

Phonic skills amongst high and low academic achievers in English and Marathi

¹ Anindita A Banik, ² Aninda Duti A Banik, ³ Dr. Arun Amarhand Banik

¹ BASLP, MASLP; Ali Yavar Jung National Institute for the Hearing Handicapped, Mumbai, Maharashtra, India

³ MASLP, GDREPY, SLR (*Certified in Voice Rehabilitation post Larynectomee*), Ph.D (*ongoing*), Senior Audiologist & Specialist in Cochlear Implant at Kokilaben Dhirubhai Ambani Hospital & Medical Research Institute, Mumbai, Maharashtra, India

⁴ Ph.D, M.S. (U.K.), Msc (Speech and Hearing), M.A (Distance Education), PGDHRM, PGDDE, Research Scholar at Roehampton university, London and Charles university, Czech Republic. Reader (speech & hearing) and Head, MDD, Ali Yavar Jung National Institute for the Hearing Handicapped, Mumbai, Maharashtra, India

Abstract

Reading research in the past three decades has confirmed the complex but symbiotic relationship that exists between reading and writing and oral language, the reading and spelling errors in children with learning disabilities are preceded by errors in oral skills and histories of slow language growth. Thus a speech language pathologist has a role to play in identifying and preventing the reading difficulties before they present themselves with typical errors of letter reversals, reading and spellings. The aim of the study is to compare the phonic skills of high and low academic achievers (8-12 years) in Marathi and English and to identify if certain parameters differ significantly across the two groups. The participants comprised of 42 children. They were classified under two groups, as high academic achievers (HA) and low achievers (LA). High achievers scored 75% or more marks in their academic performance and low achievers scored 35% or below in their academic performance. Three sub-parameters which were considered under phonics include alphabetic skills, reading and decoding skills and spelling. The Scholastic Red, 2002 was used for assessing English phonic skills and the Marathi checklist was developed based on the guidelines of Scholastic Red. The participant received a correct score and was awarded one point for an item. After the measures were administered to all the participants their responses were recorded, scored and subjected to a series of statistical analysis. Significant differences were observed in the three parameters of the phonics skills in both languages, however English language scores were higher than Marathi language.

Keywords: phonics, low academic achievers, high academic achievers, alphabets, reading, decoding, spelling

Introduction

Phonics is a method for teaching reading and writing of a language by developing learners' phonemic awareness i.e. the ability to hear, identify, and manipulate phonemes in order to teach the correspondence between these sounds and the spelling patterns (Figemes) that represent them.

The goal of phonics is to enable beginning readers to decode new written words by sounding them out, or in phonics terms, blending the sound-spelling patterns. Since it focuses on the spoken and written units within words. Phonics is a sub lexical approach and, as a result, is often contrasted with whole language, a word-level-up philosophy for teaching reading. Phonics is one of the primary building blocks of reading. Without an understanding of the relationship between letters and sounds, reading cannot occur.

Role of Phonics in Reading

Phonics relies heavily on a reader's phonemic awareness. The reader must not only understand that words are made up of phonemes (small units of sound), he must also know a number of phonemes. Since a reader's primary phonemic awareness develops through speaking and listening, most children come to reading with many phonemes stored in their knowledge banks. Phonics instruction connects these phonemes with written letters so that they can transfer their knowledge of sounds to the printed word. This is why phonics instruction is an important component of early reading education. The goal of phonics instruction is to help readers quickly determine the

sounds in unfamiliar written words. When readers encounter new words in texts they use the elements of phonics to decode and understand them. There are a number of ways in which phonics can be applied to reading. Synthetic phonics builds words from the ground up. In this approach readers connect letters to their corresponding phonemes (sound units) and then to blend those together to create a word. For example, if a reader encountered the word "apple" and did not recognize it, he would sound out each segment of the word (/a/ /p/ /l/) and then blend these sounds together to say the entire word. A word is identified as a whole unit and then its letter-sound connections are parsed out. This approach is especially helpful when a reader comes to words that cannot be sounded out (such as "caught" and "light") and reinforcement of sight words.

