To All Those who are disabled in Reading

A READING READINESS TEST IN KANNADA : ITS DEVELOPMENT & STANDARDIZATION

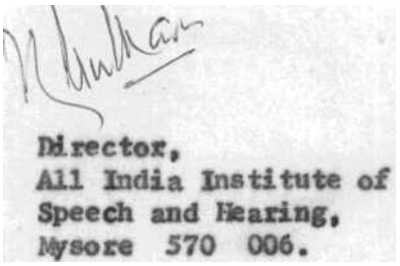
DEVAKI DEVI

A DISSERTATION SUBMITTED IN PART FULFILLMENT FOR THE DEGREE OF MASTER OF SCIENCE IN SPEECH AND HEARING

UNIVERSITY OF MYSORE

C E R T I F I C A T E:

This is to certify that the disseratation entitled " A Reading Readiness Test in Kannada: Its Development and Standard-ization ", is the bonafide work done in part fulfillment for M.Sc, in Speech and Hearing, of the student with Register Number, 8.



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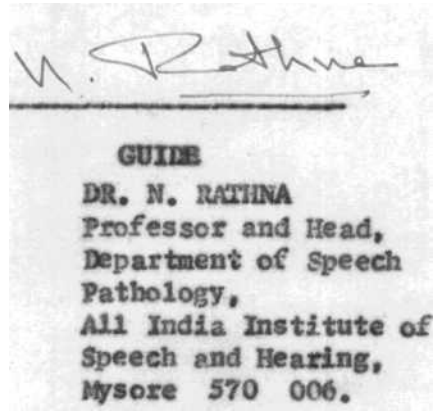

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DECLARATION:

This dissertation ia the result of My own study undertaken under the guidance of Dr. N. Kathna, Professor and Head of the Department of Speech Pathology, All India Institute of Speech and Hearing, and has not been submitted earlier at any university for any other diploma or degree.

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CHAPTER I

INTRODUCTION:

Man is A creature who devourS information. He spends much of his waking time selecting and acquiring information. One of the main purposes of any communication is to acquire information. Language, as a means of communication, according to Osgood (1963) involves decoding, association and encoding. Decoding is the ability to understand the meaning of the symbols; association is the ability to relate symbols on the basis of their meaning; encoding is the ability to express the ideas in symbols. Reading, which is obviously a language function is considered by some theorists as a process of decoding printed symbols into sound and then extracting meaning from it. But the process of reading is more than a simple, almost mechanical decoding of print to sound. It is one of the means of acquiring information. It is an act of communication in which information is transferred from a transmitter to the receiver through a set of visual symbols. If much of our reading is silent and rapid, reading moves away from the mediation of sound. It is not a passive activity and the child must make an active contribution, if he has to acquire the available information, he has to employ a number of skills in order to become proficient in reading.

" Learning to read is a complex cognitive task demanding a high level of integration and maturity of abilities and skills " (Smith, 1971). " The basic process of reading involves the recognition of symbols " (Pries, 1962; Gates, 1969; Staats and Staats, 1962). The child learns to associate sounds and letters and he learns that letters go together to form words. He must then learn to discriminate one letter from another and one word from another. The letters and words become discriminative stimuli which control his behaviour. A stimuli becomes discriminative when the response has been reinforced in its presence. When the child attends to the relevant features of a stimulus such as shapes of letters, he leams to discriminate and thereby to read. Apart from these, the brain must be able to interpret the stimulus received by the retina and associate it with a sound value, which has a meaning within the individual's experience. Even this oversimplification of the process shows that the learning involved in reading will draw on a wide variety of skills and abilities.

The process of reading is mastered by the child through several stages. Therefore, reading is charect-eristically developmental and learning to read is a continually a developing process. Reading growth is a process of development in which the skills and abilities

are gradually learned throughout the school years. Actually the child has been acquiring the necessary pre-requisite skills since birth.

The skills that are involved in reading are:

" 1. The child should learn the language he is going to read.
2. The child should learn to recognise printed words from whatever cues he can use, like their total configuration, the letters composing them.
3. The child should learn that the words are signals for spoken words and that meaning can be apprehended from these printed words.
4. The child should leam the left to right principle in reading.
3. The child should leam to recognise and discriminate the letters of the alphabet.
6. The child should leam to dissect spoken words into component sounds. " (Carebl, 1971).

The child should be able to identify and compare different shapes, should have memory for shapes, associate sounds with the shapes, associate meaning with the shapes and combine different shapes. In addition to these, speed of perception, use of analogy and memory of sequences are found to be important for learning to read.

Reading readiness is a valid concept in the process of reading and it has been a subject of concern for more than forty years. Generally, the term readiness can be considered as a t e r m applied to one's preparedness to undertake any particular learning task. Reading readiness has been defined by Thackray and Downing (1971) as the stage of development when either through maturation or through previous learning or both, the individual can read easily and profitably.

There are two groups of opinions regarding reading readiness. In the older conventional view of reading readiness, it was generally believed that these reading readiness abilities depended upon maturation which could not be speeded up by teaching. Therefore,reading readiness, it was thought, must wait for natural maturation. Furthermore, it was alto thought that the level of perceptual abilities necessary for reading readiness was not originally reached until about the age of six or seven. Some of these investigators argued that immediate, direct of teaching of reading with heavy emphasis on letters with very little attention fo readiness activities is the best approach to beginning reading.

The other view was to move away from the conventional view that readiness must wait for natural maturation. They emphasized that reading instruction should not begin directly

but should be preceeded by the pre-reading activities. Gates (1949), Stroud (1956), Bond and Tinker (1957) emphasise the fact that the time before reading commences), should be used to prepare the child by a readiness programme. This indicates the value of finding out the individual needs and differences of the children, when they enter the school and of substituting a reading readiness programme, when children are not ready to commence formal reading. It will therefore be necessary to test the pre-reading skills of all children as they begin their schooling. So reading readiness tests can be given and children's success and failures in learning to read can be predicted and they can be trained in the reading readiness activities in which they are lagging behind.

Reading readiness has received considerable attention from many experimenters. Through research, educators sought to identify the complex abilities, skills, understanding and attitudes which children need in order to ensure success in beginning reading and prevent reading problems. Thus the purpose of the reading readiness is to lay foundation upon which the later maximum success in reading can be built. According to Cutts (1965), readiness can be viewed as a pyramid to which additional blocks are continually added. The broader and more substantial the base of pyramid, the easier and more effective will be the child's growth in reading.

There are many abilities, skills, influences and interests which may develop through maturation or learning and thereby contribute in soae measure to the stage of readiness for beginning to learn to read. A careful study of research literature and a rigorous analysis of all the factors contributing to reading readiness show that the Host important ones are visual discrimination, vocabulary and concept development, and discrimination, general ability, ability to follow directions, and left to right orientation in reading(Thackray, 1971).

The present day concepts of reading readiness focussing on the factors affecting reading readiness and reasons to find out why children fail to make satisfactory progress in reading lead to the development of standardized measures of reading readiness. these tests predict the success in learning to read and thus discriminate the poor readers from the better readers. Thus the objective assessment of the children's reading readiness and their weaknesses and strengths in specific reading abilities are made possible with the use of these tests. These tests are designed to assess the ability of the children to profit from formal instruction in readings These tests not only fulfill the purpose of predicting suceess in learning to read, but they also identify the weaknesses of the children in reading. They also help to identify the children's reading problem at an earlier age.

Need for the Study:

Reading readiness is important for all the children, not only for the reading retarded, but also for the normal and for other handicapped children such as the hearing impaired, to find out in which of the skills they are lagging behind, so that they can be trained in those skills later.

One of the chief unsolved problems of the today's schools is the child who is not learning to read. Therefore, reading is considered to be the most important and the most troublesome subject in the elementary school curriculum. It is the most important because it is a tool, the mastery of which is essential to the learning of every other school subject. It is most troublesome because pupils fail in reading far more frequently than in any other elementary skills. So if, reading readiness tests are given to school going children, we can predict their success and failures in learning to read, identify their reading problems and train them in skills in which they are poor using reading readiness activities and make them successful readers.

There are no reading readiness tests in Kannada, the language spoken in Karnataka, India. No such tests in other Indian Languages have come to the notice of the investigator. Therefore, an urgent need has been felt for a reading readiness test in Kannada to be followed up by tests in other languages.

In the present study, it has been attempted to develop a reading readiness test in Kannada. The test was developed taking into account the basic skills of reading readiness such as vocabulary and concept development, visual discrimination, auditory discrimination, ability to follow directions, ability to pay attention and left to right orientation. The study was done in two parts: a) development ef the test, b) trying it out on children in Mysore. This test was tried out on a group of 100 chidren of Mysore city ranging in age from 3 to 6.6 years studying in lower kindergarten and first standard. Hypotheses framed for the second part of the study are as follows:

1. There is no significant difference between the performance of boys and girls in the current reading readiness test in all the three abilities tested.

2. There is no correlation between teacher's assessment of children's reading ability and the reading readiness scores obtained on this test.

Implications:

1. If norms are developed for this test, aany school systems can use this test as a measure of appraising pre-reading ability. This test will help the teachers to identify the weakness of children at an earlier age, thus will

help the teachers to take remedial measures at an earlier age.

2. This is a diagnostic test, which can be used to detect reading problems. It can provide etiological cues, when used in conjunction with other tests such as intelligence testa, visual acuity test, auditory acuity test, laterality tests.

3. Since reading id considered as a part of language activity, these pre-reading skills can be taught to the speech and hearing handicapped children, in order to make them successful readers through sensory training and also incidental learning to various therapeutic activities.

L i m i t a t i o n s :

1. It was decided that the present diagnostic reading readiness test need not incorporate other etiological aspects such as intelligence, visual acuity, auditory acuity as standardized tests are available in these

2. For want of time, it was decided to establish the predictive validity of this test through the use of teaCher's estimates.

3. It was decided to try out this test on a small group of children.

CHAPTER II

REVIEW OF LITERATURE:

Reading is a complex process involving the interaction and integration of ocular, perceptual, associative and motor abilities (Masland and Cratty, 1968).

In the process of reading, the individual must first regulate the larger muscles in his body to stabilize the visual apparatus, then he must scan the printed page through proper eye movement control. As he looks at the page, ocular proeesses must permit the forms on the page to be accurately transmitted to his retina and to his brain. He must differentiate the various simple and complex letter word shapes. He must then relate these letter - word symbols to the verbal symbols and to the concepts for which they stand.

If this rather complex explanation of the reading process is accepted, if is apparent that the factors that stay affect the reading process and the causes for failure to read well are numerous. For example, The child may not read well because his ocular system does not function adequately. He may not read well because he does not perceive word shapes correctly. Faulty auditory or visual discriminations and visual and auditory memory will present the child from mastering the reading process.

Reading readiness has been considered as that stage of development before which it will be difficult for a child to learn to read without unnecessary hindrances to success and after which there is no significant value in a further delay of instruction (Cutts, 1971).

Reading readiness is an individual process and it involves the ' whole ' child - his mental, physical, emotional, perceptual abilities as well as the specific skills directly related to the reading act.

The major factors involved in the reading readiness are found to be the same as those involved in the process of reading. These factors ate interelated so that a strength in one area may compensate for weakness in another, or a weakness in one area may cause another area to be weak.

A number of research studies have been carried out regarding this area of reading readiness. Research on reading readiness serves two purposes:

a) to understand better the nature of the process of learning to read, and to understand the abilities, skills which may develop through maturation or learning and thereby contribute in some measure to the stage of readiness for beginning to read.

b) to leam how to make helpful predictions.

These factors, which affect reading as well as reading reading readiness can be grouped as physiological factors, environmental factors, emotional and motivational factors and intellectual factors. This grouping of influences on reading readiness is an arbitrary one.

P h y s i o l o g i c a l F a c t o r s :

General Maturity: Research focussed on the relationship between reading and reading readiness, andthe total growth or level of maturity of the child was stimulated by the work of Olson (1940), who developed the idea that reading achievement is a function of general maturity or total growth and conversely that reading failure stems from immaturity. In support of this view, Anderson and Hughes (1953) have shown from a study of matched groups of boys and girls in the first grade, that success in reading at this early stage is a function of total development. The results suggested that children who are advanced in general maturity succeed in reading and those who are retarded physically tend to fail in reading.

However, other studies over a fairly long period, those of Gates (1924), Abernethy (1936), Deanborn and Rothney (1941) and Blommer, Knief and Stroud (19550 have investigated the relationship between mental and physical growth, and have found only a very slight relationship with low correlations between physical and mental measurements.

Stroud (1936) also concludes that anatomical and physiological growth are related neither to reading achivement nor to the mental development.

Thus the results of research into the relationship between reading and general maturity appear to provide conflicting evidence. We conclude, on the basis of studies on other factors, that there is little evidence to support the view that general maturity is an important factor in readiness to read.

Sex Differences in Reading Readiness and Rarly Readind:

Girls and boys are obviously different physiologically and so it has often been proposed that their different biological constitutions cause differences in their attachments in reading and writing. Usually it has been theorized that girls tend to mature earlier than boys physically, intellectually, and emotionally and so may be ready to read earlier than boys and to stay ahead in reading during the ensuing years.

Some studies have examined the difference in readiness to read between the boys and girls entering school, and also the difference between their respective achievements during the first year in School. Some of the investigators such as those of Samuels (1943).

Carroll (1948), Hughes (1953), Prescott (1955) show that there is significant differences between boys and girls on reading readiness measures in favour of girls. Anderson, Hughes and Dixon (1937) also demonstrated that girls learn to read earlier than boys, but the rate of development following is the same for both the sexes. Gates (1961) found that in large school samples girls obtained higher reading scores than boys, but held that the evidence suggested an environmental rather than a hereditary explanation.

In Thackay's (1963) first experiment with 182 British children, the scores of the girls were significantly superior to those of the boys on two of the five reading readiness measures, namely those of auditory discrimination and using the context and auditory cues.

Some of the large scale research reported by Dykstra and Tinney (1969) show the snperiority of American girls over the boys both in readiness and in later reading.

Some reading surveys, such as those conducted carefully by the Ministry of Education, in Britain (1948, 1952, 1936) and Morris (1966) found the superiority of the beys over girls in reading.

However, in Thackray's (1971) later experiment, a comparision between the mean scores attained by the boys and

girls on the reading readiness measures given initially showed no significant differences.

Some of the investigators like Potter (1949) and Konski (1953) found no significant differences between boys and girls on reading readiness measures.

Thus the evidence from American and Britain give contradictory conclusions concerning the differences between boys and girls with regard to reading readiness.

Most surveys and clinical studies also indicate a considerably higher incidence of reading retardation and reading disability among boys than in girls. Sex ratios reported by many investigators range from 1.3 : 1 to 15:1.

	Boys	:	Girls
Ayres (1909)	1.3	:	1
Monroe (1932)	5	:	1
Bett (1934)	2	:	1
Bennett (1938)	3	:	1
Clson (1949)	4-9	:	1
Yedinak (1949)	2	:	1
de Hirsch (1952)	3	:	1
Hughes (1953)	6-9	:	1
Miller.et al (1957	2	:	1
Kanner (1957)	5-15	:	1

Hermann (1959)	3	:	1
Bergnam (1962)	4-2	:	1
Bentzen (1963)	2	:	1
Critchley (1964)	2-5	:	1
Bisenberg (1966)	2	:	1

However, many invegtigators are of the opinion that the above findings need net necessarily be caused by the physiological or maturational differences. A variety of psychosocial variables may be of importance, including sex differences in child rearing and expectations, instructional methods, teacher and school attitudes and behaviour, Boys' and girls' attitude towards school and learning etc.,

Thus we can conclude that the differences between the reading ability of boys and girls nay not be due to physiological sex differences. It is much more likely to be the effect of the different ways in which boys and girls are brought up and educated. However, it has been found that girls are linguistically superior to boys.

Some investigators have given neuro-anotomical evidence for this linguistic superiority in girls. One such study is the study made by Witelson and Pallie (1973). They have taken the anatomical measurements of language mediating areas of superior temporal lobe (Planum temporale) for both right and left hemispheres for a group of 14 neonates and 16 adult human brain

specimens. They found that the left sided area was significantly longer in the neonates as in the adults. They suggested that this anatomical asymmetry is present before any environmental effects such as language learning and may be important in determining the left hemisphere speech specialization. They say that a possible sex difference in right - Left asymmetry of planum temporale was also observed in neonates. They found that the anatomical difference between tight and left left was marked in case of females than in males within the first few days of life. Similar sex differences in language development and in hemispheric lateralization of language have also been reported by MeCarthy (1934) and Kinura (1967).

Since it has been established that girls are language superior, since reading is considered as a language function, this might have been the reason why the girls are superior to boys in reading.

Neurological Ractors:

A very small proportion of children have chronic difficulty in learning to read in the early stages and this disability is sometimes attributed to neurological causes. This concept has been extended and it is sometimes suggested that a certain level of neurological development must be reached before any child is read to read.

The evidence for this view that then is an important neurological basis for reading readiness comes from studies of brain damaged children suffering from serious reading problems. Thia research has led to the development of concept of " Dyslexia ",' which is a Greeck term meaning disturbance in reading.

Medical research has shown that the concept of dyslexe embraces the view that the disturbance of reading is caused by some defect in the brain. Supporting this view, Hinshelwood (1917) used the term word blindness, " for what he believed was a reading disability ", by which he meant that the child tan see the letters, but he is Mind to their significance as words, caused by a localized brain defect. Witty and Kopel (1939) examined some other medical explanations of reading disability and found many of them bizarre, for example, inadequate blood and oxygen supply to certain brain centers, nervous exhaution, weakening of the excitability of the nervous tissue.

Schilder (1944) described seven eases of retarded reading, all of whom confused the letters b and d. He seems to assume that this cause proves that the neurological defect causes reversal, and that this in turn causes the reading disability. but he does not demonstrate this by his evidence.

Another study by Hallgren (1930), in which he compared 122 reading failure cases with 212 normal children, reported that all but 13 of the children in the failure children/ group had a family history of reading problems. His conclusion was that the reading disability is due to some primary specific disability which these children are inherited from their families. Many other examples of this weak type of evidence exist. Russel, Davis and Cashdan (1963) made a comprehensive review of all the evidence that had been offered, and concluded that the evidence has not yet been provided for the existence of a neurologically based dyslexia.

Thus, the evidence for the existence of a condition of neurological defect in dyslexia as a common nwbiam cause of reading disability in children is not convincing. Burt (1966) concluded that there is a little evidence that the practical educationist can learn from the neurologists somewhat speculative hypothesis concerning reading disability. He quotes a passage from Schonell with which he expresses his agreement: " Much harm has been done to remedying backwardness in reading by such cerebral theories as word blindedness ".

Thus, if dyslexia has been medically diagnosed, there may he harm in raising parent's hopes of medical cure for reading failure, and there may be harm in distracting teachers from pursuing normal methods of teaching in schools (Thackray and Downing, 1974

Even if such a neurological basis for reading is valid, the condition of dyslexia is found to be a rare condition in the classroom. Both Harris (1961) and Vernon (1962) have pointed out that cases of specific dyslexia are rare in schools. Vernon (1962) puts forward the view that there exist a number of cases who have great difficulty in learning to read, which cannot be attributable to environmental or emotional factors. These she considers may be the cases of specific dyslexia, but the suggests that the neurological hypotheses are highly speculative and that the exact nature of the disability cannot be diagnosed without further and more accurate investigations. However, the present day concept of reading disability refers to a much larger atypical group composed of boys and girls, most of whom are intellectually average or superior, are neither visually abnormal, nor deaf, who fail to learn to read or whole reading is so inadequate that learning through reading is impossible. However at the present time the controversy continues as to the reality of such a neurological condition as specific dyslexia.

This discussion is necessary because the evidence for a neurological state of readiness for reading is derived from such abnormal circumstances. However cases of neurological unreadiness seem likely to be very rare.

Cerebral Dominance, Latertlity and Reversals:

Related to the neurological issues is the controversial issue of laterality and connected theoriea of cerebral dominance. Another kind of neurologica condition of readiness for reading which has often been proposed is that children should have developed the neurological organization which is the basis for consistent preference for using the right hand and right eye.

Lateral dominance refers to the preference or supericrity of one side of the body over the other (hand, eye, foot) in performing the motor tasks. Right lateral dominance would indicate preference for right hand, eye and foot. we are all aware that some people are right handed, some are left handed and some are ambidextrous. Sometimes an individual may be dominanat on one side for handedness and dominant on the other side for eyedness. This state of mixed dominance is termed crossed laterality.

Theories incorporating cerebral dominance have been used to explain reading disability, the one most quoted in the literature being that of Orton (1929), a neurologist. He postulated that reversals in reading found frequently ta cases of reading disability and in children just beginning to read, resulted from uncertainity of orientation, sometimes called directional confusion, which in turn was

due to the lack of clearly established dominance in one hemisphere of the brain. Orton assumed that the ability to perceive and recognise visual stimuli is a funtion of identical areas in both hemispheres of the brain, but the ability to recognise a word requires the operation of these areas in one hemisphere only. He postulated that the right sided person develops memory traces for printed words in a part of the left hemisphere, but also in the right hemisphere, the less active centers and these are mirror images of those on the dominant side. When the clearly right or clearly left sided person reads, only the memory traces on the dominant side are aroused, difficulty in reading occurs when unilateral dominance is not clearly established. In such cases, according to Orton, the child will have great difficulty in learning to read and speak and reversals will be prevalent.

