CHAPTER III

REVIEW OF THE PAST WORK DONE

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3.6 Overall View
CHAPTER III
REVIEW OF THE PAST WORK DONE

If a researcher wants to plan his study, it is most essential for him to study the work done in the field in which he is desiring to work. It is noted that only relevant literature should be reviewed and included in the thesis and not each and every aspect of the topic. So the researcher has made an attempt to review some relevant literature in the field of reading achievement.

Silent reading is a complicated process and it involves motor adjustment of eyes, transmitial of visual images to the brain, recognition of the visual symbols, and interpreting them. Silent reading is more important than oral reading because people devote about 95 per cent of their total reading time to silent reading. Therefore, most of the work on measurement of silent reading has been classified into two categories:

1. Measurement of photographic eye-movements and
2. Measurement through technique of paper and pencil tests.
3.1 Measurement by Photographic Eye-Movement

Eye-movement is the only phase of the whole complicated procedure of reading and could be measured directly. The ingenious technique of photographic eye-movement has been developed early in this century and has been used extensively by researchers. The instrument known as ophthalmograph is generally used to take photographs of eye movements of pupils during silent reading.

In 1879 Javal was the first man to note the eye-movements during reading. His discovery enhanced further researches in this field by Dodge, Judd, Buswell, Dearborn, Gray and others. They discovered that it is possible to tell whether an individual is a good reader or a poor reader by observing the photograph of eye movements. Good reader makes fewer fixation and fewer regressions than poor reader while reading a given material. When an individual improves his reading ability, his eye movements also change their character. It is clear that the measurement of the eye movements of a pupil during reading would give the measure of his reading ability. The study of the eye-movement has contributed much to our understanding of reading process and especially to the study of reading disabilities of pupils.
There are two methods through which the eye-movements can be measured roughly. They are the Miles Peep Hole Method and Mirror Test. These methods require sufficient practice and training. One more serious limitation is that, when used extensively in schools, it is likely that the teachers may focus their attention on the mechanics of the reading process instead of the main purpose of all worthwhile reading which is comprehension. Therefore, for one or the other reasons, they have not become very popular in schools in foreign countries. In India this field is quite unexplored till now. Upto 1910 laboratory experiments in psychology and physiology of reading were the main features in reading.

Studies made with the help of reading tests revealed that there is a wide range of variation in reading ability among the pupils of the same grade level. Moreover the reading tests facilitated the co-operative studies under ordinary class room conditions. The development of reading tests pertaining to practical class room and educational problems became more pronounced after 1920. Number of tests are available in foreign countries. Now therefore, let us study standardized reading tests.
3.2 Standardized Reading Tests

The preparation of reading tests calls for considerable expertise in test construction. The passages that are employed to test comprehension are generally drafted very thoughtfully.

The earlier reading tests were brief and yielded a single overall reading score, or a rate of reading score and general comprehension score. Recent tests are longer and they give three to four different scores which help the user to locate the strength and weakness of the pupils.

But the test makers do not agree about the aspects of reading ability that should be measured through tests. Arthur E. Traxler says:

"Some years ago an analysis of twenty-four reading tests revealed forty-eight different aspects of reading ability which the tests purported to measure. Out of these forty-eight types twenty-six or more than half, appeared in only one test. Word meaning, paragraph comprehension and the rate of reading were the only aspects which were found in approximately half or more of the tests."

3.3 Classification of Tests

Silent reading comprehension tests could be classified as under:

i. Group test and Individual test.

ii. Diagnostic test and Survey test

3.3.1 Group Test

Group test is that test which could be administered to more than one individual at a time. This type of test consists of 75 to 100 items; and the examinee is supposed to read the item himself and work at a head. Some group tests call for oral instructions from examiner whereas some are self explanatory. The test booklets and answersheets are to be distributed to the subjects, and either they are allowed to work at their own rate or the examiner directs the subjects when to start and stop. Almost all tests of silent reading ability are group tests which grade and percentile norms. These tests are generally used to test normal children.

3.3.2 Individual Test

This type of test could be given to only one individual at a time. Therefore, they are time consuming.
Moreover these tests require highly experienced and trained examiners. The examiner has to standardise his own treatment of the child to confirm to established methods. He has also to take this into consideration while administering the test, specially in giving instructions and time to be allowed to answer each question. He has to follow the established scoring procedure meticulously and to colour the scoring with his subjective judgment of a child. If he would deviate even slightly from these, there would be a marked difference in the test result which might affect adversely the reliability of the test. This type of tests are generally designed for lower classes where younger children are studying. Almost all oral reading tests are individual tests. Some reading readiness tests are also individual tests. This type of tests are often used in clinical settings. Here the discussion about the pros and cons of these two kinds of tests is not the sole aim but to point out that there are also group and individual tests to measure ability.