Impact of Phonics on Reading Ability

Reading comprehension research has a long and rich history. There is much that we can say about both the nature of reading comprehension as a process and about effective reading comprehension instruction. Most of what we know has been learned since 1975. Why have we been able to make so much progress so fast? We believe that part of the reason behind this steep learning curve has been the lack of controversy about teaching comprehension. Unlike decoding, oral reading, and reading readiness, those who study reading comprehension instruction have avoided much of the acrimony characteristic of work in other aspects of reading.

Scholastic problems affects about 5-15% of the Indian school going population who have dropped out of school or at risk of being school dropouts (Sangeeta and Sakhuja, 2004; Thacker, 2007) ^[42, 48]. Reading research in the past three decades has confirmed the complex but symbiotic relationship that exists between reading and writing and oral language (Butler & Cheng, 1998) ^[7], the reading and spelling errors in children with learning disabilities are preceded by errors in oral skills and histories of slow language growth (Catts and Kamhi, 1999; Roth and Spekman, 1989) ^[9]. Thus a speech language pathologist has a role to play in identifying and preventing the reading difficulties before they present themselves with typical errors (American Speech-Language-Hearing Association, 2001; Justice and Kaderavek, 2004) ^[1] of letter reversals, reading and spellings. Learning phonic skills like the correspondences between letters and speech sounds of a language is a crucial step in reading acquisition, failure of which is thought to account for reading problems in developmental dyslexia (Frith, 1985) ^[19]. Assessment tools like Scholastic Red (2000) ^[43] assess phonics under three parameters viz alphabetic skills, reading and decoding skills and spelling skills. Although quite a bit of work has been done in English to facilitate acquisition of literacy and how the deficits in phonics affect linguistic comprehension and production there is a dearth of research in any Indian languages in this area (Karanth *et al*, 2006) ^[30]. The two languages are different and have different neural representations (Kumar *et al* 2009) ^[31]. An alphabetic system and a linear writing system such as English script represents language at the level of phonemes and has one of the most opaque orthoFigy (Goswami, 2002) ^[25]. Phonics instruction has a strong impact on the reading abilities of young children. Those receiving phonics instruction in the early grades (K-1) showed significant gains in their reading comprehension and spelling abilities and moderate growth in oral reading skills. Studies show that children in grades 2-6 also show growth in these areas, but theirs is not as considerable as that seen in primary grade students. At the upper grades, phonics instruction has a positive impact on the reading abilities of disabled, low achieving non-disabled students as well as those from low socio-economic backgrounds. These groups of children showed growth in their abilities to decode and spell new words. However, their reading comprehension skills were not affected by phonics instruction.

Need

The children are expected to exhibit varying difficulties in learning and processing the two languages. School teachers are the first professionals to encounter a poor academic achiever. They often assign academic under achievement to restlessness or as a result of poor attention of the child and parents towards academic issues. Teachers need to be sensitized towards the fact that children with deficits in metaphonological skills, especially phonics and phonological processing often emerge as poor academic achievers or reading disabled children. It may always be hypothesized that high academic achievers have better in phonics as compared to their low achieving peers. Hence the need of the study is to

highlight on such deficiencies to bring out a positive outcome among SLPs.

Aims and objectives

The aim of the study is to compare the phonic skills of high and low academic achievers (8-12 years) in Marathi and English and to identify if certain parameters differ significantly across the two groups.

