



LLCd Symposium.
SPEAKERS AND PRESENTATIONS.

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- Brief Bio:** Prema K.S. Rao is a Professor of Language Pathology and Head, Department of Special Education at the All India Institute of Speech and Hearing, Mysore, Karnataka, India. She has doctoral degree from the University of Mysore and postdoctoral training at the United States of America as a Senior Research Scholar on Fulbright Fellowship. She was also awarded WHO Fellowship for advanced training in community health care. She has around 27 years of experience in the field in teaching, research, clinical and community health programs. Her special interests are in the area of language acquisition, language disorders in children and adults, literacy acquisition and literacy failures, particularly in bilingual and multilingual population. She has published scientific papers in journals, chapters in books, edited manuals and books, and contributed widely for the cause of children with communication disorders. She has participated/organized regional, state, national conference and seminars and also presented invited talks, scientific papers, chaired sessions, served as moderator for panel discussions.
- Theme:** Language and literacy development in the alphasyllabaries
- Title of Presentation:** Are the precursors to literacy governed by the script structure?
- Abstract:** Development of literacy leads to cognitive changes since "writing restructures consciousness" (Ong, 1982, p. 78). This notion suggests that the writing system that a language uses influences children's acquisition of literacy. Oral language, phonological awareness and written language awareness skills are the precursors to literacy (NRP, 2000) as per the studies on acquisition of alphabetic literacy in English language by children who are native speakers of English. However, with the emergence of studies from languages that employ different types of scripts as well as studies on bilingual-biliterate children, it is observed that the precursors to literacy are likely to be governed not only by the language structure but also by the nature of script employed for written language. Influenced by this concept, the thesis of this paper is to collate research conducted by the author to examine if the precursors to literacy are governed by the script structure. The author has made an attempt to argue on the above thesis drawing evidences from three studies conducted on acquisition of phonological awareness (as a part of reading acquisition) in three South Indian languages, two studies on development of training kits to facilitate phonological awareness skills and print literacy skills for Indian children leaning to read and write English.

a) Studies on acquisition of phonological awareness

Series of cross sectional studies were conducted to develop profiles of reading acquisition in children who are native speakers Kannada (Grades III through VII, Prema, 1997), Tamil (Grades II and IV, Akhila & Prema, 2000), and Malayalam (Grades V and VII, Seetha & Prema, 2002) enrolled in respective medium of instruction. Phonological awareness skills that include rhyming and alliteration skills, syllable skills and phoneme skills through tasks that tapped identification, deletion, manipulation, oddity skills along with tasks to test sensitivity to orthographic principles were assessed as a part of profile¹ (Table 1). Distinct differences in the nature of phonological awareness skill development on syllable and phoneme tasks were observed among the three languages² under study despite the differences in the grade level and number of years of exposure to literacy. Yet, a common finding is that the development of skills related to phoneme awareness as measured through tasks employed for each of the above study was not complete even by Grade VII although the children were literate in the respective languages under study.

Table 1: Summary of participants, tests and results

Author	Prema, 1997	Akila and Prema, 2000	Seetha and Prema, 2002
Subjects	150 Children Grade III to VII 30 in each grade M=15; F=15	40 children Grade III & IV 20 in each grade M=10; F=10	40 children Grade V & VII 20 in each grade M=10; F=10
Tests Phonological awareness tasks	Rhyming skills Syllable skills Phoneme skills	Rhyming skills Syllable skills Phoneme skills	Rhyming skills Syllable skills Phoneme skills
SHWA ³ Oral and Written	2 phonemes and 4 vowels	2 phonemes and 4 vowels	2 phonemes and 4 vowels
Results Phonological awareness ⁴	Acquisition of phoneme skills not complete by grade-VII	Acquisition of phoneme skills not complete by grade-IV	Acquisition of phoneme skills not complete by grade-VII

Coltheart (1982) had stated that a syllabic script reader learns to abstract information at the level of syllable units. The subtleties among the script specific features of Kannada, Tamil and Malayalam could probably explain why children acquired literacy in their specific language in the absence of

¹ a) Tests for phonological awareness: Rhyming -Non Rhyming; Phoneme Oddity; Phoneme Deletion;

Syllable Deletion; Syllable Reversal; Syllable Oddity. b) Tests for sensitivity to orthographic Principles through

oral mode and written mode

² Script of the three languages are described as semi-syllabic in nature² (See William Bright, 1996; Gupta, 2008 for more details).

