CHAPTER- II
II. PROBLEMS AND HYPOTHESIS

In the previous section issues relating to reading process and its acquisition as well as their relationships with metalinguistic awareness and verbal processing skills were discussed in detail. However, it can be seen that most of the empirical studies were carried out in the west based on different models of reading developed within the contest of acquisition of alphabetic scripts such as English. The major issues that emerge from the review of literature form the basis for the present study.

Problem

As the review of literature shows since the early 1960s, research and theorising about reading development in children have sought to look into the complexity of reading process and identification of different factors affecting reading acquisition. Several factors emerged as affecting reading performance, such as intelligence, memory, differential teaching methods, orthographic system, linguistic awareness and information integration skills. However, a detailed analysis of the literature on reading disability and dyslexia shows that three groups of factors stand out as prominent components of reading process. One group of factors is related to metalinguistic, metacommunicative, metareading and such other metacognitive processes and the two others focus on verbal processing abilities and information processing skills, respectively.
Researches thus differ in terms of the explanations of reading failure. Reading difficulties have been explained in terms of (a) poor information processing and integration skills, (b) poor verbal processing skills, (c) poor metalinguistic skill and the latter has been specified to phonological awareness in particular.

According to the information-processing view, reading is an information processing behaviour involving three kinds of information i.e. grapho-phonetic, syntactic and semantic (Goodman, 1969). Katz et al. (1983) viewed that reading failure is attributed to difficulty in processing rapidly presented successive events. Simultaneous-successive processing do differentiate between good and poor readers and dyslexics. In one of the earliest studies, Leong(1974) compared average and disabled readers matched in IQ and simultaneous-successive tests. Results revealed poor performance of the disabled readers on both the modes of information integration. Das, Kirby and Jarman (1975, 1979) explained disabled children's performance in terms of poor simultaneous successive synthesis. They also suggested that the relationship of simultaneous-successive processing with reading vary in early and later stages of reading acquisition, successive processing being important in early stages of reading and simultaneous processing in skilled reading. Similar observations were reported by Prakash(1987) in Oriya orthographic context. In another study on Oriya language by Sahoo (1994), good comprehender group differed from the poor comprehender group on both simultaneous and successive measures.
Deficiencies in a wide range of verbal processing abilities are found to be associated with reading problems (Vellutino, 1978). Rabinovitch (1959) was one of the first researchers to find the difficulties of poor readers in expressive language, word-finding, verbal concept formation and symbolic learning. Poor readers were found to be performing consistently below the average readers on "verbal intelligence" measures but were comparable on "nonverbal intelligence" measures. Several other studies also showed that children having verbal skill deficiencies at pre first grade level were later found to have reading problem (Hirsch, Jansky & Langford, 1966; Jansky, 1973 & Satz et al, 1974). Sahoo (1986) investigated the role of verbal processing skill in poor and good Oriya readers. The reading difficulty was found to be linked to inadequate verbal processing skill, thus supporting the verbal deficit hypothesis. However, several other researches explain reading failure in terms of poor metalinguistic skill. Studies done on reading disability reveal poor performance of retarded readers in ambiguity judgement, phonemic analysis, synonymy judgement, detection of message inconsistency etc. Achieving readers were able to make more effective use of a word's semantic features, could better attend to the visual and phonological features of pseudowords (cited in Soto & Soto, 1983). More empirical studies are necessary with regard to the explanation of reading failure in the context of different orthographic systems as in case of Oriya.