Methodology

The participants comprised of 42 children (males and females), who were matched for their age, sex, language exposure and neighborhood. The participants were in the age range of 8-12 years (mean: 10.07 years SD 1.1) and attended class III to class V in an English medium school managed jointly by both the private and government bodies. The selected schools were in the middle class areas and followed similar teaching methods for both the languages. They were classified under two groups, as high academic achievers (HA) and low achievers (LA). High achievers scored 75% or more marks in their academic performance and low achievers scored 35% or below in their academic performance (Shenoy and Kapur, 1996) ^[44]. The groups were (Group 1- males: 1a- low achievers 1b- high achievers; 2- females: 2a- low achievers 2b-high achievers).The participants parents were interviewed about the linguistic environment at home, literacy activity exposure at home, their educational and occupational background during the parents day meet with their consent. The L1 was Marathi and L2 was English. WISC-R (Wechsler, 1974) ^[51], language, oromotor, articulation assessments were carried out for all children. Two experimental measures to evaluate phonic skills in English and Marathi were developed for the study. Three sub-parameters which were considered under phonics include alphabetic skills, reading and decoding skills and spelling. The three parameters asses the letter and sound correspondences which are crucial skills to understand and to use association of Figic signs and phonological sequence within words (Saez *et al*, 2006) ^[47]. The Scholastic Red, 2002 was used for assessing English phonic skills and the Marathi checklist was developed based on the guidelines of Scholastic Red. The alphabetic skills were evaluated by three tasks which required the participant to name the letters in the upper case in the first sub test followed by naming the consonant sounds and vowel sounds in the next two subtests. The participant received a correct score and was awarded one point for an item. After the measures were administered to all the participants their responses were recorded, scored and subjected to a series of statistical analysis.

Results and Discussions

The performance of HA and LA has been analyzed using three statistical tests; percentage of mean scores, standard deviation and chi-square test. The maximum possible scores on alphabetic skills in Marathi were not same as English. The mean scores of High academic Achievers is higher in all skills than Low academic Achievers in both the languages; which have been illustrated in the following tables and Figs.

Table 1: Mean score and standard deviation of high and low academic achievers in alphabets of English language

Alphabet	Males					Females				
	Mean		S.D		P value	mean		S.D		P value
	HA	LA	HA	LA		HA	LA	HA	LA	
Letter name	17.8	13.6	1.456	1.398	0.0318	17.4	15.4	1.281	1.093	0.0001
Consonants	18.1	12.2	1.034	1.492	0.0318	19.8	13.2	1.516	1.341	0.0121
Vowels	4.4	3.56	1.261	0.516	0.1257	4.8	2.3	0.526	0.985	0.1250

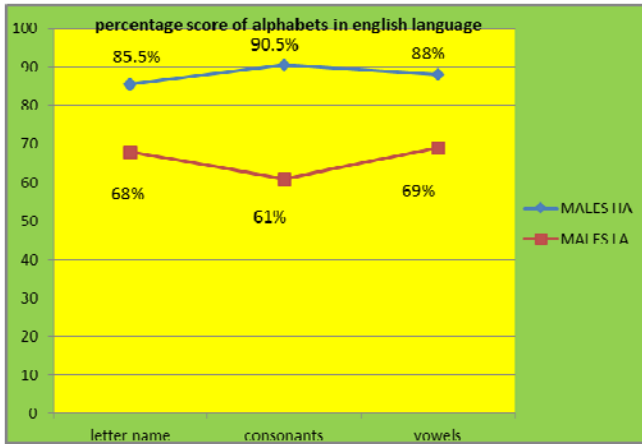


Fig 1: percentage score of alphabets in English language in males

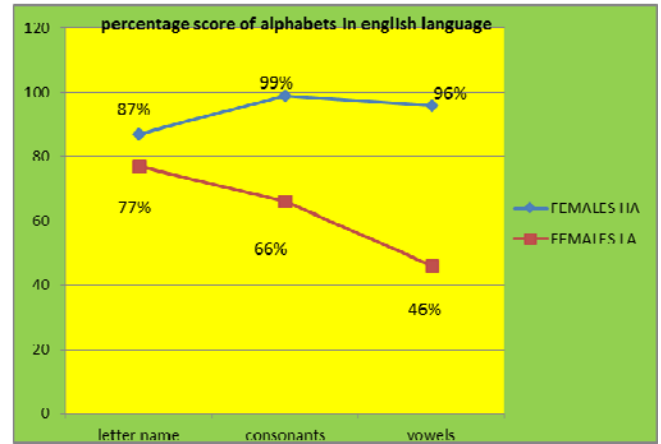


Fig 2: percentage score of alphabets in English language in females

Table 2: Mean score and standard deviation of high and low academic achievers in Reading and Decoding of English language

