

Children with Reading Disability: A Remedial Manual on Metaphonological Skills (Kannada) (Rem-Kan)

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Abstract

The present study aims to develop a Remedial Manual on Metaphonological Skills in Kannada for children with reading disability (ReM-Kan). The study also aims to determine the efficacy of the training manual when used by SLPs/school teachers/parents. Six Children studying in secondary grade (V grade) Kannada medium school diagnosed as reading disability with normal IQ and adequate language age were selected for the present study. The six children were divided into three groups (2 in each group). They were trained by two school teachers/two parents and a speech language pathologist. An intensive training program on metaphonological skills was carried out using (ReM – Kan) for a period of 30 days each of 30 minutes spread over a period of 3 months. The pre-training and post training scores on metaphonological skills were compared. The results indicated no significant difference in the performance of all the six children trained by school teachers/parents/an SLP.

Speaking and understanding speech are primary linguistic activities while reading is a secondary linguistic skill that requires explicit instruction. Reading is a process that involves both the acquisition of meaning intended by the writer and the reader's own contribution in the form of interpretation, evaluation, and reflection of these meaning (Bond, Tinker & Wasson, 1979).

Preparation for reading begins long before the child enters school. Growth in reading abilities is developmental in nature. This growth involves gradual acquisition of skills which together enable the learner to interpret printed symbols correctly so as to enter into meaningful language experience (Bond, Tinker & Wasson, 1979).

The process of reading is a highly complex, multidimensional skill involving linguistic, perceptual, cognitive and motivational components. It is also a highly artificial skill which is a product of cultural evolution and dependent on cultural transmission. Because of the complexities of skills involved in reading disruption in any one or more of these could lead to a condition known as reading disability. Reading disability is widely known as learning disability. Learning disability is a disorder in one or more of the basic psychological processes involved in understanding or using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or do mathematical calculation (Goldberg, Shiffman & Bender, 1983).

Reading involves many skills, in which language forms the core skill for reading (Catts & Kamhi, 1999). The ability to analyze a language into its components, otherwise known as metalinguistic skill is presumed to be the basis of reading. Metalinguistic skill also known as language awareness refers to the "ability to reflect consciously on the nature and properties of language" (Van Kleeck 1994). Four levels of metalinguistic awareness have been identified by Tunmer & Bowey (1984) of which phonological awareness is found to play an important role in reading. Phonological awareness (alternately referred to as

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metaphonological awareness) is defined as the ability to reflect on and manipulate the structure of an utterance that is distinct from its meaning (Stackhouse 1997).

Operationally skills that represent children's phonological awareness lie on a continuum of complexity. Chard & Dickson (1999) have given the hierarchy of phonological development from less complex activities to more complex ones. Activities such as initial rhyming and rhyming songs are considered to be less complex and blending and segmenting individual phoneme to be most complex one. Studies by Bryant, Bradley, McLean & Crossland (1989) showed that there exists a strong relationship between rhyming ability at the age of three years and performance in reading and spelling three years later. Complex phonological skills are reported to emerge only after 5 to 6 years of age (Liberman, Shankweiler, Fischer & Carter 1974).

Considerable evidence has accumulated over the last 25 years documenting the strong relationship between phonological knowledge and word recognition skill and the importance of semantics, structural and discourse knowledge for reading comprehension. Thus recent review of the literature (Hurford, Darrow, Edwards, Howerton, Mote, Schauf & Coffey, 1993; Mann 1993) indicates that the presence of phonological awareness is a hallmark of good readers while its absence is a consistent characteristic of poor readers.

Another factor that is strongly related to the acquisition of reading is the features of language and scripts. The type of script is supposed to influence the process of reading acquisition. The remedial program developed for a given language and script therefore, does not suffice children who are from different language and script background. Thus there is a need for development of remedial program in particular language and script.

Research studies indicate that phonological awareness can be taught and that those students whose awareness of phoneme increased with training showed increased facilitation to subsequent reading acquisition. Hence phonological awareness training along with facilitation of language skills forms the major goal of early instruction for later academic success.