In one of the recent studies by wechsler (1976), he reports a case of an 83 year old illiterate right handed woman who developed a persistent nonfluent aphasia, following a right cerebral infarction. He suggested that the neural mehanisms involved in learning to read and write may be necessary for the complete establishment and maintenance of language dominance. He also said that in the case imported by him, the patient's failure to acquire reading and writing skills altered the normal evolution of language latezalization

and resulted in the right hemisphere assuming the dominant role. This suggests that the literacy may have an important role in enhancing lateralization. However, as it is a tingle case study, no definite conclusions can be drawn.

Another theory of laterality in relation to reading is that of Dearborn (1933). He proposed that the easiest and most natural bobdily movements are away from the centre of the body and so right handed persons make movements from left to right more easily than those from right to left, similarly it is easier for a right eyed person to look from left to right than in opposite direction. Since in most of the languages reading and writing is from left to fight, Dearborn feels that children with left handed and left eyed dominance and particularly children with mined dominance may experience difficulty in following from left to right.

A comprehensive examination of the research literature does not fully support the thesis that there is a close relationship between eye-hand preference or mixed dominance and reading ability. Teegenden (1933), Monroe (1932), Davidson (1934), Hildreth (1934), Prank (1935), witty and Sbpei (1939), Gates (1949), Kennedy (1954) and Furners (1956) indicated that handedness ia not significantly related to reading ability, but that mixed hand - eye deminance is slightly related. However, Castner (1939)

has produced data which suggest a relationship between hand preference and reading, reporting 67 percent of his poor readers as left handed. Hildreth (1930) reviewed all the evidence and concluded that there is no evidence between handedness and speech or reading defects. Harris (1961), argues that there is a connection, and believes that the Conflict of evidence is due to the use of insensitive tests of laterality in some of the investigationa. Ooleman and Deutsch (1964) found no difference in lateral dominance in 110 poor and good readers under the age of ten years. Stephena et.al (1967), made a study of reading readiness and eye - hand preference patterns in first grade children. Among 89 children, comparisiona yielded no significant differences in levels of reading readiness.

Clark (1967) reports that the incidence of left handedness in handwriting ia increasing due to greater tolerance on the part of teachers and parents.

However some researches of Woody and Philipa (1934), Myckoff, Leverett and Dearborn (1943) and witterbom (1946) report that there is no positive connection between mixed dominance and reading disability. Recently Stephens et,al (1967) found no relationship between cross dominance and reading. Forneu (1968) found that cross dominance was not more frequent among poor readers who evidence signs of neurological impairment than in a group of poot readers who didnot evidence neurological impairments.

Belmont and Birch (1964) suggest that it is a form of right - left confusion which characterizes the poor reader rather than true mixed dominance or a disorder of handedness.

Reversals:

Young children sometimes reverse latters and numbers, a tendency which usually disappears by the age of seven (Hildreth, 1932; Davidson, Wilson & Kerning, 1938; Hagin and Silver, 1960). This tendency is greatly exaggerated in some instances of reading disability.

Orton and others (1928) have suggested that hand and eye preferences as well as cross dominance may be related to reversal problems, and that reversal problems are associated with poor reading. Teegonden (1932) presented evidence that reversal problems were correlated (r = 0.54) with scores predictive of reading failures and the achievement at the end of the first school year. Monroe (1932), Tinker (1934), Harris (1961) all fouad more reversal tendencies in retarded readers than in normal readers. This seem to have led to the belief that these reversals are indications of immaturity of perceptual development, that is, the Child is not ready to learn to read because his perceptual development has not progressed far enough for him to be able to distinguish between alternative directions of such recversible symbols.

Lynn (1963) cites an experiment by Newson (1955) which demonstrated that four and a four and a half year olds could discriminate mirror images of better after 30 minutes training than five year olds who received no special training, from which Newson concluded that the existence of this disability at five must be taken as being due entirely to lack of experience in the parctice of this concept.

y

Thackray (1971) says that the tendency to confuse b and d, a and u is more likely to be due to lack of good perceptual development. The child when he learns to read must learn that in reading and writing the direction does matter. He says the child's experiences prior to coming to school will have taught him to ignore such mirror image.

However in the beginning stage of learning the tendency to reverse letters and words is quite normal and Cannot be regarded as any indication of lack of readiness to learn to read or write. In the later stages, these reversals can be considered as symptoms of reading failure than its cause.

Visual Abilities :

Vision is the path through which the printed words go to the brain for interpretation. If a child's visual acuity is impaired, the image he sees will be blurred snd will prehaps

be difficult to be remembered or to be distinguished from other images. Poor visual acuity will prevent a child from developing the necessary visual discrimination skills; thus he will be unable to detect likenesses and differences in similar objects, shapes, letters and words. A high degree of visual control is also necessary for reading. A reader must be able to follow from left to right across a line of print, fusing the images of words seen by both eyes into one.

Some of the earlier studies in the field of red ading investigated the relation between visual defects and reading performances as it was supposed that the cause of poor reading could be traced to some kind of visual defect. However, although a large number of studies have been carried out in this field, both by oculists and psychologists The results reported have varied widely and an exact atatement of the degree to which poor reading is caused by poor vision still cannot be made.

Eames (1938), Park and Burri (1943), and Robinson (1946) have found evidence of a relationship between certain types of visual defects and reading failure. They placed more emphasis on such visual difficulties as poor near point acuity and poor eye muscle balance with accompanying deficiency in fusion and depth perception. However,

Witty and Kopel (1936), Swanson and Tiffen (1936), Dalton (1943) , Monroe (1944),Edson, Bond and Cook (1933) found little or no relationship between visual defects and reading ability.

Turning to the aore direct concern with the readiness of the eye for the reading task, all investigators feel that it is important to make an early check on children's vision and to keep a close watch on their progress on the early stages of reading (Thackray, 1971).

On the question of the typical age at whieh the child's eyes are developed sufficiently for reading, there is a conflict of opinion . Jacques, an optometrist, (reported by Witty and Kopel, 1936) is reported to have declared that the eyes ate not attured enough before the age of eight. But Shaw (1964), an Optholmologist, believes that the eyes are sufficiently well developed to handle the task of reading by the age of twelve months. But it is an agreed fact that children are farsighted and as the eyeball lengthens it becomes adapted for near vision. Jacques's view is that it is not certain that this adaptation has progressed far enough before the age of eight years, whereas Shaw believes that it is adapted enough for effective reading by the end of the first year of lift. The fear that to early a start in reading may injure the eyes has been expressed by many investigators (Thackray, 1971).

The evidence of all these problems of the readiness of the eyes for reading tasks remains inconclusive. But as Holmes (1968) concludes in his review of research from the point of view of the practical question of judging when a child's eyes are ready for the task of reading, it would seen that the eyes of a normal child are ready for this task at the usual age of beginning school, but the teacher should watch carefully for signs of visual difficulties.

Visual Discrimination:

Resesrch has clearly shown that a vital skill required for reading successfully is that of making accurate visual discriminations when comparing different letters, Shapes, words, etc., This ability is needed in the initial stages of learning to read to build up a sight vocabulary and later to develop quick recognition of words for more fluent reading. Hence one would anticipate the ability of visual discrimination to be closely related to the reading readiness and to reading progress.

Katrina de Hirsch(1969) considers readings as primarily, a perceptual process rather than a linguistic cognitive process. Therefore, visual and auditory perceptual abilities are of great importance in the process of learning to read.

One of the earlier experiments deaigned to designate the relationship between reading success and visual discrimination was that of Sister Nary Nila (1929). She tested three hundred first grade entrants, during first few weeks in schod, by administering four individual and four group tests of various reading skills. At the end of the year, the same Children were given reading achievements tests and correlations were made. She found that, of all the tests, the four factors that had the greateat relationship to reading achievement were in the order of importance, auditory discrimination, visual discrimination, range of information and mental age. Similar reaults were obtained by Fendrick (1935), Gates, Bond and Russell (1939), who found the correlation co-efficient of 0.5 to 0.6 between reading success and visual discrimination when a verbal viaual perception teat was used, and obtained lower correlation when a nonverbal visual perception test was used.

Durrell, Murphy and Junkins (1941) and Harrington and Darrell (1955) have shown quite clearly that visual discrimination and auditory discrimination are more important than mental age in reading readiness and reading success. Durrell (1956) states that the minimum requirement in the visual discrimination of word elements appears to be the ability to match letters. Therefore, any good test of reading readiness should incorporate this ability for testing. As

further evidence of the importance of visual discrimination in learning to read, Nicholson (1958), Olson (1958), and Gavel (1958) have all shown in their experiments carried out in America that of allreading readiness factors those which measure the visual discrimination provide the best prediction of success in learning to read.

Mc Kim(1939) says that the following visual discrimination abilities are necessary for reading:

1. Identification of similar geometric figures.
2. Identification of geometric figures with finer discrimination.
3. Identification of common objects with slight differences.
4. Recognition of similar digits.
5. Identification of letters and words.
6. Finding a given letter in words.
7. Finding identical elements at the beginning of words.
8. Finding of elements at the end of words.
9. Reconising word families.

Thackray (1965)tested a representative sample of 182 children for reading skills such as visual and auditory discrimination and also for other important factors is reading readiness such as general intelligence, home environment and emotional and personal attitudes.

In the sample selected by her, auditory and visual discrimination correlated most highly with the reading achievement (0.53 and 0.50 respectively) general ability was found to be hot as important as visual and auditory discrimination (0.47), home environment was found to be of lesser importance (0.42), and emotional and personal attitudes relatively unimportant (0.10 - 0.36).

In Thackray's (1971) of second investigation the aim was to ascertain experimentally the difference between the reading readiness requirements necessary for satisfactory progress in reading of children learning to read. A group of 238 children were given tests of visual and auditory discrimination, mental ability and vocabulary, after first six weeks in school. Towards the end of the children's second and third years in school when the reading achievement testa were given, the following correlation coefficients were obtained.

Tests	End of the Second year	End of the Third Year
Visual Discrimination	0.48	0.58
Auditory Discrimination	0.46	0.41
General Ability	0.38	0.38
Vocabulary Development	0.38	0.44

These investigations add to the growing evidence that visual and auditory discriminations are more important ia the early stages of learning to read than general mental ability.

In the older conventional view of reading readiness it was generally believed that theae perceptual abilities depended upon maturation which could not be hurried by teaching. Further more, it was thought that the level of such perceptual abilities necessary for reading readiness was act normally reached until about the age of six or seven. ,

However Downing (1963) and Lynn (1963)have suggested that the perceptual abilities required by children for successful reading have been overestimated and that the previous studies supporting the theory of maturation used drawing or copying letters or figures as an index of perceptual ability, which children do not acquire till six to seven years. So they recommend the use of naming of pointing as an index to perceptual ability, so that perceptual differentiation at a considerable lower mental ages will be possible. This view is supported by evidence from the studies of Dolbear (1912), Terman (1918), Diack (1960). and Fowler (1962) which show that children with mental ages of less than five can perceive enough detail in words to help them to recognise them. Thackray (1963, 1971)shotted in his investigation that British children, soon after entering school at the age of 5, would tackle

simple tests of visual and auditory discrimination very confidently and score very satisfactorily.

The maturational approach of Bender (1954), Hymes (1958) and Olson (1959) posits that parents and teachers cannot accelerate the children's development of readiness, On the other hand, Peterson (1937), Scott (1947), Sister Nila (1933) and Bradley (19550, have shown that teaching programmes designed to help children get ready for reading have developed readiness, and Teegonden (1932), Hildreth (1950), Durrell and Murphy (1933), Lineham (1938), de Hirsh (1969). Bond and Wagner (1966) and Ruth Reeves (1966), have own that specific training in visual and auditry discrimination brings about improvement in these abilities.

The weight of evidence, therefore seems to favour the view that the perceptual abilities of children should not be underestimated and more consideration must be given to the extent to which we can develop these various abilities through training.

The ability to distinguish between visual symbols is essential for effectiveness in reading. Letter identification is considered as basic to the reading process. The child engages in no other activity that requires as high a. degree of visual discrimination as does reading.

Direct training should be given in seeing likenesses and differences in pictorial and geometirc patterns and letter and word configuration. The pictorial and geometric configurations may range all the way from those in which the likenesses and differences are very apparent to those in which they are somewhat subtle. The series of letter and word configurations should also range in difficuty from those in which the likenesses and differences are very apparent to those in which they are far more subtle. Many visual discrimination tests may also be developed by calling attention to linekesses and differences in word and letter configurations, based upon the distinctive features of the letters of the particular mlanguage uaed. One of such studies is by Briggs and Hocevar (1973) who devised a distinctive feature analysis for printed capital letters of English by using four major features; Curvature, Horizzotal linearity, Vertical linearity and Diagnolity. The analysis was adapted to discriminate all English capitals and to provide an index of similiarity. Each letter was then compared with every other letter on the simalarity index and a confusability index was developed for each letter pair. It was found that Letter pairs with more features in common have a high confusability index.

Thorson (1976) presented a table of numerical values for shared distinctive features of the 26 upper case alphabet

letters. Letters were paired according to their degree of visual confusability. Visually confusable letters were those with 3 or more distinctive features in common. The resulting table was compared with reaction times betwean visually confusable sets of letter pairs and visually non-confusable sets. There was a significant difference in mean reaction times for the two sets of letter pairs.

Two experiments conducted by Santa (1975) were to determine the units of word perception children use in recognising isolated words. In the first experiment kindergarten children practiced discriminating visually whole words, single letters or geometric shipes, before learning to read three words. The children having whole word discrimination read the words more accurately than those having the two other conditions. The second experiment focussed on children's use of spelling patterns to recognize isolated words. The experiment involved & same/different reaction-time design in which children decided whether a word semantically matched a picture. The words were typed with spaces that either preserved possible spelling patterns (bl a st) or were inconsistent with proposed units (blast). The time of reaction to the preserved spelling-pattern conditions was approximately 300 msec faster than to the inconsistent spelling pattern. The results of both experiments indicate that children use units larger than single letter

in identifying words in isolation. In addition, it appears that instruction aimed at developing children's ability to visually discriminate whole words ahould be done with actual words rather than with geometric shapes on individual letters.

In the present investigation, a visual discrimination test was be constructed based upon the distinctive features of the Kannada alphabet. A series of geometric configurations were constructed, which ranged in difficulty from those in which the likenesses and differences are apparent to those in which they are more subtle.

Thus the visual difficulties of one sort or the other are often the root of failure to learn to read. It can't be said that the children with visual difficulties will inevitably become poor readers or that the children with normal vision will definitely become good readers. However the children with visual difficulties are more likely to get into difficulty with learning to read. Therefore, the teachers should be alert to detect the signs of visual trouble.

Left to Right Orientation:

It has been agreed that our language should be read from left to right. Therefore the child must learn to move his eyes as smoothly as possible along the line and avoid backward, that is, tight to left movements. In fact, this

movement will not be entirely smooth for it is only when the eye becomes stationary that a clear sensations are received by the receptors within the retina. This period of stopping is termed as fixation and fewer of these made in any one time of the print, the greater will be the fluency of the reader.

According to Moyle (1968), very young children appear to be able to recognize pictures equally well when they0 are rotated and inverted. But Newson (1933) discovered that children of five years of age are frequently unable to distinguish a shape and its mirror image. When a child begins to learn to read, he must gain proficiency in this skill or he will be at a great disadvantage.

Therefore it is obvious that reading can never be fully efficient the child has mastered this process of reading from left to right for order and direction are essential to a good standard of word recognition. According to Moyle, to the young child who has not yet matured sufficiently to differentiate between inverted object and one which is the right way up, the letter ' u ' and ' a ' will appear identical. Again the child who has mastered neither skill will be helplessly confused by the group of b, d, g, p, q. Maturation of two skills, one visual and other auditory, plays a part here, for in reading it is not merely a process of distinguishing one letter shape from another, but also of being able to link a sound value with one letter which has a reversed

equivalent with a different wound not present on the printed page, but poasibly confused within the mind.

Most of the reading readiness tests and reading tests are constructed taking into consideration this ability to examine letters, pictures, words in a left to right sequence. Thackray (1971) says that this ability to left to right orientation should be taken into consideration in any reading readness test along with other important skills such as visual discrimination, auditory discrimination, etc.,

In the present study, this ability of examining of pictures, letters, words in a left to right sequence is incorporated. Because this skill is important to gain proficiency in reading.

Visual Memory:

In order to read, the child is not merely required to perceive words but also recognize them, that is, he must be able to relate the new perception to the previoua perceptual experience. This obviously involves some form of memorization of worda or letters. Many young children seem to have some difficulty in achieving this and others proceed very slowly to add new words to their vocabulary . Moyle (1968) says that the failure of memory may be due to:

1. Overemphasis on one channel of perception.
2. Insufficient repetition of the word for memorization to take place.
3. Immaturity or defect in long term memory.
4. Poor concepts of shapes and orientation.

However, only few studies about the role of visual memory with reference to reading were available to the investigator. Therefore, no definite conclusions can be drawn in this area.

Auditory Abilities :

The child's contact with language during his early years comes entirely through the sense of hearing. If for some reason the child's hearing is defective, his language growth will be delayed and his ability to discriminate betwe-on the sounds will be affected. The hearing of language and perception of speech sounds aid reading in the following way:

1. To build up a vocabulary.
2. To act as further aids to the recognition of printed words.
3. To enable the identification of constituent sounds of which our words are constructed and the use of these sounds in new words we meet.

Growth in reading attainment is largely dependent en the ability to attack a word which has not been met before in print. In order to do this the child must understand that.

1) Each word has its own sound patterns.
2) The sound pattern can be broken into a series of sounds which are arranged in a definite sequence.
3) These sounds correspond to letter shapes or combination of letter shapes.

The auditory perceptual abilities required for learning to read include:

1) The understanding that words are built up of sounds.
2) Being able to analyze words into seperate sounds.
3) Being able to synthesize separate sounds into words.

According to Burton (1956), a person with normal auditory acuity can:

a) hear speech sounds covering a considerable range of sound wave frequeneies.
b) distinguish between sounds of different frequencies and
c) can blend, or fuse sounds effectively through the use of both ears.

Impaired hearing could create difficulties in reading.

However although A hearing impairment may be a fac-to relating to poor reading in an individual ease, the resea-rches of Bond (1935) and Gares and Bond (1936), into the relationship between auditory acuity and reading performance give no clear evidence that goups of poor readers are infer-ior in auditory capacity to groups of normal readers and some studies, such as those of Witty and Kopel (1939), Kennedy (1942), and Robinson and Hall (1942), show a negative relationship.

Robinson is one of the several researchers who have found that high frequency hearing loss is consistently assoc-iated with reading failure. This condition results in poor acuity for sounds of high frequency. The effect is to make it difficult for the child suffering from this condition to discriminate the high frequency components of speech spectrum.

Witty and Kopel and Bond have pointed out that the effects of hearing handicap as progress in learning to read may depend upon the methods of teaching. For example; methods which emphasize the phonic aspect of learning to read are less likely to succeed with children who suffer from defects in hearing.

It would appear from the research on auditory acuity that given a degree of hearing is sufficient to enable the child to join the activity of ordinary classroom, the child will not

have much difficulty in leading. Auditory acuity is not closely related to the success in reading. Prom the point of view of reading readiness, the main general conclusions for educational purposes is that children should be examined for defects in their auditory abilities, when they enter the school, or before they start to read, by audiologists to ensure the minimum necessary acuity and to test for auditory discrimination which is important for reading.

Auditory Discrimination:

Research has clearly shown that for learning to read successfully the ability to make auditory distinction is of vital importance. If the child is not aware that two sounds are same or different, he cannot understand why the words are. spelled alike. Although he may develop a small sight vocabulary first, without this ability he will quickly become confused when words look alike and will be slow to respond to phonic training involving blending of sounds. Thus auditory discrimination, which is the ability to hear and distinguish the difference in similar sounds and words, is necessary for child's educational progress. Children need to be taught to listen and identify sounds which are quite different and progress to identify sounds which are very similar.

According to Mckim (1953), there appears to be a lack of agreement in experimental data as to the relationship between learning to read and auditory discrimination. This is due to the fact that in the literature under review, the term auditory discrimination is found to include such abilities as discrimination between pitches of musical tones, discrimination between the intenstity and the acuity of hearing in frequencies in the speech range. According to him such factors donot differentiate between good and poor readers. But the Assessment of similarities and differences between speech sounds is found to be important in learning to read.

Initial attempts to relate auditory discrimination to reading skill began to appear in the twenties. However, at study made before 1930 was available to the investigator. Deputy (1930), Monroe (1932), Bond (1935), Schomell (1946) and Templin (1943) have investigated these factors. A charecterstic of these earlier studies seemed to be the expectation that a highly significant and direct relation would be found between the reading shills and auditory discrimination, but this didnot materialize.

Later studies done in 1950's indicate that impaired readers lack the skills in discrimination of speech sounds. Robinson (1955) points out that this skill is linked to success in reading on two counts (1) its relation to speech and language (2) its role in phonic analysis.

Durell and Murphy (1953) state " Although there are many factors which combine to determine the child's success in learning to read, it is apparent that his auditory discrimination ability is a highly important one. " They also indicate that most children who come to reading clinics with reading ability below first grade level are unable to discriminate between speech sounds in words. Tests usually reveal that the problem of these children is not a hearing loss, but an inability to discriminate between minute differences in speech sounds.

Hildreth (1954) says that rapid noting of auditory cues results in more efficient reading. Betts (1956) stresses a substantial relation between a child's inability to name the letters and impaired reading. Barbe and others ( ) compiled the types of reading difficulties found among eighty remedial readers receiving help at a reading clinic. More than forty problems were noted and tabulated. The weakness showing the highest incidence was sound of letters not known.