Reading and Decoding	males					Females				
	mean		S.D		P value	mean		S.D		P value
	HA	LA	HA	LA		HA	LA	HA	LA	
Real words	8.3	5.7	1.159	0.983	0.0016	9.9	5.3	1.518	1.234	0.0016
Pseudo words	8.9	3.4	2.233	1.634	0.0253	8.6	3.6	2.148	1.782	0.0143

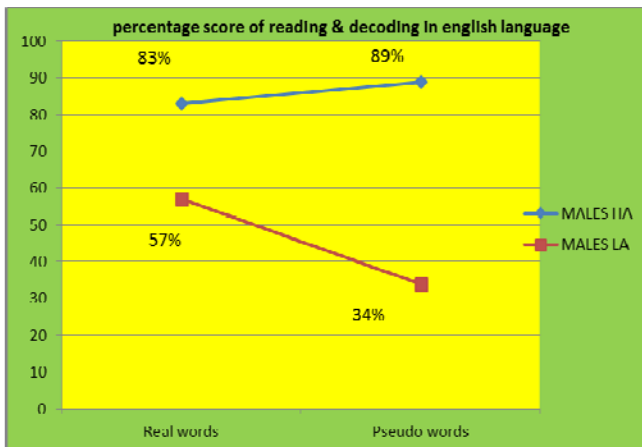


Fig 3: percentage score of reading & decoding in English language in males

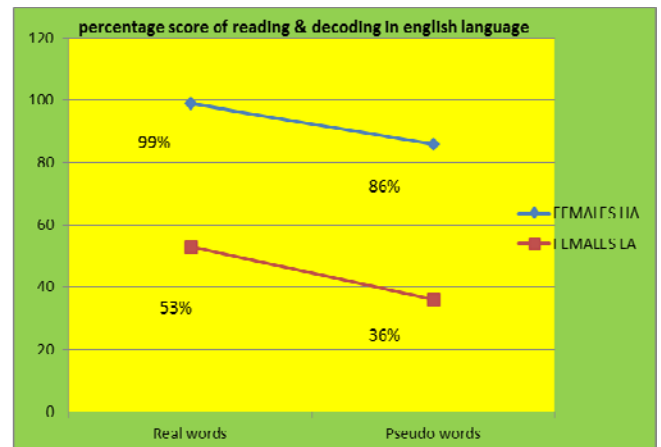


Fig 4: percentage score of reading & decoding in English language in females

Table 3: Mean score and standard deviation of high and low academic achievers in Spelling of English language

Spelling	Males					Females				
	mean		S.D		P value	mean		S.D		P value
	HA	LA	HA	LA		HA	LA	HA	LA	
First sound	4.6	2.3	0.592	0.347	0.0455	4.8	2.1	0.724	0.936	0.0455
Last sound	4.5	2.8	0.527	1.009	0.0833	4.9	2.6	0.618	1.265	0.0016
Whole word	9.8	4.5	1.628	1.267	0.0253	9.2	3.5	1.718	1.356	0.0253