As the process of reading is complex the remediation of reading also calls for intervention of multiple processes using step-by-step hierarchical strategies. Since language and metalinguistic skills form the core processes, it is essential to initiate reading remediation by building up a child's language potentials. Western literature indicates availability of such resources for children learning to read/write English. In India, Ramaa (1985) has developed a general drill material to improve reading in Kannada. Ponnumani (2003) has developed Remediation Manual in Malayalam (ReM-Mal) for children with specific language based reading disability. ReM-Mal was tried out on dyslexics by speech language pathologist/parents/ teachers and was reported to be quite effective in improving phonological skills.

Need for the study

The present study focuses on development of manual for remediation of reading disability in school going children. The remedial programs currently being used are those that have been developed keeping English as the medium of instruction. In India majority of the children attend schools which have their regional language as the medium of instruction. Since our clinical data and the outreach programs in the state of Karnataka indicate around 4-6% of children as having reading disability, it is felt necessary to develop a manual for remediation of reading disability in Kannada. The current status of ratio of children with reading disability and professionals who offer remedial services is highly mismatched, the latter being too low in number. Hence, there is a great need to deprofessionalize the services, remedial treatment to children with reading disability in particular. In order to help large

number of children there is a need to develop remedial program that is user-friendly and is also accessible by paraprofessionals and parents.

Objectives of the study

1. To develop a remedial manual for metaphonological skills in Kannada for children with reading disability and also to determine the efficacy of the remedial manual.
2. To check the efficacy of the manual as used by school teachers, parents and speech language pathologist.

Method

The present study aims to develop a remedial manual for metaphonological skills in Kannada for children with reading disability. The study is carried out in six phases from the development of the remedial manual to the analysis of results.

Phase I: Development of the remedial manual for metaphonological skills in Kannada.

Phase II: Pilot study

Phase III: Selection of children with reading disability

Phase IV: Selection of teachers/parents/SLP for training children with reading disability.

Phase V: Training teachers/parents to carry out the remedial program.

Phase VI: Data compilation and analysis of the result.

Phase I:

Development of the remedial manual for metaphonological skills in Kannada: Reading acquisition profile in Kannada (RAP-Kan) by Prema (1997) was considered as the basis for the development of the manual. The metaphonological skills were included in the training manual are: rhyme recognition, syllable reversal, syllable deletion, syllable oddity (words), syllable oddity (non words), phoneme deletion and phoneme oddity (non words). The training manual was developed as follows:

1. **Selection of Words:** Words from the Kannada textbooks of primary and secondary grade (I-VII) were chosen. Those words that could be picturised were selected for the training manual. Table 1 provides information on the items selected for each of the metaphonological skill. The non-words in syllable and phoneme oddity tasks were however not picturized.
2. **Picturization of stimulus words:** Picture cards were prepared for all picturable items. Black and white line drawings were made on card size of 15 cms Vs 10 cms for rhyme recognition, syllable reversal, syllable deletion and phoneme detection. The card size of 28 cms Vs 9 cms was used for the task like syllable oddity (words), which consisted of 4 pictures per set in series. These pictures were also scanned and saved in compact disc (CD).
3. **Training method:** It is proposed to conduct training with the help of spoken words, pictures, and/or written words either by using pictures of flash cards or pictures in compact disc (CD).

Table: 1 Items in the remedial manual

Sl. No	Metaphonological skills	Description of items
1.	Rhyme recognition	30 pairs of picturable words.
2.	Syllable reversal	30 picturable words.
3.	Syllable deletion	22 picturable words (both stimulus and response words are picturized).
4.	Syllable oddity (words)	30 set of picturable words, sets of 4 words each.
5.	Syllable oddity (non words)	30 set of non-picturable words, sets of 4 words each.
6.	Phoneme deletion	30 picturable words.
7.	Phoneme oddity (non words)	30 set of non-picturable words, sets of 4 words each.