3.3.3 Diagnostic and Survey Tests

Reading tests are classified according to the nature and complexity of the scores. Broadly speaking, they are divided as diagnostic tests and survey tests. Survey tests generally measure vocabulary knowledge, comprehension
of sentences or paragraphs and perhaps the rate of reading. They give the general picture of pupils' strengths and weaknesses. They indicate the grade level. This type of test generally provides overall score. Thorndike McCall Reading Test, published in this century, is an example of this type of test.

The second kind of test measure specific strengths and weaknesses of a pupil. It usually provides three to four separate scores, which are specifically useful in locating the specific weakness of an individual. These are the diagnostic tests. Iowa Silent Reading Test and SRA Reading Diagnostic Tests are the best examples of this kind of test.

A third kind of tests are generally designed to measure the specific skills of reading ability or three to four fundamental aspects of reading ability. They usually measure comprehension and vocabulary, comprehension and rate of reading, rate and vocabulary.

3.4 Review of Some Tests

A few available tests on reading are reviewed here-with an object to find out abilities or skills measured by them. Therefore the tests have been studied keeping in mind the following aspects:
(a) Abilities or skills measured by the tests.
(b) Types of scores they give
(c) Norms
(d) Time required to administer the test.
(e) Types of questions
(f) Reliability

3.4.1 Silent Reading Comprehension

Iowa Every Pupil Tests of Basic Skills Test A; Grade 3-5, 5-9, from L ... N ... 0. These tests are the reading tests of comprehension, achievement test battery measuring skills developed in elementary schools. The four silent reading skills that are measured through these tests are paragraph comprehension, noting details, organization of ideas and grasping the total meaning. Over and above these they also measure vocabulary.

The test material ranges from short paragraphs followed by three to five questions to a story followed by 15 questions. The multiple choice type questions are used with four choices in each test item. The advance battery is parallel to the elementary battery in abilities measured. The questions are also similar in nature. The reading material used is longer and consists of description, exposition and historical notation. The reading material
chosen in both the tests appears to be quite interesting and it is also within the reach of pupils.

There is a vocabulary test in both tests. There are 40 items in the elementary school battery and 50 items in the advanced battery. The words are either in a complete sentence or in only two or three word phrases. The four restricted answer technique is used in both the tests. The direction for administering and scoring are quite clear and concise. The total time required to administer the test is 68 minutes. Three type of norms are given in test manual. They are grade equivalents, age equivalents and grade percentiles. All are based on pupils of Iowa public school. No objective data are given about the validity and reliability of these tests. Answers are to be marked on a separate answer sheet.

3.4.2 The Nelson Reading Test (Revised Edition)

Vocabulary Paragraph Comprehension Grade 3-9. The test consists of vocabulary test of 100 words from the Thorndike and Horn list and 25 paragraphs to measure three different skills of comprehension. They are, general significance skill to note the details and to draw inferences. The vocabulary test contains useful words of increasing difficulty. Five multiple choice answers are sometimes synonyms with the word tested, or at other times description
of function or attribute like many vocabulary tests available in the market. This test contains few easy words to make it useful or pleasant to the subject. The paragraph test mainly contains narrative material. It deals with feelings, situations and motives. The paragraphs are well written for the purpose of testing the above mentioned skills of comprehension. Each paragraph is followed by three questions. Questions are of multiple choice type—having four foils. There are in all 75 questions in this section.

The author has given percentile and grade norms for vocabulary as well as for paragraph comprehension and total score.

The reliability co-efficient is about 0.90 and the validity of the test has been studied by comparing the scores with the score on other available reading comprehension test which is about 0.80. Thus the test is an adequate measure of reading comprehension. This is not a diagnostic test.

The time allowance for Part I of the test that is vocabulary is 10 minutes and for Part II it is 20 minutes. In all, the test requires 30 minutes.
3.4.3 Gates Reading Survey

Grade 3.5-10 speed and accuracy, reading vocabulary, level of comprehension. There are three sub-tests in the test. The first is speed and accuracy test, the second is reading vocabulary test, and third is level of comprehension test. There are 36 test items in speed and accuracy sub-test, 60 items in vocabulary sub-test, (65 items in hand scoring edition) and 43 items in level of comprehension test. The speed and accuracy test requires the reading about three sentence paragraphs. Almost all paragraphs are of similar difficulty. Each is followed by a simple multiple choice question measuring comprehension of inferential type. That is the skill of drawing inferences. The vocabulary sub-test requires simple matching of a word with a synonymous word among the five given choices. The level of comprehension sub-test consists of short paragraphs arranged in order of difficulty, in which comprehension is measured by choosing appropriate words to fit two or three blanks in the paragraphs. This provides the measure of the skill of selecting the words in context clues.

