CHAPTER III

THEORY OF READING
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In recent years, there has been a global concern about developing reading. The knowledge explosion which has taken place in the process of rapid technological development today demands that the young acquire a thorough mastery of the skills of reading early in their school career. The teaching of reading today has acquired greater importance and has become a more demanding and essential aspect of the educational process than ever before. But unfortunately reading remains a neglected area in our schools partly because of the lack of training of teachers in the use of appropriate instructional strategies for developing specific skills of reading and partly because of the lack of reading readiness and motivation of the students. Our teaching and learning are examination oriented. The examination does not test reading comprehension since reading is not given any significant weightage in teaching.

Reading proficiency is the royal road to knowledge. It is essential to success in all academic subjects. Reading involves the whole personality. It promises countless personal and social values. Reading is necessary in almost all vocations. In the literate society of ours it is hard to imagine any skilled worker who does not require the ability to read. Professional competence depends on it.
The routine mechanical work in a factory demands the reading of materials, such as basic rules, safety signs, changes in Factory regulations etc. Reading is the most rewarding use of the expanded leisure. It can relieve emotional tensions and can give insight into personal problems. Thus both the work - a day world and one's personal life necessitate the cultivation of this skill.

Reading is the most important of the three R's. The man who cannot read has limited ideas and the one who can read has unbounded fields of knowledge open before him where he can rummage at will and quench his thirst for knowledge. 'Reading Maketh a full man', said Bacon long ago. Reading habits not only help the individual in accumulating stores of knowledge and wisdom from one's cultural heritage but are also a stimulating pursuit for leisure hours. Good reading habits facilitate the process of self education.

Reading is a process of dealing with language in its printed form. As such, it is language activity. "Reading is the number one curriculum concern of educators (and of parents too). It is at the centre of the curriculum in the early grades and an important part or need in the curriculum of all grades. Virtually every teacher in the elementary grades teaches reading and pupils need reading skill in all subjects at all levels. More research has been
done on reading than on any other subject in the curriculum. More has been written, more conferences held, more materials have been produced, more approaches tried and more national interest has been expressed about reading than about any other aspect of school's instruction programme.¹

But in India, in spite of its many advantages, reading has been neglected in schools and colleges. Like several other developing countries India has not been able to achieve a high level of performance in reading. There is hardly any research done on reading efficiency at the Ph. D. level. One may find a few Diploma dissertations at the CILEP, Hyderabad and, of course, a good number of articles on different aspects of reading in journals in the past few years. We do not have any reading clinic for improving the reading efficiency of students studying at different levels. There is no reading association to inform teachers of the latest innovations and research in the field. In the U.S.A. and the U.K. the average citizen is very conscious of his attainment in reading and exploits all possible resources to better his attainments. In spite of all their efforts the National Centre for Educational Statistics reports:

One out of every four eleven-year-old children in the U.S. reads below the level of an average nine-year-old child. About seven million public school pupils in the United States (about 16 percent of school enrollment) require special instruction in reading.2

If this is the situation in the USA the plight of developing countries like India where very little or nothing is being done about teaching of reading can only be imagined. The attainment of our students in reading is very low compared with that of students from other countries. This could be inferred from the survey of Reading Comprehension Education in Fifteen Countries made by R. L. Thornlike:

In the case of reading speed, two of the countries that scored relatively poorly on the comprehension test show very large standard deviations on the speed test. However, these large standard deviations are accompanied by high mean and large standard deviation in number of errors on speed test. One gets the impression that in Iran and Chile some individuals went through the tests very rapidly with minimal level of understanding marking but not really reading and comprehending. This tendency to dash ahead and mark whether one understands or not seems to be even more uniformly the case in India.3

2 Vera South Gate (ed.), Literacy at all Levels, United Kingdom Reading Association, London, 1972, p. 21.

K. R. Narayanaswamy's experiment at Hyderabad reveals that the initial average reading speed of the Hindi Arts College (Hyderabad) students, who were tested on the Fry passages, was a bare 138 words per minute with only 36 percent comprehension. The results of the investigation into the reading efficiency in English of the students of standard XI in one of the local colleges by this investigator is in no way better. The initial average reading speed of Arts students was 112 WPM with only 43 percent comprehension. The Commerce students were poorer. Their initial average reading speed was 102 WPM with 40 percent comprehension. The Science students were comparatively better. Their initial average reading speed was 138 WPM and comprehension 47 percent. A point which is worth considering here is that the passages were far too easy compared with those of Fry and even those of Narayanaswami. This gives us enough evidence of the average Indian student's competence in reading skill.

It is time we seriously thought of doing something to remove this deficiency. Unfortunately very little is being done in this direction.