Hierarchy of steps for training was envisaged as follows:

a. Oral Presentation of Stimulus Words

ಲವಂಗ - ವ = ಲಂಗ
lavaMga - va = laMga
(clove) (skirt)



- If the child fails to understand the task even after 2-3 trails, present additional cue such as finger counting for each syllable or trapping on the table for each syllable.
- If the child fails further present the pictures as cue (either flash card or CD) and instruct the child to carry out the activity.
- Despite all the above cues if the child fails to understand provide picture along with graphemic cues

Since it is a training manual the above mentioned cues are incorporated to facilitate learning. The order of training phonological awareness skill as proposed and carried out in this study is as follows:

- 1) Rhyme recognition
- 2) Syllable reversal
- 3) Syllable deletion
- 4) Syllable oddity (words)
- 5) Syllable oddity (non-words)
- 6) Phoneme deletion
- 7) Phoneme oddity (non words)

This manual also provides instruction to carry out each skill as follows:

1) Rhyme Recognition: Rhyme recognition is the skill where the individual recognize rhyming words.

Instruction: I will say two words; you tell me if they rhyme. Does 'ele' (stimulus word) rhyme with 'ole'? (stimulus word).

Eg: ಎಲೆ - ಒಲೆ

ele - ole

Leaf - Stove

ಮಣಿ - ಚಾಕು (ಓಖ)

maNi - caaku (NR)

Beed - Knife (NR)

2) **Syllable Reversal:** Syllable reversal is a task where syllables in a word are reversed.

Instruction: I will say a word you have to tell me the reversal of it. 'kudure' (stimulus word) in its reverse form 'reduku'.

Eg. 1. ಕುದುರೆ = ರೆದುಕು
kudure = reduku
Horse
2. ಜಡೆ = ಡೆಜ
jaDe = Deja
Plait

3) **Syllable Deletion:** Syllable deletion is the task where one syllable of the word is deleted (initial medial or final syllable of the word).

Instruction: I will say a word and then I will delete/strip/leave out a syllable from the given word. You have to tell me the remaining part of it. Say 'mUguti' (stimulus word) without 'ti' (stimulus syllable).

Eg. 1. ಮೂಗುತಿ - ತಿ = ಮೂಗು
mUguti - ti = mUgu
Nosering
2. ಮಹಿಳೆ - ಹಿ = ಮಳೆ
mahile - hi = maLe
Woman
Rain

4) **Syllable Oddity (Words):** Syllable oddity (words) is the task where the child would identify the word that does not belong to the set (which does not sound similar).

Instruction: I will say a set of four meaningful words; listen to the sound aspects of these words carefully (rather than paying attention to the meaning) and say the word which does not belong to the set/group. I say now 'kivi' baavi moogu tivi (stimulus words) tell me the word that does not belong to the set.

Eg. 1. ಕಿವಿ ಬಾವಿ ಮೂಗು ಟಿವಿ
kivi baavi moogu Tivi
ear mouth nose T.V
2. ಬಿಲ್ಲು ಕಣ್ಣು ಹಲ್ಲು ಕಲ್ಲು
billu kaNNu hallu kallu
bow eye teeth stone

5) **Syllable Oddity (Non Words):** Syllable oddity (non-words) is the task where the child identifies the non-word that does not belong to the set (which does not have similar sounding).

Instruction: I will say a set of four non meaningful words; listen to the sound aspects of these non words carefully and tell me the non word which does not belong to the set/group. I say now 'camali kalaga samali tamali' (stimulus words) tell me that non word that does not belong to the set.

Eg. 1. ಚಮಲಿ ಕಲಗ ಸಮಲಿ ತಮಲಿ
camali kalaga samali tamali
2. ಉಲಚ ಉಮಟೆ ಗಲತ ಉತಸ
ulaca umaTe galata utasa

6) **Phoneme Deletion:** It is a task where the phoneme (sounds) of a word is deleted.

Instruction: I will say a word now listen to it carefully. Later I will delete/strip a phoneme (sound) from any syllable of a word (either initial, medial or final). You have to tell me the remaining part of it. Listen to the word I say, now say 'skooTar' (stimulus word) without 's' (stimulus sound).

