

---

## **Effectiveness of Remedial Programme on Improving Reading Comprehension Skills of Children with Dyslexia**

**Kanakappa Pujar<sup>1</sup>,**

Asst. Professor and Research Scholar, School of Education, Rani Channamma University,  
Belagavi-591156

**Prof. H. M. Shailaja<sup>2</sup>**

Director and Research Guide, School of Education, Rani Channamma University,  
Belagavi-591156

### **Abstract:**

The instant study examined the effectiveness of remedial programme on improving reading comprehension skills of children with dyslexia. The researcher has made the study single group experimental and conducted pre-test and post-test on reading comprehension to know the effectiveness of remedial programme. The sample comprised 50 dyslexic students of fifth standard studying in Government Primary Schools of Belagavi city, this sample was drawn with the help of Rutter's Proforma-B (1967). The researcher has developed remedial programme based on English Text book prescribed by DSERT Karnataka state for the fifth standard and remedial programme has been conducted on the selected sample. In this study Performance on Reading Comprehension was Dependent Variable, whereas remedial programme was an independent variable and gender was treated as a moderator variable. The findings of the study reveal that the remedial programme is effective on improving the skills of reading comprehension among children with dyslexia

**KeyWords:** Reading Comprehension, Dyslexic Children and Remedial Programme.

## **Introduction**

Reading consists of a complex set of skills which includes recognition of word, determining of words, phrases, guessing the meaning of words which are similar, making use of them in the correct context and coordinating the meaning with the general theme of the text.

A child with dyslexia has severe difficulty in learning to read the components of words and sentences and derive meaning from it. Hence, children with dyslexia require specific kinds of teaching tactics and strategies.

It is important for the teacher to have an understanding of the 'science of reading.' The teacher must assess each student individually and have sufficient techniques and strategies available at their fingertips to better meet out the emerging and challenging learning needs of students with dyslexia.

## **Dyslexia**

Numerous definitions of the word dyslexia exist and while they contain many similarities they can also lead to a great deal of confusion. The word itself is derived from the Greek "dys" meaning difficulty and "lexia" meaning written words. It was originally named as "congenital word blindness" when it was first diagnosed as a medical problem at the end of the 19th century.

## **Symptoms of Children with Dyslexia**

Student may have dyslexia or a learning disability if they have one or more of the following symptoms:

- Letter or word reversals when reading. (Such as was/saw, b/d, p/q)
- Letter or word reversals when writing.
- Difficulty in repeating what is said to them.
- Poor handwriting or printing ability.
- Reversing letters or words when spelling words that are presented orally.
- Difficulty in comprehending written or spoken directions.
- Difficulty with right - left directionality.
- Difficulty in understanding or remembering what is said to them.
- Difficulty in understanding or remembering what they have just read.
- Difficulty in putting their thoughts on paper.

## **Remedial Programme**

After children's reading difficulties have been identified each child is then matched with a programme to provide remediation. A major characteristic of remedial reading programme is that the content of the programme is predetermined by the children's performance on a set of sub-skills. Each child's tutorial consist of a series of activities that focus on various sub-skills, such as

Background knowledge, Vocabulary, Language structures, Verbal reasoning, and Literacy knowledge.

### **Review of Related Literature:**

Samuel (1981) recommended a method that he calls the “retelling techniques”, in which students are asked to elaborate on what read by retelling a story in their own words. Rowe and Ray ford (1987) and Arnold (1988), are of the view that encouraging readers to bring to the reading task what they already know about a topic assists their comprehension. Munro and Munro (1991) teaching reading strategies such as the use of prior knowledge, visualizing and paraphrasing can greatly assist readers who have phonemic difficulties to comprehend. According to Mackay (2004), Intensive Remedial Instructions are designed to help in building and developing both the intellectual confidence and self-esteem of the learners in order to prepare them to undertake activities that are more challenging.

### **Significance of the Study**

Since dyslexia can't be diagnosed until the child has been failing in school for at least two years by that time constant failure may have produced a version towards the school, undermined self-esteem, self confidence and would have created psychological problems. Treatment becomes effective if earlier diagnosis is made. Hence remedial programme for children with dyslexia studying in V standard is included in the study.