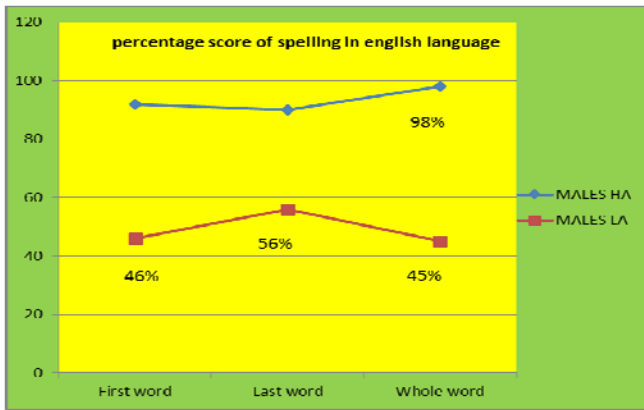


Fig 5: percentage score of spelling in English language in males

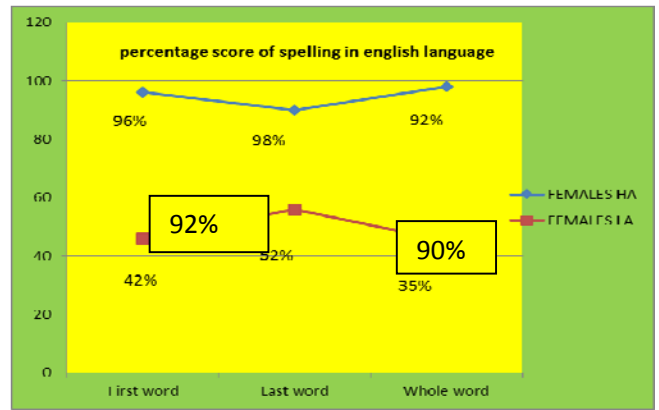


Fig 6: percentage score of spelling in English language in females

Table 4: Mean score and standard deviation of high and low academic achievers in alphabets of Marathi language

Alphabet	Males				P value	Females				
	mean		S.D			mean		S.D		
	HA	LA	HA	LA		HA	LA	HA	LA	
Letter name	14.14	12.2	1.234	1.674	0.0027	14.89	12.4	0.659	1.23	0.0016
Consonants	12.34	11.4	1.261	1.123	0.0455	11.32	12.1	1.302	1.112	0.0082
Vowels	4.45	2.7	0.899	1.099	0.0256	3.32	2.2	1.523	1.342	0.0047

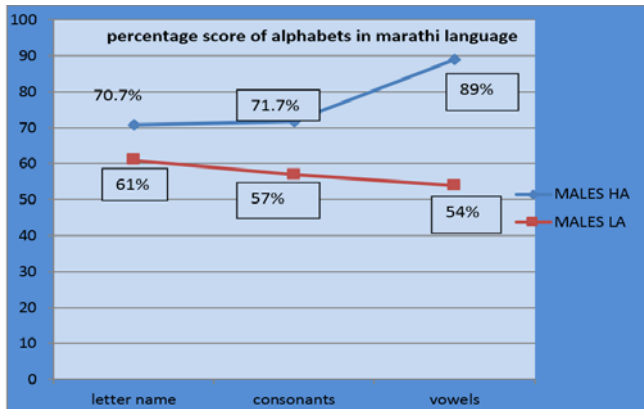


Fig 7: percentage score of alphabets in Marathi language in males

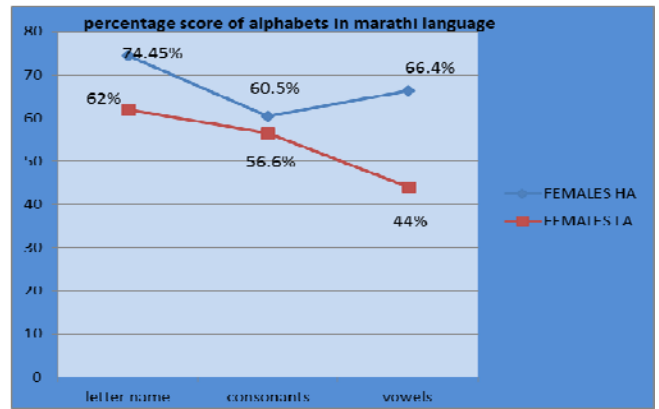


Fig 8: percentage score of alphabets in Marathi language in females

Table 5: Mean score and standard deviation of high and low academic achievers in Reading and Decoding of Marathi language

