CHAPTER 4

CONSTRUCTION OF DIAGNOSTIC TEST

A battery of diagnostic test was prepared to diagnose the difficulties of students in language errors related to spelling, vocabulary and sentence structure. The diagnostic test is normally graded under achievement test however it is different from the proficiency test in the sense that diagnostic tests are those which indicate unambiguously the students mastery of each of the language aspects tested (Clark 1972). Such diagnostic tests, therefore, have to focus on a single aspect of language competency at a time. Therefore different types of diagnostic tests were prepared to know the nature of different types of language errors.

In order to know the types of language errors the investigator went through the linguistic material in Hindi text book of class V. She also decided to ask the students to write few sentences on one of the topics given viz. My favourite festival, my school, I want to become............ Different types of mistakes were noted down while analysing the linguistic materials of Hindi textbook and free hand writing of the students.

After analysing the Hindi text book and the writings of the students, the investigator found that the nature of errors mainly belong to three categories i.e. spelling, vocabulary and sentence structure. In order to diagnose the difficulties in each area extensively two tests for each area were prepared. Thus total six
diagnostic tests have been prepared. The rationale of preparing each test along with the examples of the test items and scoring details have been discussed below:

4.1 **SPELLING**
Spelling is the foundation of any written language. Hindi language is in Devnagri script and the main characteristic of this script consists in a separate grapheme for every phoneme i.e. it has a separate symbol for each sound. It is syllabic script and it is generally written in a way it is spoken due to its phonetic and syllabic nature. Hindi script is considered more scientific and is easy to learn by pupils. Consequently there should be little possibility of spelling errors in Hindi in comparison to other languages which are not so phonetic. But the reality is quite different from what it appears to be. On observation it is found that the spelling errors in Hindi written work are not less in magnitude than they occur in any other language.

The investigator after analysing Hindi text book of class V and written material in Hindi related to different subjects and the paragraphs written on different topics found that students usually commit three types of spelling mistakes i.e. vowels, their Matras, consonants and clusters.

A list of 180 difficult words has been prepared and categorized in a tabular form according to difficulty related to vowels, Matra Consonants and Cluster. Frequency of different types of
errors were noted down. Sixty difficult words were selected for the Adhoc spelling errors diagnostic test. This test was administered upon Hundred students. After error analysis most difficult forty eight words were selected for two types of spelling errors diagnostic test.

(a) **Production of correct spelling test**-
This test contains 25 items. To test the ability of mastery of phoneme grapheme correspondence in writing words in Devnagri, a test of production of correct spelling was constructed. In this test mis-spelt words are given and the testee is required to produce the correct spelling of each given word. Thus testifying the ability to recall the correct spellings. The instruction of the test to the candidates along with an example of the test item is given below:

निर्देश - नीचे दिये गए अशुद्ध शब्दों की शुद्ध वर्तनी कोष्टक में सिखिए।
1 असान - (आसान) 2 अनुकूल - (अनुकूल)

The number of correct spelt words is the total score achieved by a student in this test. (See Appendix -1)

(b) **Identification of correct spelling test**-
In the identification of correct spelling test, there are 23 items of multiple choice. Each item has four words. One of them is a correctly spelt word i.e. it has a perfect grapheme phoneme correspondence and the three words are incorrect in that
correspondence. The testee is required to identify the correctly spelt word. The instruction of the test to the candidates along with an example of the test item is given below:

निर्देश ----नीचे प्रत्येक शब्द को चार रूपों में लिखा गया है इनमें से सही शब्द को रेखांकित कीजिए।

1. पाठशाला, पाठशाला, पठालाला, पाठालाला

2. अतिथि, अतिथि, अतीथि, अतिथि

The number of correct responses achieved by the student on the test will be his total score. (See Appendix – 2)