The test gives three different scores. The grade and percentile norms for each score are given. The reliability coefficients for five different grade range
from 0.82 to a high of 0.89. These reliability co-efficients are certainly satisfactory. Neither the manual nor the supplement give any information about the validity.

The time allowance for speed and accuracy sub-test is 6 minutes for grade 3, 4 and 5, 4 minutes for grade 6th to 10. For reading vocabulary and level of comprehension sub-test the time to be allowed for each sub-test is 20 minutes. Thus, the total time required to administer this test is ranging from 44 minutes to 46 minutes.

3.4.4 SRA Reading Record, Grade 7-12

There are 10 sub-tests in this test and they measure 10 basic skills in reading. Of these, five are general in nature. They are rate of reading, reading comprehension, paragraph meaning, sentence meaning and general vocabulary. The four other skills that are measured are skill of reading directory, map-table, graph reading, advertisement reading and index reading. The test No. 8 is a test of technical vocabulary.

Test 1 is the rate of reading test. The number of words the students read in two minutes is measured.

Test 2 is the reading comprehension test. There are 16 questions which are coined to measure the skill of
noting the details of what is read. Time to be allowed is 3 minutes.

Test 3 is the paragraph meaning test. The student has to find out the word which spoils the meaning of the paragraphs. This may be regarded as an indirect measure of vocabulary.

Test 4 is a test of reading and alphabetical directory. A typical page from telephone directory is taken and the questions are asked to find out the correct telephone number.

Test 5 is the test for measuring the skill of interpreting maps, tables and graphs. A map, a weather report in tabular form and a bar graph of average temperature are given. The students are required to answer factual questions based upon these pictorial representation. Some questions require reference to more than one of the sources of data.

Test 6 is an advertisement reading test. Factual questions are asked on four advertisements.

Test 7 is the test of index usage test. The students look page references in a book index to answer 14 questions.
Test 8 is a test of technical vocabulary. The student has to select the word or phrase meaning the same as each word in the list of 23 technical terms. The terms are taken from English, Social sciences, Natural Science and Mathematics.

Test 9 is the sentence meaning test. Nineteen sentences are given. The student has to choose one of the four words which could be substituted for the last word in each sentence without changing its meaning. Thus, this test is also a test of vocabulary knowledge.

Test 10 is the general vocabulary test. The student has to select one of the four words meaning the same as each word in a list of 25 general terms. Score on sub-test 2 through 10 are to be totalled in order to obtain a single score of students’ reading comprehension. Each of the ten tests is separately timed.

For test No. 1 and 3 the time limit is 2 minutes while for the rest of the tests, the time limit is 3 minutes. The examiner has to instruct the subject when to start and stop answering the questions.

Grade and percentile norms are given for the rate of reading: comprehension and for total scores. The
reliability co-efficients for different grades have been computed for rate of reading, reading comprehension vocabulary and every day reading skills by K.R. Formula 21 and by Split half method. The reliability of the whole test is also established by the same methods. The reliability co-efficients of different grade range from .91 to .92 by K.R. formula and .88 to .91 by split-half method. The test has proved successful in differentiating good from poor readers in skills needed for scholastic success.

3.4.5 Diagnostic Reading Tests - Survey Section Lower Level Grade 4-6 Form A

There are two booklets of this test. Booklet No. one contains Part I of the test known as word recognition and comprehension. Booklet No. two contains section I and II. Section I deals with the measurement of vocabulary and Section II deals with the story reading and measures rate of reading comprehension.

In part I the passages through which the word recognition and comprehension are tested, are chosen from literature, social science and natural science. There are 18 word recognition items and 42 items for measuring the ability to get main ideas, to note the details, to draw
conclusion and inferences from the passages read.

In part I section one is the vocabulary test in which 60 words are given. The meaning of the word is given which is followed by five words. The student has to select the word which matches with best meaning.

In part II, there is a story reading test. This is mainly devised to measure rate of reading but at the same time it aims at measuring student's comprehension also. This aim is accomplished by fifteen questions given at the end of the story. The story approximately consists of 950 words. Except for measuring the rate of reading, this part is also untimed. Only 5 minutes are given to read the story with a view to measuring the number of words read per minute.

Percentile ranks are given for each grade. There is no information about the reliability coefficient of the test in the test manual.