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Linguistics and Reading:

By reading is meant here, and generally in modern education, silent reading. The teaching of silent reading in the West is relatively recent. It was only after World War I that there was general agreement on rapid silent reading as the primary objective of school instruction. Until then reading meant reading aloud. If a pupil could read aloud with due attention to pronunciation and articulation and to the modulation of his voice, he passed the test of a good reader. To this there was at least one notable exception. G. L. Farnham published in 1881, a book entitled 'The Sentence Method of Teaching Reading' in which he made a persuasive plea for 'eye reading' as he called it. He observes:

The object in teaching should be to make every pupil an eye-reader to give him the ability to look directly through the written expression to the meaning, or to at once detect the unknown elements that prevent the accomplishment of this object.5

Edward Fry holds a similar view. According to him the reader:

Should go as directly as possible to the author's idea. He should not be a proof reader and worry about spelling,

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he should not be a radio announcer and worry about pronunciation, he should be a mind reader and try to determine quickly and efficiently what the author had in mind.\textsuperscript{6}

The linguists and linguistically-oriented teachers maintain that the shortest route to reading is to learn the spoken language first. Charles C. Fries suggests:

One can "read", in so far as he "can respond" to the language signals represented by patterns of graphic shapes as fully as he has already learned to respond to some language signals of his code represented by patterns of auditory shapes.\textsuperscript{7}

Harold Palmer is equally emphatic on the subject. In 'the Principles of Language Study' he concurs:

To learn, however, the written form of the language before having learnt to assimilate the spoken form is unnatural and contrary to all our linguistic instincts; it is comparable to learning to cycle before having learned to walk.\textsuperscript{8}


He returns to this theme again after a few pages in the same book and observes:

... all normal people inner-articulate all that they read. ... We are incapable of understanding what we read unless a process of inner-articulation is going on at the same time.\(^9\)

Not all linguists\(^{10}\) agree on how their insights ought to be applied to teaching reading. There is, however, some common ground, a core of information, about language that they agree upon.

The linguist's or the linguistically-oriented teacher's views on reading as a process and as a goal of teaching may be summarised as follows:

1) All reading is a form of 'inner speech' and thought-getting is impossible without some kind of vocalization or subvocalization;

2) speech is the shortest route to reading at all times and in all circumstances;

3) it is unnatural to teach reading before teaching the spoken language.

These propositions presuppose that reading is derivative. If we accept this proposition how can we explain the fact that many words, about double the number of words used in

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9. Ibid., p. 44.

speech, are recognized by even native speakers in print. I. Morris in one of his articles on vocabulary control observes:

Although a normally educated Englishman may 'know' as many as 60,000 words when he encounters them in texts, the average speaker will not exceed the limits of 20,000 when expressing his own thoughts. 11

If reading is considered just a process of transfer from auditory signs to their equivalent visual signs then the distinction between active vocabulary and recognition vocabulary would appear to be meaningless. 12

D. W. Reed emphasises the primacy of speech concept when he says: "... the newer grammars move from syntax to speech and writing rather than vice-versa. 12

He also questions the attempts at defining writing as "a secondary presentation of speech, for to do so would render us unable to explain deaf mutes who read or skilled readers who read with far greater speed than the most rapid speaker can speak." 13

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11. Morris, I., Principles of Vocabulary Control, ELT, Selections 1, p. 33.


13. Ibid.
The linguist, however, insists on the primacy of speech over writing. This is not true under all circumstances. Articulation may facilitate reading at the initial stage but as one advances one can comprehend without articulation if proper habits of reading have been formed. For a child who is learning his mother tongue, speaking should precede reading but this may not be necessary for a child — not so young — learning the second language. The child learns to speak the mother tongue (L₁) because he cannot help it. The 'second' or 'third' language learning cannot be the natural process it is in the case of the 'first' language learner. In second language learning the spoken form of the language presents by far the major hurdle since there is no easily available environment for reinforcement. To quote Michael West:

Is it possible to teach reading ability prior to and independent of speech ability? The ordinary view, of course, is that the best way of preparing a body for reading is to teach him to speak. Now that seems to me on the face of it absurd. You are preparing him for something quite easy by teaching something at least four times as difficult, and so keeping down the progress of the reading course to one quarter of what it might be. It is like getting a baby to walk by teaching it roller-skating.¹⁴

West concedes that reading is "a process of sight-sound sense."

In the early stages it is usually speech, but when the child is able to read faster — that is, over 300 words a minute — speech begins to become a mutter; then a half-formed scheme or skeleton of words, and eventually a silent shadow, passing through the wind with no outward show. It may even (possibly) drop out altogether, learning a direct bond between sight and sense.15

The propositions either of C. G. Fries that speech is the shortest route to reading or that of Michael West that learning to read is by far the shortest road to learning to speak and write cannot be accepted without reservation. Spoken and written forms of language are two distinct and yet interrelated modes of communication. We can divide them only for pedagogical reasons rather than "for any natural or assumed superiority of one over the other."

Some Linguistic Approaches:

Leonard Bloomfield's famous book 'Language' marked the beginning of the linguistic era in the United States. His "Linguistics and Reading" signalled the beginning of

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the linguist's attention to reading instruction. In this article he describes the alphabetic nature of the English writing system in some detail. He criticizes the phonics and word methods of teaching reading that were popular at that time as well as the sentence method. He then gives a basic outline of his own approach, which consists of better recognition as the first step, followed by left-to-right scanning and then the use of words in which the sound-symbol relationships are consistent, beginning with two or three letter words (including non-sense syllables) and progressing to less regular words. Criticizing the phonic method he observes:

The letters of the alphabet are signs which direct us to produce sounds of our language. A confused and vague appreciation of this fact has given rise to the so called "phonics" methods of teaching children to read. This method suffers from several serious faults.