4.2 VOCABULARY-
Vocabulary is the fundamental material of any language. Words convey most of the meaning of a sentence, though the complete meaning is not communicated by them alone. It is usually assumed that dictionaries are concerned with words and therefore, the word is in some sense at least one of the basic unit of semantics. There are some difficulties in this regard. For our purpose the prime function of the language is to provide information. A good deal of meaning is cognitive. Some cognitive meaning of words are important by themselves as well as part of sentence. Vocabulary is treated as an important aspect of language. The test of word meaning could be developed by using sub-tests of synonymity and antonymity.
Word and its meaning are inseparable. Indian philosophers like Katyayan observed that the relation of words and their meanings is natural. Evaluation of word recognition skills goes on simultaneously with teaching of meaningful material. The skillful teacher helps the student to unify words and thought while reading.

Bond and Bond (1943) have suggested three levels of meaning. The first level has been identified by them as 'simple recognition' at which the child attaches some meaning to the word symbol. The second level has been suggested as "Extensiveness of meaning" at which the child attaches two or more distinct meanings to words that have different meanings. The third level has been posited as 'Depth or vividness of meaning' at which the child gains deeper understanding and greater appreciation of the concepts subsumed in a word.

After analysing Hindi text books of class V and written material in Hindi investigator came to know that often the usage of the words by the students were not appropriate. It indicates that the students are not well conversant with the correct meaning of the word and hence there is confusion while using the word in a sentence. Sometime the investigator tried to determine whether the student know the correct meaning of word orally. Thus she came to the conclusion that lack of understanding of the correct meaning of the word is often responsible for its wrong usage in the sentence. The meaning of the word in the lower classes is normally taught with the help of Synonyms and Antonyms.
therefore in order to diagnose difficulties related to word meaning. A list of about 100 words have been selected. A set of 50 words were given to students to write their meaning and another set of 50 words were given to write their opposites. Out of these hundred words only most difficult fifty words were selected for the test of both Synonimity and Antonimnity. These words were selected for the adhoc diagnostic vocabulary test. After administering this test on 100 students, item analysis was done and most difficult 22 words were selected for the test of Synonimity and 21 words were selected for test of Antonimnity. Therefore Synonimity and Antonimnity tests would provide an appropriate test of word meaning at this level. Abstract and concrete two types of words have been included in both tests.

(a) **Synonimity sub-test**

Synonimity means sameness of meaning. Dictionaries contain many sets of words that have the same meaning that are synonymous of one another. It can be maintained that there are no real synonyms, that no two words have exactly the same meaning. e.g. The word may be said to differ in their emotive or evolution meanings. The remainder of their meaning, their cognitive meaning, is more or less the same. The test has been designed to provide a measure of students capabilities to identify the meaning of the given word with the help of an item for which three words are given where in one word is correct and the rest are distractors.
The instruction of the test to the candidates along with an example of the test is given below:

निर्देश - नीचे बाराइं ओर कुछ शब्द दिए गए हैं। शब्द के सामने तीन अर्थ भी दिए गए हैं। इनमें से सही अर्थ को रेखाखंड कीजिए।

मेघ - वर्षा पानी बादल
स्वाभिमान - अभिमान गुर्म घमण्ड

The correct response, which indicates the Synonym of given word. Here ‘Baadal’ is Synonym of ‘Megh’. The correct response is awarded a score. The total score on the test is the number of correct responses. (See Appendix –3)

(b) Antonymity sub-test

The words that are opposite in meaning are known as antonyms. Antonym is often regarded as an opposite of synonym but the status of the two are very different. There can be many objectives regarding true synonym but antonym is a regular and natural feature of a language and can be defined fairly precisely.

There are different kinds of oppositeness and one must clearly distinguish them. Interestingly, however there is no absolute distinction among many kinds of antonyms but some sort of oppositeness exists between the pairs of antonyms, it may be explicitly gradable or implicitly gradable items of antonyms were constructed to test ability of the students to identify the
antonym vocabulary. In the present test, the item type is that of multiple choice. The testee has been asked to choose one of the correct antonym from the given three choices in which only one was correct and other two were distractors.