³ Test for sensitivity to orthographic principles

⁴ Development of phoneme skills only is reflected in the table.

development of the precursor, i.e., phoneme awareness skills often emphasized for alphabetic script. Alternately stated, would literacy develop without the precursor of phoneme awareness skills and are precursors to literacy governed by the script features?

b) Phonological skill training in Kannada

In a subsequent study the author employed a training paradigm with quasi-experimental design to facilitate phonological sensitivity in preschool children (PhoST-K, Prema, 2010) who are native speakers of Kannada but learners of English as Second Language (ESL). 172 children selected from two preschools of Mysore city were screened for emergent literacy skills. Twelve children (nearly 7%) who were found to be ‘at-risk’ for literacy were identified among which six children were recruited for the experimental group (who received training for phonological sensitivity skills) and six served as controls (who did not receive the training). Phonological sensitivity training program incorporating tasks for auditory discrimination of minimal paired words that differed by one or two features of place and manner of production through tasks for manipulation of syllable and phoneme units at different levels of complexities was carried out by the investigator/s. Each of the twenty sessions⁵ lasted for 30 minutes spread over five days/week for a period of one month. 80% success in the specified skills was set as the criterion limit to move ahead in the training program. Pre-training and post-training scores were compared for the experimental group. The outcome measures on phonological sensitivity, particularly the scores on phoneme related tasks remained at ‘zero’ in the post-training evaluation for ESL learners with Kannada as their native language (Table 2). The results of phonological sensitivity training study further support our premise that not all phonological skills are necessary to serve as precursors to literacy for non-English speaking children. Would mere training on certain skills not necessary in the given language facilitate its acquisition? Alternatively stated, would cognitive restructuring happen with later exposure to script to facilitate the necessary skills?

Table 2: Mean number of training sessions

Phonological awareness skills	Mean number of sessions (Max=20)	SD
Syllable blending	11.66	2.16
Syllable segmentation	7.00	2.19
Syllable oddity	14.50	3.88
Phoneme oddity	-	-
Syllable Deletion	9.66	3.98
Phoneme deletion	-	-
Manipulation	12.16	5.19

⁵ See Justice, Chow, Capellini, Flanigan & Colton, 2003 for optimum dose for training phonological skills.

c) Print awareness skill training in English

Purcell-Gates (2001) opined that written language and not oral is at the heart of early literacy. In order to examine the influence of written language awareness on oral language skills, Neha Lakshmi and Prema Rao (in press) trained preschool children who are native speakers of Kannada language but learning to read and write English (ESL) using a Digital Literacy Coach (DiLiCoach) developed for the purpose. DiLiCoach was designed as a story-telling activity emphasizing on story-retell by employing dramatic play, wordless picture stories in sequence, heightening awareness to concepts about print and recognition of simple logos. Impact of written language awareness training on oral language skills was assessed by employing Checklist for Emergent Literacy Development (CELD, Justice, 2003) and Screening Emergent Language and Literacy (SELL, Prema Rao, 2010).

The study employed three groups of children LKG-1 (experimental group), LKG-2 and UKG-1 (control groups). LKG-1 received 20 sessions of instruction from teachers with the DiLiCoach. At the end of this period, LKG-1 and LKG-2 were again evaluated on various measures of print knowledge on CELD and for oral language on Systematic Analysis of Language Transcription (SALT, Miller and Iglesias, 2006) program. Results showed that LKG-1 had made significant progress on specific parameters of oral language with the scores almost paralleling those of UKG-1. LKG-1 was six months ahead of their peers in LKG-2 on the measured parameters of oral language (Table 3). However, no improvement was seen in the performance of the control group (LKG2).

Table 3: Mean pre-training and post-training scores on specific parameters of SALT

Parameters	LKG 1 (N=8)		LKG-2 (N=8)		UKG-1 (N=8)	
	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
MLU in words*	5.43 (1.50)	6.94 (0.88)	4.65 (0.65)	5.28 (0.68)	6.24 (0.84)	--
MLU in morphemes*	6.31 (1.67)	7.83 (1.05)	5.13 (0.65)	5.89 (0.73)	7.08 (0.80)	--
No. of Main Body Words*	37.75 (8.35)	53.75 (10.60)	39.63 (7.03)	42.38 (6.05)	48.13 (9.37)	--

*Parameters that showed significant difference between the groups are reflected in the table.

The findings of this study suggest that for preschool children who are ESL's, facilitation of print knowledge would influence performance on oral language skills. While oral language skills (in English) are treated as precursors to literacy for children who are native speakers of English, it emerged as a consequence of print awareness in ESL children. The findings raise a question as to would the script features (trained via DiLiCoach) govern the precursors to literacy, i.e., oral language?

The consistency of findings in the results of the three studies that examined the development of phonological awareness skills, outcome of training on phonological sensitivity skills and the effect of written language awareness skills on oral language together, endorse the premise that the precursors to literacy (in the context of the present studies, the oral language and phonological awareness) emerge with awareness to script (written language awareness). At this point it seems apt to cite the statement by Purcell-Gates (2006, p.20) 'Language is central to literacy, but this language is written'. If this is acknowledged, one can study the ways in which written features of language influence literacy development. And that, because the development of literacy

leads to cognitive changes due to restructuring of consciousness as stated in the initial paragraphs, understanding the cognitive processes necessary for early literacy skills for the vast majority of bilingual/biliterate children of India is essential. This would greatly help to plan and offer equal opportunities for education and equal access to the information culture. These insights can then be applied to policy and practice in order to increase the prospects of literacy for Indian children who are in a system of education that follows Three Language Formula as a National Policy of Education.

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