The inventors of these methods confuse writing with speech. They plan the work as though the child were being taught to produce—that is, as if the child were being taught to speak. ... Alphabetic writing merely directs the reader to produce certain speech sounds. A person who cannot produce these sounds cannot get the message of a piece of alphabetic writing. If a child has not learned to utter the speech sounds of our language, the only sensible course is to postpone reading until he has learned to speak.16

Discussing the drawbacks of the word method he says:

One most serious drawback of all the English reading instruction known to me, regardless of the special method that is in each case advocated, is the drawback of the word method. The written forms of words are presented to the child in an order which conceals the alphabetic principle. ... The irregularities of spelling — that is its deviation from the alphabetic principle — demand careful handling if they are not to confuse the child and to delay his acquisition of the alphabetic habit. 17

Like Bloomfield, Charles Fries was a noted linguist. He too was interested in the application of linguistics to reading instruction. Fries's theory of reading is fully explained in his widely known book, 'Linguistics and Reading'. He states:

To read any writing effectively, one must develop high speed recognition responses to the graphic signs as representations of significant language parts. ... The spelling pattern approach to the teaching of reading develops the relation between the word - patterns (as sequence of phoneme contrasts) and spelling patterns (as sequence of grapheme contrasts). 18

17* Ibid., p. 29.
He also acknowledges the importance of comprehension in reading, an idea which was supported by Bloomfield. He suggests:

Linguistics does not ignore meaning of any kind. It insists that statements about the signals of meaning to be scientific must be made in physical terms, but it does not deny that practical language deals with a complex range of various kinds of meanings which must be understood. 19

Carl A. Lefevre presents a different point of view about linguistics and reading from that presented either by Bloomfield or by Charles Fries. He considers their theories as being too narrow a view of the reading process. Lefevre sees reading as a language-related process. His approach goes beyond words. He puts the primary emphasis on sentence patterns rather than on word patterns. He also concerns himself with structural devices "between and among sentences", leading to paragraphs and longer reading selections. He applies linguistics to reading of literature and gives a great deal of attention to the role of intonation (pitch, stress and juncture) in both reading and literature. He observes:

We see that writing, not spelling, is seriously concerned with communication. Now consider reading; reading involves no active production of letters, words or sentences at all. What reading

19. Ibid, p. 242
requires is recognition and interpretation of the graphic counterparts of entire spoken utterances as unitary meaning bearing patterns; this is reading comprehension. These considerations may help us to evaluate the role of spelling in reading and in reading instruction.

Sooner or later all the letters in all the words laid end to end, line after line and page after page, must reach not from here to eternity in the child's eyes; all words must pattern themselves into sentences. The sentence is the fundamental unit both for written composition and for reading comprehension... 20

The validity of the linguistic approach to reading is very often questioned. In 1964 Emmett Betts put forth the view:

At the present time there is no substantial evidence that the study of either descriptive or generative grammar increases the pupil's ability to write or to read. 21


And after five years William W. West, in his article "Values of Linguistics in High School Reading" observed:

Now almost five years later we must still preface a discussion of each of these values with an identical warning: "At present time there is no substantial evidence..." But note that the stress on the word substantial is "phonemic" here — that is it changes the meaning ever so slightly: there is beginning to be evidence, but it is not yet substantial. 22

Some individual research studies comparing the linguistic approach with some other method or combination of methods revealed an edge for linguistics or no significant difference. It is true that linguistics is not the whole answer to reading instruction but it does have something to contribute. Linguistics and linguistic approach do have something to offer in reading instruction. Linguistics offers an effective approach to word-study skills. The linguistic approach offers another alternative to teaching children who fail with more conventional approaches.

Mechanics of Reading

Reading requires the process of visual discrimination, recognition of words, rhythmic progression of eye along a line of print, accuracy in return sweep of the eyes and adjustment of rate. These are mostly physiological factors some of which may cause difficulty in initial reading. They are predominantly related to the levels of recognition and

22. Ibid.
structuring of the reading process. Most of these may create problems for the learner. Reading is a complex process and involves mastery of a number of skills. Some of these skills can be analysed but not all. Discussing the aspects of reading ability J. P. B. Allen and S. Pit Corder observe:

The first is that the learner child or student has to realize the nature of reading task. We are not ourselves clear enough about it to give him an analysis which will be of much help.23

Reading is not simply a physiological phenomenon. It is not just 'barking at print'. It is also a psychological process involving thinking. The good reader thinks with the writer and if his experiences are different from those of the writer, he frequently thinks either beyond, or differently from, the writer. E. V. Dechant puts forth a similar point of view when he writes:

Reading is far more than recognition of the graphic symbols. It is much more than the mere ability to pronounce the words on the printed page; it is even more than gaining of meaning from printed materials. The reader is, stimulated by the writer's words, but in turn vests these words with his own meaning.24


Ruth Strang suggests:

The psychological process of reading includes all that goes on between intake—the stimulus of the printed word and output—the reader's response in thought, spoken or written words, or action. Response may take the form of a mental image, a principle, or a new way of looking at something.25

Thus, reading involves a two-fold process. "There are mechanical processes involved in bringing the stimuli to the brain, and there are the mental processes involved in interpreting the stimuli after they get to the brain."26

Reading involves two kinds of skills perceptual and conceptual. Perception is a cognitive process by which visual impressions become meaningful in the light of the individual's past experiences. It involves understanding, comprehension and organization. Perception of the meaning of the printed words involves more than visual perception, determination, auditory perception, discrimination and sound symbol associations. The quality of one's perception can be affected by the change of the nature of the situation.