Reading and Decoding	Males				P value	Females				
	mean		S.D			mean		S.D		
	HA	LA	HA	LA		HA	LA	HA	LA	
Real words	5.46	2.1	1.329	1.112	0.0143	5.77	2.01	1.523	1.121	0.0455
Pseudo words	3.25	1.9	0.934	1.023	0.0082	3.12	2.31	1.835	0.972	0.0253

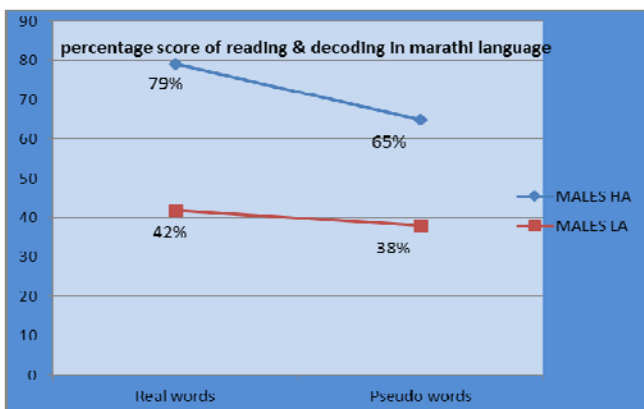


Fig 9: percentage score of reading & decoding in Marathi language in males

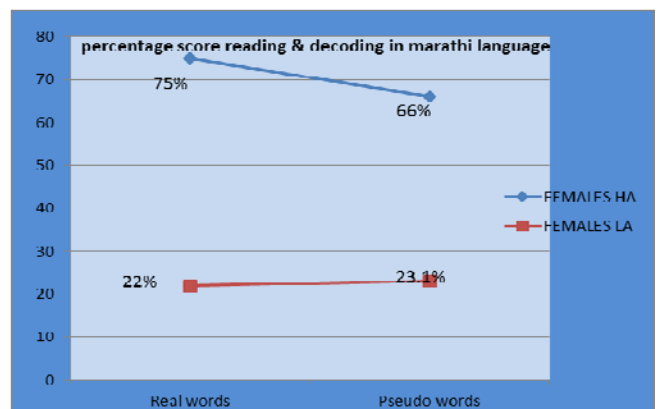


Fig 10: percentage score of reading & decoding in Marathi language in females

Table 6: Mean score and standard deviation of high and low academic achievers in Spelling of Marathi language

Spelling	Males					Females				
	mean		S.D		P value	mean		S.D		P value
	HA	LA	HA	LA		HA	LA	HA	LA	
First sound	4.1	2.3	0.634	0.834	0.0833	2.45	1.23	0.734	0.856	0.0156
Last sound	3.6	2.2	0.443	1.123	0.0421	2.11	2.87	0.634	1.123	0.0318
Whole word	8.3	4.2	1.034	0.975	0.0025	5.21	4.3	0.567	1.093	0.0812