By remedial programme, the teachers and parents could become aware of Dyslexic condition and make the necessary considerations required for children with Dyslexia.

The need to identify such children at an early stage who are totally ignored and left bewildered in the regular class-rooms made the researcher to choose the present study.

### **Objectives of the Study**

Keeping in mind the need, nature and scope of the study, researcher has identified the following objectives;

1. Identification of the children with dyslexia, studying in V standard of government primary schools in Belagavi city.
2. Development of the remedial programme on reading comprehension in reading skills for V standard students.
3. Assessment of the reading comprehension and its dimensions in reading skills of students with dyslexia studying in V standard.
4. To study the effectiveness of remedial programme on improving reading comprehension in reading skills of children with dyslexia studying in V standard.

## **Hypothesis**

1. There is no significant difference between pre-test and post-test mean scores of performance of children in Reading Comprehension.
2. There is no significant difference between pre-test and post-test mean scores of performance of children reading comprehension component that is background knowledge.
3. There is no significant difference between pre-test and post-test mean scores of performance of children reading comprehension component that is vocabulary.
4. There is no significant difference between pre-test and post-test mean scores of performance of children reading comprehension component that is language structures.
5. There is no significant difference between pre-test and post-test mean scores of performance of children reading comprehension component that is verbal reasoning.
6. There is no significant difference between pre-test and post-test mean scores of performance of children reading comprehension component that is literacy knowledge.
7. There is no significant difference between boys and girls children with respect to pre-test and post-test mean scores of performance of children in reading comprehension.

## **Design of the Study**

Experimental design is the most useful and powerful method to identify the effectiveness of any programme. Hence the investigator has incorporated the single group experimental design to find out the Effectiveness of Remedial Programme for Improving Reading Comprehension in reading Skills among Children with Dyslexia.

## **Population, Sample and sampling technique**

The population of the study was children with dyslexia studying in primary schools. Identification of dyslexic children is not appropriate in first and second standard as they would have not received enough reading instructions. While in seventh standard or more, a two year reading activities or practices might not indicate severity in reading problems. The sample comprised 50 children with dyslexia from the fifth standard. A purposive sampling technique was adopted to select the sample (children with dyslexia) enrolled in government schools in Belgaum city.

## **Variables**

The variables of the study are as follows;

- a. **Dependent Variable:** Performance on Reading Comprehension
- b. **Independent Variable:** Remedial Programme
- c. **Moderate Variable:** Gender

## **Data Collection Procedure:**

The entire procedure of the study can be divided into two parts, Screening of the children with dyslexia and remedial programme

### **1. Screening of the Children with Dyslexia**

The success of any educational research depends on the methods adopted for carrying out the research. In the present study the experimental procedure has been followed. The researcher has made the present study confined to Belagavi city for children with dyslexia. For identification of children with dyslexia researcher has approached Block Education Officer (BEO) to take permission to visit the schools and discussed about the nature of his study, what the researcher was going to carry out. The researcher collected the list of primary schools located in Belagavi from Block Resource Centre (BRC) and then researcher has approached Assistant Programme Coordinator (APC) of Sarva Shikshana Abhiyana (SSA) to find out various interventions conducted for children with special needs but for children with dyslexia were neither identified nor have been treated with remedial programme. They were treated as normal children in schools. Therefore, identification of dyslexic children was a Herculeous task in the beginning. Based on the study of research reviews conducted on dyslexic children, the researcher planned to use Rutter's Proforma -B, (1967) to identify the children with dyslexia with the help of language teacher in various schools of the study. The researcher and the language teacher of the school together have identified the children with dyslexia with the help of Rutter's proforma.

The researcher has administered Pre-test on reading comprehension skills. Based on the performance in the pre-test the remedial programme has been developed depending on the reading skills.

### **2. Remedial Programme**

Remedial programme has been developed on reading comprehension based on the following components of reading skills and collected the data before and after remedial programme that is pre-test and post test.