Eg. ಸ್ಕೂಟರ್ - ಸ್ = ಕೂಟಾರ್
skooTar - s = kooTaar
skooter
ಪರಕೆ - ಎ = ಪರಕ್
parake - e = parak
broom

7). Phoneme Oddity (Non Word): Phoneme oddity (non-word) is the task where the child identifies the non-word which does not belong to the set (which does not have similar sounding).

Instruction: I will say a set of four non-meaningful words. Listen to the sound aspects of these non-words carefully and say me the non word which does not belong to the set/group (which does have similar sounding). I say now 'chaaga chaTu paja chogi' (stimulus words) tell me which non-word does not belong to the set.

Eg. ಚಾಗ ಚಟು ಪಜ ಚೊಗಿ
chaaga chaTu **paja** chogi
ಯಗಿ ಕಾಲೆ ರಕಿ ಲಜ
yagi **kaale** raki laji

Phase II

Pilot Study: The material prepared (which included both word list and picture cards) was subjected to pilot study. Five normal school going children from grade III to VII (one from each grade) were selected to check for familiarity of words and pictures and cues used for training on metaphonological task.

Phase III

Selection of children with reading disability: Six children studying in secondary grade (V grade) Kannada medium at government school were selected. These children were also reported to have reading difficulty as per class teacher/headmasters observation. A screening test was carried on these children using the Jaya Bai oral reading test (Bai 1958).

Among the children screened for identification of presence reading difficulty, six children were selected for detailed evaluation. Detail diagnostic evaluation was carried out at AIISH on these children. Evaluation detail included is

- 1) Administration of intelligence test–Binet Kamath Test (BKT) to rule out retardation if any.
- 2) Detailed language evaluation was carried out using Linguistic Profile Test (LPT) to find out the language level of all the children.
- 3) RAP–Kan (Prema 1997) was administered to identify if all the children do really fall into the category of reading disability.

Table 2: Summary of Test Results

Subjects	Age in years	IQ	LPT (aged in years)			Overall Lang age (years)	RAP–Kan Metaphonol task total score (72)
			Phonology	Syntax	Semantics		
A	11	85	10+	8+	9+	9+	22
B	11	85	10+	10+	8+	9+	22
C	11	90	10+	10+	10+	10+	25
D	11	85	10+	9+	8+	9+	21
E	11	90	10+	10+	11	10+	26
F	11	85	10+	8+	9+	9+	21

Results of these tests revealed that all the children had normal intelligence (i.e. IQ above 85) language level ranged from 9+ to 10+ years (chronological age of all the children was 11 years) and all the children failed in RAP–Kan (Prema, 1997) test. Based on these

results, all the children were identified as having reading disabilities and were taken for the study. Table-2 provides the summary of various test results for each child taken for the present study.

Phase IV:

Selection of teachers/ parents/SLP for training children with R D: The selected children in the study were divided into three groups (two in each group) to be trained by teachers/ parents/an SLP. All the parents and teachers participated in the study agreed to carry out the training program for these children..

Selection criteria of trainers are as follows:

- 1) Two literate parents who knew to read and write Kannada were selected to train two of the children with reading disability.
- 2) Two school teachers (class teacher of V grade and teacher who taught Kannada for these children) were selected
- 3) Experimenter played the role of an SLP.

Phase V

Training teachers/parents to carryout the remedial program: Teachers/Parents were oriented towards carrying out remedial program. The following information was provided to them.

- 1) About reading disability in general.
- 2) Influence of metaphonological skills on reading ability of an individual.
- 3) Importance of training metaphonological skills to facilitate reading.
- 4) Various steps to be followed and cues to be used in the training.

After the orientation on the remedial program teacher/parents were given the manual along with picture cards. They were also provided with the data entry sheet to monitor and note down the responses and progress of each child.

Phase VI

Compilation of data and analysis of results: Intensive training on metaphonological skills was provided by teacher/parents/an SLP for 3 groups of children (2 in each group). The training was conducted for a total of 30 days each of 30 minutes duration spread over a period of 3 months.