The perceptual style differs from person to person. Good readers may see words as wholes while poor readers may perceive only word fragments. In order to help the poor


readers develop better perception the aspects of reading which may affect their perception need to be taken care of.

The Speed Breakers
Pointing to the Words:

A bad reader is one who has contracted several bad habits. One of these bad habits that impedes the reading speed and in consequence affects reading efficiency of the reader is pointing to the words with a finger, pencil or ruler. This habit develops, perhaps, due to "a hang over from the early habit of reading word by word which may partly be ascribed to the alphabetic method and the word method of teaching reading."27

But this habit of running the index finger along the line of print can be exploited for improving reading speed. Herbert W. Seliger quotes28 a reading improvement programme in the United States which allows the use of finger and it has been found that it is an extremely effective tool in speeding up reading and correcting regression habits. Seliger supports the use of finger for


improving reading speed and suggests:

If the reader follows his finger through the reading text, he speeds up his eye movements and rarely regresses. ... The speed with which the reader moves his finger can also be adjusted to the difficulty of material being read. 29.

Head Movement:

Another common fault that one may observe is head movement. The readers who are nervous about their reading or those who meddle hard, as during a reading speed test may resort to this habit. The head turns slightly as the reader reads across the line. The student tries to aim his nose at the word he is reading. This habit affects speed in reading as the reader reads a word or two with each jerky movement of his head. A good reader does not move his head while moving his eyes and reads as many words as possible in each eye fixation.

Vocalization and Sub-vocalization:

The other terms that figure largely in reading jargon are 'vocalization' and 'sub-vocalization'. Vocalization is the habit of saying or whispering the words even when one is reading for meaning. The disadvantage

29. Ibid.
of pronouncing words while one reads them is that it tends
to tie the reading speed with speaking speed. Edward Fry notes
that "English is usually spoken at about 150 words per minute,
while an average person in England or the United States can
read at 250 words per minute or faster." Articulation may
facilitate reading initially but after a reader attains some
maturity it becomes undesirable. Researches have shown that
most readers tend to inner-articulate when they read. Ruth
Strang quotes Eifeldt who studied electromyographic methods
of determining the extent of inner vocalization during
silent reading. Eifeldt's experiment "demonstrated some
degree of inner or silent speech in all silent reading, but
is not necessarily detrimental to good silent reading, though
it may result in a slow rate of silent reading among some
individuals." Anderson and Dearborn in their experiment of
the vocalization of very elementary readers found that
pronunciation of words gradually becomes superfluous,
vocalization decreases and by the process of cue reduction
silent reading develops." Vocalization takes various

30. Edward Fry, op. cit, p. 2

31. Ruth Strang, op. cit, p. 77. See also Sokolov's
experiment quoted by Neville and Pugh, ELT Vol.XXIX,
No.4, July 1975 p. 321. He reports "that the least
sub-vocalization occurred when they (Russian subjects)
were reading difficult English texts which they did
not understand. However, on lighter English that
subvocalization was marked."

32. Quoted in Mary H. Neville and A. H. Pugh, op. cit;
p. 321.
modified forms. The reader may make tongue, throat, lip or vocal cords movements. This can be controlled if the reader makes conscious efforts.

Sub-vocalization is an inner type of speech. The student says each word to himself in his mind. The habit of sub-vocalization cannot be eliminated completely and it is the reader himself who can evaluate it. Owen Webster suggests:

... I have seen so many resigned to irretrievable ignorance, or worried to the point of reading with neither pleasure nor comprehension, by exhortations to stop sub-vocalizing, that I long ago decided to concentrate on those aspects of reading which were amenable to training and suggestion, and let sub-vocalization take care of itself. 33

Eifelt's study 34 demonstrated that there is some degree of inner or silent speech in all silent reading. It may not be detrimental to good silent reading, though it may result in a slower rate of silent reading in some readers.

Fixations and Regressions

It is now well-known that eyes do not move along a line of print in one continuous sweep. They move in jerks, in a rapid series of stop-and-go movements called 'fixation'.

33. Owen Webster, op. cit., p. 91

34. Quoted by Ruth Strang, op. cit., p. 77.
pauses or saccadic movements. These movements are so fast that while they are in process no clear vision is possible. The span of material grasped each time the eye stops is called 'span of recognition' or 'reader's eye span'. The span of recognition of an average reader is 1.25 words per fixation. In actual reading practice this might mean that an average reader might make one fixation on a word of average size, two fixations on a word of five or six syllables or he might see two short words in one fixation. G. C. Ahuja and P. Ahuja suggest: The span of recognition averages 13 to 14 letter spaces (say about 3 words for good readers) and 6 spaces (say about 1 word) for poor readers. 35

Poor readers see one or less per fixation whereas good readers may see two or three words. Buswell 36 found that the average child in grade one made between 15.5 and 18.6 fixations per 3½ inch line. The average college student made only 3.9 fixations on a line of similar length.