Price (1973) defines poor auditory discrimination as the inability to differentiate between individual sounds . child with such a problem will be severely handicapped in learning to read. He discusses three possible interpretations for the relationship between poor auditory discrimination and

poor reading ability:

a) Normal and retarded readers have underlying differences ia perceptual capacity. A child so retarded is being described as having learning disability

b) Poor auditory discrimination is due primarily to differential stimulus familiarity than to inherent perceptual disability.

c) Poor auditory discrimination may result from an inability to attend to stimuli.

There are other studies wich suggest the importance of the ability to synthesize or fuse phonetic elements of words Hester (1942) reporting data gathered on approximately 200 children admitted to a reading laboratory states that blending of consonant sounds was particularly difficult for reading retarded children.

Recording to Relley (1971), the combination of various approaches to auditory discrimination and reading have resulted in equivocal results and uncertainity as to the nature of their relationship. Katz (1967) concluded that better auditory discrimination performance was associated with older children, and with better children at each level. This suggests that auditory discrimination ability is a function of developmental factors.

Sex differences in developmental pattern of auditory discrimination have been noticed by many investigators.

Birch and Belmont (1964) found that girls had superior auditory discrimination ability than boys, thus girls are significantly superior in reading achievement.

In a study by Dykstra & Tinney (1969) a great deal of data was collected on reading readiness as well as on reading achievements in first and second grades, by comparing 1659 boys and 1624 girls from different schools. This study yielded further support to the mass of evidence which demonstrates that girls have more advanced visual and auditory discrimination abilities at the readiness stages and are superior in reading ability .

Thackray (1965, 1971) found in his first experiment with British children that the girls were significantly superiror to the boys on auditory discrimination in wing the context and auditory clues. In his second experiment, he found no significant difference between boys and girls on auditory discrimination and other readiness measures.

Hirst (1969) in examining sex as a predictor of reading success, comnented on the amount of research data indicating that girls were superior to boys in discrimination skils and therefore in reading achievement.

Mc Nineh, Palmatier and Richmond (1972) constructed a test of several auditory perceptual abilities and analyzed it, using Kindergarten children. They constructed a screening teat of auditory perceptual skills, which consisted of four subsets of memory, auditory discrimination, auditory blending and audio-visual integration. This test was administered to three groups of subjects:

1. Twenty,five year oldd.
2. Sixty zix beginnerz in first grade.
3. Thirty three pupils completing first grade.

They found significant difference on all subjects

Relley (1971) says that the research atteapts to relate either auditory or vizual dizcrimination skills to reading achievement have resulted in equivocal results. So more recent studies have been directed towards investigating auditory - visual integration of skills, since the investigators have found that this approach will be more profitable, and focusses on interaensory systems and reading success.

Riske (1979) studied the relation between sound matching skills and reading achievement. Subjects in grades one to three could distinguish beginning, middle and ending sounds of a word and relate them to other words, suggesting that identifying specific sounds is more important to reading achievement than assessing sound similarities in minimum pairs of words. But in the early stages of learning to read,

it is important that the child should asses the sound similarities and differences in minimum paira.

Bitch and Belmont (1964) compared audio-visual integration in good and poot readers. Their results indicated that good readers achieved higher auditory viaual integration scores than poor readers. Relley (1971) investigated auditory visual integration skills as they related to sex and reading 225 students in grades one to four comprised the sample. Significant correlations were found at each grade level. The results confirm that the ability to integrate auditoty visual stimuli is significantly related to each reading achievement. The results also suggested that girls develop audio-visual integration skills earlier than boys. With girls these skills appeared to reach a asymptote by the second grade.

Benton, Voort and Senf (1972) define audio-visual integration as the ability to note the equivalence of patterned stimuli received auditorilly and visually. They that this ability develops with age and has been found to be deficient in children witit deficient reading skills.

These studies suggest that particlar focus on developing the audio-visual integration skills at the kindergarten and first grade levels is essential. Such studies of visual and auditory discrimination appear to warrant the conclusion that there is a significant relationship between discrimination

skills and reading achievement, but the extent of this relationship and its specific nature remain unclear.

There are some investigations which emphasize the role of auditory memory (ability to remember what is heard) in leading success. Norms Rogers ( ) suggests that auditory memroy must be refined so that language patterns, oral instructions and sequence of letter sounds will be retained. One study conducted by Rose (1938) over 100 remedial readers (retarded by two years or more on basis of mental age) indicated that these impaired readers were below average on auditory memory span as measured by specific subsets on Stanford Binet test. Since there are only a few studies relating auditory memory span and reading achievement no definite conclusions can be drawn regarding the degree of relationship.

There are number of studies which suggest that training the children in auditory discrimination tasks will lead to success in reading . Bond and Wagner (1966) emphasize that some training in the ability to make finer discrimination in the auditory patterns of words is needed during initial instruction in reading. The children should be given training in attending to similarities and differences in the sounds of the words, as in the case of visual discrimination, the exercises should progress from large gross differences to the more fine and detailed differences found in words of very similar sounds.

Sorothy Seymour (1969), suggests that children should be trained in activities such as listening for individual sounds. discriminating among similar ones, locating the sounds in different words. She says that such auditory clues will help in word recognition in reading.

According to Kirk and Kirk (1971), training in auditory discrimination is necessary because some children may not have developed a listening attitude, they may not recognise and identify sounds in their environment, they may have difficulty in attaching meaning to words, so they may not understand consecutive speech. They also lay that their auditory sequential memory may be impaired – that is, they may have difficulty in attending to auditory stimuli, they may have difficulty ia reporting/ repeating what they have heard and attended to, they may have difficulty in storing and retriving information. So training the children in listening and different auditory discrimination activities will help in the initial stages of learning to read.

To conclude, auditory defects of one set or the other are often the cause of failure to learn to read. Cildren with auditory capacities however donot inevitably become poor readers. Regarding reading readiness, the responsibility of the teacher is one of early detection. So the teacher should be alert to the possibility that some of the children some hearing defects. Since the ability of auditory discrimination.

has been in learing to read important in learning to read, in the early stages, this ability has been included in almost all the reading readiness tests. In the present reading readiness test, this test has been included as one of the sub-tests.

Speech and Reading:

Many theories have been described over the years as to the relationship between speech and reading. Today, many of the controversies are unsettled.

VanRiper (1954) stated that as communicAtion skills both speech and reading have much in common (1) They both begin with single letter approach to phonics, (2) they both require the acquisition of motor skills, (3) reading reversals are paralleled by speech reversals,(4) cluttering appears in speakers and oral readers, (3) scanning in reading and echo Shadowing in speech both involve the same kinds of rapid responses and often have poor comprehension, (6) Both readers and speakers suffer terrible frustrations because of their handicap, (7) both have multiple causes.

Dechant (1964) stated that both reading and speech require an association between the experience (object) and the symbol. The child must have meaning in spoken context before he can learn it and read it with naming. He further stated that listening and speaking provide the vocabulary and sentence pattern for reading, and that training in listening develops auditory

auditory discrimination, which in turn serves as basis for phonemic analysis in reading.

Betts(1946) pointed out that speech is an aid in learning to read and that speech patterns contribute to or impede the development of reading ability.

Jones (1951) stated that some of the common factors between speech and reading are:

1) both require the ability to associate meanings with symbols.
2) both presuppose a state of readiness.
3) both may be reflected by personality, emotional and / or environmental factors.

Many investigators have claimed that children who find difficulty in learing to read speaking often find difficulty in learning to read as speech impedements affect reading in several ways. According to Thackray (1971), the most common of the speech problems that affect reading are stuttering and articulation problems/ defects. He attributes it to difficulty in making phonetic analysis. Research into the relationship between speech defects and reading achievement is very limited and typical studies are those of Monroe (1932), Bond (1935), Bennett (1938), Gaines (1941), Robinson and Hall (1942) and Gates (1949).There investigations indicate a definite connection, but there is insufficient evidence to claim a causal relationship. In one of the recent studies by Oollyen (1971)

he says that the poor readers have defective articulation, lower verbal out put and are lower onpsycholinguiatic assesment, when setelling a story.

Thus although the cause is not understood, the children with speech problems have difficulties in learning to read. If the teacher detects such problems, the child should be referred to the speech pathologist as early as possible.

Language Facility:

Good language development ia essential for good reading, for a good vocabulary and the ability to use the language is basic to the process of learning to read. Since reading is a language activity, recent developments in the understanding of all aapecta of language will provide a frame work for conatructing a good model of reading. " A key factor affecting the child's state of reading readineas is the child's home background and the cultural level of the home. The effect of home background is revealed in the child's language patterns and speech, knowledge of word meaning and his understanding of basic concepts." (Thackray and Downing, 1974). It has been found that the child's language usage is the best indicator of child's mental ability. Language facility ia closely related to general ability on one hand, but on the other it is very much open to the effects of influence of environmental influences.

In other words, it can be enhanced or retarded by the atmosphere in which the child is placed. Flanders ( ) say that Vocabulary or language development will develop best in a stimulating environment. Berstein (1961) has shown that a poor social environment causes a general lowering of the child's potential in academic work. Ilg and Almes (1950) came to the conclusion that the most important factor in readiness for leading instruction is the child's language facility, for the relationship between the understanding of words and reading achievement is very high.

According to Caroll (1968 - 69), one of the basic components of reading skill is the child must know the language that he is going to learn to read. Normally, this means that the child can speak and understand the language, at least to a certain level of skill, before he starts learn to read, because the purpose of reading is to help him get messages from print that are similar to messages he can already understand if they are spoken. But language learning is a lifelong process, and there are certain aspects of language that the individual learns solely through reading, speaking and understanding the language is not an absolute prerequisite to learn to read, because there are children who learn to read before they can speak and many deaf children whe learn the langauge only through learning to read. Children, who begin to read before they know the language or who only Understand but do not speak may require a mode of instruction specially adapted them

According to de Hirsch (1969), mastery of spoken language preceeds the mastery of its graphic forms. Most normal children acquire a complex linguistic code between four and five years of life age. Difficulties with verbal processing, limited vocabulary, inability to generate linguiatic rules (Menyuk, 1969) have been linked with reading failure. Such linguistic deficits are particularly glaring in disadvantaged children. Supporting this Lawton (1968) says "..... linguiatic underachievement is a cummulative deficit, i.e.,.... a disadvantage which generates a vicious circle of difficulties increasing in magnitude as school progresses . In determining by factor analysis, the underlying abilities represented by 20 predictive tests administered to 401 kindergarten children from socially heterogenous backgrounds, Jansky (1970) found two oral language factors that contributed to reading. The more important of them involved linguistic funtioning on both the retrieval and the symbolic level (two verbal auditory tasks contributed to the factors). Such studies and the previous investigations of Deutach (1967) and many others have resulted in a rapid growth of language oriented precchool programmes differing widely in scope, depth and sophiatication,

Relley (1969) discussing the current view on reading readiness says that children need to be primarily language ready. He aays that the readiness for reading

depends upon intellectual readiness and language readiness. So readiness programme that hopefully make children language ready along with other pre-reading activities, and therefore make children ready for reading should be used by schools. In addition, it has generally been recognized that experiences that promote intellectual development are also desirable for reading growth.

Jean Piaget (1959) says four things are necessary if children are to grow intellectually – maturation, experience, verbal transmission and equalibration. Programmes designed to make children language ready for reading stress verbal transmission with some emphasis on experience.

Langer (1969) considers vocabulary and concepts as essentials in the reading thinking process. Independent reading is essential to achievement in all areas of academic curriculum. He quotes Smith and Dechant (1961) who found close relationship between vocabulary and reading comprehension. without a good grasp Of the concepts represented by vocabulary it is impossible to achieve good reading comprehension.

Bond and Wagner (1966) say that children entering the school because of the previous environmental experience should have varying degrees of deficiency ia abilities such as good vocabulary, since this ability to use the language

is a basic process of learning to read, following direction, and ability to pay attention. So they say that in order to make children educationally ready, good langauge development is essential. Krik and Kirk (1971) say, " If the children lack basic verbal skills such as lack of adequate vocabulary, it will lead to inadequate interpersonal communication. Since, reading and writing are considered as forms of communication, there will be some retardation in these skills." So they recommend training children to make them language ready.

Thus, most of the investigators emphasize that good language development is necessary for good reading. So in reading readiness programme activities to improve langauge of the children should be included, in order to make them successful readers. Thackray (1971) conducted an investigation to ascertain experimentally the differences between the reading readiness requirements necessary for satisfactory reading programme of children learning to read. He administered tests of visual and auditory discrimination, mental ability and vocabulary to the children after they have spent six weeks in school. At the end of the year reading achievement tests were given to them and the correlation between reading readiness measures and reading achievement was found out at the end of the children's second and third year in school.

	End of the second year	End of the third year
Vocabulary development	0.38	0.44
Visual discrimination	0.48	0.58
Auditory discrimination	0.46	0.41
General Ability	0.38	0.38

This investigation adds to the evidence that vocabulary development is essential for reading, bat visual and auditory discrimination are more important in the early stages of leaMing to read than vocabulary and general ability. Since this ability is found to be important in reading readiness, almost all the standardised reading readiness tests employ a vocabulary test as one of the subtests. In the present investigation a test of vaocabulary and concept development has been included as one af the subtests.

Environmental Factors:

Environmental factors have been found to bear a Relationship to reading readiness and reading progress. These aspects which have often referred to as " home background " are found to be more important because they affect the total experience the child brings to the reading situation. Schonell (1961) suggests that " home background " includes the following:

1. Economic conditions, such as, income of the family etc.,
2. Opportunity for play and for social experiences of different kinds - theae ara linked with growth of concepts and vocabulary.
3. Nature and amount of speech and language patterns of children.
4. Attitudes towards reading and writing, the amount of reading done in the home.
5. Quality ef family life in terms of interpersonal relationships, as they influence the child's security and personality growth generally.

Such aspects of the home back ground determine the quality of the experience the child brings to the reading situation, and experience is a basic prerequisite for reading. Reading has been defined as gaining of leaning from printed symbola. Meaning it attached to these symbols bated on the readers own past experience.

According to Thackray (1971), research on theae aspects of home background seems to have been chiefly of three kinds (1) studies of relationahip between socio - economic class levels and reading ptogress, (2) investigations of specific qualities af children's home and their success in beginning reading, (3) research on the cultures to which children belong and their influence an learning to read.

when rersearch workers have confined to the investigation of socio-economic class, only a alight or negligible relationship with she reading progress has been found.

In one of the earlier studies Gessell and Lord (1927) found that there was no evidence that differences in reading abilities are directly caused by the differences of socio-economic status. Anderson and Kelley (1931) in their comparisive study of 100 poor readers and 100 normal readers matched for age,sex and intelligence were unable to find any significant difference between the groups. With regard to the father's occupation,the general economic status of the home, the occurence of broken homes or the general emotional atmosphere prevelent in the home. Similar evidence was found in the studies of Ladd (1933), Bennett (1938), Meaning (1943), who found the low correlations between reading performance and socio-economic status.

Those studies which have investigated the comparitive richness of experience available to children in different home rather than their simple socio-economic status have shown the importance of the former on the development of the children' s reading ability. One important study to illustrate this point is made by Hilliard (A) Troxell (1937). They investigated the relationship between rich or meagre backgrounds of experience at home and sucess in rading by using 70 Kindergarten children and following their reading progress to the second

grade. At the beginning of the experiment they gathered all possible information concerning each child's pre-school and present environment and background. The children's I.Q.S were determined and then they were devided into two groups, one group with meagre background of home experience and the other with rich backgrounds. Reading tests were given to both the groups at the end of six months in the first grade, and again at the of four months in the second grade. It was found that the group with rich background of experience was two months ahead of the poor group at the initial testing, and sixmonths ahead at the second testing. However, no definitions of the two terms " rich background " and " Poor background "were available to the investigator.

Many other studies such as those of Hildreth (1943), Burt (1937), Witty and Kopel (1939), McClelland (1942)), Schonell (1942), Flemming (1943), McClaren (1950), Sheldan and Carrillo (1952) and Morris (1966) lend support to the findings of Hilliard and Troxell(1937). These studies found a positive relationship between childrens' experiential backgrounds at home and reading progress.

Four studies which investigated the influence of parents and home environment on child's reading readiness have been mentioned by Rupely (1977).

One of the studies conducted by Flood (1975) was planned in two parts. In the first part, a pre-reading index Similar to the ones created for kindergarten children was developed for pre-school age children. The second part, was an examination of the relationship between the pre-reading measure and four contextual variables. Twenty five selected background and pre-school type variables for thirty six pre-school children were introduced into a stepwise regression analysis. The following variables were found to be highly related to the pre-reading measures: the educational television recognition, number of materials available to the children at home, specified parental criteria for TV Programme selection and questions preparatory to a parent / child reading episode. The results of this study clearly indicated that reading success and failure may stem from causes. The results further suggest that children's home environment play a significant role in relation to their level of readiness for reading. The teachers can better accomodate students needs in beginning reading instruction by compiling as much information as possible about children's home environment as one indicator of their level of readiness for reading.

Scott (1966) investigated the efficacy of the kindergarten home learning kit as a means of ameliorating the educational deficits of disadvantaged kindergarten children.

The kit consisted of sequential units, each of which contained toys and learning materials for parents to use with their children at home. Two groups of twenty five diatdvantaged kindergarten children participated in the study, one group instructed with the kit and the other without the kit. Two forms of metropolitan reading readiness test were used as pre-tests and post-tests of reading readiness. The group ming the kits scored significantly better on the first post-test than did the control group in vocabulary, listening, matching and number concepts. It was concluded that environmental intervention in the form of educational materials and toys to be used at home might be an effective extension of the public school kindergarten curriculum.

The purpose of the study conducted by Henry (1974) was to determine whether boys read to by their fathers for the six month period immediately preceeding entrance into the first grade would score significantly higher on predictor instrument for first grade reading achievement than would boys read to by their mothers or boys in an unplanned situation for the same period. The experimental groups were read to by the assigned parent reader, two or three times a week. The dependent variables were letter naming and word recognition. The results indicated that father - read - to boys had significantly higher mean scores on the words in context of crterion measure than did the mother - read - to, the father not participating, or the control group of boys.

The research investigation conducted by Woods and others also focussed on the influence of parental participation in children's reading readiness. Random, proportional - stratified sample was selected from different schools; forty students whose parents didnot participate in the programme and forty students whose patents did participate. Twice a week, parents received instructions in working effectively with their children, making reading gazes and teaching in the kindergarten classroom one day a week. The Murphy - Durrell readniess analysis test on letter names was administered as a pre-test and post-test, the Murphy - Durrell Readiness analysis test on phonemes was also administered as a post-test. The results showed that all children who were taught, by the parents mastered the beginning skill of letter recognition regardless of their own parents attended that parent involvement programme. These studies have emphasized the need for teachers of beginning reading to stay current with reading readiness research as a means of identifying instructional practices which will improve the effectiveness of their instructions.

The conclusions from the studies reviewed are that the socio-economiec class is related to reading readiness but that this is not a direct causal relationship. He may anticipate that children from lower socio-economic class mny tend to be ready for reading some what later than those from others,

but this may be due to the fact that certain types of experiences are less likely to be available to individual children in poorer homes. Parental attitudes ate less likely to be positive towards intellectual activities such as reading. Parents are less likely to read to their children. Parents are less likely to hold elaborate conversations with them. Parental influences play a major role in reading readiness. The children need richness of experience especially in language and that costs parental time rather than money. The investment of time in talking to children sharing the contents with of book with them is probably the beat method of helping them to get ready for learning to read. So the richness of experience available to children at home has a greater influence on Children's reading ability.

Cultural factors:

The 1960's in America saw a rapid increasing interest in cultural factors in reading progress. The children who failed moat frequently in reading were termed " culturally disadvantaged ". They were termed so because the sub-culture their parents have given them in their upbringing just does not happen to be the one which is approved by the larger culture. In this social problem of culturally disadvantaged we can find the most glaring examples of the way in which the children's home background can make a child either more ready or less

ready for learning to read.

According to Bloom, Davis and Hess (1965) " the roots of the reading problem may in large part be traced to their experiences in homes which donot transmit the culture patterns necessary for the types of learning charecterstic of the schools & the larger society". According to Corbin (1965) the cultural unreadiness for school is cummlative in its effect. It was pointed out that the standard curriculum to which they are committed hastehs the decay of their egos and reduces their ability to deal with the books, ideas and langauge. Instead of growing their measured I QS decline as they advance from grade to grade. This tendency for I Q to be depressed through such exqeriences of conflict between the subculture of the home and that of schools, suggested by the results of a number of other research investigatoions such as, those conducted by Gordon (1924), Neff (1928), Asher (1935 Edwards and Jones (1938), Newman Freeman and Helzinger (1939), Lee (1951) and Kiek (1965).

Some investigations have suggested that children who are not capable of benifitting from the initial teaching alpha-bet in the first year of the school are unready for it because of the deficiency in linguistic conpetence. Because of their cultural disadvantage children may be hindered in linguistic competence as a result of which reading failures may occur

in such children. Pitman and St. John (1960) have suggested that reading problems are due to A lack of linguistic competence. But Goodman (1969) in the paycholinguistic analysis of the leading problem criticizes Pitman and St. Johns' idea and says that in every reapect the process of language development of the culturally disadvantaged child is exactly the same as that of other children. His language will be just as grammatical, within the norm of his dialect, just as much a part of him as any other child's is. If the teacher corrects the dialect based divergent language, this ia at cross purposes with the direction of growth of the child. If the teacher considers the child dialect as bad, his past experience of his own family and home are made worthless. Then he may be diagnosed as suffering from a lack of linguistic competence as Pitman and St. John see. Loban (1963) clearly recognises the need for teachers to adapt their language expectations more towards the childs' own patterns of linguistic behaviour. So he says that in the kindergarten and earliest years of school the emphasis should be upon the child's using whatever dialect of the language he already speaks as a means of thinking, exploring and imagining. Thackray (1971) says that if we extend Loban's statement to apply it specifically to readiness for reading, the children can get good foundation of experience which is essential for reading.

