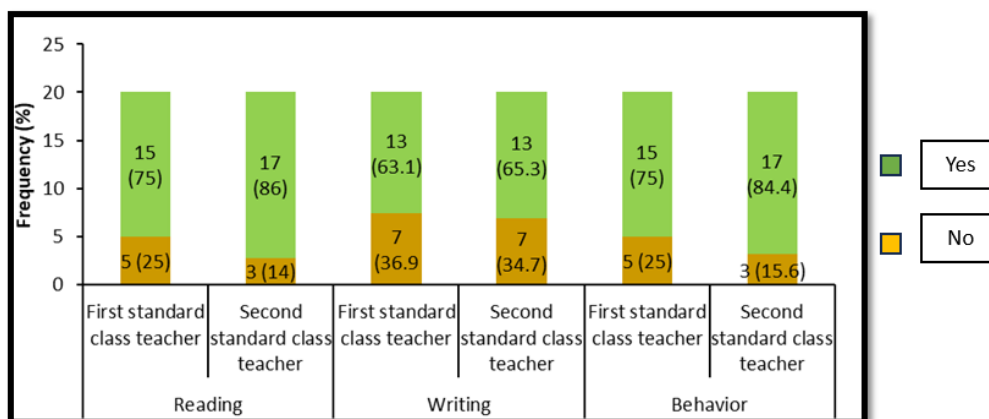


Table 4 and Figure 1 showed that out of 40 students participated in the primary school (1<sup>st</sup> standard and 2<sup>nd</sup> standard), 60.6% of them showed poor performance in reading, 19.4% of them showed poor performance in writing and 14.7% showed poor performance in behavior. Significant differences were noticed in the performance of writing when compared to reading and behavior.

### III. Discussion

The present study aimed to translate and adapt an English screening tool by Roshni (1995) for identifying LD into Malayalam language, for the identification of students with LD in primary school students in Kerala. Class teachers from primary school (1<sup>st</sup> and 2<sup>nd</sup> standard) were selected for the study from a private English medium school in Trivandrum district, Kerala. They administered the Malayalam screening tool for LD to their students in the 1<sup>st</sup> standard (20 students) and 2<sup>nd</sup> standard (20 students). The questionnaire consists of a total of 60 questions, which are formulated under 3 sections reading, writing, and behavior. The result of the study revealed that 7 out of 40 students who were assessed are at the risk of having LD. The result of the current study is in accordance with the present study in Tamil language by Saravanan and Karanth (2005) and in Malayalam language by Saigal (2005) emphasizing the necessity of a screening tool in Malayalam language for early identification of Malayalam speaking students with LD in schools.

#### **IV. Conclusion**

LD are disorders that affect the ability to comprehend or use spoken or written language, Do mathematical calculations, coordinate movements, and direct attention. LD occur in very young children, yet they are usually not noticed until the child reaches school age. Teachers are often the first to notice signs of potential LD in students. Hence it can be concluded that Malayalam LD screening tool is an efficient tool for teachers to identify Malayalam speaking students with LD.

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