3.4.6 Diagnostic Reading Tests - Survey Section Grade 7-12

The survey section of Diagnostic Reading Test has three sub-tests (i) General reading, (ii) Vocabulary (iii) Comprehension.
General Reading

The purpose of the diagnostic test i.e. sub-test is to measure usual rate of reading through interesting story type material. The story is followed by 20 questions which aim at measuring the skills to note details. The time allowance for taking this test is 15 minutes.

Vocabulary

This sub-test is designed to secure measure of vocabulary. It is composed of sixty items drawn from general vocabulary and from the vocabularies of English, Mathematics, Science and Social Studies. Each item consists of a definition of a word followed by five words, one of which is an appropriate response to definition. The time to be given to the subject to take this sub-test is 10 minutes.

Comprehension

This sub-tests measure reading comprehension skills. The skills that are measured, are to give the main idea of the paragraph and to draw conclusion. The reading material is similar to that found in text books in social studies and science. Each paragraph is followed by five
multiple-choice type questions with four foils. The time limit is 15 minutes. The test gives four types of scores namely score for rate of reading, story comprehension, vocabulary comprehension and total comprehension.

The pupils' responses are to be recorded either in the test booklet or on a separate answer sheet. The norms are established. Percentile norms for each grade are given in the test manual. The pupils are also to be instructed about when to start and stop while taking the test.

The reliability of each sub-test and that of the whole test is established by K.R. Formula-21, and the sample taken for this from each grade is approximately 100. The reliability co-efficients for each sub-tests are 0.74, 0.89 and 0.83 respectively. The reliability of the whole test is 0.91. Thus the test is reliable too. There is no information about the validity in the test manual.

3.5 Test on Reading in India

3.5.1 NIE Reading Readiness Test

There are five parts of this test. The test is standardized for Hindi speaking pupils. The main objective of the test is to ascertain whether a child is ready to start reading in Hindi in the first grade in primary schools.
It also aims to discover the difficulties and weaknesses of children with regard to skills necessary before they can start reading. The test consists of the following five parts.

i. Word meaning test

ii. Visual perception test (Part I and II)

iii. Auditory perception test (Part I and II)

Detailed information about timing, reliability and validity are not available.

Coming to the silent reading ability test in India, the test constructed and standardized by Bhagatwala in Gujarati, R.S. Trivedi and B.V. Patel’s test of Reading Ability in Gujarati, B.U. Parekh’s Reading Ability Test, Maniar’s Reading Ability Test are regarded to be landmark.

Bhagatwala’s test aims at measuring speed of reading, word meaning and comprehension. It is meant for classes VIII to XI.

There are fifteen sub-tests in the battery devised to measure the following abilities:


2. Rate of comprehension.
3. Range of general information.
4. Ability to grasp the meanings.
5. Speed for reading table.
6. Perceiving relationship.
7. Noting details.
8. Good visual perception.
10. Ability to use language precisely.
11. Spelling ability.
12. Retention of clearly started details.
13. Rate of comprehension.
15. Ability to grasp the central idea.

Thus, the battery appears to be elaborate enough to measure the reading ability, percentile norms for each grade and age are given, sex-wise norms are also given.

The reliability co-efficient of each sub-test is determined by test-retest method, parallel form method and split-half method.

The reliability co-efficients are found to be between 0.50 and 0.60 in all the cases except a few where it ranged from 0.60 to 0.98. The validity has been determined by three different techniques namely (i) correlating the
scores on the test with standard scores of the marks obtained by pupils in the subjects other than English. (ii) With the teachers' opinion. (iii) Factor analysis. The validity coefficients range from 0.30 to 0.72.


The main objective of study was to construct and standardize an achievement test on different aspects of Hindi for Matriculation students of Haryana.

The six tests included in the battery covered following aspects of Hindi:

i. Spelling
ii. Vocabulary
iii. Applied grammar
iv. Formal grammar
v. Idioms and proverbs
vi. Comprehension

More than one and half times items, than proposed to be kept in mind in the final tests, were constructed after consulting text books, syllabi, examination papers,
exercise books and experienced teachers. The items were tried out on a sample of 370 students of matric class of Haryana. The final form was administered to 1500 students of matric class belonging to seven districts of Haryana selected by cluster sampling technique percentile rank, percentile band and T-score norms were established for each test.

The reliability of each test was established by Split-half method. The reliability coefficients for the test varied from 0.83 to 0.92. The validity of the tests was assumed as they were achievement tests and had been constructed after consulting the syllabi, prescribed books, supplementary readers, the examination papers, teachers and sample exercise books of local students. No criterion was available for external validation since marking was not done separately on different aspects in examinations.

