

Interventional Remedial Teaching with Phonics to Students with Reading Disability

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ABSTRACT

Reading is highly important and key ability. It is rather gateway for education and academic achievement. Person can learn to speak naturally without formal training however, for reading one need to undergo proper training and education. Learning disability is incapacitating to any person. Person with reading disability is cannot perform well in academics and therefore they are unemployable which can create economic misery. Children who have developed learning disability, particularly reading disability are at disadvantage. The investigator aimed in this study to use phonics as method of intervention to alleviate reading problem of normal elementary school going students. Information about learning disability is collected from teachers through standardized test to select students with learning disability. Participants in this study received extensive tuition on reading through phonics for three months. Subjective reading test was conducted along with standardized test on learning disability. Significant improvement is found in the reading ability of all participant. Hence systematic phonic instructions can be really helpful in making students fluent readers.

Keywords: *Learning Disability, Reading Disability, Phonics Instructions, Remedial Teaching.*

After speaking, reading is the key activity through which children learn language. The acquisition of new words which are not popular in spoken language takes place only by reading and comprehension. Reading disability is most occurring difficulty faced by children (Gundin & Llamazares, 2021). We learn spoken language naturally to some extent and from our environment that is through exposure to speaking significant others. Hence if child is developmentally normal speaking does not bother child, however s/he struggles with learning to read. Reading ability is most valuable in academics rather whole achievement in academics is depends on the ability to read to read and comprehend. In India there can be at least 10- 12% prevalence of learning disability and this is a big number and significant population can remain deprived of education if not diagnosed early and provided treatment (Oberoi, 2022). This reading difficulty can consequently leads to remain illiterate and thus losing opportunities of employment (Benner, Michael, Ralston, & &, 2022), and thus suffering poverty and again contributing to inability to access to education, like this vicious cycle continues.

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Reading ability is most effortful activity since it requires to identify letters and alphabets of one's language as well as accomplishment of knowledge about words. Understanding the written material through deciphering it (Cruz, Mendes, Marques, Alves, & Cadime, 2022). Nevertheless, the reading difficulty in the children can be address with the help of phonic instructions or programme. There are various types of phonic instructions that can be used like synthetic phonic, analytic phonic, embedded phonic, analytic phonic, onset- rime phonic and phonics through spelling etc. (Ehri, Nunes, Stahl, & Willows, 2001). In synthetic phonic instructions students are taught with unit to word approach, in which students are told to covert smallest unit of written language i.e., grapheme into smallest unit of sound i.e., phoneme and then synthesizing the word pronunciation. For example, in word dog students are told to produce sound of each letter, /d/o/g/ and then combining all letters into meaningful word. In analytic phonics, students need not to produce sound for each individual syllable rather they are taught about similarities between different words in beginning and ending having similar pronunciation. Once students learn to identify word, they are told to analyze the letter- sound relationship and this further help to associate particular sound with particular letter. For example, teacher may show letter A after students read the words *like apple, ant, arrow* and associate beginning sound of word with letter A. In embedded phonic activity tutor selects a word containing target pattern (e. g. Jam). Then first letter (J) is removed and pattern (am) has to recognize by students and then by using different initial phonic letter students is told to form new words like dam, ram, cam etc. Then students are told to identify same patterns (am) in reading and writing practice followed by knowing the pattern. In onset- rime analogy phonic instructions students are taught about onset and rime and how to separate them and to use while reading new unknown words. For example, in word *make*, *m* is onset and *ake* is rime now student has to understand this and use this while reading words like *bake, fake, cake*, just by identifying analogy between rime and replacing the onset. In phonics through spelling intervention students are taught to associate letter symbol with its phoneme. Later on they are told to write word with louder pronunciation. In the beginning there is fifty- fifty percent allocation of time for reading and writing.

Addressing the reading disability in children is very crucial for their not only education but their future occupation, self -esteem, self- efficacy or overall well-being also. Hence in this study researcher aimed to investigate effect of interventional remedial teaching with phonics instructions on reading ability of children having reading disability. It is hypothesized that, there will be significant improvement in the reading ability of children after teaching them with phonics instruction.