A. **Background Knowledge:** To identify the background knowledge, the following steps were followed;

- Exercises to understand the relationship between spoken and written language.
- Identification of the forms and functions of print found in classroom signs, labels, posters and calendars.
- Understand the print conversations like print directionality, word boundaries, capital and end punctuation.
- Check book awareness and book handling.
- Promote word awareness by identifying word boundaries and compare word lengths.
- Practice what he/she has learnt through hearing.
- Participation in the reading of predictable and patterned stories and books.
- Grasp the main idea of the material while reading English.

- Predict the main idea of the whole passage from its title or subtitles.
- Grasp the gist of the reading material through quickly reading the first and the last paragraphs.

**B. Vocabulary:** To identify the vocabulary, the following steps were followed;

- Read on his/her own when opportunity is given to read or re-read a story/ text.
- Able to hear the text and read fluently with expression.
- Involve his/her parents/family actively to build home-school connections which helps for reading development.
- Increase his/her reading rate and accuracy after recording oral reading.
- Visualize spelling techniques i.e. either by colour or by symbol for memorization.
- Able to memorize sight words by steering at the word for an appointed amount of time until the words imprinted on his/her memory.
- Improve his/her spelling by practicing spelling words by playing language games.
- Prepare hand outs for new words introduced in the classes.
- Able to spell the words backward as easily as forward when true imprinting has occurred in his/her mind.
- After reading practice he/she is able to read difficult words on his/her own.

**C. Language Structures:** To identify the language structures, the following steps were followed;

- Able to learn letter – sound relationship at different rates.
- Able to learn sound – letter relationship from a range of two –four letter words in a week.
- Able to learn frequently used letter-sound relationships quickly.
- Learn consonants and vowels in a sequence so that he/she is able to read words quickly.
- Able to learn single consonant sounds and consonant clusters/blend in separate lessons.
- Learn letter sound relationship by blending instructions with words
- Find the text as coherent and comprehensive.
- Able to comprehend more when it is discussed in the class what he/she has read.
- Get a variety of opportunity to read the given text.
- Able to read high frequency/ irregular words to make them sound natural.

**D. Verbal Reasoning:** To identify the Verbal Reasoning, the following steps were followed;

- Distinguish between minor and major points in the given lesson.
- Draw conclusion from the passage provided.
- Reason out incomplete data, inferring missing information
- Analyze the given text and reach conclusion about it.
- Develop and consider the alternative explanations.

- Evaluate the given passage before selecting right answer.
- Identify words/phrases that seem particularly significant in the given lesson.
- Identify the use of different reading strategies depending upon the text.
- Integrate new information to recognize prior knowledge and beliefs.
- Incorporate understanding in a larger framework i.e. compare, contrast and integrate perspectives.

**E. Literacy Knowledge:** To identify the Literacy Knowledge, the following steps were followed;

- Child understands the relationship between spoken and written language.
- Reinforced by the forms and functions of print found in classroom signs, labels posters and calendars.
- Learn print conventions like print directionality, word boundary, capital letters and end punctuation.
- Improve awareness about handling of books.
- Promote word awareness by identifying word boundaries and compare tense.
- Practice what he/she has learnt through hearing.
- Participate in the reading of predictable and patterned stories and books.
- Guess the meanings of new words in context when reading in English.
- Try to interpret the writer's intention while reading in English.
- Pause and analyze the structure of sentences when reading in English.

### Testing the Hypotheses

**Hypothesis-1: There is no significant difference between pre-test and post-test mean scores of performance of children in Reading Comprehension.**

To test this hypothesis, the paired t-test was applied and the results are presented in the following table-1.

Table: 1 Results of Paired t-test Between Pre-test and Post-test Mean Scores of Performance of Children in Reading Comprehension.