Procedure

Prior to the training a base line of performance on metaphonological skills was established for each child. They were assessed by the experimenter using reading acquisition profile RAP-K (Prema 1997). For assessment purposes a subsection named metaphonological skill was considered which has twelve items under 6 different skills; Rhyme recognition, Syllable deletion, Syllable oddity (word), Syllable oddity (non-word), Phoneme deletion, Phoneme oddity (non-words). A score of one was given for each correct response and zero for each incorrect response.

1. Each child was tested using Binet Kamath test to rule out retardation if any and also Linguistic profile test was administered to identify language age for phonology, syntax, and semantic skills.
2. After establishing the base line intensive training was given to all the children with reading disability by school teachers/parents and by an SLP – with the help

of the manual developed and picture cards. This was done for duration of 30 days (30 minutes each day) training was carried out.

3. Training was carried out by providing cues which facilitates learning.
4. During this period, data entry sheet was given to school teachers/parents/an SLP to monitor and note down the response and progress of each child.
5. In order for the learning to be optimal recognition, recall, and relearning strategies were adopted. e.g. where each child was asked to give examples for each task learnt the previous day.
6. Immediate feedback was given to all the children on their response to help them evaluate the adequacy of their response. All the trainers followed this.
7. All the children were reinforced through bonus points and small rewards thus reinforcement formed a strong motivational factor.
8. Towards the end of the training (30 days, each of 30 minutes spread over a period of 3 months) the subjects were re-assed to obtain a post training scores using the RAP-Kan (Prema, 1997).
9. The obtained pre training scores and post training scores were subjected to appropriate statistical analysis.

Results and Discussion

The objective of the present study was to develop a remedial manual for metaphonological skills in Kannada for children with reading disability. The core items of this manual are:

1. Rhyme recognition
2. Syllable reversal
3. Syllable deletion
4. Syllable oddity (words)
5. Syllable oddity (non words)
6. Phoneme deletion
7. Phoneme oddity (non words)

The present study examines the efficacy of the remedial manual and also the efficacy of the manual as used by school teachers, parents and speech language pathologist. Information regarding the cues used by school teachers, parents and an SLP for training children with reading disability is also examined. Cues provided in the manual are as follows:

1. Oral presentation of the stimulus words
2. Oral presentation along with additional cues like finger counting & table tapping
3. Pictorial presentation
4. Pictorial and Graphemic presentation of the stimulus word/Graphemic cues for non-word stimulus

The data for the same was obtained on six children with reading disability studying in secondary grade with Kannada as a medium of instruction. Table-3 gives the mean scores on metaphonological skills before and after the training.

Table - 3 shows an improvement in metaphonological skills in post training scores by the sign test being positive. The improvement is also evident in figure 1.

Table 3: Mean scores of pre and post training

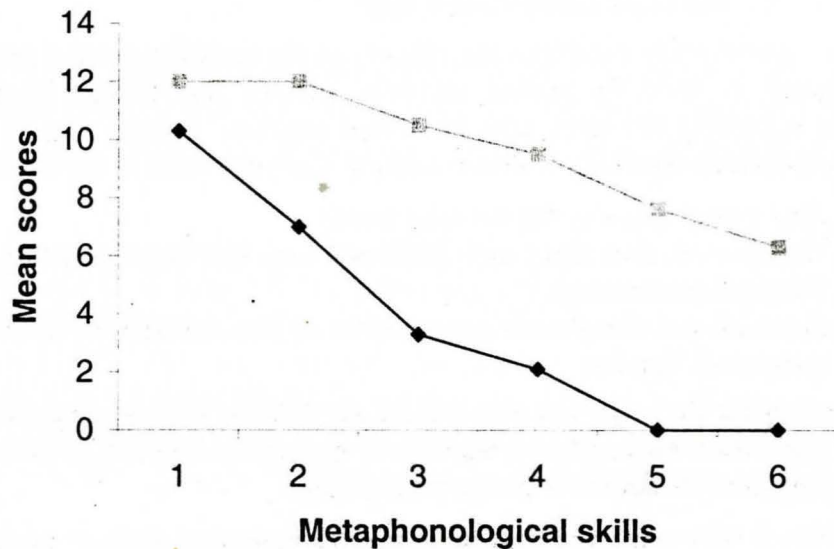
Sl.No	Metaphonological skills	Mean pre-training score	Mean post training score
1	Rhyme recognition	10.3	12
2	Syllable deletion	7	12
3	Syllable oddity (words)	3.3	10.5
4	Syllable oddity (non words)	2.1	9.5
5	Phoneme deletion	0	7.6
6	Phoneme oddity (non words)	0	6.3

The significance of difference in performance was tested by applying sign test. The results of sign tests are presented in the table - 4.