Frank Smith observes:

The number of fixations varies both with the skill of the reader and the difficulty of the passage being read, but not to any remarkable extent. In fact, fixation rate settles down by about grade 4. There is a slight tendency for skilled readers to change fixations faster than unskilled readers, but the difference is only about one extra fixation a second; adults may average four while the child just starting to read changes fixation three times a second. For any reader, skilled or unskilled, reading a difficult passage may cut about one fixation a second off the fastest reading rate.37

Thus the duration and frequency of fixations vary with the difficulty level of the reading material and the reader's facility in word recognition. It varies with reader's familiarity with the content, with his purpose and with his ability to assimilate ideas. Edward Fry suggests that: "the length of a fixation is fairly constant for all human beings, being about one-fifth of a second."38 This means that the fixation time is constant and the amount of material which a person sees during a fixation is a variable. This is a point in favour of the use of


tachistoscopic training. Words are exposed on the screen of the tachistoscope for less than one-fifth of a second and the amount of material flashed is gradually increased from one word to two words and then to three words progressively. It is believed that this method may help some students to increase their span of recognition.

Edward Fry in this regard opines:

This opinion is neither proved nor disproved by research. Some reading instructors still maintain that for some students tachistoscopic training is of use in breaking up mental training or sub-vocal word-by-word reading habits also.

Gradual widening of the span of recognition increases speed as well as comprehension since the reader manages to read the entire line in the same amount of time as is required for reading a single word or two. He also understands the sentence better.

Regression is another common fault. Regression is backward movement along the same line of print. There are several causes that lead to regression. With very poor readers, the most common cause of regression is failure to recognize the meaning of the word. This necessitates additional inspection of the word. Among other causes are failure to recognize the meaning of a word, in particular, failure to get the meaning of a word from the given context.

A reader may regress because of difficult phrases or

39A. Ibid.
difficult vocabulary. Sometimes even a good reader makes regression for re-examining or re-evaluating a line or a statement. Frank Smith does not see any significant difference between children and adults in the matter of regression. He says:

Children do tend to make more regressions than fluent readers, but not so many more, perhaps one for every four progressive fixations and compared with one in six for the adult.\(^{39}\)

In short, we can say that the duration of fixations and the number of regressions are not reliable indices for distinguishing between a good reader and a poor reader. A good reader and a poor reader can be distinguished on the basis of the amount of meaning one grasps in a single fixation.

Training in reading speed is given either by means of eye movement pacing devices or by exposing the pupils to printed material specially prepared for the purpose or by both. There are a variety of mechanical gadgets to help quicker reading. The three main types are the film, the reading rate controller and the tachistoscope. The films project a page of print on to a screen and reveal it gradually from top to bottom. The main disadvantage of this device is

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that their pace cannot be varied according to the needs of the individual reader. The Harvard and the Carborundum material consist of a series of films.

The reading rate-controller is a frame for a printed sheet with a control knob to vary the speed at which a bar moves down the page. It forces the eye to move with it.

The tachistoscope is simply a slide projector with a camera shutter attached to its lens. Words and phrases of varying length are exposed on to a screen at different speeds varying from one second to one hundredth of a second. The basic principle underlying the device is the same as that of the flash card, the only difference between the two being that the tachistoscope is operated mechanically or electronically.

Not all experts approve of the use of mechanical devices for improving reading rate. Owen Webster for instance, is sceptical of these devices and comments:

It is an important part of my thesis in this book that anything can be learnt from books, given the determination, and provided that they are well written and properly read. Mechanical aids to learning may contribute to the amusement of

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any course of training or study but they
detract from the sense of personal
achievement. And in the long run it is
questionable whether they do much to
speed up the learning process, unless
their alternate is bad books, poor
teachers, or unlettered students. 41

De Boer and Dallmann 42 on the other hand consider
that eye movements 'reflect' and do not 'produce' reading
He suggests 43 that training in eye-spacing can be of some
benefit and may make some sense with native speakers of the
language for whom comprehension is no problem and whose
chief difficulty is a poor reading speed. This seems to be
ture. In the second language teaching situation, where the
basic problem is comprehension, such training will be of
little use. Experiments with tachistoscope have revealed
that the more meaningful the material exposed, the wider
is the span. 44

This discussion leads to another dimension of
reading efficiency i.e. conceptual skill. By conceptual
skill is meant skill in comprehension. Today the emphasis

41. Webster Owen. Read Well and Remember Well, (London: The


43. Ibid., p. 23.

44. Anderson, I. H. and Dearborn, The Psychology of
is on comprehension rather than on speed. Ruth Strang opines:

Reading is more than seeing words clearly, more than pronouncing printed words correctly, more than recognizing the meaning of isolated words. Reading requires you to think, feel, and imagine. Effective reading is purposeful. The use one makes of his reading largely determines what he reads, why he reads, and how he reads.

Reading Speed and Comprehension:

Researches have rightly emphasized the relationship between speed and comprehension. Reading Efficiency, therefore, may be defined as a product of reading rate and comprehension. Some experts maintain that in order to comprehend effectively one should concentrate on increasing the reading rate though most of these include some type of comprehension check. This for two reasons:

1) the belief that faster reading results in better comprehension;
2) the belief that reading speed is unimportant unless some minimal level of comprehension is maintained.


In his experiment at Dacca, Michael West\textsuperscript{47} confined himself to testing the rate of reading alone in an attempt at making his test as 'pure' as possible. This was because he believed that comprehension could not be improved by classroom practice. Edward Fry, Cawson and McKillop and Yoloye conducted experiments in rapid reading only.

Some experts maintain that the ultimate goal of reading is comprehension and therefore comprehension is more important than speed. McKillop and Yoloye in their experiments with Nigerian students stressed comprehension. "They discovered that the Nigerian students had only one speed, the study reading speed; but they felt that there was little point in training for speed until the problem of comprehension was tackled."\textsuperscript{48} Narayanaswamy also stresses comprehension.