Mean while, there are certain and practical steps which can be taken without delay to adapt the reading task more to the Children's level of readiness in respective language. Homeamde books, charts are clearly more likely to be closure to the child's own experience. Therefore, the language experience approach to Hiding as it is termed by Allen (1961) is more likely to come closure to the young beginners need for reading related to his own background than mass/ produced nasal reading schemes.
the trading material needs to be closed to the child's own experience not only of language, but of the life the language describes.

The above mentioned environmental aspects reflect an area of real importance for reading readiness. A child's bome background or his culture and / ot sub-culture are extremely significant determinants of readiness. Readiness is only a relative concept, what the child must be ready for, is not some fixed and unchangable task of reading.

We can modify our reading demands according to individual Child's level of readiness. The teacher must give the child the kind of reading activity which be individually is ready for. In terms of home background and culture, this means providing activities which involve reading, which ere related to the child's own home background and the child's own cultural and sub-cultural experfences.

Enotional Factors:

Children of the same age vary greatly in their emotional and social Maturity. They need self confidence and self esteem which come as a result of many early success experience and adult approval. There is a wide range in the kind of personal and social adjustment which children manifest when they first begin school. Some are confident, well poised, cheerful and cooperative. Such children adjust to the school situation with a minimum of conflict. But some other are shy and timid, self-centered and un-cooperative in routine school activities, and are early upset emotionally. Between these two extremes there are many degrees of maturity in personal tad social adjustment. Inadequate emotional stability, insufficient self reliance and inability to cooperate may handicap child in his efforts to learn to read. As the school years go by, certain children will develop reading disabilities. Most of them will manifest emotional involvement and instability. Naturally teachers should be alert to detect symptoms of this. However, Gates (1949) says that one should always be cautious and not aasume that a child's instability ia permanent or constitutional until other possible sources of his symptoms are ruled out. On the other hand, the signs of personal and social maladjustment may be only surface symptoms of fundamental causes that are relatively difficult to search out. Furthermore, all children with symptoms of emotional maladjustment does not necessarily become reading cases at all.

Nearly all investigators of reading emotional factors agree that emotional disturbances and personality difficulties do appear frequently when there is difficulty in learning to read. For example, in one investigation. Gates (1936) drew up a list of different symptoms of emotional and personality maladjustment in 100 cases of children having difficulty in reading. The most usual symtoms were:extreme

1. extreme self consciousness, early hurt, blushes readily, has curious and ego-centric manners, inferior feelings.
2. inclination to submissiveness, indifferent, a-nd inattentive.
3. Withdrawl.
4. nervous tension and habitual nervous actions, such as nail biting, restlessness.

But which is the cause and which is the effect is the question usually asked. That is, whether emotional and personality disorders cause the reading disability or the vice-versa.

Some investigators have hypothesized that emotional disturbances preceed and cause difficulties in reading or that such reading difficulties are one of the most symptoms of a fundamentally inadequate persomality adjustment. Monroe (1935) lists the following possible causes of emotional disturbances that may preceed reading difficulties:

1) Overprotection from parenta, as a result of which the child will be dependent upon his parents and learning to read will be an impossible task to undertake alone.

2) Paulty training at home – the child accoustomed to unwise training methods, to inconsistent and unpredictable occurrences at home, may find At very difficult to make adjustments to systematic order of affairs at school.

3) Unfair pressure by adults – that is, a child who is urged to read before he is ready to read materials beyond his ability may develop feelings of antagonism that prevent him from making normal readins progress.

The investigations of Burt (1927), Blanchard (1928), Robinson (1946), Young and Gaier (1951), provide eveidence which indicates that difficulties in learning to read can be a result of emotional and personal diffciulties. On theother hand, Monrore(1932) maintains that personality difficulties & emotional problems are more frequently the results eather than tha causes of reading disabilities and Schonell (1961) also arrived at the same conclusion. Reports of earlier clinical studies such as those of Gates (1936), witty and Kopel (1939) indicate that the incidence of emotional problems among clinical cases of disabled readers is high. The listed personality handicaps which interfere with learning include

introversion or preoccupation with one's own thought, shyness, lack of self confidence, fear of reading task and anatagonism towards reading. Bennett (1928) comparing groups of poor readers with good readers discovered that poor readers more frequently were inclined to a solitary life, found adjustment to school life difficult and unpleasent and were subject to emotional upsets, fears, indecision and lonliness. He said that the difference between these two groups was not highly reliable. Ladd (1933) found a slight but unreliable tendency for poor readers to have a less satisfactory personality adjustment. In Gannt Study (1935) the behavior of the poor readers manifested a greater number of unfavourable signs. According to Sornson (1950) children who become retarded readers in primary grades develop feelings of insecurity and manifest a less satisfactory form of personal and social adjustment.

It becomes apparent that while the majority of the investigators who have studied the relationship between emotional and personality difficulties and reading disability agree that, they are frequently found together, they disagree as to which is the cause and which is the effect. Gates (1931) reviewed the evidence available on this issue and came to the conclusion that approximately 75 percent of the more severe cases of reading disability which were referred to clinics, showed some degree of maladjustment and that in quarter of such cases,

a maladjustment has caused the reading failure, while in thre fourths of the cases the maladjustment were the accompaniment ot the result of failure to learning to read.

There have been some studies relating parental attitudes and reading achievement. It has been generally agreed that it is of great importance that the child develops favourable attitudes towards school, his teacher, ether school children and towards reading. Satisfactory personal and social adjustments provide the background for development of favourable attitudes towards the school situation. Home conditions, parental attitudes toward children, teacher-pupil relationship, influence attitudes towards reading. Austin, Bush and Heubner (1961), in their study point out that, although parental factors have often been convincingly shown to bear some responsibilities for child's reading difficulties, almost never can these be sited as the single causal factor. Unfavourable home environment can aggravate school learning problems to a degree that prohibits maximum progress in reading. A majority of studies done on this aspect indicate that a group af factors in the child's home environment are operating, only some of which are due to parental influences, while others are traceable to other family relationships.

The children's attitude towards reading is also an important factor in learning to read. Although most children who beginning schooling are eager to learn to read, a few

children will become antagonistic towards the whole idea of reading. They may become emotionally disturbed for one reason or the other and may not develop positive attitude towards reading. These children need sympathetic understanding and guidance from the teacher, if they are to achieve proper attitudes towards reading. " In most instances unfavourable attitudes towards reading arise after rather than before the child is exposed to reading instruction." (Bond and Tinker 1967). A number of investigators including Ladd (1933) and Sandin (1944) repo-rt that a successful achievers develop positive attitudes towards reading and the school, While slow progress pupils and the cases of reading disability found unfavourable attitudes. So, on the first day in the School the child should receive sympathetic guidance and the kind of instructions which will assure success in the reading.

However, Thackray and Downing (1971) state that the incidence of severe cases of reading disability in which enotional disorders occur is quite a small fraction of the total population. Thus, the number of children a teacher is likely to meet, who are unready for reading because of emotional or personality disorders is extremely small. Dechant (1970) says that if the child is showing the signs of the reading failure and emotional disorders, the possibility is that the child is upset because of the failure and frustration, because the child will be emotionally disturbed about reading, because the child will be pressed to go too fast beyond his level of readiness.

So reassement of the child's level of readiness and the reassesment of the difficulty level of reading activity is necessary for the child. So a fresh start with easier material is necessary, so that the child's self-confidence can be restsed before the vicious circle of failure - maladjustment - more failure gets established.

Motivation in reading readiness:

Another important aspect of the child(s psychological development as it affects the reading progress is that of motivation, that is, the child's interest in school activities related to reading and his desire to learn these skills. The studies of Brunbaugh (1940), Stroud (1956) and Burton (1956), all emphasize the importance of motivation in reading success. Gates (1959) stresses the role of motivation as factor in causing and correcting difficulties in reading. He describes a study in which a number of children who have had no experience of learning to read at all, were provided with identical first lessons. Five boxes were used with one of the following words on the top of each box; ball, bolt, bulb fall, roll. It was explained to each child that a real ball was in the box whose cover bore that word and if he correctly picked out this printed word three times in succession, he would be allowed to keep the ball, upon entering the game, some succeeded at once and gained increasing skill rapidly in similar games with other wards, others could

not master this and became discouraged. As some children efforts with repeated failure, there interest began to Wane and they showed every evidence of distaste for the task. Gates (1949) feels that probably many disabilities in reading might arise in the same way, perhaps from the very first lesson. His experiment also shows that if the task is too difficult, if the problem is top complex the child will deveiop distaste for reading, with which is just the reverse of positive motivation which is needed to make him learn.

Another important research study on beginning writing and reading has been done by Vigotsky (1962). His results led him to conclude that children have little motivation to learn reading and writing in the beginning because they feel no need for it and have only a Vague idea of its usefulness. Thus, there will be a general problem of lack of intrinsic motivation to learn to read when the children first come to the school. Intrinsic motivation can only begin to develop when the child understands the purpose of reading. This view is also supported by Reid (1966) who found in her research on Scottish young beginners that for them reading is a mysterious activity, to which they come with only the waguest of expectancies. The children she studies in their first months at school displayed a general lack of any specific expectancies as to what reading was going to be like, of what the activities Consisted in, of the purpose aad the use of it.

Such motivational readiness is hardly likely to grow on its own. To be motivated, the children most understand and know the true purposes of reading and writing. They need to feel for themselves communication of ideas to others, self-expression, etc., The key to develop intrinsic motivation for reading is sharing With the children real life uses of reading and writing.

Intellectual Factors:

Since the very first experimental investigations into reading readiness, most researchers have emphasized that the level of general mental ability is an extremely important determinant of reading readiness and reading progress. According to Thackray and Dawning (1971), a close relationship between general intelligence and reading would be expected for two important reasons; (1) the ultimate goal of reading is the comprehension of the communication transmitted by the author's writing. This involves understanding and interpreting the author's ideas, (2) learning to read requires the development of new concepts of linguistic elements such as words, phoneme etc., It also requires reasoning and problem solving operations in developing the skill of decoding the written form of language back into its primary spoken form.

Learning to read is a complex mental process requiring mental associations, memory and attention span. General

intelligence implies all of these abilities; comprehension, interpretation, concept learning, problem solving and reasoniag. Therefore, one would expect intelligence to be closely related to reading readiness, especially if its application to language skills are well developed.

The usual method of studying the importance of general intelligence in learning to read is to obtain intelligence test scores of a group of children soon after entering school and then,atleast,six months later, to obtain the same children's reading achievement scores. The statistical correlation of two sets of scores is than calculated. The resulting correlation coefficient in many studies of the relationship between general intelligence and reading achievement have ragged from about 0.35 to about 0.70, average being about 0.60 which shows a high positive relationship.

The age of the children tested has been found in certain investigations, to assess the measure of aggreement. Lennon (1950) particularly emphasizes the great difference in the correlation between reading ability and intelligence which occur at various grade levels. He found continuously increasing correlations from 0.34 for the second grade to 0.85 for the eigth grade. This finding was confirmed by Manolates (&) Sheldon (1955).

Bond and Magnet (1957) also cite evidence to show that the relationship between intelligence and reading success becomes increasingly close when population are sampled at successively higher grade levels. The correlations between mental age as measured by individual Stanford - Binet test and reading comprehension at the age of the first grade is approximately 0.35, at the end of the fifth grade it is approxiaately 0.60, during the high school year it approaches 0.80. These correlations do suggest that factors in addition to mental age influence the child's success in reading. Some children who begin relatively slowly in the primary grades later increas their rate of learning and out do some of their contemporaries. Bond and Wagner, also point out, why these comparitive relationships seem reasonable. In the early stages of their reading development, children are concerned with the Mechanical aspects of reading. For example, word recognition skills lean heavily upon visual and auditory discrimination. In the higher grades the complexity of reading demand fine discrimination, logical reasoning, abstract analysis and other comprehension skills which requite a high level of mental ability. So it is not surprising that mental age and reading ability become more and more highly related as a reader progresses into more and more matured materials and reads for more matured purposes.

Strang (1943) found correlations of 0.80 to 0.84 between the language score on the California Test of Mental

Maturity and the scores on the Gates Basic Reading Test. But for non-language intelligence scores and reading test the correlations were only 0.36 to 0.56. Traxler (1932) found the corrleation of 0.69 between the language scores and the score on Iowa Silent Heading Test and a correlation of 0.36 between non-language scores and reading, Wheeler and wheeler (1949) obtained a corrleation of 0.70 between intelligent test scores where language is more used in teat and reading ability, 0.36 between quantitative scores and reading ability. Those verbal group intelligence tests usually correlate fairly high with the reading comprehension, while the non-language group with intelligence test correlate much lower. However neither a language group test nor the non-language test, seem very appropriate for getting at the relation between intelligence and reading performance with the cases of reading disability. Although non-language intelligence scores may be of considerable help in predicting the reading potentiality of retarded readers, such tests donot measure satisfactorily the intellectual abilities employed in reading. Strang (1943) appears to downgrade the use of intelligence tests as a means of predicting reading potential. She states that mental measured by tests is not an adequate guide to an individual's reading potential.

Although Thackray and Downing (1971) have indicated the importance of intelligence with respect to reading, in another

investigation Tackray (1971) obtained a lower correlation between the reading achievement and general ability. The four reading readiness measures used by him were visual discrimination, auditory discrimination, general ability and i.vocabulary. In his investigation, the earlier results on these reading readiness measures were correlated with later results of reading achievement tests and following correiation coefficients were obtained towards the end of children's second and third years in the school.

	of the second Year	End of the third
Visual discirimination	0.48	0.58
Auditory discrimination	0.46	0.41
General Ability	0.38	0.38
Vocabulary	0.38	0.44

The above coefficients of correlation show again that visual discrimination and auditory discrimination have a substantial Relationship with reacting progress which is even greater than general mental ability.

Most investigators studying the relationship between intelligence and reading at various age levels have proposed what may seem the obvious causal relationship, that is, the level of intelligence determines the level of reading ability. Earlier investigators Me Laughlin (1978), Raybold (1929) Deputy (1930), Tinker (1932) and Hayes (1933) have claimed that general mental ability is the most important single

factor in determining reading progress. Later investigators, Schonell (1932), Monroe (1932), Stroud (1936), Urge that caution be used while interpreting results. Schonell (1942) points out that the relationship between reading ability and intelligence, although high is by no means absolute. He says that there are not a few intelligent children who fail to makenormal progress in reading and numerous exaamples of rether dull pupils who read fluently.

In more recent studies both Malmquist (1969) in Sweden and Vormeland (1967) in Norway have observed a high correlation between general intelligence and reading ability. Malmquist concludes that in his research the relation was of such an order of magnitude that it definitely confirm the almost unanimous view expressed by previous investigators that intelligence is an important factor in the development of reading ability.

However, Machowsky (1973) determined the relationship of auditory discrimination on intelligences reading achieviment in first grade. The California Test of Mental Maturity The California Reading Achievement test and Buktenica Modification of Wepman's Auditory Discrimination test were administered to 78 first grade children. Correlations suggested a stranger relation between auditory discrimination and reeding than between I Q and reading. This supports the view that in the early stages of reading, perceptual skills such as auditory discrimination and are more important than intelligence.

Regarding the question often asked as to whether low intelligence really causes reading disability, Vernon (1937) observes that specific reading disability cannot be directly attributed to the subnormality of intelligence. He says that low intelligence it self is not a direct cause, but it may lead indirectly to reading disability. Implications of the evidence available indicates that the possession of less than normal intelligence used not be direct cause of reading disability. However, when instructional methods are not adjusted to his slow learning ability an accumulation of partial learning will eventually make it impossible for such a child to profit by ordinary classroom instruction. As a result he becomes a case of reading disability.

Because intelligence is so closely related to reading ability, it seems reasonable to propose that a certain level of intelligence any be necessary before a child can succeed in learning to read. This conclusion has been the most influential in the literature on reading readiness. According to Betts (1946) the most widely quoted study on the minimal mental age necessary for readiness for reading is that of Marphett and Washborne (1930), They made two investigations of this problem and their experiments showed that very little progress was made by children with mental age below six years, but that the increase in percentage of success rose sharply at the mental age of six and a half years.

They concluded that by postponing the teching of reading until children reach a mental level of six and a half years the teachers can generally decrease the chances of failure and discouragement and can correspondingly increase the efficiency.

Bigelow (1934), Witty and Kopel (1936), Dolch and Bloomster (1937), Dean (1939), all claimed to have found that a minimum mental age was required for successful reading and mental ages of six, six and a half and seven were mentioned in these studies. A careful studies of these investigations makes it clear that the minimum mental age found necessary for successful reading dependent entirely on the criteria of Successful reading, that id, what the researchers consider to be " reading ". Betts (1946) reported that one of the guides to teachers in determining the point at which reading may begin with the promise of success was a mental age of 76 to 80 months.

In recent years, however, other investigators have criticised the concept of minimum mental age for reading for all children in all circumstances and growing evidence is being provided thai to show that children can, in suitable circumstances learn to read successfully with an mental age well below six and a half years.

In Thackray's (1965) investigation with British children it was found that a minimum mental age of five and

a half years was necessary for the beginning of formal reading and for asking a Satisfactory progress in learning to read under the typical circumstances of British schools.

Regarding the growing evidence of children learning to read successfully with mental ages of below six and a half years. the studies of Dolbear (1912), Teman (1981) Terman and Oden (1947), Diack (1960), Lynn (1963), Fowler (1962) and Thackray (1971) provide evidence of very young children under the age of three learning to read. Lisvka (1976) in his seventeen month long experiment in teaching reading to aa boy 2.2 years old and to a girl 2.1 year old showed that these children were taught to read. He taught the words by describing each word after it was read and by making the task more pleasurable. Syllable drill was followed by synthesis drill. Reports indicated that the girl was able to read a totally aew word in fourteen months. He regards this experiment as a heartening sign that children can be taught to read before they attain the school age. However, a careful study of the cases described suggests that the children involved were above average intellectually, instruction was individual and enjoyable and by reading was really meant the recognition of letters or of words. Fowler, Lynn and Thackray, all reported that their daughters quickly lost interest in the reading activity, which suggests that reading was mechanical, the effort was unrewarding and the

activity was not very Meaningful.

Durkin (1939), (1961), (1963) and (1964) has made a number of studies which show that children can learn to read at home with mental agea of three, four and five . From the data provided it was found that these early readers tended to be children who were persistent, perfectionist either to keep up with older siblings and curious. Again the evidence suggest that the children were precautious, instruction was individual, given by parenta, and by reading word recognition only was implied. However, some of Durkin's early readers were only of normal intelligence and later follow-up studies shows that an early start seems to be most helpful to those children who were at this lower level of intelligence.

In a critical appraisal of the minimum age concept, the studies which investigated children of average ability in normal or near normal class room situations have most relevance, as Holmes (1962) has pointed out; " Other things being equal the earliest age at which a child can be taught to read is a funtion of the amount of time or help the teacher can give the pupil. " Apart from the teachers' role the amount of time the parents spend in teaching the children' is also important.

In Davidson's (1931) experiment, she used groups of five pre-school children. She conducted her experiment with

A " bright " three year old group, a " normal " four year old group and a " dull " five year old group – all having Stanford-Binet mental ages of approximately four years. Bach group received ten minute reading lessons daily for four months and reading tests were given at the end of that period. After four months the bright three year old children recognised an average 129.4 words out of context, average four year olds-55.3 words and the dull five year olds – 40 words. This experiment is often quoted to support the claim that the children can learn to read with mental age of four, but it must be noted that when the retention was tested four months later after the close of the experiment, the dull children recognised as an average only nine words. However, in this study no definitions of bright, normal and dull were available.

Another important contribution was that of Gates (1937) who examined studies with made with four groups of children in ordinary classroom situations. In the first, of the four groups where modem and effective instructions, well adjusted to individual differences was peovided, a mental age of five years appear to be sufficient for learning to read; in a second group, the conditions were less favourable and a mental age of five and a half was necessary; in the third group the teaching conditions were still more inferior and a mental age of six years was required to make satisfactory progress;in the fourth group children with a mental age of 6.6 years faired none too well and some with mental ages of

seven and above had difficulty. Gates, showed that in the Normal classroom situations, children could learn to read with mental ages below six years but did note that practically all near failures fell into the group with mental ages of less than five years. His main conclusions were that the statements concerning the necessary mental ages at which a pupil can be instructed to learn to read are meaningless. The age for learning to read under one programme may be entirely different from that required under other circumstances.

Thus, the evidence from the research discussed indicates that children have been taught to read, some what mechanically with mental ages of four or less. But the children tended to be above average in intelligence and they were taught individually or in small groups. In a normal classroom situation the mental age requirements will vary with the methods and materials used. But it would seem that a mental age of atleast five or five years and sixmonths is necessary for success as there is evidence to show that worthwhile progress in reading is not made where mental ages far below five years.

To conclude, intellectual factors are important for reading. But in the initial stages of reading and reading readiness period perceptual factors such as, visual and auditory discriminations are more important than general intelligence.