Test	Mean	SD	Mean Diff.	SD Diff.	Paired t-value	p-value	Signi.
Pre-test	88.10	21.37					
Post-test	215.90	53.89	-127.80	34.5584	-26.1494	<0.05	S

From the results of the above table-1, it is observed that, a significant difference was observed between pre-test and post-test mean scores of performance of children in Reading Comprehension ( $t=-26.1494$ ,  $p<0.05$ ) at 0.05% level of significance. Hence the null hypothesis was rejected and alternative hypothesis is accepted. It can be concluded that, the post-test performance of reading comprehension mean scores are higher when compared to pre-test performance of reading comprehension mean scores. In other words, the student's performance

shown improvement in post-test in reading comprehension after remedial teaching when compared to pre-test.

**Hypothesis-2: There is no significant difference between pre-test and post-test mean scores of performance of children reading comprehension component that is background knowledge.**

To test this hypothesis, the paired t-test was applied and the results are presented in the following table-2.

**Table: 2 Results of Paired t-test Between Pre-test and Post-test Mean Scores of Performance of children reading comprehension component that is background knowledge.**

Test	Mean	SD.	Mean Diff.	SD Diff.	Paired t-value	p-value	Signi.
Pre-test	15.08	2.77	-21.38	3.3557	-45.0513	<0.05	S
Post-test	36.46	2.22					

From the results of the above table, it is observed that, a significant difference was observed between pre-test and post-test scores of performance of children in component of reading comprehension i.e. background knowledge ( $t=-45.0513$ ,  $p<0.05$ ) at 0.05% level of significance. Hence the null hypothesis was rejected and alternative hypothesis is accepted. It can be concluded that, the post-test performance of children in background knowledge mean scores are higher when compared to pre-test performance of children in background knowledge mean scores. In other words, the student's performance shown improvement in post-test in component of reading comprehension that is background knowledge after remedial teaching when compared to pre-test.

**Hypothesis-3: There is no significant difference between pre-test and post-test mean scores of performance of children reading comprehension component that is vocabulary.**

To test this hypothesis, the paired t-test was applied and the results are presented in the following table-3.

**Table: 3 Results of paired t-test between pre-test and post-test mean scores of performance of children reading comprehension component that is vocabulary.**

Test	Mean	SD	Mean Diff.	SD Diff.	Paired t-value	p-value	Signi.
Pre-test	14.26	1.78	-21.62	2.8348	-53.9277	<0.05	S
Post-test	35.88	2.23					

From the results of the above table-3, it is observed that, a significant difference was observed between pre-test and post-test mean scores of performance of children in component of



reading comprehension i.e. vocabulary ( $t=-53.9277$ ,  $p<0.05$ ) at 0.05% level of significance. Hence the null hypothesis was rejected and alternative hypothesis is accepted. It can be concluded that, the post-test performance of children in vocabulary mean scores are higher when compared to pre-test performance of children in vocabulary scores. In other words, the student's performance shown improvement in post-test in component of reading comprehension that is vocabulary after remedial teaching when compared to pre-test.

**Hypothesis-4: There is no significant difference between pre-test and post-test mean scores of performance of children reading comprehension component that is language structures.**

To test this hypothesis, the paired t-test was applied and the results are presented in the following table-4.

**Table: 4 Results of Paired t-test between pre-test and post-test mean scores of performance of children reading comprehension component that is language structures.**

Test	Mean	SD	Mean Diff.	SD Diff.	Paired t-value	p-value	Signi.
Pre-test	14.40	1.92					
Post-test	36.66	3.13	-22.26	3.3062	-47.6080	<0.05	S

From the results of the above table-4, it is observed that, a significant difference was observed between pre-test and post-test mean scores of performance of children in component of reading comprehension i.e. language structures ( $t=-47.6080$ ,  $p<0.05$ ) at 0.05% level of significance. Hence the null hypothesis was rejected and alternative hypothesis is accepted. It can be concluded that, the post-test performance of children in language structures mean scores are higher when compared to pre-test performance of children in language structures mean scores. In other words, the student's performance shown improvement in post-test in component of reading comprehension that is language structures after remedial teaching when compared to pre-test.