The standardised reading tests of today, therefore aim at measuring both speed and comprehension. Passages testing both speed and comprehension are most suitable since these two variables are interrelated and interdependent.


Reading speed is defined in terms of the number of words read within any given period usually words per minute. The value of the ability to read rapidly and efficiently is important if not central. Roger Fry suggests:

This is certainly justifiable on both logical and empirical grounds — the large volume of reading required in most academic and vocational endeavours is reason enough for the development of speed reading programs. 49

A good reader is one who has flexible speed of reading. Slow reading is not always bad. If a reader is reading materials which involve directions and his purpose is to achieve hundred percent comprehension, he must go slowly so that he grasps the minutest details of these instructions. Edward Fry calls this type of speed “Study Speed”. 50

Flexibility in reading rate is the skill of not reading everything at the same rate. Flexibility enables a reader to vary his reading speed according to the nature of materials to be read. Jack Holmes rightly states:

The secret of good reading lies in the ability to know when and how to change pace. The mundane material concerning

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49. Roger Fry, Reading: What can be Measured? (Newark, Delaware: International Reading Association, 1969), p. 44.

50. Edward Fry, op. cit, p. 43.
the commerce of life may well be read quickly; but when one comes to the crux of the message, or when one fortuitously encounters one of those fountain head concepts from which ideas flow, then one must deliberately drink the delightful draught until the full meaning has been drained.51

Reading rate is no doubt important but reading without understanding is no reading. Comprehension and not speed, therefore, should be our prime concern and consideration, but at the same time brooding over the same material for the whole day to get 100% comprehension is of no use. Fast readers may not in all cases be good comprehenders but poor readers are necessarily poor comprehenders.

The upshot of the above discussion is that the reading efficiency of a reader should be judged on the basis of both speed and comprehension.

This also suggests that 'pure' speed tests or 'pure' comprehension tests may not be appropriate to measure reading efficiency. Narayanaswamy K. R. rightly comments:

The quest for 'purity' whether in life or language testing, may ever remain elusive, however desirable. Language

is not Mathematics. In Mathematics, as Parrren points out the skills to be sampled can be defined and measured by reliable techniques, easy to devise and use. In language the skills, besides being closely interrelated, are deeply involved with life itself. 52

The early attempts to isolate specific reading comprehension skills employed factor analysis techniques. F. B. Davis 53 as early as 1944 developed tests of nine skills which he believed to be the essential components of reading comprehension. The following are the nine reading skills included in Davis Tests:

1) Knowledge of word meanings

2) ability to select the appropriate meaning for a word or phrase in the light of its particular contextual setting.

3) ability to follow the organization of a passage and to identify antecedents and references in it

4) ability to select the main thought of a passage

5) ability to answer questions that are specifically answered in a passage

6) ability to answer questions that are answered in a passage but not in words in which the question is asked


7) **ability to draw inferences from a passage about its contents**

8) **ability to recognize the literary devices used in a passage and to determine its mood and intent**

9) **ability to determine the writer's purpose, intent and point of views, i.e., to draw inferences about a writer.**

A factor analysis of the results of these tests administered to a group of college freshmen produced only five statistically significant skills. Two of them, word knowledge and reasoning, accounted for 39 percent of the total variance. The five reading comprehension skills were:

1) **word knowledge,**

2) **ability to reason in reading,**

3) **ability to follow the organization of a passage and to identify antecedents and reference in it,**

4) **ability to recognize the literary devices used in a passage and to determine its tone and mood, and**

5) **tendency to focus attention on a writer's explicit statements to the exclusion of their implications.**

In 1953, L. C. Runt examined the correlations of a number of sub-tests of reading comprehension to

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53+ Ibid.
determine if each of the measures of reading comprehension which he developed were distinct and measurable skills. He concluded that each sub-test was measuring the same thing. He, therefore, suggested that diagnostic measures of reading comprehension needed further research. Macmillan includes the following:

i) reading to get the main idea,

ii) reading to get important details,

iii) reading to answer specific questions,

iv) reading to follow the logical sequence and development of ideas,

v) reading to apply what is read,

vi) reading for deductions and implications,

vii) reading to evaluate.

He defines comprehension as follows:

Understanding what is written within, between and beyond the lines—in other words, intelligent interpretation. 55

A. V. P. Elliott56 in a series of two articles in ELT suggests the following three types of understanding:

i) imaginative understanding, (ii) precise understanding


and (iii) practical understanding. Prof. Yardi V. V. believes that "it is 'precise understanding' and 'practical understanding' which are of immediate relevance to us."57

By 'precise understanding' Elliott means:

It enables the reader to understand the exact meaning of a descriptive word or sentence, to know exactly what is being said in a scientific book or journal, to comprehend accurately the text and nothing but the text. . . .58

And the "practical understanding" according to him:

. . . enables the reader to let the text guide his hands. It is important for the garage proprietor who holds the agency for a British or American make of car and who must understand the very detailed and technical institutions which are issued by the makers. It is equally important for the boy who needs a simple pamphlet on the care of his bicycle.59

"Imaginative understanding" is essential for appreciating literature. This type of understanding may be desirable but not strictly necessary in L3 situation, where the objective is not literary appreciation of a high order.

57. Yardi V. V., op. cit., p. 67.
59. Ibid.
The three types of understanding that Elliott suggests are not interdependent variables, however, the distinction can help in preparing reading materials.