Predictive Value of Reading Readiness Tests:

Research have shown that a thorough readiness programme creates a basis upon which later acquisition of proficient reading skills can be built. An increased degree of active stimulation of reading readiness before formal reading instruction has been accepted among the first grade teachers. It is therefore felt that the time spent on the developments of vocabulary and concepts, the ability to listen and concentrate, to discriminate visual as well as auditory stimuli and to recall is desirable for all school beginners. Hence, the use of reading readiness tests are becoming increasingly popular, as they are efficient in predicting reading failure and they also give a differential evaluation of the child's strength and weakness so that specific educational strategies for habilitation may be formulated.

In general, experimental data indicate that the relation between the scores on reading readiness tests and success in beginning reading is not hight.

In one of the earlier studies by Deputy (1930) the first grade children were pre-tested with an intelligence test and various measures of reading readiness. The correlations between these tests and later reading achievement were as follows Pintner - Cunningham Primary Mental Test – 0.70, visual readiness 0.52, word recognitioa -0.49, visual auditory association- 0.39, comprehension and recall - 0.37.

Long term prediction of reading achievement based on reading readiness test administered on first graders is also hazardous. Moreau (1950) reports a correlation of 0.46 between readiness scores made in the first grade and the reading achievement made in the sixth grade. Baker (1955) reports data for over 200 children in grades four, five and six, who read below grade norm with many of then showing severe retardation. Readiness scores achieved on tests administered during the first grade showed that an extremely high percentage of these reading failures had exceeded national norms on readiness tests. Baker hyphothesized that these findings from two factors; standardized readiness tests rate children too high and elementary classroom from which these pupils came were eharecterised by stereotyped instructions with emphasis on wort books, inteasive reading of the few books, etc.,

Karlin (1957) studied over hundred first grade children, all of whom had an I Q of ninty and above, had attended kindergarten and had no serious visual, hearing or emotional problems. He found a correlation of 0.36 between scores on the Metropolitan Reading Readiness Test administered in september and achievement on Gates Primary Reading Test administered at the end of the school year. In this study prediction of reading achievement based on readiness test scores was only about 4 percent superior to teacher's prediction made in the absence of readniess data.

Karlin, concluded that " The confidence which teachers place in the concept of reading readiness is well merited, but the desirablity of loosing existing reading readiness test alone exclusively to measure the extent of readiness to be re-examined".

Bremar (1959) tested over 2000 first graders with a reading readiness test and later with a test of reading achievement. He reported only a slight relationship between the scores on the two tests. Studies also report that teacher's estimate of pupil's success in reading made without a knowledge of reading readiness test scores, correlate as high with achievement as do the actual test scores.

Lee and others ( ) tested 164 first grade children and found a correlation of 0.49 between scores on Lee - Clarck Readiness Test and the Lee - Clarck Primary Reading Test and a correlation of 0.54 between the former and Gates' Silent Reading Test. In the samestudy, a group of teachers predicted the reading achievement of pupils in their respective classes. The correlations between teacher's prediction and actual achievement renged from 0.10 to 0.63. About of the teachers were as effective in predicting pupil's achievement as was the reading achievement.

Henig (1949) tried to determine the comparitive fore - casting value of the Lee Clarck's Reading Readiness Test

and of teacher's estimate of their pupil's likelihood of succeeding in learning to read. The test were administered to 98 beginning first grade children by their teachers about three weeks after the opening of the term. The results showed that a substantial degree of relationship exist between the reading readiness test results and the degree of ability in reading attained by these children during their first years experience with formal reading programme. A substantial degree of agreement also exists between the teacher's forecast of their pupil's probable success in learning to read and the degree of ability in reading actually attained by them. He also concluded that tee - Clarck test fore tells with a substantial degree of success the outcome of children's first year of experience with formal reading programme as indicated by teacher's marks. The fore-cast made by experienced teachers versed in reading readiness techniques has a high degree of predictive value,

Jansky & de Hirsch (1972) developed a, kindergarten screening test battery to predict reading failure. In the test in this battery were letter naming, picture naming, Gates' ward Matching Test. Bender Visuo-motor Gestalt test, Binet's sentence Memory test. Those children who failed in this kindergarten screening battery a diagnostic test battery composed of 19 tests as follows; Oral language, pattern matching, pattern memory, and visual - motor organization. From these test ecores a diagnostic profile was derived to be used to formulate a remedial programme for the children.

The screening index was given to 268 Kindergarten children. It correctly identified 79 percent of the failing readers at the end of the second grade.

Book (1974) reported on a test battery givan to 725 children to identify potentially high risk children for reading failure in the first and second grades. The battery included the metropolitan readiness test, Bender Visuo - motor Gestalt test and Slossen intelligence test. On the basis of test scores the children were devided into six diagnostic categories. At the end of first and second grades the children were given test to measure their reading levels which were divided into six reading level categories. The correlation between the diagnostic category and the reading level category at the end of the first grade was very significant (r = .99). Similarly, at the end of the second grade the correlation between the diagnostic category and reading level category was very significant (r = 0.99).By the end of second grade only one child failed to make as much progress as the test predicted and twenty seven children did better than expected. '

Thus, the experimental data suggests that there are three main methods by which information concerning reading readiness can be gathered.

1. The use of reading readiness test.
2. The use of intelligence test.
3. Teacher's evaluation of each pupil's behaviour.

Investigations by Robinson and Hall (1942). Kottmeyer (1947) and Henig (1949) have been made to find out which of the above methods is the most predictive if, only one is used and secondly whether a combination of two or all three of the methods are valid. The research findings are not clear cut. As to which method is the most predictive the findings of Robinson and Hall, who analysed the data of over 20 investigations are still valid as shown by the most recent investigations by Spaulding (1956) and by Bremer (1939) and by Thackray (1965). Robinson and Hall, found that the median correlation between reading success and these three types of predictive measures were; reading readiness tests- 0.58, intelligence tests - 0.50, and teachers rating scale 0.62. It is notable that the teacher's judgement score highest in this comparision. However, some investigators (McKin, 1355) suggests that all the three predictive measures are equally effective in predicting success in beginning reading. This doesn't imply that readiness tests have little value to teachers. It does suggest that the educators should not project into these tests the degree of predictive infalibility, which they donot possess. It appears that some readiness tests over rate children in regard to their readiness to deal with reading. It is possible that some of the tasks on the test are more closely related to the children's previous experiences than to what he will actually encounter in beginning reading.

It must be kept in mind that readiness tests measure only selected factors which are believed to be related to reading. There are many other factors which affect learning to read such as instruction the child receives, his attitudes towards his teacher and towards reading, his reaction to varying degrees of success and failure and his home stability, etc., This paints up the need for intelligent use of readiness test result. However, if the teachers make use of readiness test results and adjust their teaching to each child needs numerous reading problems might be averted.

Most of the studies show that the predictive value of reading readiness tests when used alone is low. So, these tests should be used as guides to finding out the reading problems along with a battery of tests such as intelligence tests, visual acuity tests, auditory acquity tests, etc., More over many studies have pointed out that the teacher's estimates of the childrens reading are found to predict reading failures well. Therefore, they should also be used along with reading readiness tests. However, for this purpose teacher should be trained well in evaluating children's reading.

Recognized tests of Reading Readiness:

These tests are standardized instruments designed to assess the ability to profit from formal instruction in reading. They fulfill their purpose in so far as they predict success in learning to read. That is the scores on the test must be indicative of what can be expected in reading achievement. These tests are either group tests or individual tests consisting of number of subtests which are directed specifically at the skills which the research literature shows are connected with reading readiness. Standigh (1959) has analyzed eight American reading readiness tests and found that of the eight, all use a test of visual discrimination, six use tests of vocabulary, three use motor tests, two use tests of reproduction of patterns and shapes from memory and two make use of tests of spatial relationships. Other tests used are tests of auditory discrimination ability to recall a story, ability to remember ideas in sequence, pronunciation, rhyming of words, handedness and eyedness.

Gates, Bond, Russell (1939), Betts (1948) and Harrison and Stroud (1956) have emphasized that the diagnostic value of reading readiness tests. Betts feels that these tests have been a potent factor in furthering interest in reading readiness problems. He argues that firstly, they make it possible for the teacher to identify specific strengths and

weaknesses in certain areas such as, visual and auditory discrimination, vocabulary, perception of relationships and secondly, that the fairly specific nature of the tests make it possible to suggest relevant procedures for developing reading readiness sub-skills.

Some of the recognised tests of reading readiness are given below:

1. Gates' -Mac Ginitie Reading Readiness Test (1939):

This is a group, diagnostic test which can be administered to children of five to six years of age. The skills tested are:

1. Listening comprehension,
2. Auditory Discrimination,
3. Visual Discrimination,
4. Following Directions,
5. Letter recognition,
6. Visual Motor Co-ordination,
7. Auditory Blending, and
8. Word recognition.

This test was standardised on a nationally representative sample. The children's scores on this test can be presented in a profile. showing weaknesses and strengths in the areas tested.

2. Metropolitan Readiness Test (1933-1966):

This test has been used extensively since its first appearence. It has also undergone successive improvement as a result of its use. This test was developed by Hildeth, Griffiths, and McGauvran.(This test, tests the children of five to six years of age, with athe skills tested being:

1. Wbrd meaning,
2. Listening,
3. Matching,
4. Alphabet.
5. Numbers,
6. Copying, and
7. Draw - a - Man (optional)

This test has produced evidence of being a valid predictor of children's later reading attainments. This test doesnot test some of the basic skills such as, visual discrimination which is important in the beginning stages of learing to read.

3. Harrison - Stround Reading Readiness Profiles:(1949-56):

This test was developed by Harrison and Stroud, to test the children of five to six years of age. This is a diagnostic test, can be administered individually in part, but sections can also be administered as a group test. This test requires the children to be able, on instruction to underline

either a picture or a word or to draw a line joining a word to picture. The skills tested were :

1. Symbols,
2. Visual Discrimination,
3. Auditory Discrimination,
4. Letter Naming,
5. Contexts and Auditory Clues

The results can be summarized for each child in a profile giving a child's percentile rank for each of the tests. The profile presentation gives the clear idea about the child's weaknesses and strengths in the stills tested. Reliability of the test and their inter- correlations have not been given by the authors. Even the validity of this test is also being questioned. Despite such strictures these tests have been used widely.

4. Murphy- Durrell Reading Readiness Analysis Test (1965):

This test has been developed by Murphy and Durrell to test children of six to six years eleven months. This test is a group as well as an individual teat and can be used both as a diagnostic and as an attainment test. Skills tested are:

1. Phoneme identification (24 items)
2. Letter Naming,upper and lower case letters (52 items),
3. Learning Rate test (18 items)

This test was primarily itended to measure aspects of reading readiness, that will help in grouping entrants to school for

reading instruction. This test was standardised on first grade pupils from different school systems. The internal consistency relaibilities for the subtests are high and the extent to which they predict later reading attainment is acceptable.

5.Clymer- Burrett Pre-Reading Battery (1957):

This test was developed by Barrett and Clymer to test the children of five to six years of age. This test can be used as a group or as an individual test. The skills tested are:

1. Visual discrimination:
   a) Recognition of Letters, (33 items)
   b) Matching of Words (20 items).
2. Auditory Discrimination:
   a.) Beginning sounds in the Words (20 items),
   b) Ending sounds in the words (20 items),
3. Visual - Motor Coordination:
   a) Shape completion (20 items),
   b) Copy a sentence (one sentence, 7 words, 20 letters).
4. Pre-Reading Rating Scale:
   a) Facility in oral language,
   b) Concept and vocabulary development,
   c) Skills in critical thinking,
   d) Social skills and emotional development,
   e) Attitude towards and interest in reading,
   f) work habits,

The purpose of this battery is to provide teachers with infe-rmation that will serve as a basis matching instruction in pre-reading and early reading skills to the child's individual pattern of skills. There are two forms of the test. The short form employs only two subtests that is, visual discri-mination and auditory discrimination. This gives a single scores which ia useful for screening and placement. The long form gives three diagnoatic sub -scores and battery total. The instrumentation on the standerdization is rather vague. reliabilities of subtests, inter-correlations, validities are reported. This battery is equal to Metropolitan Readiness Test in its ability to predict reading success.

6. Initial Survey Test (1972):

This test was developed by Monroe, Manning, Wepman and Gibb (1972), to test children of six to seven years of age. This test is a group, attainment and diagnostic test. The skills tested are:

1. Language Meanings (20 items) ,
2. Auditory Abilities (25 items),
3. Visual Abilities (21 items),
4. Letter recognition (44 items),
5. Sound letter relationships (10 items),
6. Mathematics (15 items),

The aim of this test is to help teachers assess each pupil's to use the skills that are important to success in beginning

school learning with particular emphasis on reading and number.

7. Pre-Reading Assessment Kit: (1972):

This vas developed at Ontario Institute of Studies in Education. This battery of tests is intended to provide diagnostic indication of the specific skills pertinent to reading, that the child has or not acquired. This battery is to test children of five to six years of age. The skills tested ate:

1. Listening Unit:
    a) Rhyming,
    b) Begninning Sounds
    c) Ending sounds,
2. Symbol perception Unit;
    a) Visual Discrimination,
    b) Recognition of letters,
    c) Recognition of words,
9) Experience voeabulary Unit:
    a) Experience vocabulary,
4) Comprehension Unit:
    a) Classification,
    b) Pmotional Response,
    c) Cause and effect and Prediction,

Tumphrey (1976) rays that the correlations between the subtests are sufficiently low to suggest that relatively distinct abilities are being tested. The predictive validity of the instrument appears satisfactory.

Administration of the test, scoring and interpretation is likely to be rather time consuming, if used with classes of children rather than with individual children.

8. Thackray Reading Readiness Profiler (1975):

This is a group, diagnostic test developed by Thackray and Thackray (1974), to test children between 4.8 to 5.8 years of age. The skills tested are,

1. Vocabulary and concept development,
2. Auditory Discrimination,
3. Visual discrimination,
4. General Ability

These profiles are primarily intended for use with admission class pupils. The aims of this test are to provide quick, reliable and valid measures of the most vital reading readiness skills. This Test has been standerdized on 500 children aged from 4.8 to 5.8 years draw from 350 schools in urban and rural areas of Great Britain. The split - half relibilities of the pre-reading read-iness scales are 0.80, 0.81, O.09, respectively. High content validity is claimed and evidence of acceptable predictive validities of first three scales is given. The manual of this test also contains information on interpretation of the individual scales and suggestions for developing reading readiness skills in the areas of the language development, auditory and visual discrimiations.

Some other tests in case of which not much informtion about the authors of the test and their standardization was available are as follows:

1. American School Reading Readiness Test: This test ia used to test first grade children. The skills tested are, vocabulary, Visual discrimination of various kinds, following directions, memory for geometric shapes.
2. Binion Beck Reading Readiness Test for Kindergarten and First Grade children: The skills tested in these test are picture vocabulary and discrimination following directiona, memory for the story and motor controlling.
3. Diagnostic Reading Test for Kindergarten: The skills tested in this test are vocabulary, viaual discrimination, left to light approach, coordination and relationships.
4. Lee - Clark RT Reading Readiness Test: This test makes use of skills such as, letters symbols, symbols, and word symbols.
5. Scholastic Reading Readiness Test: This test is used to test kindergarten children.
6. Van Wagmen Readiag Readiness scales; This test is used to test children studying in kindergarten. It consists of two parte. In part I, Listening vocabulary of children is tested. in part II, range of information, perception of relationships, memory for i span for ideas and word discrimination are tested.
7. Watson Reading Readiness Test : Used to test children studying in kindergarten.

From the review of literature it is clear that some of the key factors affecting reading readineaa are visual discrimination, auditoty discrimination, vocabulary and concept development. Many reading readiness testa have been developed taking into consideration these important factors. From the review it is also seen that there is no such test for reading readiness in Kannada. The present study was taken up to develop a reading readiness test taking into consideration the three important reading readiness and to identify the children's strengths and weaknesses in these specific areas offreading readiness.

CHAPTER III

METHODOLOGY:

Methodology has been described in two pArtS:

In the first part, it has been attempted to develop a reading readiness test in Kannada, which can be used with children to identify their strength and weaknesses in different areas of reading.

T e s t C o n s t r u c t i o n :

Skills tested:

The following skills were identified as being important for reading readiness:

1. Vocabulary,
2. Auditory Discrimination,
3. Visual Discrimination,
4. Ability to follow Directions and pay Attention,
5. Left to Right Orientation.

These skills have formed the basis for different forms of the test.

1. Vocabulary Test:

This test is a measure of the child's vocabulary and co-ncept development. The words used as test items are, objects,

action pictures and concepts with in the young child's experience. The words were chosen as follows;

a) Based upon the frequency of occurance:

The list of 10,000 moat frequent Kannada words developed at Oeccan College, Poona was uaed to chooae the words based upon the frequency of oceurance. Out of these words, 104 words which were 30 percent to 100 percent frequent were selected. Out of these, some of the most frequent words that could be picturised were selected.

b) Based upon Familiarity:

Some of the words were chosen from the Kannada Articulation Test developed at All India Institute of Speech and Hearing, Mysore, by Babu, et al., (1973). These words had been teated for familarity and a word was considered as familiar only when 75 percent of the children rated it as familiar.

e) Some more words were choosen from the Kannada Text books of primary classes. This criterion was used becauae the education bareau claimed that their research showed these words were the most frequent.

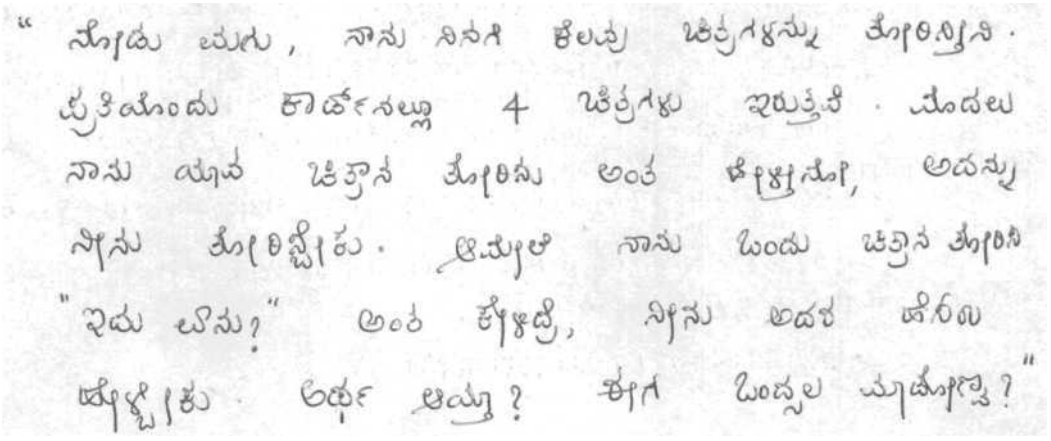
Thus a total number of sixty two of the most frequent words were selected and a picture vocabulary teat consisting of twenty three item was constructed. Each stimulus item consisted of four words which were picturised. The pictures used were simple line drawings of objects, body parts, actions and concepts.

Description of the Test:

Each stimulus card consists of four pictures. In the first part of the test, the children are asked to point out to the word spoken by the tester and in the second part of the test, they are shown a particular picture and are asked to name it. Thus, both the expreasive and receptive vocabulary of the childr-en are tested. These two abilities are tested, as a good expres-sive vocabulary and an ability to use language are basic to the process of learning to read and by testing receptive vocabulary, we would be testing the children's ability to connect the spoken words with the symbols.

Instructions:

The following instructions preceed the administration of the vocabulary test:


“ನೋಡು ಮಗು, ನಾನು ನಿನಗೆ ಕೆಲವು ಚಿತ್ರಗಳನ್ನು ತೋರಿಸ್ತೀನಿ. ಪ್ರತಿಯೊಂದು ಕಾರ್ಡ್‌ನಲ್ಲೂ 4 ಚಿತ್ರಗಳು ಇರುತ್ತವೆ. ಮೊದಲು ನಾನು ಯಾವ ಚಿತ್ರಾನ ತೋರಿಸು ಅಂತ ಕೇಳ್ತೀನೋ, ಅದನ್ನು ನೀನು ತೋರಿಬೇಕು. ಆಮೇಲೆ ನಾನು ಒಂದು ಚಿತ್ರನ ತೋರಿಸಿ "ಏನು ಮಗು?" ಅಂತ ಕೇಳ್ತೀನಿ, ನೀನು ಅದಕ್ಕೆ ಹೆಸರು ಹೇಳಬೇಕು. ಅರ್ಥ ಆಯ್ತಾ? ಈಗ ಒಂದ್ಸಲ ನೋಡೋಣ್ವಾ?"

English version of the instruction is as follows: " I will show you some picture cards. In each card there are four pictures. Cut of these four, I will show you one of the pictures and ask you to name it. Then, I will ask you to point to the picture named by me. Did you follow me ? Shall we try it once ? ".

These instructions were read out by an adult female speaker and were recorded on a Philips Tape Recorder.

Testing Procedure Recommended:

The children should be tested individually. The test should not be timed. The picture cards should be kept in front of the children. The instructions should be read out. The first item should be used as a practice item in this vocabulary test. The picture should be presented randomly. Whenever the children named the picture correctly or showed the correct picture, they should be verbally reinforced The children should be repeatedly instructed to look at the pictures carefully. This test also tests the children's ability to follow directions.

Method of Scoring:

Bach correct response should be scored as one and an incorrect response as '0' (zero). Out of the 23 items, scores should be obtained only from 22 items as the first item should be used as a practice item.