METHODOLOGY

Research Design

This investigation was case study as well as pre- test, post- test within group design. This study possesses virtue of both qualitative and quantitative research design. Qualitative in the sense, in this study detail case study of each student with learning disability was conducted. Through standardized test the data about learning disability was collected from participants' teacher. The analysis was both qualitative and quantitative.

Participants

Five students were selected for the remedial teaching intervention programme after diagnosing for learning disability and reading disability specifically with the help of standardized test. Out of which four are male and one is female students their age range from 8 -11 years with 9.4 years of average. All participants are studying in the elementary

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school i.e., primary school. All five participants are from middle class background with different types of occupation of their parents. Two students' mother are working and three students' mothers are home makers. In case description names are changed to maintain confidentiality.

Shahrukh is son of baker, is 8-year-old male studying in 3rd standard. According to his mother he speaks well in English however, struggles with reading. He was having difficulty in recognizing alphabets also. Even after learning repeatedly and frequently he was unable to retain the word and its spelling. He was screen by his teacher and obtained 66 score on learning disability scale hence showing moderate learning disability. He received Three-month one hour daily phonic instructions. For one month it was individual training and later combined.

Salman is 11 year old male studying in the 6th standard. He was having a problem in reading and cannot read even two or three letter words. He also had problem of forgetting learned words again and again. He can learn spelling of word but cannot pronounce the word. He had got 61 score on learning disability score which classified him as moderately learning disabled. He received Three month one hour daily phonic instructions. For one month it was individual training and later combined.

Siddhartha is 9 year old male child studying in 4th standard. He had a problem of reading and pronouncing the word. He had seen many psychologists, however there was no improvement in his reading ability. He also had problem to remembering letter and its phoneme. He scored 65 on learning disability scale. He also received Three-month one hour daily phonic instructions. For one month it was individual training and after that he was instructed with other participants.

Amir is 10 year old male, studying in 5th standard. He was scored 79 on learning disability scale indicating his reading problem was severe. After repeated attempt he was unable to recognize and read word. He also received Three month one hour daily phonic instructions. For one month it was individual training and later on he had received phonics instruction with other participants.

Amrita is 9 year old female child. She is studying in 4th standard. She had problems in reading and following instructions. She was also received individualized phonics instructions at the beginning and after some improvement she was seated along with other participants.

Instruments

To assess learning disability of students for screening learning disability scale – Basra by Dr. Asha Bhatnagar, Dr. Neelu Sharma and Dr. Anumeha Rai was used. It consists of 20 items out of which 15 are positive and 5 are negative items. Total score on test gives index of learning disability. Higher the score more will be learning disability. On the basis of scores respondents can be classified as high learning disabled, moderate and low learning disabled children. The test is highly reliable since it's' test retest reliability coefficient is .84 and split half reliability coefficient is .79. The validity of test is established by content validity through judges.

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Instruction Material

On the basis of principals of synthetic phonics explicit instructions were developed. The instructions are divided into three steps. First two steps was employed to teach different sounds of both monophthong and diphthong, monograph, and digraph, onset and rime etc. Second step was consists of instructions regarding knowing individual grapheme phoneme sound association and then blending all phonemes to produce word sound i. e. reading complete word. After that students were instructed to read sight words in step three. After the remedial teaching was over subjective test was conducted for each participant and posttest assessment was conducted.

Interventional Remedial Teaching

One tutor was assigned to teach all participant. Initially the teaching was individualized and later on all participants were taught together. The teaching was always began with ice-breaker activity to remove hesitation and making students free. Then stepwise teaching was imparted.

Step I

In step one student was taught phoneme of single letter like *m, a, s, d, t, i, n, p, g, o, c, k, u, b, f, e, l, h, r, j, v, y, w, x, z*. Then student was taught to produce sound of combination of two or three letters. For example in *Ship: sh* and *ip* in *phone: ph* and *one*. Then student was taught words having same phoneme with different grapheme like tree and tea. In these words rimes are having same phoneme.

Step II

In step II synthetic phonics instruction was used. Students were taught to read and produce individual phoneme of letter and then combine all phoneme to pronounce the complete word. For example in *Pen* students were taught to pronounce phoneme for /*p/e/n*/ and then combine all phoneme to produce sound of *Pen*. Like this with blending of independent phoneme of each syllable students were instructed to read complete word.