**Measurement of Reading Efficiency:**

That speed and comprehension are the two elements in all reading is the conclusion we derive from earlier discussion, and as a corollary we can say that an efficient reader is one who reads fast and comprehends well. However, there can not be a single uniform speed for all reading. The speed of reading will depend on the degree of difficulty of the materials read and the purpose for which it is read. The amount of comprehension required will again depend on the purpose in view. Thus speed is the function of comprehension. G. Bond and M. Tinker define "rate of reading" as "rate of comprehension of printed and written material."60 Smith and Dechant also suggest that "rate of reading has no meaning apart from rate of comprehension."61 Edward Fry suggests three types of reading speed — 'Study reading speed,' 'average reading speed' and 'Skimming speed'. The study reading speed according to Fry is:

... the slowest reading speed, and it is used for difficult material.

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It is also used when one wishes to have a high rate of understanding as well as good retention. In this type of reading the student attempts to study the material carefully so that he will not miss a single point. He also hopes to remember the material at a later time.  

The average reading is what a student does most of the time. The average reading speed is the rate at which most material is read — material like easier textbooks, novels, magazines and newspapers. Edward Fry, while admitting the fact, that it is difficult to define what average reading speed should be, suggests:

... it would certainly be faster than 250 words per minute, while many students can read quite comfortably at 500 words per minute after training.  

Average reading speed varies from person to person and from time to time. The comprehension required in this type of reading is around 70%.

The third type of reading speed that Fry suggests is skimming. It is reading at the fastest speed which a person can attain. A good reader adopts this speed when he wishes to cover in a hurry large chunks of written/printed materials. This naturally affects comprehension which may sink as low as 40% to 50%. Edward Fry grades

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62. Edward Fry, op. cit, p. 43.
63. Ibid, p. 50.
the three types of reading speeds as follows:

<table>
<thead>
<tr>
<th>Speed</th>
<th>Type of Reading</th>
<th>Poor reader</th>
<th>Good reader</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slow</td>
<td>Study reading</td>
<td>90-125 w.p.m.</td>
<td>200-300 w.p.m.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30-90% Comp.</td>
<td>80-90% Comp.</td>
</tr>
<tr>
<td>Average</td>
<td>Average reading</td>
<td>150-180 w.p.m.</td>
<td>250-500 w.p.m.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>70% Comp.</td>
<td>70% Comp.</td>
</tr>
<tr>
<td>Fast</td>
<td>Skimming</td>
<td>Cannot skim</td>
<td>800 + w.p.m.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>50% Comp.</td>
</tr>
</tbody>
</table>

In measuring reading efficiency what is sought to be measured is both — the reading speed and comprehension. The course designer may emphasise either speed or comprehension depending on the needs of the class. The second or third language learners need to concentrate more on comprehension than on speed. Therefore a course in reading efficiency designed for these students may well insist upon developing comprehension before increasing speed.

The measurement of reading efficiency which we devise or adopt should be such that it helps to provide the teacher a ready means to measure the progress of this students' reading ability over a period. This measure should also help him to assess the day-to-day performance of an individual or the group or a class. The results should

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64. Ibid, p. 52.
serve as 'feed back' to the teacher for remedial work. To ensure this we need a method of assessment of reading which should integrate reading speed with comprehension so that it gives a composite score. (By reading speed here is meant reading at 'average reading speed').

Three such methods of integrating measurement that have been proposed may be mentioned here. Edward Fry, in his manual, suggests combining speed and comprehension in a single rough measure to be expressed as a product of the two. This means that if a reader reads at the rate of 150 words per minute with 60 percent comprehension, his reading efficiency would be 90 words per minute. The above scores are derived from the formula given below:

\[ \text{RE} = \frac{\text{Speed} \times \text{Comprehension}}{100} \]

This, however, is a rough measure and does not discriminate between a good reader and a poor reader. This measure "obscures qualitative differences in performance."\(^{65}\) This point could be clarified by reference to a few concrete examples. Two readers, one reading at a speed of 350 words per minute with 40 percent comprehension and another reading at a 200 words per minute with 70 percent comprehension

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would both get a reading efficiency score of 140 words per minute. The two readers do not have the same performance. The second reader, though he reads slowly, reads to a purpose. 70% comprehension is certainly better than 40% comprehension. And between the other two readers, one reading at 450 words per minute with 70 percent comprehension and another reading at 350 words per minute with 90 percent comprehension, the former is a better reader because he reads with a comprehension desirable for "average reading speed". 90 percent comprehension of the second reader is no doubt good but not desirable. Perhaps it is not warranted by the nature of the material he happens to be reading.

Thus the Fry method of integrating speed with comprehension does not seem to be appropriate because it integrates mechanically and fails to give due weightage to the two elements of reading efficiency.

Hunter Black 66 has devised another method of measuring reading efficiency. Black conceives of two types of reading - 'text' (i.e.; detailed) reading and 'context' (i.e.; non-detailed) reading. Context reading can roughly be compared to Edward Fry's "average reading speed". Black suggests a speed of 200 words per minute and on the basis

of this the time for reading the given passage is worked out. Thus if the passage contains say, 300 words, the reading time would be four minutes. Twenty questions are set on the passage and the scoring is done as follows:

1. Score less than 10, time 5 minutes or less: context reading mark = score x 10

2. Score less than 10, time more than 5 minutes: context reading mark = score x 10 minus two marks for each five seconds over five minutes

3. Score 10, 11, 12:
   Context reading mark = score x 10 plus or minus one mark for each five seconds less or more than five minutes

4. Score over 12:
   Context reading marks = score x 10 plus or minus one mark for each five seconds less or more than five minutes.