Table 4: Sign test result on metaphonological skills (pre & post training)

Sl.No	Trainers	Teacher	Teacher	SLP	SLP	Parent	Parent
	Children with R.D	A	B	C	D	E	F
1	Rhyme recognition	+	+	+	+	+	+
2	Syllable deletion	+	+	+	+	+	+
3	Syllable oddity (words)	+	+	+	+	+	+
4	Syllable oddity (non words)	+	+	+	+	+	+
5	Phoneme deletion	+	+	+	+	+	+
6	Phoneme oddity (non words)	+	+	+	+	+	+

* Syllable reversal task was not considered for statistical analysis as it is not a part of RAP-Kan (Prema, 1997). This task was incorporated in the present study to facilitate syllabic skills).

Figure 1: Pre and Post training scores on metaphonological skills

- ♦ - Mean of pre-training session
- - Mean of post training session

- 1 - Rhyme recognition
- 2 - Syllable recognition
- 3 - Syllable oddity (words)
- 4 - Syllable oddity (non words)
- 5 - Phoneme deletion
- 6 - Phoneme oddity (non words)

- 1) **Rhyme recognition:** Performance of all the children on rhyme recognition task almost reached the maximum value in pre training session suggesting that, the rhyming skills are acquired before entry to secondary grade. This result supports the study carried out by Brant, Bradley, McLean & Crossland (1989) who reported that rhyming skills develop at the age of 3 years. This result also indicates that even though children who participated in the study had reading disability, rhyming skills are present to a considerable extent. Similar results have been reported by Ponnumani (2003). In her study she developed a remedial manual in Malayalam and trained children with reading disability studying in secondary grade Malayalam medium of instruction. She found that rhyming skills were present in these children even though they had reading difficulty.
- 2) **Syllable deletion:** The pre-training scores obtained by all the subject on this task was much lower than that of scores obtained in rhyme recognition tasks. The scores in post training session reached almost the same value as obtained for rhyme recognition task suggesting that, syllabic skills can be equated with rhyming skills in Kannada. Similar results are reported by Prema (1997).
- 3) **Syllable oddity (words) and Syllable oddity (non-words):** Performance in this task was poorer in pre-training session compared to that of syllable deletion task; within these two tasks scores obtained for syllable oddity (non-words) was lower than scores obtained for syllable oddity (words). The results indicate that although oddity task is difficult for children with reading disability, between the two tasks with word/non-word, the more meaningful syllable oddity (words) was easier than syllable oddity (non-words). This suggests that the children with reading disability are more dependent on the meaning than the sound aspects of word. Further the importance of including non-word task in assessment and remediation of children with reading disability is also highlighted from the result of the study. The gradual improvement seen in both the task suggest that through training one can improve the performance of children with reading disability on syllabic task.
- 4) **Phoneme deletion and Phoneme oddity (non-words):** Among all the tasks involved in metaphonological skills phonemic task was most difficult for all the children. After the intensive training, that was carried out for this task the post training session showed improvement but this did not reach the maximum score as seen in Rhyming and Syllabic task. This could be due to the fact that phonemic skill develops much later than that of rhyming and syllabic skill and the script specific feature of language also plays an important role. Also, Kannada is a syllabic script and readers of Kannada perceive the syllable of a word and not that of phoneme. Gradual improvement seen in post training session reveals that phonemic skill can be improved through training.

