



**LLCd Symposium.**  
**SPEAKERS AND PRESENTATIONS.**

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- Brief Bio:** Dr. Vasanta Duggirala, an audiologist and speech pathologist by training is currently working as a professor in the Department of Linguistics, Osmania University, Hyderabad. Her research areas include: clinical linguistics, literacy studies, and education of the hearing impaired children. Since 2009 she has been working on an interdisciplinary research project on multilingualism in India funded by the Department of Science and Technology, Government of India. She is one of the editors of the books: Language Development and Language Disorders: Perspectives from Indian Languages published by Bahri Publications, New Delhi (1994), Practice and Research in Literacy published by Sage, New Delhi (2002), and editor of the Special issue on Clinical Linguistics, Indian Journal of Applied Linguistics (2010). In addition to publishing articles in several national and international journals, Vasanta has been involved in translation of children's stories published by Tulika, Chennai and Anveshi research centre for women's studies, Hyderabad.
- Theme:** Literacy Development in the Alphasyllabaries
- Title of Presentation:** Phonological and orthographic factors in learning to read Telugu words: An experiment based on 4th and 6th grade children
- Abstract:** Researchers in the field of reading have long held that theoretical descriptions of reading and its development should be based on investigation of the relative contribution of orthographic and phonological structures of a given language. Phonological awareness is typically tested by having children delete phonemes / syllables from spoken words or judge whether two spoken words rhyme or do not rhyme, or generate rhyming words and so on. Orthographic knowledge is assessed using tasks such as spelling words with varying syllable structures, and generating new words by deleting specific orthographic units. Most procedures such as these are based on English language which has an alphabetic script associated with it that represents consonants and vowels separately and therefore segmental manipulation is a relatively straight forward process. However, in languages associated with alphasyllabaries (such as Telugu), there are primary and secondary graphemes for both vowels and consonants. Segmentation of words containing consonant clusters poses particular difficulty for children because often the phonological syllable does not match the orthographic syllable. For instance, in a word such as goorlu 'nails', not only there is a mismatch between phonological syllables (goor.lu) and orthographic syllables (goo.rlu), only the first segment of the cluster -rlu, viz, /r/ appears in its primary form, whereas the second segment /l/ as well as the vowel /u/ attached to it must be recovered by drawing either on one's phonological awareness or orthographic knowledge or a combination of both. In this

particular example, goorlu, knowledge that –lu is a plural morpheme can also influence performance in segmentation tasks. The sonority distance between the lateral consonants /r/ and /l/ in the cluster is negligible compared to that between the obstruent consonant /d/ and glide /y/ in a word such as padyam ‘poem’ as per the sonority hierarchy of lowest to highest sonority of segments ONLGV where O stands for obstruent consonants with least sonority and V for vowels that have the greatest sonority with sonority values of nasals (N), laterals (L) and glides (G) falling in between. If the child engages in phonological processing, then one can expect better performance in words with consonant clusters separated by greater sonority distance than those that have less sonority distance between them. Being able to isolate the vowel phoneme that is shared by the two components of each consonant cluster also demonstrates phonological awareness. Successful recovery of the second consonantal component of the cluster (represented by secondary grapheme) reflects deployment of orthographic knowledge. Literacy instruction might shift a child’s initial reliance on phonology to orthographic structures through the elementary school years. In the context of India, children receive literacy instruction in two or three different languages and scripts. There is a need to design afresh tasks that will enable us to examine how phonological awareness interacts with orthographic knowledge as some children become bilingual / biscriptal effortlessly while others experience reading difficulties.

This paper describes a methodology developed to study the interaction between phonology and orthography in processing Telugu words containing consonant clusters in 20 words and 20 non words that have differing sonority profiles. Ten 4th grade and ten 6th grade children were tested individually using a task involving segmenting individual components of clusters (ru and lu in the case of goorlu), isolating the shared vowel phoneme (-u- ) and generating another word by deleting one segment of each cluster (gooru by deleting the segment –lu). Each child provided written responses on data-sheets containing randomly ordered printed target words / non-words. Correct segmentation of the two components of the cluster was assigned one mark each, recovery of correct vowel was given one mark and generation of a meaningful new word was given one mark. Wrong response received a zero mark. Time taken to complete the entire task was noted using a stopwatch. Children from sixth grade took considerably less time to complete the entire task compared to fourth grade children. Further, sixth grade children also made less number of errors in recovering the secondary grapheme associated with the second segment of the cluster and in identifying the vowel shared by both the components of the cluster. A developmental trend seems to exist such that as children move from grade 4th to grade 6th, they become adept at deploying both phonological awareness and orthographic knowledge in segmenting words with two consonant clusters. However, the performance of both the groups of children was not influenced by differences in the sonority profiles of the target stimuli used in this study. In order to make definitive statements about the role of sonority in lexical processing, corpora based information on different syllable structures in Telugu along with their frequency of occurrence is required. Existing corpora should also be analysed for phonological and orthographic neighbours of words children encounter during the course of learning to read. This means, we may have to develop specialist corpora based on school textbooks as well as popular children’s books. Such corpora based information will not only contribute to fresh theorising about the processes involved in mapping print to sound and vice versa in relation to our languages. They will also help researchers develop resource books addressed to teachers containing systematic lists of material required for helping children with reading difficulties.