**Hypothesis-5: There is no significant difference between pre-test and post-test mean scores of performance of children reading comprehension component that is verbal reasoning.**

To test this hypothesis, the paired t-test was applied and the results are presented in the following table-5.

**Table: 5 Results of Paired t-test between pre-test and post-test mean scores of performance of children reading comprehension component that is verbal reasoning.**

Test	Mean	SD	Mean Diff.	SD Diff.	Paired t-value	p-value	Signi.
Pre-test	14.10	1.59					
Post-test	35.94	3.07	-21.84	3.1060	-49.7203	<0.05	S

From the results of the above table-5, it is observed that, a significant difference was observed between pre-test and post-test mean scores of performance of children in component of reading comprehension that is verbal reasoning ( $t=-49.7203$ ,  $p<0.05$ ) at 0.05% level of significance. Hence the null hypothesis was rejected and alternative hypothesis is accepted. It can be concluded that, the post-test performance of children in verbal reasoning mean scores are higher when compared to pre-test performance of children in verbal reasoning mean scores. In other words, the student’s performance shown improvement in post-test in component of reading comprehension that is verbal reasoning after remedial teaching when compared to pre-test.

**Hypothesis-6: There is no significant difference between pre-test and post-test mean scores of performance of children reading comprehension component that is literacy knowledge.**

To test this hypothesis, the paired t-test was applied and the results are presented in the following table-6.

**Table: 6 Results of Paired t-test between pre-test and post-test mean scores of performance of children reading comprehension component that is literacy knowledge.**

Test	Mean	SD	Mean Diff.	SD Diff.	Paired t-value	p-value	Signi.
Pre-test	14.38	1.55					
Post-test	36.30	3.02	-21.92	2.9056	-53.3447	<0.05	S

From the results of the above table, it is observed that, a significant difference was observed between pre-test and post-test mean scores of performance of children in component of reading comprehension that is literacy knowledge ( $t=-53.3447$ ,  $p<0.05$ ) at 0.05% level of significance. Hence the null hypothesis was rejected and alternative hypothesis is accepted. It can be concluded that, the post-test performance of children in literacy knowledge mean scores are higher when compared to pre-test performance of children in literacy knowledge mean scores. In other words, the student’s performance shown improvement in post-test in component of reading comprehension i.e. literacy knowledge after remedial teaching when compared to pre-test.

**Hypothesis-7: There is no significant difference between boys and girls children with respect to pre-test and post-test mean scores of performance of children in reading comprehension.**

To achieve this hypothesis, the independent t test was applied and the results are presented in the following table-7.

**Table: Results of t test difference between boys and girls children with respect to pre-test and post-test mean scores of performance of children in reading comprehension.**

Variable	Gender	Mean	SD	SE	t-value	p-value	Signi.
Pretest	Boys	72.88	9.44	1.93	0.5411	>0.05	NS
	Girls	71.62	6.92	1.36			
Posttest	Boys	181.21	12.51	2.55	-0.0193	>0.05	NS
	Girls	181.27	9.70	1.90			
Difference	Boys	108.33	13.42	2.74	-0.3827	>0.05	NS
	Girls	109.65	10.94	2.15			

From the results of the above table-7, it can be seen that,

- A non-significant difference is observed between boys and girls children with respect to pre-test mean scores of performance of children in reading comprehension ( $t=0.5411$ ,  $p>0.05$ ) at 0.05% level of significance. Hence, the null hypothesis is accepted. It means that, the boys and girls children have similar pre-test mean scores of performance of children in reading comprehension.
- A non-significant difference is observed between boys and girls children with respect to post-test mean scores of performance of children in reading comprehension ( $t=-0.0193$ ,  $p>0.05$ ) at 0.05% level of significance. Hence, the null hypothesis is accepted. It means that, the boys and girls children have similar post-test mean scores of performance of children in reading comprehension.
- A non-significant difference is observed between boys and girls children with respect to change in pre-test to post-test mean scores of performance of children in reading comprehension ( $t=-0.3827$ ,  $p>0.05$ ) at 0.05% level of significance. Hence, the null hypothesis is accepted. It means that, the boys and girls children have similar change in pre-test to post-test mean scores of performance of children in reading comprehension.