The Diack method appears to be an improvement over the Fry method. It tries to assess the performance through a system of discriminating reward and punishment. The Diack method is also not free from flaws. It too obscures the qualitative differences in performance. The same performance would earn different marks, depending on the length of the passage read. A reader reading a passage of say, 400, 300 and 1200 with a speed of 200 words per minute and with a comprehension score of 12 out of 20 would get different context reading marks i.e. 156, 132 and 108.

According to Narayanawamy:

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* * *

... this anomaly arises from setting up the reading time instead of the reading
speed (expressed universally as so many words per minute) as the norm of reference for rewards and penalties. While the time allowed for reading at a set speed would vary with the length of the passage read, the speed itself is independent of it.67

In fixing the norm of reference Blaack opted for the variable against the constant, and that is where the flaw seems to creep in.

Another drawback one may come across in the Blaack method is that the better comprehenders, that is, those with a score of over 12 are penalised severely for exceeding the time allotted than those with a score of 10 to 12. They lose at a rate of five marks for each five seconds more, as against the others who lose only one mark.

Another method which seeks to incorporate the sound features of Blaack method while at the same time trying to remove its anomalies is suggested by K. R. Narayanamswamy.68 In this approach the principle underlying speed and comprehension takes into consideration the following three categories of readers:

1- Poor comprehenders: those who read with little or no comprehension (CS less than 5);

2- Fair comprehenders: those who read with a certain amount of comprehension, though inadequate (CS 5 or 6);


68. Ibid., p. 147.
good comprehenders: those who read with a comprehension score of 7, an amount of comprehension considered to be adequate (or more than adequate comprehension).

<table>
<thead>
<tr>
<th>Comprehension score (CS) out of 10</th>
<th>Reading speed (RS) (w.p.m.)</th>
<th>Speed and comprehension rating (SCR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a (a) 1, 2, 3, 4</td>
<td>150 or more</td>
<td>CS x 10</td>
</tr>
<tr>
<td>(b) 1, 2, 3, 4</td>
<td>100 to 140</td>
<td>CS x 10 minus 1 mark for every ten words less than 150 w.p.m.</td>
</tr>
<tr>
<td>(c) 1, 2, 3, 4</td>
<td>less than 100</td>
<td>CS x 10 minus 2 marks for every ten words less than 100 w.p.m.</td>
</tr>
<tr>
<td>IIa (a) 5, 6</td>
<td>Over 400</td>
<td>CS x 10 plus 20</td>
</tr>
<tr>
<td>(b) 5, 6</td>
<td>210 to 400</td>
<td>CS x 10 plus 1 mark for every ten words more than 200 w.p.m.</td>
</tr>
<tr>
<td>(c) 5, 6</td>
<td>200</td>
<td>CS x 10</td>
</tr>
<tr>
<td>(d) 5, 6</td>
<td>150 to 190</td>
<td>CS x 10 minus 1 mark for every ten words less than 200 w.p.m.</td>
</tr>
<tr>
<td>(e) 5, 6</td>
<td>less than 150</td>
<td>CS x 10 minus 2 marks for every ten words less than 150 w.p.m.</td>
</tr>
<tr>
<td>III (a) 7, 8, 9, 10</td>
<td>250</td>
<td>7 x 10 = 70</td>
</tr>
<tr>
<td>(b) 7, 8, 9, 10</td>
<td>Over 250</td>
<td>70 plus 2 marks for every ten words over 250 w.p.m.</td>
</tr>
<tr>
<td>(c) 7, 8, 9, 10</td>
<td>200 to 240</td>
<td>70 minus 1 mark for every ten words less than 250 w.p.m.</td>
</tr>
<tr>
<td>(d) 7, 8, 9, 10</td>
<td>less than 200</td>
<td>70 minus 2 marks for every ten words less than 200 w.p.m.</td>
</tr>
</tbody>
</table>

69. Ibid., p 147
In the above formula, Narayanaswamy assumes the minimum differential speeds for the three levels of comprehension i.e., poor, fair and good. This appears to be arbitrary but there have to be these differential speeds otherwise one cannot integrate speed with comprehension in any meaningful way or in a way that would satisfy our commonsense notions of fairness or justice. If one assumes a single minimum speed for all levels of comprehension and set it up as the norm with reference to which all variations in speed are rewarded or punished, one will end up with a huge overlap of reading efficiency scores among qualitatively different performances. Thus the formula that Narayanaswamy has proposed tries to integrate speed with comprehension in such a way that due weighting is given to each of the components, for example, no weighting for speed above 150 words per minute is given for the poor comprehender (CS 4 or less). The reason is obvious. The extent of comprehension issuing from the speed at which the material is read is irrelevant and if he reads at less than 150 words per minute, attracts penalty. This is because he probably feels that it is bad for a reader to read at 450 words per minute with a comprehension score of 4 and below, but it is worse if the speed drops below 150.
The Narayanaswamy method thus appears to be based on sound principles and, therefore, it was decided to make use of the formula to compute the reading efficiency of students in this research project.