The instruction of the test to the candidates along with an example of the test item is given below:

निदेश - नीचे बाईं ओर कुछ शब्द दिए गए हैं। शब्द के सामने तीन विलोम शब्द दिए गए हैं, इनमें से सही विलोम शब्द को रेखांकित कीजिए।

दिन - शाम रात अंधकार
गुण - अवगुण निर्गुण दुर्गुण

‘Raat’ is the correct response which indicates antonym of given word ‘Din’. The correct response is given a score. The total score on the test is the number of correct responses. (See Appendix-4)

4.3 **SENTENCE STRUCTURE**

It is essential in sentence structure to note that the process by which words stand for or correspond to a content. Every word in a sentence has its own importance. The communication between a word and the concept or experience with which it stands in relation must work in either direction. The word must evoke the concept and the concept must evoke the word. (Skinner, 1957)

The word has a Semantic structure with a quality control of the speech community for the contextual meaning thereof, and the
clusters of experience formed in individuals, either independent of language processes or in close dependence on language processes. Meaning of words are not covered by vocabulary test only since sentences too have meaning. The meaning of word is also related to the meaning of sentences. If the meaning is considered in terms of reference in the wide sense of the term e.g. while saying something about world around us, it is reasonable to believe that only sentences have meaning. Referential meaning then seems to be characteristics of sentence meaning in terms of sense. On the other hand, appears at least in part to belong largely to words. Thus the contextual meaning of words is derived from the meaning of sentences in which they occur and not vice-versa.

In the present research work investigator gave three topics, My favourite festival, My school and I want to become, .......... to Class-V students and asked them to write a paragraph on any one of the three topic given. She also went through the Hindi written material of the students. The incorrect sentence structures were noted down it was found that the incorrect sentences were either because of the wrong usage of the word in the sentence or due to wrong formation of the word in the sentence. Therefore two types of diagnostic test related to sentence structure were prepared. The frequency of errors in incorrect sentences were noted down, in tabular form. There were mainly seven types of words used in sentence structure at primary level i.e noun, pronoun, verb, adjective, adverb, conjunction and preposition. Each diagnostic test of sentence
structure contains 25 items. Both the tests were administered in 100 students of class V. The error analysis was done and most difficult items were selected. Finally seventeen items were selected in the word usage test of sentence structure and 21 items were selected in the word formation test of sentence structure.

The reason for dividing the items of two tests into different categories is to check the knowledge of students in the usage of different parts of speech in sentences.

(a) **Word usage test**-
In the word usage test each item is presented in a sentence form with a gap for a word. A choice of two words is given along with each sentence, out of two words only one word is appropriate in the context of the sentence given or the contextual meaning. The testee first comprehends the contextual meaning of the incomplete sentence and then taking into account, one appropriate item from given ones, completes the sentence and testifies his communication competence and semantic control through proper and correct use of a word. The instruction of the test to the candidates along with an example of the test is given below.

निर्देश - कोष्ठक में दिए गए शब्दों में से एक शब्द प्रांतकर रिक्त स्थानों की पूर्ति करिए।

जैसे - इस बाण में तरह-तरह के पेड़ हैं। (बाण, बाघ)
Baag is the correct response. It is appropriate in given context. The total score on the test is number of correct responses. (See Appendix -5)

(a) **Word Production Test**-
In the word production test each item is presented in a sentence form, with a gap for a word. One word is given in the brackets. The student has to change this word in a way so as to make this statement into a meaningful sentence. In this way testee can testify his communication competence and semantic control through producing correct word for a given sentence.