2. Auditory Discrimination Test:

An auditory discrimination test developed by Kumudavalli (1973) was used in the present reading readiness test. This test made use of those features which are distinctive in Kannada Language.

This test consists of 17 minimal pairs, the selection of which was based upon two factors:

a) The words had to be familiar to young children.

b) Both the members of the pair had to be picturable. Thus, pairs of phonemes differing in one or two distinctive features were chosen out of which a list of 17 minimal pairs was made up(Kumudavalli, 1972).

Description of the Test:

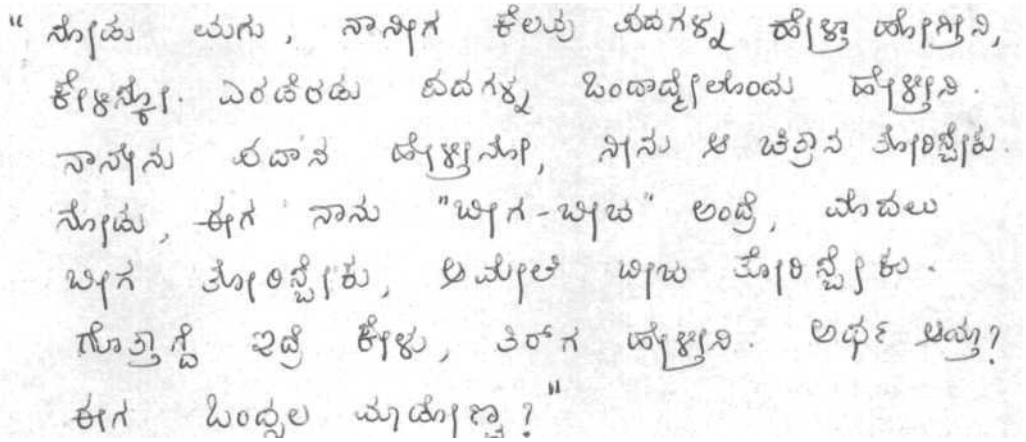
In this test four pairs of pictures are used to represent each word pair. For any stimulus word pair a, b, the four picture pairs are a a, ab, b a, and b b. The picture pairs of each set are pasted on a sheet of thick paper. The arrngement of picture pairs is the same for all the tests.

The stimulus word pairs were read out by an adult female speaker and recorded on a Philips Tape Recorder. The children are asked to point to the picture cards named by the tester. For each stimulus word pair, there are four possible combinations. Instead of recording all of them simultaneously, one randomly

chosen item from each set is recorded aad similarly another item from each set is recorded until all the four items of each set are recorded. There was a gap of 10 seconds between the successive words.

Instructions:

The following instructions which were recorded on a portable philips Tape Recorder were given before the administration of the **Test:**


" ನೋಡು ಮಗು, ನಾನೀಗ ಕೆಲವು ಪದಗಳ್ನ ಹೇಳ್ತಾ ಹೋಗ್ತೀನಿ, ಕೇಳಿಸ್ಕೋ. ಎರಡೆರಡು ಪದಗಳ್ನ ಒಂದಾದ್ಮೇಲೊಂದು ಹೇಳ್ತೀನಿ. ನಾನ್ಹೇಳು ಪದಾನ ಹೇಳ್ತಿದ್ದೀನೋ, ನೀನು ಆ ಚಿತ್ರಾನ ತೋರಿಸ್ಬೇಕು. ನೋಡು, ಈಗ ನಾನು "ಬೀಗ-ಬೀಜ" ಅಂದ್ರೆ, ಮೊದಲು ಬೀಗ ತೋರಿಸ್ಬೇಕು, ಆಮೇಲೆ ಬೀಜ ತೋರಿಸ್ಬೇಕು. ಗೊತ್ತಾಗ್ದೆ ಇದ್ರೆ ಕೇಳು, ತಿರ್ಗ ಹೇಳ್ತೀನಿ. ಅರ್ಥ ಆಯ್ತಾ? ಈಗ ಒಂದ್ಸಲ ಮಾಡ್ಬೇಕಾ?"

English version of the instructions is as follows:

" I will go on saying some words, listen carefully. I will say two words one after another. You should point to the picture pair named by me. If I say / bi:ga/ / bi:ja/, point to /bi:ga/ first and then to /bi:ja/. If you don't follow,please tell me and I will repeat. Did you follow me? Shall we try it once?"

Testing Procedure Recommended

The picture pairs of this test should be/used /first to elicit oral responses from the children in order to familiarise them with the words. When the children donot name the pictures, the experimenter should name it and some times when the picture is ambiguous he or she should explain it.

The children should be tested individually. The instru - ction should be read out and the children should be asked whether they understand the instructions. The instructions should be Repeated whenever found necessary. The task should be demonstra- ted to the children and trials should be given. The real discr- imination test should begin only after ensuring that children have understood the instructions.

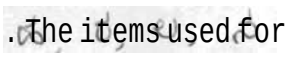
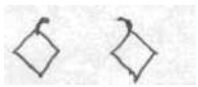
Both the material and the tape recorder should be kept in front of the child. The stimulus words should be played at a constant loudness. The child should point to the picture pair that he/she thinks is named by the tester. Each response should be noted down as either correct or wrong. The child should be periodically reinforced verbally after correct responses. The child should be oceassionally reminded to listen carefully. This test also tests the ability of the children to pay attention and follow directions and examine the pictures carefully.

Method of Scoring: In this test, each correct response should be scored as '1' and an incorrect response as ' 0 '.

3. Visual Discrimination Test:

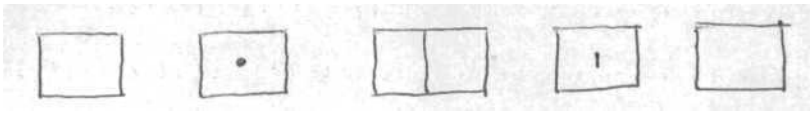
This test is a measure of child's Ability to compare different shapes, letters, printed words, and to match them.

The teat items were chosen by analysing the Kannada script and selecting the distinctive features of the Kannada Alphabet taking into consideration the features such as, shape of the letters, length of the lines and combination of lines and curves. The sets of letters and words chosen were those that could be confused visually such as: 
Each letter was compared with every other letter to find out similarities and differences among them. The items used for gross discrimination were those which differed from each other in terms of more features as in case of distiction between,

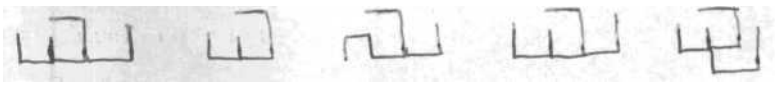

. The items used for fine disctimination were those which had more features in common and were different from each other only slightly. For example: 

. From the above analysis, major features which seem to be relevant were obtained and are given below:

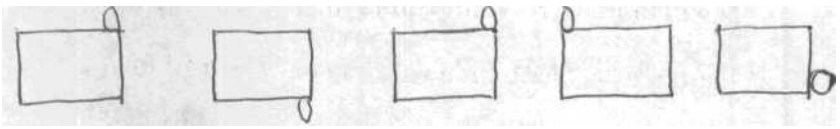
1. Distinction between items such as,



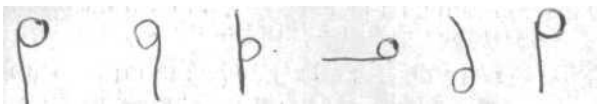
The distinctive feature in these items is the placement of dots and / or a small line as seen in case of letters such as,

2. 

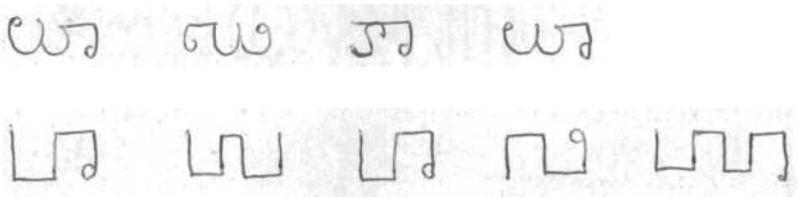
These items differ in terms of linearity and curvature.

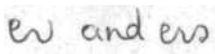
3. 

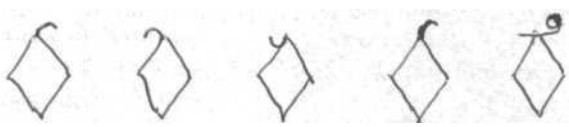
The distinctive feature in these items is the placement of the circle. This distinction is seen between -

4. 

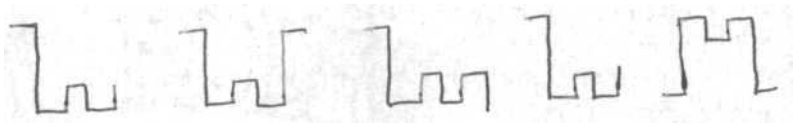
These items differ in terms of direction and orientation.

5. 

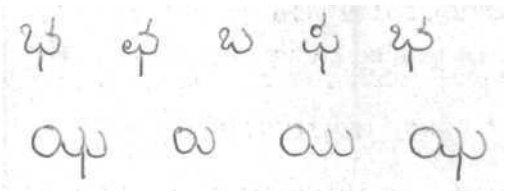
The distinctive features in these items are length and direction of the line. Such distinctions are seen between 

6. 

The distinctive feature test is that there it a difference in amgle of relationship between the maim figure and auxilliary figures. Such distinctions is seen in case of - ಓ ಬ ಕೆ

7. 

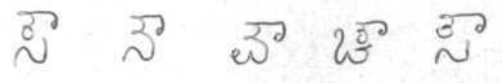
The distinctive features here are the number and orientation of curves. Such distinctions are seen between:- ಓ and ಬ

8. 

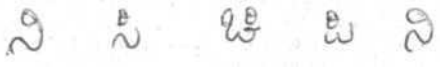
These items differ in terms of number of elements and presence of the small line.

9. 

These items differ in terms of curving and the presence of the small line.

10. 

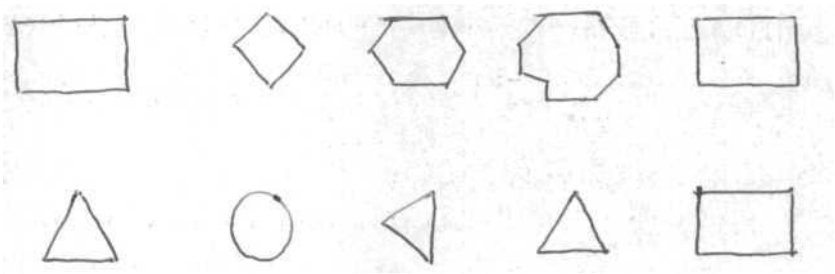
These items differ in terms of presence of number of small curves.

11 

These items differ in terms of number of curves and types of curves and seperation of lines.

That, all the features that seem to be relevant have been included in this test. Some of the words and letters were chosen from the Kannada visual discrimination test developed at Central Insititute of Indian Languages, Mysore.

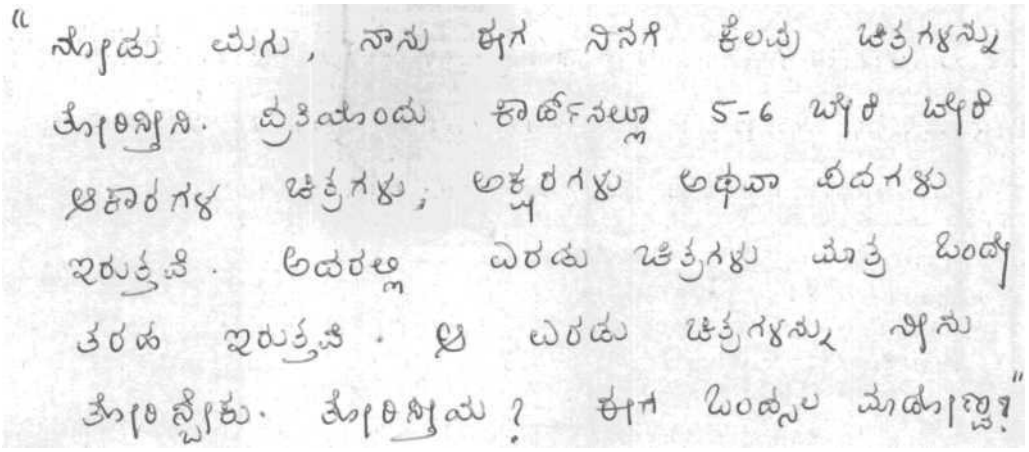
The first few items used were different geometric shames such as:



The children were asked to watch these different shapes. The size of the letters used in this test varied from item to item.

Thus, a total number of thirty items were selected and a visual discrimination test consisting of these items was constructed. Each stimulus card consists of five to six pictures of different shapes, letters and words. The children are asked to point out the two pictures which are similar(Match to sample items).

Instructions: The instructions were recorded on a philips tape recorder and were given prior to the administration of the test:


" ನೋಡು ಮಗು, ನಾನು ಈಗ ನಿನಗೆ ಕೆಲವು ಚಿತ್ರಗಳನ್ನು
ತೋರಿಸ್ತೀನಿ. ಪ್ರತಿಯೊಂದು ಕಾರ್ಡ್‌ನಲ್ಲೂ 5-6 ಬೇರೆ ಬೇರೆ
ಆಕಾರಗಳ ಚಿತ್ರಗಳು, ಅಕ್ಷರಗಳು ಅಥವಾ ಪದಗಳು
ಇರುತ್ತವೆ. ಅದರಲ್ಲಿ ಎರಡು ಚಿತ್ರಗಳು ಮಾತ್ರ ಒಂದೇ
ತರಹ ಇರುತ್ತವೆ. ಆ ಎರಡು ಚಿತ್ರಗಳನ್ನು ನೀನು
ತೋರಿಸ್ಬೇಕು. ತೋರಿಸ್ತೀಯ? ಈಗ ಒಂದ್ಸಲ ಮಾಡ್ಬಾರ್ದ?"

The English version of the instructions is as follows:

" I will show you some pictures. In each picture card there will be pictures of different shapes, letters or words. But in each card two of the pictures will be similar. You have to point to those two pictures which are similar. Will you do it ? Shall we try it once ? ".

Testing Procedure Recommended:

The picture card should be kept in front of the children. They should be asked to observe all the pictures carefully in a left to right sequence. The instructions should be read out. The pictures should be presented randomly. The children should be asked to point out to the two pictures which are similar. They should also be periodically reinforced verbally, when they matched the pictures correctly. This test should also tests the children's ability to follow directions and their ability to examine the pictures in a left to right sequence.

Method of Scoring:

The first two items of the test should be considered as practice items and therefore, scores should be obtained from 28 items. Each correct item should be scored as ' 1 ' and an incorrect item as ' 0 '.

Before administration of the test to a larger group, a pilot study was done with six children ranging in age from three to six years six months. It was found that these children failed consistently in fine discrimination items of visual discrimination test end auditory discrimination test was found to be difficult for them. Then, this reading readiness test was administered to the children of slightly older age group of seven to nine years and it was found that they made no mistakes on the visual discrimination test and made one or two random mistakes in auditory discrimination test. Auditory discrimination test was administered to two normal adults and it was found that they made no mistakes. Therefore, this cannot be attributed to faulty recording. Therefore, no changes were made in the test on the basis of the pilot study.

The Reading Readiness Test thus developed is given in the appendices.

In Appendix I (A), the words chosen for the picture vocabulary test are given.

In Appendix I((B), sample items of the picture vocabulary test are given.

In Appendix II (A), the list of word pairs used in the auditory discrimination test are given.

In Appendix II (B), sample items of the auditory discrimanation tests are given.

In Appendix III The visual discrimination teat is given.

The second patt of the methodology ia concerned with the administration of the reading readiness test, thus developed to a larger group of children.

Subjects:

The subjects chosen for this study were from the school going population of Mysore City. The children selected were in the age range of three to 6.6 years studying in lower kindergarten, upper kindergarten, and first standard in seven different schools, in different areas of Mysore City.

Selection of Subjects:

The total number of subjects tested was 100. They were selected in the following manner:

In each class, all the children who came under the age group of three to 6.6 years and who knew kannada were listed as per the admission register. Every third child waa chosen from the list. A lower limit of three years was chosen because children begin their Nursery Education around 2.6 to 3.0 years. An upper limit of 6.6 years was chosen because it has been established by American investigators that their children would be ready for reading around six to 6.6 years of age.

Thus, a random sample was found drawn among the children from each of the following grades:

1. Lower Kindergarten,
2. Upper Kindergarten, and
3. First Standard.

All the children were divided on the basis of age into four groups. The interval covered in three of the groups was 12 months and in one group, the interval was six months.

The Table showing the age groups and the number of children in each age group is given below:

GROUP	AGE	NUMBER OF CHILDREN	GIRLS	BOYS
1	3.0 - 4.0	25	13	12
2	4.0 - 5.0	30	15	15
3	5.0 - 6.0	30	15	15
4	6.0 - 6.6	15	8	7

The new reading readiness teat was administered to these Children individually and it was scored on the basis of number of correct responses. The maximum reading readiness score that could be obtained was 118, with the maximum vocabulary score being 22, maximum visual discrimination score being 28, and the maximum auditory discrimination score being 68.

The data for each age group was analyzed and stastical* treatment was done, which nhas been described, in the next chapter under results and discussions.

** Statistical

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CHAPTER IV

RESULTS AND DISCUSSIONS:

The new reating readiness test has been described in the previous chapter. This reading readiness test was administered to a group of 100 school going children ranging in age from 3.0 to 6.6 years. They were grouped on the basis of age. There were four groups, in three of which the range was 12 months and in one, the range was six months. The number of children in each group was not epual and it ranged from 13 to 30. No effort was made to control it as it was dependent upon the easy availability of the children and the time available for the study.

Table I shows the number of children each group.

Table I

AGE GROUP	AGE RANGE	NUMBER OF CHILDREN
1	3.0-4.0	25
2	4.0-5.0	30
3	5.0-6.0	30
4	6.0-6.6	15

The score sheet used for evaluating reading readiness is shown in the Appendix IV. Each correct response was scored as '1' and an incorrect response as '0'. The data was analysed statistically.

Reliability of the responses was obtained by test - re-test method. Fifteen children were selected randomly from four different schools and were retested after a period of 10 to 21 days between the test and retest. The performance of the children on all the three important abilities was evaluated. Person's Product Moment Correlation was used as the measure of reliability. The test - retest correlation co-efficients obtained were as follows :

TEST - RETEST	CORRELATION
Vocabulary test	0.92
Visual discrimination Test	0.90
Auditory diserimination Test	0.89

For the total test performance the Correlation co-efficient was 0.90, thus indicating Fairly high reliability.

The mean reading readiness scores and standard deviations for different age groups were calculated in order to compare their test performance with age.

Table II shows the means and standard deviations for different age groups.

TABLE II

AGE GROUP	TOTAL R.R. SCORES		VIS.DISMN SCORES		AUD. DISMN SCORES		VOCABULARY SCORES	
	Mean	S.D	Mean	S.D		S.D.	Mean	S.D.
1	66.42	14.38	15.50	4.60	37.17	7.30	14.36	5.00
2	79.86	13.64	19.80	4.79	43.26	8.36	18.13	3.50
3	94.63	8.54	21.99	3.87	49.23	7.74	18.63	1.50
4	96.45	13.60	24.70	2.50	53.18	8.43	18.90	1.10

The waw scores for all the gropus are given in the Appendix V.

Feom the comparision of means and standard deviations for different age groups from Table II, the following results are obtained:

1. The means of total reading readiness scores increased with age. There is a rapid increase in total reading readiness scores from Group 1 to Group 2, and Group 2 to Group 36, and only a slight increase in reading readiness scores from Group 3 to Group 4. This slight increase may be because of two reasons:
   a) The interval covered in the group 4, is small (six months).
   b) The scope for improvement is less, That is, as the maximum scores is reached in the group 3 itself, the increase may be very slight from Group 3 to Group 4.

Standard Deviations obtained for total reading readiness scores showed that the variability is high in younger age groups of 1 and 2 and also in group 4. Variability is less in group 3.

2. Means of visual discrimination scores for different age groups increased with age and the standard deviations obtained show that the variability is high in younger age groups.
3. Means of the auditory discrimination scores increase with age and the standard deviations obtained show that the variability is comparitively higher in age groups 2 and 4.
4. Means of the vocabulary scores show that these scores increased from group 1 to 2 and reached plateau around 4 to 3 years (Group 2) itself, with a increase being very slight from Group 3 to Group 4 and Croup 2 to Group 3. As the maximum vocabulary scores has been reached in group 2 itself, the vocabulary test developed may be easy for children. To increase the efficiency of this test, there is a need for increasing the difficulty of the test. Even the manner of testing might have influenced these scores. Because in case of some of the younger children belonging to age groups 1 and 2, only receptive vocabulary was tested as it was difficult to elicit responses from them. Therefore, to improve the test there is need for testing expressive vocabulary in children.

Table III (A)and Table III (B) show the means and standard deviations of total reading readiness scores, vocabulary Stores, visual and auditory discrimination states for boys and girls Respectively.