3.5.3 Construction and Standardization of an Achievement Test in Hindi, Janta College of Education, Chanda 1964 (NCERT financed) Jha S.K., Altekar J.D., Jha B.K., Gajare R.V. Indapurkar C.D.

This test was devised to measure the achievement of pupils in the major aspects of Hindi language learning. It was designed specially for schools of rural areas of Vidarbha.
The specific objectives were first formulated on the basis of general objectives and objectives of the syllabi. The syllabi prescribed for classes V, VI, VII & VIII by the Vidarbha Board of Secondary Education, Nagpur, were studied and analysed into content areas. Some standardized tests both Indian and foreign, were critically studied before the items were constructed. Items mostly of multiple choice type were prepared under different areas viz., vocabulary, comprehension, recognition of tenses, spellings, sentence structure, Hindi usages and construction shift. Tryout was carried out by administering the test to one hundred pupils from local schools in Chanda city. The modified test was administered to over 400 pupils from the rural area of Chanda city. Item analysis was carried out and finally 400 items were selected for inclusion in the preliminary test. The test was administered in four parallel forms to 7000 pupils randomly selected from five schools of each district of Vidarbha. Item analysis was again carried out with a view to finding out discriminating index and difficulty level. 400 items tried in the preliminary test were included in the final form of the test. Age norms, grade norms, percentile norms, standard scores, 't' scores and other derived scores were worked out. Reliability of the test was calculated by using K.R. formula -20 and coefficient of reliability was found out to be 0.97. The content, criterion and intrinsic validity were
found out for the test and co-efficients of validity were found to vary from 0.45 to 0.98.

3.5.4 Construction and Standardization of an Achievement Test in Hindi for Class VIII, New Delhi, C.I.E. 1962

The investigation aimed at standardizing an achievement test in Hindi for grade VIII students of Delhi.

Keeping in view (i) the objectives of teaching Hindi at grade VIII level and (ii) the appropriate level of difficulty of language as well as the complexity of the material which the students were expected to deal with, it was decided to go through text books, children's exercise books and other books and magazines based upon those source materials the achievement test in Hindi was designed and it included six areas viz., reading comprehension, word meanings of proverbs, sentence structures, diction (the use of most appropriate word) and spellings. Item analysis was carried out with a view to finding out difficulty index. The final form consisted of 100 items. The sample of the study consisted of students of Delhi schools. For reliability study the sample consisted of 84 girls and 106 boys and for validity study, the sample consisted 123 students of grade VII, 128 students of grade VIII and 82 students of grade IX. In case of the study for establishing
norms, sample was drawn from all parts of Delhi. The systematic randomised design was used to draw the sample.

It was found that C.I.E. Achievement test in Hindi had test-retest reliability coefficient of 0.89 (N=88). Split-half reliability coefficients calculated by Spearman Brown formula were 0.93 for girls (N=84) and 0.95 for boys (N=106). Two criterion were used for the purpose of validation viz., (a) the rise in average score from grade VII to grade IX on this test and (b) correlation of the scores on this test with the scores on the teacher made achievement test in Hindi. It was found that there was a sharp increase in mean scores from lower to upper grades.

The concurrent validity coefficient against teacher made test was 0.69. Percentile norms for boys and girls were also established. The study has led the investigator to the following inferences.

1. There are two types of test namely speed test and power test. For the speed test, the score obtained entirely depends upon the number of items the examinee reaches in time limit allowed. On the other hand for the power test every examinee is permitted to try every single item and his score depends entirely on how many questions he can answer.
2. The test items included generally are objective type, especially multiple choice items having three to four alternatives for the response.

3. There is a logical process of test standardization, hence the standardized test has its own reliability and validity and the norms, such as Age norms, Grade norms, percentile norms, Standard scores and quotient norms.

4. There are various methods of establishing the reliability and validity of the test, and they are essential to be used for the standardization process for a particular test.

5. Most of the language achievement tests measure the basic language skill or skills.

6. Omnibus method and Discrete method are available for the compilation of the test. In omnibus method the items of the each sub-test are not grouped together but all are distributed over the whole battery, according to their difficulty indices, while in discrete method, the selected items are grouped together in the ascending order of their difficulty in a sub-test, and the selected sub-tests are arranged one after another for the test.
3.6 **Overall View**

In review of the survey test and diagnostic tests in English, Hindi, Gujarati reveal that most reading tests do not measure all the skills of reading comprehension which are considered highly important by the authorities in the field. These skills have been mentioned in the previous chapter.

The material presented in this chapter would definitely serve as background information essential to plan intelligently the proposed test of silent reading comprehension test in Hindi.