The analysis of results of training program suggests that the Remedial Manual in Kannada (ReM-Kan) is useful in enhancing metaphonological skills of children with reading disability. The result further indicated that rhyming skills need no training for V graders and that phoneme skills need to be trained even beyond V grade. Among the syllable tasks, oddity

skill needs more training than deletion skill. In order to sensitize children to the sound part of word than the meaning there is a need to include non-words in the training program. The results support the objective of the study which aimed at development of remedial manual for metaphonological skills in Kannada.

In order to check whether the Remedial Manual in Kannada (ReM-Kan) can be used by SLPs/teachers/parents equally well the performance of children on metaphonological skills trained by school teachers, parents and speech language pathologist were compared. To find out if there is a significant difference between speech language pathologist vs teachers and speech language pathologist vs parents in training children with R.D on metaphonological skills 't' test was employed.

Table 5 provides information regarding the mean score obtained by all the children in pre and post training session trained by two school teachers for two children, two parents for two children and an SLP for two children. It also provides information on significant difference seen in performance of children on metaphonological skills trained by teachers/parents/SLP.

Table 5: Mean score and 't' scores of children trained by teachers/parents/an SLP.

Sl.No	Trainers	Pre-training	post -training	Gain	't' scores	Sig (2-tailed)
1	Teachers	22	55.5	33.5	1.571 0.5	0.361 0.705
2	SLP	23	60	37		
3	Parents	23.5	58.5	35		

The 't' test result indicates that there was no significant difference seen in the performance of children on metaphonological skills trained by SLP Vs teachers and SLP Vs parents. This result answers the objective of the study which aimed to determine the efficacy of the Remedial Manual in Kannada (ReM-Kan) trained by teachers/parents/an SLP suggesting that this Remedial Manual in Kannada (ReM-Kan) is user friendly and the usage can be deprofessionalized. Performance seen in children participated in the study and the hierarchy of cue used by all the trainers (school teachers/parents/an SLP) shows similar result (with slight variation within each individual and percentage of cues used in each task) suggesting that the Remedial Manual in Kannada (ReM-Kan) is user friendly and usage can be deprofessionalized.

The study also set a hierarchy of metaphonological skills for training as follows:

- Rhyme recognition
- Syllable reversal
- Syllable deletion
- Syllable oddity (words)
- Syllable oddity (non-words)
- Phoneme deletion
- Phoneme oddity (non-words)

It also provides information on use of various cues in a hierarchy to facilitate learning.

- Oral presentation of the stimulus word
- Oral presentation with additional cueing method (finger counting & table tapping)
- Pictorial presentation of stimulus word
- Pictorial and Graphemic mode of presentation of stimulus word.

The present study indicates that the remedial manual developed can be effectively used for training children with reading disability (children who read and write Kannada) on metaphonological skills. Further it is also indicated that the Remedial Manual in Kannada

(ReM-Kan) is user friendly and hence the service for remedial education can be partially deprofessionalized.

Conclusion

- 1) Phonological awareness skill is a developmental continuum. It develops in a hierarchy from less complex activities such as Rhyming skill to more complex ones i.e. phonemic skill.
- 2) This result of the present study indicated that, in children with reading disability acquisition of rhyming skill is complete by grade V; therefore, rhyme recognition need not be the focus of training for children with reading disability. However, Syllabic skill needs to improve through training.
- 3) Phonemic skills are generally acquired by children at later age than rhyming skill and syllabic skill. This suggests that acquisition of phoneme skills also depends on the language of an individual and medium of instruction. In the present study all the children showed poor performance in phonemic skill before training and better performance after training. This result indicates that even such task can be improved through training.
- 4) There was no significant difference seen in the performance of children on metaphonological skills trained by school teachers/parents/an SLP and also in cues used by these trainers in training children on metaphonological skills. Hence, the present study indicates that this remedial manual in Kannada (ReM-Kan) is user-friendly and its usage can be deprofessionalized.

Implication

- The present study contributes to the literature on remedial material in Kannada for children with reading disability.
- This manual can be used as remedial manual (ReM-Kan) for children with reading disability learning to read and write Kannada.
- This remedial manual in Kannada (ReM-Kan) is user-friendly manual as it is deprofessionalized.

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