## Findings

1. The student's performance shows improvement in post-test in reading comprehension after remedial teaching when compared to pre-test.
2. The student's performance shows improvement in post-test in component of reading comprehension that is background knowledge after remedial teaching when compared to pre-test.

3. The student's performance shows improvement in post-test in component of reading comprehension that is vocabulary after remedial teaching when compared to pre-test.
4. The student's performance shows improvement in post-test in component of reading comprehension that is language structures after remedial teaching when compared to pre-test.
5. The student's performance shows improvement in post-test in component of reading comprehension that is verbal reasoning after remedial teaching when compared to pre-test.
6. The student's performance shows improvement in post-test in component of reading comprehension i.e. literacy knowledge after remedial teaching when compared to pre-test.
7. A non-significant difference is observed between boys and girls children with respect to pre-test mean scores of performance of children in reading comprehension. It means the boys and girls children have similar pre-test mean scores of performance of children in reading comprehension.
8. A non-significant difference is observed between boys and girls children with respect to post-test mean scores of performance of children in reading comprehension. It means the boys and girls children have similar post-test mean scores of performance of children in reading comprehension.
9. A non-significant difference is observed between boys and girls children with respect to change in pre-test to post-test mean scores of performance of children in reading comprehension. It means the boys and girls children have similar change in pre-test to post-test mean scores of performance of children in reading comprehension.

### **Summery and Conclusion**

The educational needs of children with Dyslexia are unique in nature. Teachers who are working in schools should have adequate knowledge and training on how to handle these children's reading problems. Without specific training in this area they may not be able to teach language effectively. This remedial programme confirms that with concentrated instructional skills on reading comprehension, these children will return to the regular class-room instructions and apply these reading comprehension skills on reading and eventually begin to improve reading skills.

## References

- Agarwal, S. (2009). Neuropsychological Deficits in Children with Dyslexia. *Indian Journal of Clinical Psychology*.
- Arnold, (1988). Specific perceptual remediation Effects related to sex, IQ, and parents' occupational status; behavioral change pattern by scale factors; and mechanism of benefit hypothesis tested. *Psychological Reports*. 49, 198.
- Baker, L. (1984). Spontaneous versus instructed use of multiple standard for evaluating comprehension; Effects of age, reading proficiency, and type of standard. *Journal of experimental Child Psychology*.
- Barrett, Thomas C. (1967). Ed. The evaluation of children's reading achievements. *Perspectives in Reading*, No.8 New York, International Reading Association.
- Best, J. W. (1989). *Research in Education* ed. 6, New Delhi: Prentice- Hall India.
- Curtis, M.E. (1989). Development of components of reading skill. *Journal of Educational Psychology*.
- English Text book, (2016). Published by DSERT Karnataka state for the fifth standard Second Language.
- Mackay,(2004).Dyslexia in the Secondary School.Improving whole school achievement through dyslexia aware best practice.
- Munro and Munro (1991). Explaining developmental dyslexia: Orthographic processing difficulties. *Australian Journal of Remedial Education*, 27, 1, 5-15.
- Ramaa, S. (1984). Diagnosis and Remediation of Dyslexia – An Attempt. Unpublished thesis submitted for the award of the Degree of Ph.D. of the University of Mysore.
- Rowe and Rayford, (1987). Activity background Knowledge in Reading Comprehension Assessment. *Reading Research Quarterly*, 22, 160-176.
- Samuel, (1981). Phonemic Restoration: Insights From a New Methodology. *Journal of Experimental Psychology: General* Vol. 110, No. 4, 474-494.
- Sangolli, V. S. and Shailaja, H. M. (2010), A Study of the Development and Validation of Remedial Programme for Promoting Education of Dyslexic Children. Unpublished thesis of M.Phil. of Karnataka University, Dharwad.
- Texas Education Agency, (2002). Guidelines for Examining Phonics and Word Recognition Programs. Austin, TX.