T A B L E III (A)

AGE GROUP	TOTAl r.R. SCORES		VIS. DISMN SCORES		AUD. DISMN SCORES		VOCABULARY SCORES	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
1	61.69	12.80	13.44	4.07	35.61	7.74	12.53	5.94
2	81.33	12.02	20.00	5.10	43.66	7.30	18.13	4.00
3	94.40	3.90	22.80	3.20	52.06	5.90	19.00	1.43
4	96.28	15.02	23.85	2.70	53.00	9.10	19.55	1.73

TABLE III (B)

AGE GROUP	TOTAL R.R. SCORES		VIS. DISMN SCORES		AUD. DISMN SCORES		VOCABULARY SCORES	
	Mean	S.B.	Mean	S.D	Mean	S.D.	Mean	S.D.
1	71.16	16.02	16.66	4.24	38.73	7.40	16.91	3.91
2	78.40	13.07	19.60	4.40	42.86	9.60	18.13	4.00
3	94.80	11.00	22.33	4.60	46.40	9.60	18.26	1.31
4	96.62	13.00	23.33	a.53	53.37	8.43	18.26	1.30

The following results were obtained by the comparision of means and standard deviations of boys and girls:

1. The means of total reading readiness scores of girls in group 1 are found to be higher than thoae of boys and the means of boys in group 2 are found to slightly higher. In group 3 and 4, the means are almost same indicating no difference in the performance of boys and girls.

   Standard deviations obtained show that the variability is high in younger age groups of 1 and 2 and in group 4. In case of boys as well as in girls.

2. The means of visual discrimination scores of boys and girls show that only in groups 1 and 4 the means of girls are higher than those of boys and in other group the means are almost equal.

   Standard deviations obtained in case of boys and girls indicate that the younger age groups are more variable

3. The Beans of auditory discrimination scores are almost same in group 2 and 4. Means of the girls are higher in group 1 and means are slightly higher in group 3 in case of boys.

   standard deviations obtained for boys indicate that group 1,2 and 3 are highly variable and in case of girls, groups 2, 3 and 4 are highly variable.

4. Mean vocabulary scores obtained for girls in group 1 are higher when compared to boys. Whereas in groups

3 and 4, slightly higher means are obtained for boys. Standard deviations obtained indicate that the younger age groups are higher varaible in case of boys as well as in girls.

Graph I (A) shows the mean total leading readiness scores obtained for different age groups. I (B) shows the mean vocabulary scores and the mean visual and auditory discrimination scores obtained for different age groups.

Graph II (A) shows the comparision of mean total reading readiness scores of the boys and girls. Graph II (B) shows the comparision of mean vocabulary scores, mean visual and auditory discrimination scores of the boys and girls.

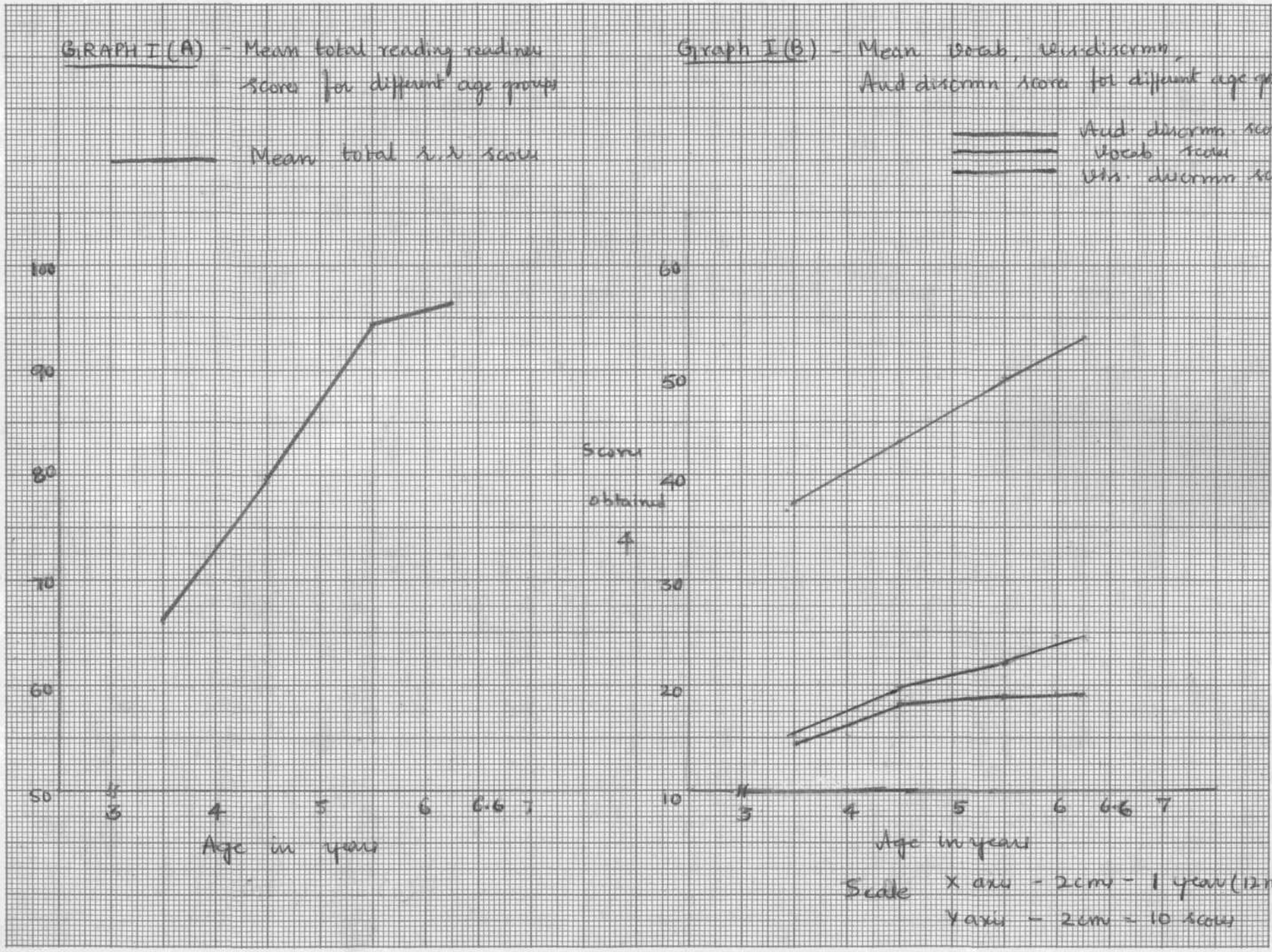
The first hypothesis tested in this study was as follows: "There is no significant difference between the performance of boys and girls on reading readiness test in all the three abilities tested."

To test this hypothesis, the significant difference between the means of boys and girls was found out using the formula:

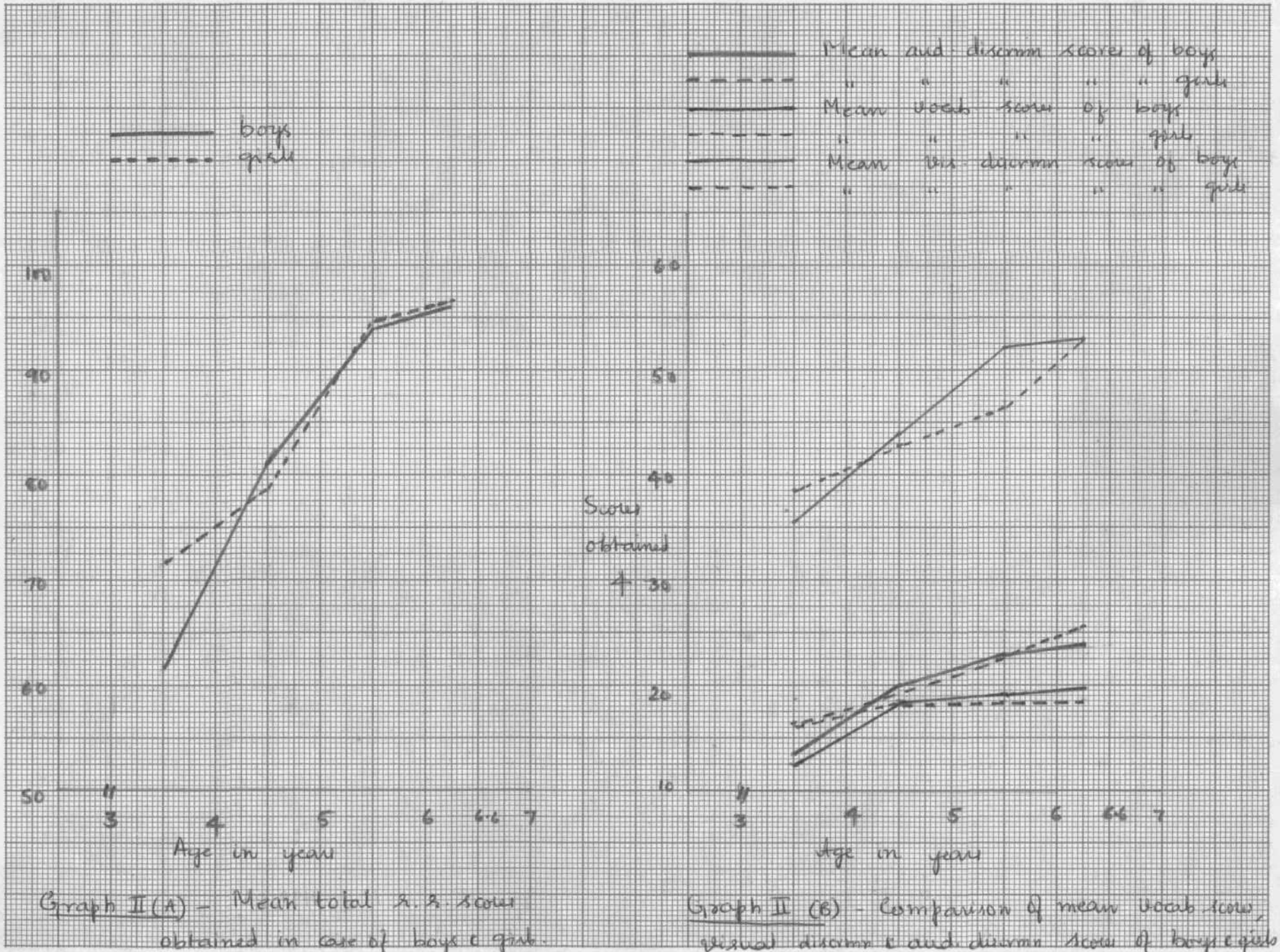
$$T = \frac{M_1 \sim M_2}{SE_D}$$

where the standard error of difference between the means of boys and girls, N_1 and M_2 refers to the means of boys and girls, T refers the critical ratio.

GRAPH I (A) - Mean total reading readiness Score for different age groups



Graph I (B) - Mean vocab, vis-discrmn, Aud discrmn score for different age groups



Graph II (A) – Mean total v. s. scores obtained in case of boys & girls.

Graph II (B) – Comparison of mean vocab scores, visual discrm & aud. discrm scores of boys & girls.

The results showed no significant difference between the performance of boys and girls on the present readine readiness test in all the three abilities concerned.

These findings support the findings of Potter (1949), Konski (1953) who found no significant difference between the mean reading readiness scores obtained by the boys and the girls and Thackray (1971) who also obtained the same results as above These results obtained support the hypothesis made by many investigators to claim that in the early stages of reading, there is no significant difference between the boys and girls.

The second hypothesis tested was as follows:

" There is no correlation between the reading readiness scores obtained and the teacher's estimate of children's reading ability."

The degree of correspondence between the teacher's estimates and the reading readiness scores was determined statistically by employing a device known as the co-efficient of contingency. The basis of this is the allocation of each child's rating to its proper cell in the contingency table. This co-efficient of contingency provides a measure of correlation when each of the two variables under study has been classified into two our more categories, Table IV the computation of 'C in a 4 x 4 fold classification. This table provides the test results and the teacher's estimate of children's reading ability. In this

table, reading readiness test results are classified into four categories of very good, good, fair & low arbitarily based upon the scores and the teacher's estimate are given in terms of grades A, B, C, and D.

TABLE IV

Reading Results	A	B	C	D	Total
90 — 100 (very good)	(17.60) 25	(11.07) 10	(7.38) 4	(4.92) 2	41
70 — 90 (good)	(17.20) 12	(10.80) 13	(7.20) 10	(4.80) 5	40
50 — 70 (fair)	(6.88) 6	(4.34) 3	(2.88) 4	(1.92) 3	16
— 50 (low)		(0.88) 1		(0.36) 2	3
	43	27	18	12	100

Teacher's Estimate →

In this table, each cell contains an observed value and an independent value in parentheses. These values inpatentheses represent the scores to be expected on the basis of chance alone. These independent values were compared with the observed values given in each of the cell. To calculate C, all the observed values were squared and divided by independent values. The sum of these quotients yielded ' S ' from the formula:

$$C = \sqrt{\frac{S - N}{S}}$$

contingency correlation was found out and was equal to 0.42. This value shows that there is a less substantial degree of aggreement between reading readiness test results and the teacher's estimate of children's reading. These results donot agree with the results obtained by Henig (1949) to obtain the co-efficient of contingency of 0.60, between the teacher's forecast and Lee - Clarek's reading readiness test scores. This may be because in the present study the group of children tested is not homogeneous, that is, the children belonging to different age groups are tested, whereat in Henig's study he has tested 98 first grade children, matched interms of age.

Many American and British investigators haw shown that the teacher's estimate of children's reading and the reading readiness test results are found to have high predictive value and are found to have a substantial degree of correspondence. But no such correlation was found in the present study. Lack of uniformity in rating the children might have influenced the teacher's estimate of children's reading. The teachers were asked to rate the children based upon the following criteria: (1) based upon the children's ability to read or marks obtained in reading. (2) ability to follow direction, (3) attention, (4) concentration, (5) strengths and weaknesses. The ability with which this criteria was used by the teachers is also questionable. The teacher's definition of reading was restricted to " The ability to identify letters in case of children belonging to nursery classes." whereas in case of children belonging to age groups of 5 to 6 years and 6 to 6.6

years, the ability to read was determined by their ability to identify wordS and MarkS obtained in reading.

Validity of the Test:

There is no other reading readiness test in Kannada. Hence, the performance of this test cannot be compared with that on any othet test. However, the teat can be presumed to measure reading readiness, since simialr tests for measuring reading readiness do exist in English, which makes use of the same basic skills that are measured in this test. Thus, the preaent reading readiness test satiafies the criteria of High content validity.

To establish the construct validity of the test, the total reading readiness test scores obtained were compared with the subtest scores and the correlations between them was established using a two way correlation table.

Correlations of the total test scores with subtest stores are given in the table V.

TABLE V

Correlation between vocabulary scores and total reading readiness scores	0.70
Correlation between visual discrimination scores and total reading readiness scores	0.80
Auditory discrimination scores and total reading readiness scores	0.90

The correlation coefficients obtained are high suggest that these abilities are equally good in measuring reading readiness.

Inter-correlations between the subtest scores were also obtained and ate given in the Table VI.

TABLE VI

Correlation between the vocabulary and visual discrimination scores	0.49
Correiation between the vocabulary and auditoty discrimination scores	0.54
Correlation between the visual discrimination and the auditory discrimination scores	0.64

These Inter-correlations obtained are found to generally agree with those Thackray (1971) has obtained, except for the correlation obtained between visual discrimination and auditory discrimination, where he obtained a value of 0.31.

TABLE VII

Correlation between vocabulary and Visual discrimination scores	0.50
Correlation between vocabulary and auditory discrimination scores	0.52
Correlation between visual discrimination and auditory discrimination scores.	0.31

Table VII shows the correlation co-efficients obtained by Thackray (1971). According to him the examination of the correlation co-efficients obtained in his study indicated that although, the tests overlapped in some extent, they did indicate that to a large extent, each of these tests measured a different ability and all of them were needed for the evaluation of the children's reading readiness abilities. In the present investigation, the obtained correlations do orverlap to some extent, bet as each of these tests measure different and realtively distinct ability they are equally important for the evaluation of children's reading Readiness abilities.

The predictive validity of the teat was established by finding out the correlation between the teacher's estimate of children's reading ability and reading readiness test results (whch has been described earlier). The correlation obtained was found to be low (0.42), indicating a low predictive value. This test shares with other investigations such as, those of Moreau (1950 who obtained a correlation of 0.46, the low predictive value for reading readiness test.

Thus the results can be summarixed as follows:

1. There is no significant difference between the performances of boys and girls on the present reading readiness test.

2. There is a low correlation between the teacher's estimates of children's reading and the reading readiness scores.

3. The results obtained also show that the present reading readiness test has a fairly high reliability, a high construct validity and satisfies the criteria of high content validity.

4. The predictive validity of the test is found to be low, so this test can be used as a guide to find out the strengths and weaknesses in the specific skills of reading readiness. This test is a satisfactory diagnostic test which can be used to identify reading problems at an earlier age. Thus, it also helps the teachers to find out the abilities in which the children are lagging behind, with the help of which the teacher's can train them in these areas.

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CHAPTER V

SUMMARY AND CONCLUSIONS:

Reading readiness has received considerable attention from the investigator during recent times. It has been defined by many investigators as the stage of development, during which the child can learn to read without any difficulty. By testing the pre-reading skills of all the children on entry to the school or before, the individual differences and needs of the children can be found out. One of the problems faced by the schools now a days is the child who fails to make satisfactory progress in reading. Therefore, objective assessment of children's reading readiness becomes necessary. Through the use of reading readiness tests, we can identify children's weaknesses in specific areas of reading and remedial measures can be taken up at an earlier age, before any reading problem deteriorates into a reading failure.

Reading readiness tests are standardized measures which measure directly or indirectly the most important - skills and abilities contributing to readiness for reading. They are either group or individual tests which test specific abilities such as visual discrimination, auditory discrimination and vocabulary. There were no such reading readiness tests in Kannada. Therefore, it was decided to develop a reading readiness test in Kannada, mad to try it out on a small group of children.

The study was done in two parts, the first part of which was concerned with the development of the teat. A careful study of research literature showed that the basic skills necessary for learning to read are vocabulary, visual discrimination, auditory discrimination, ability to follow directions and pay attention and left to right orientation.

For the vocabulary test in the current reading readiness test, the words were selected based upon the criteria of familiarity and picturability of the words and the frequency of occurence of the sound in the language. This vocabulary test consisted of 23 items. Each stimulus card consisted of four words which were picturised and the children were asked to point out to the picture named by the tester. In the second part of the vocabulary test, they were asked to name the picture shown by the tester. The instructions were recorded.

The visual discrimination test in the present reading readiness test was constructed by analyzing the Kannada script and by selecting the distinctive features of the Kannada Alphabet. Finally a test consisting of 30 items, which required the child to match different shapes, letters and words and point out two of the items which are similar was constructed. This test required the child also to examine the items in a left to right sequence and follow directions correctly.

The auditory discrimination test developed by Kumudavalli (1973) was used in the current readine readiness test. This test makes use of thoae features that are distinctive in Kannada Language. This test consisted of seventeen minimal pairs made up by using pairs of sounds which differ in one or two distinctive features. Four pairs of pictures represented each item. The instructions and stimulus word pairs were recorded. This test required the child to pay attention to the stimulus words, listen carefully and to examine the pictures thoroughly.

In all the three tests, each correct item was scored as one and an incorrect item as zero.

The second part of the study was concerned with the administration of the newly developed reading readiness test to group of children. For this purpose, 100 school going childr-en of Mysore city ranging in age from 3.0 years to 6.6 years were selected. They were grouped on the basis of age. There were four such groups. The test was administered individually and it was scored on the basis of number of correct responses. The maximum reading readiness scores that could be obtained was 118, with the maximum vocabulary score being 22, maximum visual discrimination score being 28 and maximum auditory discrimination score being 68.

The data for each group was analysed and statistical treatment was done. The results showed that the means of total

reading readiness scores increased with age. Similarly means of visual diascimination and auditory discrimination scores increased with age. Mean vocabulary scores increased from age group 1 to 2 and reached a plateau in the second group itself. This indicated that the vocabulary teat was found to be too easy and to improve the efficiency of the test, there was a need for increasing the difficulty of the test.

The results also indicated no significant difference in the performance of boys and girls on this test on any of the three abilities concerned.

Reliability of this test was estabiiahed by test - re-test method and the test was found to have fairly high reliability (0.90).

The test was found to have fairly high conatruct validity, which was established by finding out the correlation between total reading readiness scores and subtest scores. The test also has good content validity. The predictive validity of the test was eatablished by comparing the teacher's eatimates of children's reading and reading readineas test results, by means of a device called coefficient of contingency. The results indicated a less subatantial agreement between the two, indicating a low predictive validity. To conclude the current test satisfies the criteria of good content validity, high construct validity and fairly high reliability. Therefore this test can be used as a guide to

identify the weaknesses in the specific abilities tested. This test also provides a quick and reliable measure of the important reading readiness factors such as vocabulary, visual discrimination and auditory discrimination. Once the teacher knows the strengths and weaknesses in these vital reading readiness skills and abilities, he / she can take positive steps to develop these skills in these children .

Recommendations for Further Research:

This test is a satisfactory Test. Therefore,

1. It is recommended that this test should be used to identify the weaknesses of the children in specific areas of reading until further revisions are made.
2. This test should be used in conjunction with other teats each as intelligence tests, visual acuity tests, auditory acuity tests, laterality tests, etc., in order to diagnose specific reading patterns.
3. Similar tests in other Indian Languages should be constructed.
4. The vocabulary test in the present reading readiness test has to be reconstructed to improve the efficiency of the test, and the difficulty of the task has to be increased.
5. Standardization of the test on a larger population has to be attempted and norms have to be developed

on this test.