Among the various factors accounting for reading difficulty, poor metalinguistic skill has been taken to be a dominant one. However, metalinguistic skill is not a unitary skill. It involves
subskills at various levels such as phonological, morphological, syntactic, pragmatic, etc (Tunmer & Bowey, 1984). The literature seems to favour phonological awareness as a major factor in reading of English language. English is an alphabetic script in which the grapheme-phoneme correspondence is not direct. It requires the reader to focus attention both on the sound and the context. In contrast, most of the Indian scripts present a combination of alphabetic and syllabic principles. There exist a perfect grapheme-phoneme correspondence between syllabic representation and pronunciation. This minimizes irregular spellings. Because of the nature of orthography, Oriya learners are less likely to be dependent on phonological skills as has been found by Prakash, Rekha, Nigam and Karanth (1993). Wimmer et al., (1990) reported similar observations on German-speaking first graders. It was further suggested that in a transparent orthography the use of phonic would be more effective with 7 year olds than with 4 to 5 year olds. Thus, researches differed in their opinion with regard to the relationship between phonemic awareness and reading. Some view phonemic awareness as a prerequisite to learning (Mattingly, 1979), whereas the interactive view held phonological sensitivity both as contributor and a consequence of learning to read (Ehri, 1979; Goldstein, 1976). In a study by Prakash et al, (1993) on Kannada literature, literate subjects were found to perform better than illiterate subjects on phoneme segmentation tasks. However, as has been indicated the importance of phonological awareness may be specific to certain writing system (such as alphabetic system).
and no others.

Further, not much is known about the processes underlying specific metalinguistic performance. Literature on Oriya orthography provide evidence for a mutual relationship between metalinguistic awareness and reading. Both the variables were found to mutually facilitate each other. All the levels of metalinguistic awareness were observed facilitating learning to read Oriya but none of the levels stood out as having any special significance (Rout, 1994). Various studies showing the relationship between metalinguistic and verbal processing skills are not unequivocal. It has not been possible to establish a clear relationship between metalinguistic ability, verbal processing skills and reading due to several problems in earlier studies as discussed in the previous chapter. Therefore, it is necessary to understand the role of various aspects of metalinguistic awareness in the process of reading acquisition of Oriya language and study its relationship with verbal processing and reading.

The literature on reading also shows that the incidence and nature of reading problems may be dependent on the orthographic system. Thus, the task of reading and the nature of reading difficulty for a Chinese reader may not be the same as for an English reader. In learning to read in a particular language, the reader has to be conscious of the principles governing the language as the rules governing the representation of language in written form vary in different writing systems. Studies show that an ideographic system, like Chinese helps the reader in understanding meaning but the larger number of logographs present
in the system provide difficulty in memorising. On the contrary, alphabetic system, such as English, because of its abstract phonemic level of representations becomes difficult for understanding but can be remembered easily (Glietman & Rozin, 1977). There are certain other contrast features in English script, such as phonetic arrangement, short and long vowel differentiation which seem to have specific influence on the reader.

Oriya language is semisyllabic in nature and is different from the traditional taxonomic categories like ideographic syllabary or alphabetic system. The details of the structure of Oriya orthography and the various constraints it puts on the learner are discussed in first chapter. It appears from the discussion that its graphemic representation is complex and therefore has a larger memory load on the Oriya learners.

Literacy models of Frith (1985); Harris and Coltheart (1986) proposed the stages of a child learning English as passing through logographic, alphabetic and orthographic phases. Wimmer and Hummer (1990) raised doubts on the naturalness of the logographic stage as it appears to be of less significance for German speaking children where a limited number of words are read logographically. Fukuzawa and Prakash (1993) in their study on an Indian language i.e. Oriya, observed the children passing through two successive stages-phonemic (syllabic) decoding (sounding out) and decoding plus comprehending. Rout (1994) traced the course of literacy acquisition in Oriya as proceeding from simple decoding stage to comprehending. Appraisal of various writing systems in
general and Oriya orthography in particular show the various constraints they put on the reader and their psychological implications. Thus, orthographic specific factors in reading need to be examined by cross-orthography data.

The studies on reading development has been mostly examined with cross-sectional samples. With such data it is difficult to establish the developmental pattern and consistency across different grades. Longitudinal studies can throw more light on the nature of reading development.