Step III

In step III the reading of sight words are taught. As sight words like cup, long etc. are familiar, learning to read them is quite easier than unknown words. Teaching sight words reading was divided into different phases.

The first phase was always nouns, in which for example were included the words “*cup, ball, book, hat*”. The second phase included adjectives. Words in the second phase were included, “*big, small, red, blue*”. The third phase was then a combination of the nouns and adjectives, “*big cup, small ball, red book, blue hat*”. The fourth phase taught verbs. The verbs included in the fourth phases were, “*take, put, give, push*”. The fifth phase was a combination of the nouns, adjectives, and verbs. The sixth phase was prepositions. The words in the sixth phase included, “*in, on, under, next to*”. The seventh phase was a combination of the nouns, adjectives, verbs, and prepositions. The eighth phase was labelled as other and words included in this phase were “*the, and, is, a*”. The ninth phase was a combination of all the word forms previously mentioned. Finally, the tenth phase focused on plurals of the previously learned words such as “*balls, hats, books, cups*”.

Assessment of Effect of Interventional Remedial Teaching

The improvement in reading ability of each student was assessed by keeping in mind 7 specific areas of improvement.

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These 7 items are rated on a 5 point scale in which points are distributed from 1 to 5 depending upon the improvement of performance.

- 1-Unsatisfactory performance
- 2-Needs improvement
- 3-Fully meets expectations
- 4-Exceeds expectation and
- 5-Exceptional performance.

These 7 items which are rated on 5 point scale are as follows:

1. **Letter Knowledge:** Student must correctly identify letters (by name, by pointing to them, and by writing them).
2. **Phonics Knowledge:** Student must identify the sounds (phonemes) that typically correspond to letters and letter clusters. Student must also correctly pronounce simple nonsense-words
3. **Sight Word Recognition:** Student must correctly identify words in graded sets of list.
4. **Sound Categorization:** Student must decide which word out of a set of words does not begin with the same sound (phoneme) as the other words.
5. **Invented Spelling:** Student must write dictated words using appropriate spelling-sound conventions.
6. **Matching Symbols:** Student must match identical pairs of letters as well as clusters (made of two or more consonant sounds) of letters.
7. **Fluency:** Student must read with a basic speed of reading without taking unnecessary pauses.

RESULTS

In present investigation teacher of participant rated them for learning disability on LDS-Basnra before and after interventional remedial teaching and 't' value is computed along with mean and standard deviation as descriptive statistics.

Table1. Mean, standard deviation, df, and 't' of scores on learning disability scale.

	Mean	Std. Deviation	Df	t
Pre- Intervention Learning Disability Scores	68.80	7.16	4	7.98**
Post- Intervention Learning Disability Scores	40.20	6.53		

** $p < 0.01$

From above table no. 1 it is evident that there is significant difference between pre intervention learning disability scores and post intervention learning disability scores of participants ($t = 7.98$, $df = 4$, $p < 0.01$). On careful observation of means and standard deviation it reveals that, mean scores of learning disability before intervention is 68.8 and standard deviation is 7.16 whereas post intervention mean scores are 40.2 and standard deviation is 6.53. Hence post intervention learning disability scores are reduced significantly. There is significant effect of phonics based intervention for reading disability in reducing it.

Shahrukh

His scores on learning disability before intervention was 66 which was 2.8 deviation below the mean score of group. After intervention when rated for disability, his score was 29 which

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was 11.2 score lower than mean score after intervention. He has grasped identification of letters when associated with its phonic sound. His fluent speaking made this easy for him. He has learned to recognize letters soon. He has improved letter and phonics knowledge, sight word recognition and matching symbol at expectancy level. Naturally he has exceeded expectation in sound categorization by virtue of good at speaking. However, there is need of improvement in invented spelling and fluency.

Salman

Salman was scored 61 on learning disability scale which was 7.8 below the mean score of group and was lowest score. After intervention there is improvement albeit, surprisingly he was scored 40 on learning disability scale which are only 0.2 score below. He had a problem of reading even two and three letter words although he is in 6th standard. He has very low memory for words and require many rehearsals to memorize the word. He was not only suffered from problem of identification of words, but in pronunciation also. After phonics based treatment of his reading problem, he has done remarkably well in letter knowledge and categorizing of the words according to sounds of the words. He has well accomplished the task by scoring well in phonics knowledge, invented spelling, matching symbols and fluency.