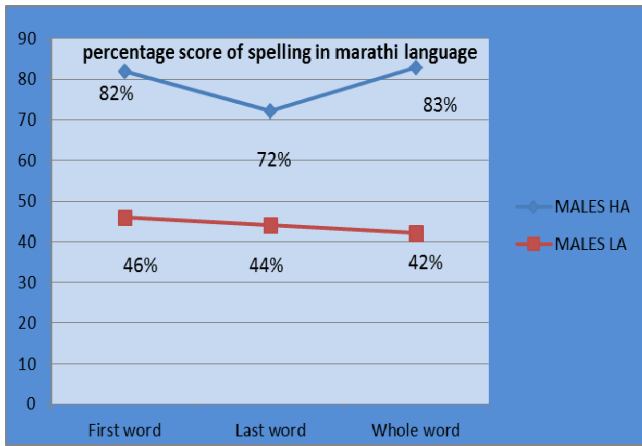


Fig 11: percentage score of spelling in Marathi language in males

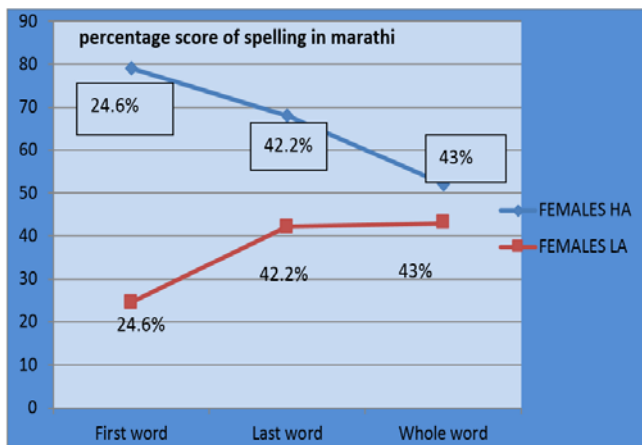


Fig 12: percentage score of spelling in Marathi language in females

The scores obtained in phonics by high and low academic achievers in Marathi and English has been compared as a whole as well as across the sub parameters. There was significant difference between the performances of high and low achievers in total scores of phonics in both the languages. Significant difference in Marathi among the low achievers and high achievers were obtained for sub parameters including letter name, consonant sounds, reading and decoding skills and spelling skills. On comparing the scores obtained by high achievers and low achievers for the language English, significant differences were found for consonant sounds, vowel sounds, reading, decoding skills and spelling skills. The performance of two languages has been analyzed which reveals that the maximum possible scores in Marathi were not same as English.

The dual route cascade model by Coltheart, Rastke, Perry, Langdon and Zeigler (2001) [11] explains reading and spelling the model specifies that the meaning of printed words can be accessed via two separate but interactive routes, phonological

route or non-lexical route and visual route or lexical route. When the child reads a word by producing one-sound-at-a-time (s) he uses the phonological route (Gillon, 2002) [23]. The phonological processing route is not necessarily the only route to word recognition. Proponents of the visual route argue that many irregularities in pronouncing English word require readers to bypass phonological route and map orthographic representations directly onto semantic representations through the lexical route (Coltheart, 1978; Karanth, 2003a) [10, 29].

The investigation of the phonics skills to high and low academic achievements revealed a number of significant findings. Poor achievers who fail to learn effectively have deficits in some key capabilities which include processing what they hear, retaining information, understanding and using language and making connections between ideas (Lacey, 2010) [32]. Lundberg & Høien, (1999) [36] identified characteristic indicator of phonological problems that play part in reading difficulties. These include; problem in segmenting words into phonemes, problem in keeping linguistic material (string of sound and letter) in short term memory, problem in repetition of non-word, slow naming of colors, numbers, letters and object in pictures, slow rate of speech, sometimes with indistinct pronunciation, problems in playing word-games where the point is to manipulate phoneme. Many researchers (Murphy, Pollatsek, & Well, 1988) [40] have suggested a deficit in the phonological coding or deficit in lexeme level in children with Specific learning disabilities (Bock & Levelt, 1994; Indefrey & Levelt, 2000; Levelt, 1999; Levelt, Roelofs, & Meyer, 1999) [5, 35, 36] which leads to difficulty in retrieving the phonological information. Ramus and Szenkovits (2008) reviewed a series of experiments aimed at understanding the nature of phonological deficits in developmental dyslexics. These experiments investigated the input and output phonological representations, foreign speech perception and production, unconscious speech processing and lexical access.

Summary and conclusion

The difference in scholastic performance between low achievers and high achievers in part may be attributed to inadequate metaphonological knowledge of the low achievers. Consequently, this issue should be carefully considered during classroom teaching. In academic syllabus, phonics tasks at the syllabic level should be provided importance and during classroom curriculum for teaching reading /spelling in Indian languages. The speech language pathologist should also build up skills in this area and provide assistance to children who are poor language learners but do not present any overt symptoms of delay or deviance of linguistic skills.

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