Studies on reading development often compare the performance of good and poor readers. The difference between the reading groups will increase with the years since the early reading failure will lead to a cumulative deficit in case of the poor readers compared to the good readers. Ingram, Mason and Blackburn (1970) provide evidence for developmental language problems in the histories of children severely impaired in reading. Lyle (1970) reported similar observations in which language difficulties in poor readers were correlated with measures of reversal tendencies in reading, spelling, memory for designs and with tests of verbal ability. These observations support the cumulative deficit case of the poor readers. In one study, Jorm Share, Maclean and Mathews (1984) observed that children with poor phonological recoding skill at the end of the kindergarten lagged behind the group having good phonological skill still to a greater extent over the subsequent two years. It may be due to the poor processing skill, poor metalinguistic skill and reading awareness, the poor readers fail in establishing proper reading goals. As a result they fall behind the good readers.
The present longitudinal study is designed to focus on some of the issues raised earlier in respect of reading acquisition and its relationship with different components of metalinguistic awareness and verbal processing skills in children learning to read Oriya. The objectives of the present investigation may be summarised as follows:

1. To make a longitudinal observation of the course of development in respect of reading awareness, metalinguistic awareness and verbal processing skill.

2. To find out the relationship between development of reading and metalinguistic skills as well as verbal processing skills in view of the nature of Oriya orthography.

3. To examine the nature of relationships among various measures of reading, metalinguistic and verbal processing skills.

4. To compare the performance of good and poor readers on various measures.
Hypotheses

In view of the above objectives, a longitudinal study was planned to examine the children's development of reading as well as verbal processing and metalinguistic skills over the primary grades by taking cross-sequential samples of two groups over a four-year period beginning with grades 1 and 2.

The first objective is concerned with the developmental aspect of reading skill, metalinguistic awareness and verbal processing skill. Research findings establish the fact that children do show developmental changes in reading acquisition. Different models of literacy acquisition suggest the development of reading taking place through various steps (Marsh, Friedman, Welch & Desberg, 1981; Harris & Coltheart, 1986). According to Frith's model, children follow a holistic analytic-synthetic course of development in reading. She viewed reading and writing as acquired through various sequence of steps along with new strategies adopted at different ages (Frith, 1985). Fukuzawa and Prakash (1993) also proposed a developmental sequence in Oriya learners. The reader in Oriya language passed through phonemic decoding and decoding plus comprehending stages. In a recent study Rout (1994) has also obtained similar findings. Mohanty and Rout (1989) observed reading awareness, an ability to control and coordinate develops with age and grade. It was confirmed that most of the children of Grades 1 and 2 did not know the purpose of reading. Thus, it seems as awareness of children improves with age, it results in better comprehension and reading proficiency.

Review of literature shows developmental changes in different component aspects of metalinguistic awareness. Clark (1978) in
taxonomy of metalinguistic abilities views it as a direct function of age development and not a function of social factors (Clark, 1978, P.34). The metalinguistic awareness model by Tunmer and Bowey (1984) suggests that the different levels of awareness emerge during the middle childhood of 4 to 8 years of age along with the general cognitive development. In an Indian study, Karanth (1984) observed a developmental course in syntactic awareness. Major changes in syntactic awareness were noticed during 6-9 years of age and by age 14 children were able to reach the peak in its acquisition. Prakash (1987) and Rout (1994) also observed developmental trend in different aspects of metalinguistic skill in Oriya speaking school children. Thus, developmental changes in metalinguistic abilities do occur but the extent and order of contribution of different aspects of metalinguistic skill to reading development may vary.

Verbal processing skill, another factor affecting reading acquisition is also assumed to show development with age. Stanovich (1980) suggested that most high frequency words are automatised to adult levels by the third grade, but word recognition time continues to decrease. This shows that automatic word processing ability, one measure of verbal skill, develops to a certain extent at least with age.