6. Longitudinal studies with standardised reading achievement tests have to be done.

7. The discriminative ability ## tMa a^lHy of this test has to be found out.

8. Studies corroborating the the deficiencies identified by this test with other test batteries should be done.

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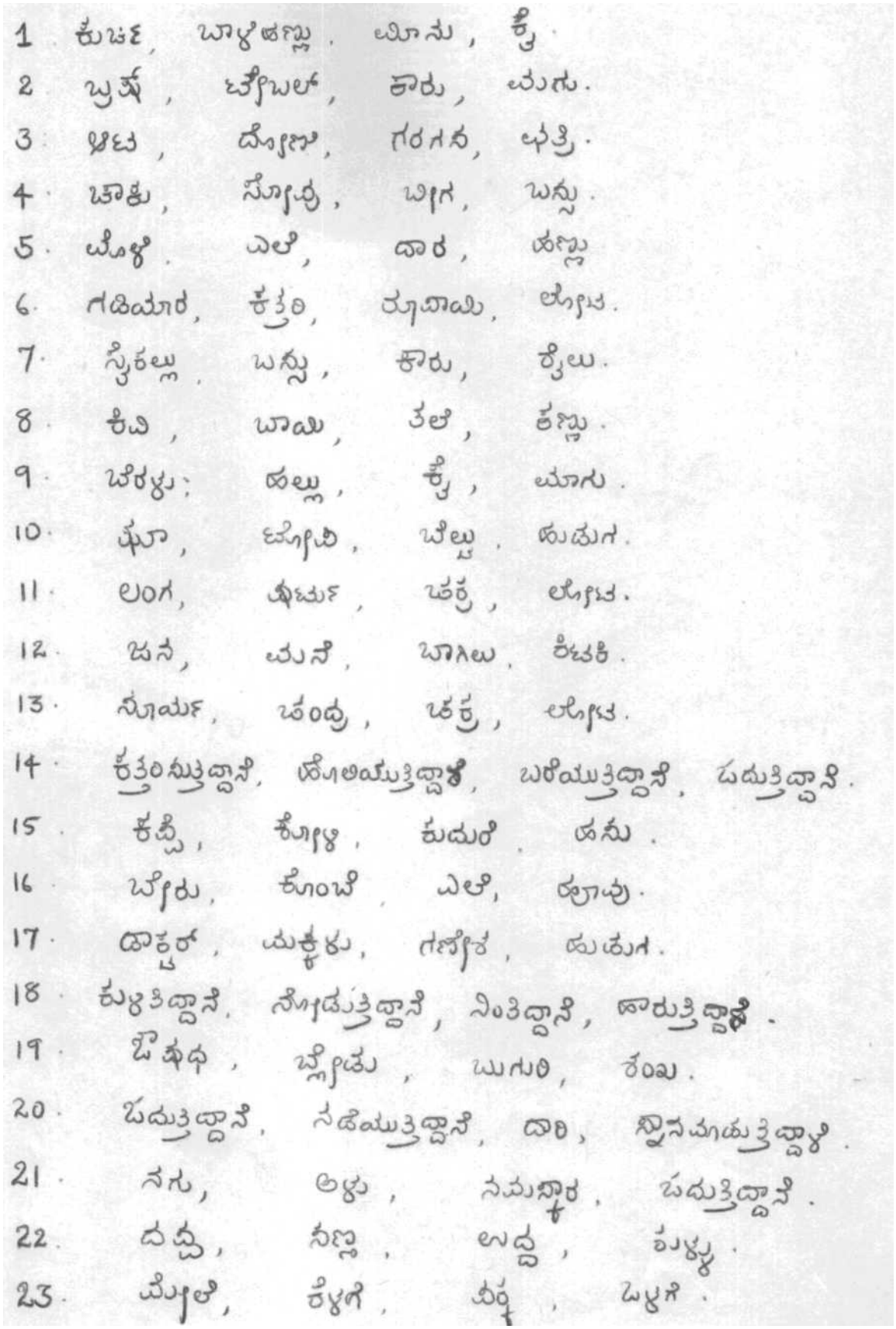
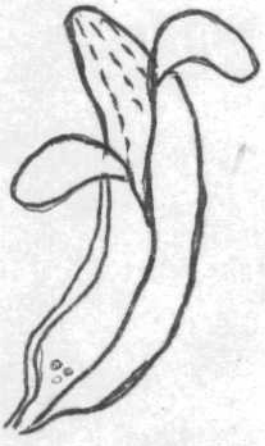
APPENDICES

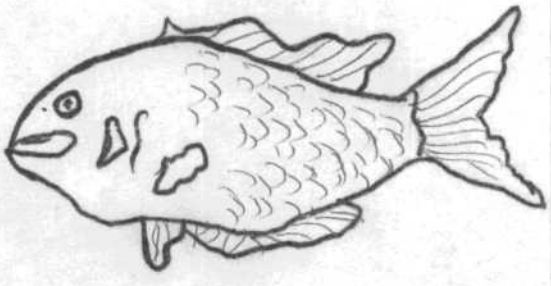
APPENDIX I (A)

The list of word chosen for the picture vocabulary test:



APPENDIX I.B SAMPLE ITEMS OF THE PICTURE VOCABULARY TEST



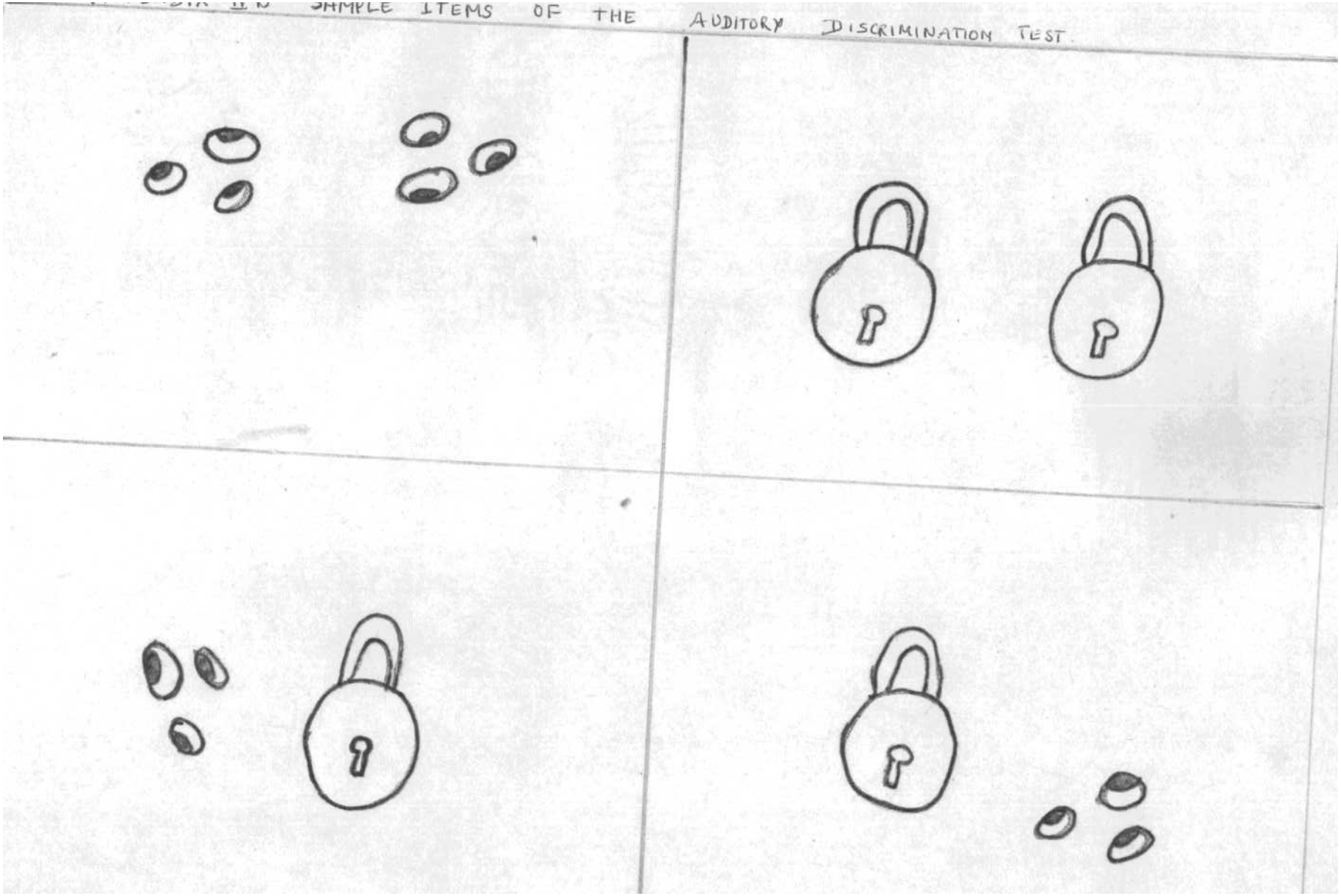


APPENDIX II (A)

The list of wordpairs used in the auditory discrmination test:

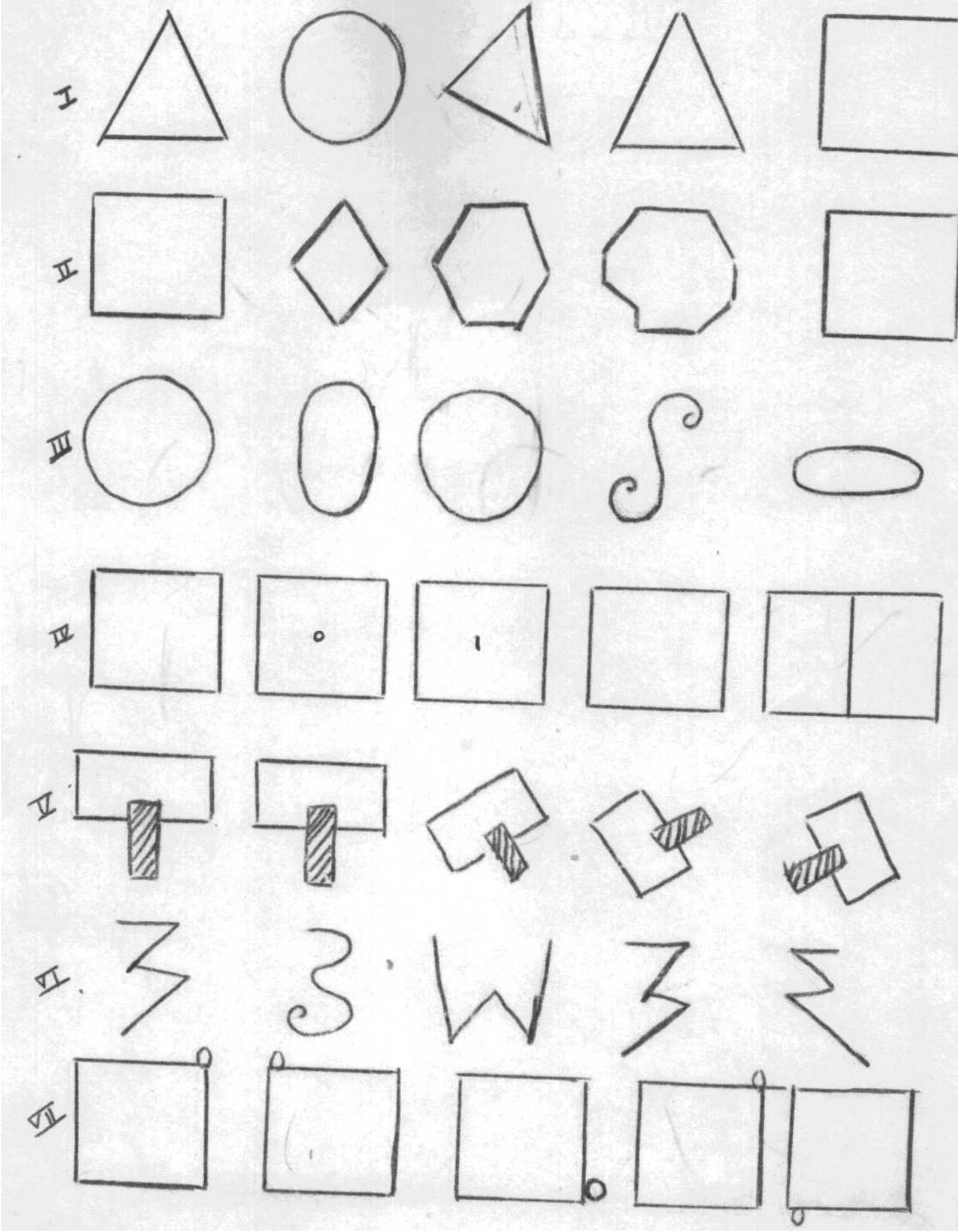
ಬೀಗ	ಬೀಳ
ದನ	ಜನ
ಚಕ್ಲಿ	ಚಕ್ಕಿ
ಓದು	ಊದು
ಇಪ್ಪತ್ತು	ಎಪ್ಪತ್ತು
ಛತ್ರಿ	ಕತ್ರಿ
ಕ್ಯಾದು	ಗೂದು
ಪೆನ್ನು	ಬೆನ್ನು
ಬಳೆ	ಮುಳೆ
ಕತ್ತು	ಕಚ್ಚು
ಕಾಲು	ಕಾಳು
ಇಲಿ	ಇಳಿ
ಡಕ್ಕಿ	ಡಕ್ಕೆ
ಬೈದಿ	ಬೈಡಿ
ಓದು	ಔದು
ಎಲೆ	ಒಲೆ
ಕಾಲು	ಕಾರು

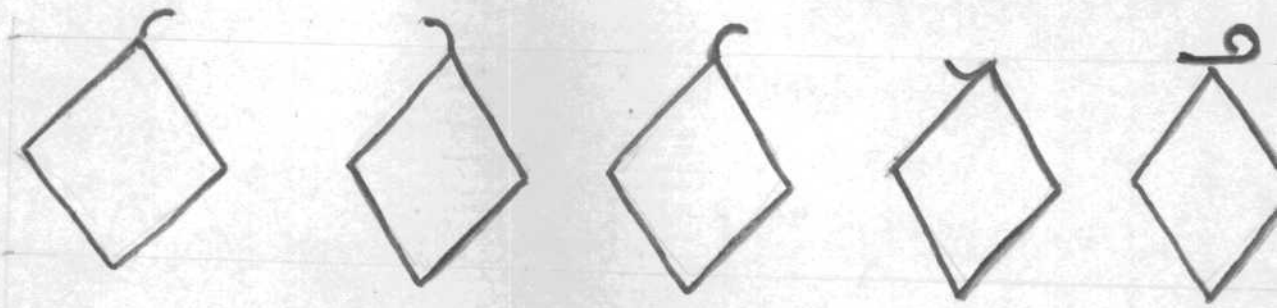
SAMPLE ITEMS OF THE AUDITORY DISCRIMINATION TEST.

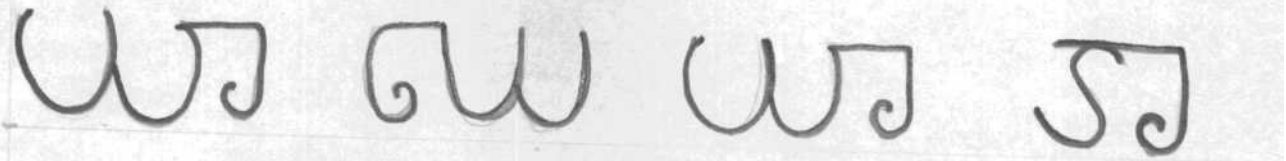


APPENDIX III

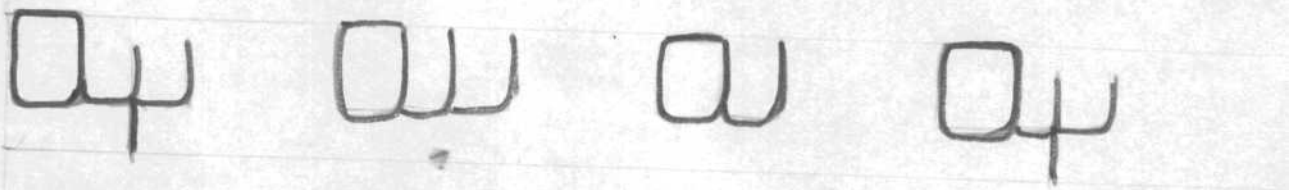
The visual discrimination test

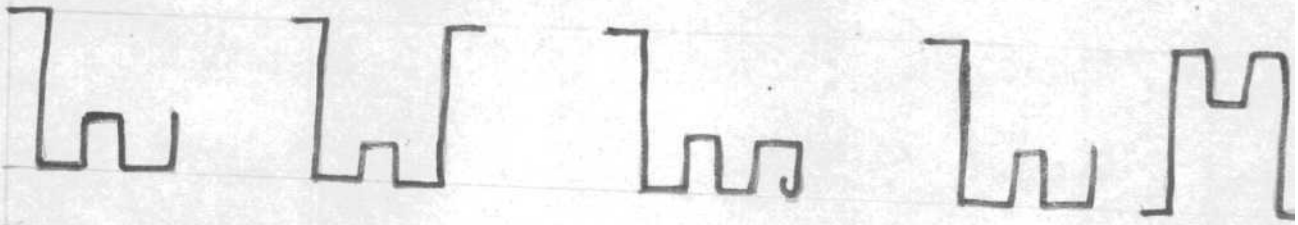


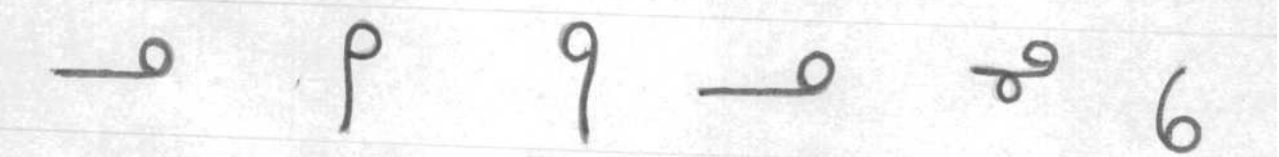
VIII 

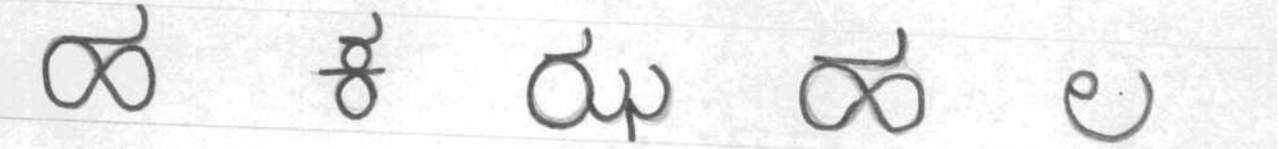
IX 

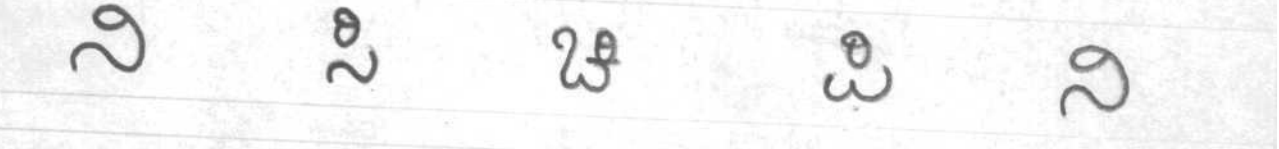
X 

XI 

XII 

XIII 

XIV 

XV 

XVI 

XVII ದ ಡ ಥ ದ ಜ ಣ

XVIII ಭ ಫ ಬ ಫ ಭ ಫ

XIX ಢ ಢ ದ ಡ ಧ

XX ಲು ಳು ಖು ಜು ಲು

XXI ಬ್ಬ ವ್ವ ಜ್ಜ ಬ್ಬ ಟ್ಟ

XXII ಸೌ ನೌ ಬೌ ಚೌ ಸೌ

XXIII ಕಿ ಠಿ ಕಿ ಕೆ ತಿ

XXIV ಕೋಳಿ ಕೋಡು ಕೂಡು ಕೋಳಿ ಕೋಣ.

XXV ಅರಸ ಅಗಸ ಅಗಲ ಅರಸ

XXVI ಠಟ ಠಣ ಠಟ ಕಣ ಪಟ

XXVII ಬಟ್ಟೆ ಪಟ್ಟೆ ಬಣ್ಣ ಬಟ್ಟೆ

XXVIII ಮಠ ಮರ ಮನೆ ಮಠ

XXIX ಬಿತ್ತು ಬಿತ್ತು ಎತ್ತು ಬಿತ್ತು ಇತ್ತು

XXX ನೀನು ನೀರು ನೀನು ನೀಲು ನೀಡು

APPENDIX IV

Data Sheet used for evaluating Reading Readiness:

Name:

Age:

Date of Birth:

Sex:

Years: Months:

Class:

School:

Medium of Instruction:

Teachers erstimate of children's reading :(Ingrades),

_____

1. Vocabulary Test: Score Sheet:

Items	Response	Scores
1	Practice Item	
2		
3		
4		
5		
6		
7		
8		
9		
10		
23		

Total Score Obtained_____

2. Visual Discrimination Test Score Sheet:

Items	Response	Scores
1	Practice Item	
2	Practice Item	
3		
4		
5		
6		
7.		
8		
9		
10		
11		
12		

Total Score Obtained_____

3. Auditory Discrimination Test: Score Sheet:

Items	Response I	II	III	Scores IV
1.				
2.				
3				
4.				
5				-
6				
7				
8				
9				
10.				
11				
12				
13				
14				
15				
16				
17				

Total Scores Obtained . . . . . .

Totl Reading Readiness scores obtaines.....