Siddhartha

His scores on test before and after intervention was 65 and 45 respectively. His scores before intervention was 3.8 below the average and after intervention was 4.8 above the average which shows little improvement as compared to two earlier cases. With three months continuous training he was able to identify the letters with their appropriate names and sounds. It also has helped him to pronounce the word correctly. He is still facing some problems with sight words, invented spelling and fluency. He has done incredibly well in the categorizing the words with the help of initial sounds and also matching identical pairs of letters.

Amir

He had a problem in reading as well as writing English. Very poor in attention and inability to sit on one place worsen his problem. After the intervention with special attention on his reading ability, he has shown remarkable improvement. His understanding of letter and phonics knowledge has increased a lot and his confidence in reading has gone high. Though he still has some issues but he met maximum score in most of the items of evaluation like letter and phonics knowledge, sight word recognition and also categorizing of words according to the sounds. Areas of improvement are inventing the word with the help of given sounds and fluency in reading which can be overcome with continuous efforts and practice.

Amrita

She got 73 score on learning disability scale before intervention and 44 after intervention. Her both before and after treatment scores was second highest. She has problems in reading and following instructions. After three months of phonics based treatment for her reading disability she has shown tremendous improvement in her reading ability. After meeting the expected scores for items like letter and phonics knowledge, invented spelling, and matching symbols, she has got highest score for sight word recognition and sound categorization. The only area of improvement for her is fluency as she takes unnecessary pauses in between due to which she doesn't meet the expected fluency score.

DISCUSSION

In the present investigation it was hypothesized that the phonics instructions will be beneficial in treating the reading disability of children. Participants were taught for one hour daily for continuously three months. In the beginning every child was taught separately and after improvement was visible in all participants they were seated together and taught. The standardized test viz. learning disability scale was used to assess learning disability before and after intervention. The subjective assessment material was also used to assess improvement in reading ability. In light of obtained results it can be said that phonics instructions were effective for all participants. On an average there was difference of 28.6 score on learning disability scale before and after interventional remedial teaching. All participants exhibited significant improvement in all reading skills included in the assessment after intervention. The beneficial effects of phonics instructions on reading disabled also can be found in previous studies like, (Galuschka et al., 2014). In meta-analysis by Galuschka et al. in 2014, reported that, phonics instructions of sound and letter association, breaking words into its respective phonemes and then applying the principles in reading and writing is the highest effect producing remedial teaching for children and adolescents with learning disability. It is also found that children taught with direct instructions on alphabetical rules of reading were improved their reading than embedded or implicit instructions (Foorman et al., 1998). However, for normal children phonics instructions are helpful in learning to read who are in kindergarten and first standard and beyond first standard that is from 2-6 standard it is not much effective, nevertheless can produce significant changes in reading ability (Ehri et al., 2001). In this study improvement can be attributed to the nature of instructional material and procedures rather than the duration of training. Phonic analysis and blending instructions and word breaking and identifying instructions were helpful in making better reader. This effect was visible in the few days and length of training was increased to make them fluent readers. The same results are obtained with severely disabled children in study done by Lovett et al. in 2000. In this study investigators imparted 70 hours training with Phonological analysis and blending direct instruction programme and word identification training programme to severely disabled children of age 6 to 13 and found significant improvement in their reading ability. Phonemic awareness and phonological skill can be strong predictor of the reading ability in children whether they are dyslexic or normal (Melby-Lervåg, Lyster, Hulme, 2012). In this study phonics through spelling was not used and this may be cause of participants need to improve writing correct spelling on dictation. It is found that phonics through spelling is effective treatment method even for children having dyslexia and it can be beneficial in improving both reading as well as writing. Breaking word into onset and rime is also good strategy to teach reading to disabled. After onset-rime training children can transfer learning to non- studied words during training (Hines, 2009).

CONCLUSION

From above discussion it can be concluded that, the phonics based interventional remedial teaching is helpful in treating reading disability of children. Focused long duration and persistent phonological instructions can brings changes and thus will help to students to advance in their studies. Hence it can be said that phonics based instructions has clear implication in teaching reading skill to dyslexic children with reading disability.

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Conflict of Interest

The author(s) declared no conflict of interest.

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