Thus, the first hypotheses can be stated as follows:

**Hypothesis-1**

*There will be significant effect of grade level on reading performance, metalinguistic awareness and verbal processing skills.*
The next objective of this study is to investigate the relationship of different aspects of metalinguistic awareness and reading development. It is well documented in the literature that a positive relationship exists between reading and different levels of metalinguistic awareness, but this relationship is not a simple one. Different aspects of metalinguistic awareness may be significant at different stages of reading acquisition. Awareness of the phonetic segmentation of words helps in decoding it and awareness at the lexical level helps the reader to understand that a word is a unit of language and constitutes a meaningful element of a larger unit like phrase, clause, sentence, etc. Development of word awareness helps a child to understand the arbitrariness of a word. Syntactic awareness or the explicit knowledge of the internal grammatical structure of the sentence helps in the meaning extraction. Pragmatic awareness helps the reader in evaluating sentences for their logical consistency/inconsistency by gathering relevant meaning information. Thus, it appears for decoding aspect of reading process, awareness at phonemic and lexical level play important roles whereas syntactic and pragmatic awareness help in comprehension process. Hakes (1980) has differentiated between earlier and late forms of metalinguistic performance suggesting that the change in children's metalinguistic abilities is a change in the systematicity and variety of their performance and in the extent to which they can engage in such performances deliberately" (P 107). Thus, various aspects of metalinguistic awareness can be expected to help the reader to comprehend the
meaning of the text. In view of the above considerations the second hypothesis may be stated as follows:

**Hypothesis-2**

*Different aspects of metalinguistic awareness-phonological, lexical, syntactic and pragmatic awareness will show a positive relationship with reading comprehension.*

It is observed from the literature that verbal processing skill is related to reading. Sahu and Devi (1984) observed the children with different reading abilities differed in processing information. In reading, verbal information is not only necessary for sentence comprehension but also helps in developing semantic, syntactic and phonological cue systems. Sahoo (1987) attributed reading problem to dysfunction in proper encoding and decoding of verbal materials. This is consistent with the verbal dysfunction hypothesis of Vellutino (1977). Vellutino and Scanlon (1984) reported that training in either phonemic segmentation or verbal response increased children's processing skill. It can be said as children go to higher grades training in verbal responses may increase their capacity to process verbal information. Therefore, the third hypothesis was stated as follows:

**Hypothesis-3**

*There will be significant relationships between measures of verbal processing skill and reading comprehension.*

Discussion in the literature shows that reading ability of good and poor readers vary in early and latter stages of reading acquisition. Children with verbal skill deficiencies at the pre-first grade were found later to have reading difficulties (Hirsch, Jansky & Langford, 1966; Satz et al, 1974). Vellutino (1978) differentiated normal and poor readers on verbal paired-
associate task. The poor readers did not perform as well as normal readers in processing skill. In an Indian study, Sahoo (1986) also observed poor processing skill in poor readers as compared to the good readers.

It was also observed that poor readers showed poor performance compared to normal readers in phonemic analysis, ambiguity and synonymy judgement, detection of message inconsistency (Garten & Pratt, 1989; Tunmer, Pratt & Herriman, 1984). Fry and associates (1970) compared 7 and 8 years old normal and poor readers in a story telling task about each of 20 pictures. Normal readers were found to show more flexibility and complexity in syntactic structure and productions in story telling than poor readers.

The developmental pattern of reading suggest that children who begin learning to read well continue to do so, while children who begin poorly show progressive retardation in reading and other related skills. Studies also provide evidence of the fact that the gap between the poor and good readers in reading ability present during the early stages goes on increasing as they grow older. One study (Jorm, Share, Maclean & Mathews, 1984) noticed children having phonological recoding skill at the end of kindergarten made greater progress in word recognition skills over the subsequent two years than those children who had none. The gap between the two groups tended to further widen over time. Hence, the present study sought to compare the performance of good and poor readers on different measures of metalinguistic awareness, verbal processing skill and reading. The next
hypothesis may be stated as follows:

**Hypothesis-4**

The difference between good and poor readers will show a cumulative trend in terms of their developmental performance in measures of reading comprehension, reading awareness, metalinguistic awareness and verbal processing skill.