The instruction of the test to the candidates along with an example of the test is given below-

निर्देश - कोष्ठक में दिए गए शब्द को वाक्य के अनुसार बदलकर रिक्त स्थानों की पूर्ति कीजिए।
जैसे - पुस्तकालय में बहुत सी पुस्तकें हैं। (पुस्तक)

The correct and accepted response is ‘pustaken’ and the correct response is awarded a score. The total score on test is the number of correct accepted responses. (See Appendix -6)
4.4 **THE PRE-TRY OUT**

All the items in the six diagnostic tests were arranged in a subjectively guessed order of the difficulty. The items together with instructions were neatly written on sheets of papers for a pre-try out. The purpose of the pre-try-out, according to Anstey (1966), is to obtain, introspection on test instructions, examples etc. and to discover gross deficiencies in the test format. This test was administered upon 10 students of fifth class to check the incongruity and obtuseness in instructions and examples, necessary alterations, deletions were made in the draft try-out ad-hoc tests on the basis of the pre-try-out.

4.5 **THE TEST FORMAT**

The format and topography of the ad-hoc tests were designed giving utmost consideration to the suggestion that "the format and topography of a test should be based on consideration of legibility, convenience in taking the test, convenience in scoring and attractiveness" (Thorndike 1949)

Anstey (1966) objects to separate answer sheet because it increases the risk of putting the answers in wrong place by the testee.

Bearing this in mind, the author decided to use answer on the test booklet type test. The space for marking the answer was provided beside the item itself. The testee were instructed to use the appropriate space in the test booklet to indicate their responses. The method of indicating the response on test items
was explained verbally with the help of an example at the beginning of the test.

4.6 THE TRY-OUT-
Having compiled and printed the first draft of the test, the next step was to subject these items for experimental try-out. The purpose of try-out is to secure data both for quantitative and qualitative analysis. The qualitative analysis consists in checking and finalising test administration procedure, identification of faulty instructions, examples and finally discovering weakness or defects in such items that can be removed e.g. ambiguity, non functioning or implausible distractor etc. The quantitative analysis is concerned with the determination of item difficulty and item discrimination in order to select the most suitable and determination of appropriate time-limit for the final form of the tests items for inclusion in the final form of the tests. (Joshi 1977)

4.6.1 The tryout sample and test administration-
"The size of the sample for tryout will depend on what method or ready reckoners one intends to use for item analysis". Verma (1965). For methods which, according to Anstey (1966) have been used most often in item analysis and where the criterion is dichotomous i.e. the sample consists of two distinct groups top and bottom with equal number of cases in each, a convenient size of try out sample can be worked out. It helps in getting the proportions of cases passing an item in top and bottom groups are easily calculated (Furst, 1950)
In the present study dichotomous criterion with top and bottom twenty seven percent cases were proposed to be used for item analysis. However the six diagnostic tests for Hindi language errors had been restricted to hundred students only.

One of the major goals of effective organisation of test administration identified by Thorndike is "the achievement of uniformity of procedure in test administration, scoring and weighing so that final evaluation of a given individual will be same, no matter where, when or by whom he was tested (Thorndike 1949) bearing this in mind, school authorities were contacted and their cooperation was sought prior to the administration of the test. For this purpose three MCD Primary Schools were selected. These schools were

1. Primary, MCD School, Seva Nagar
2. Primary, MCD School, Lajpat Nagar
3. Primary, MCD School, Defence Colony.

Though the schools taken above are from middle class colonies, but the students belonging to these MCD Schools mainly come from low Socio Economic Strata like in Defence Colony, students belongs to Kotla Mubarak Pur village.

The purpose of the tests, the instructions, the content of each test, and the procedure of administration was discussed with school teachers. The administration of the test was carried out
by the investigator herself. An orientation was given to the students a day before the actual date of the administration in order to maintain an optimum level of motivation for taking the test.

In order to help examinees to understand the instructions as well as the examples before undertaking the test, each test carried an example which the examiner had to attempt before starting the actual test. Special care was taken to enter the exact time of starting and finishing the speed of all the six Hindi Diagnostic tests. Liberal time limits for the tests were fixed so that majority of students could complete the test. The period within which ninety percent of the students could complete the test was estimated. The total time allotted on the basis of the average time taken by students. Hence it was decided to given an hour to complete the present diagnostic test.

4.7 SCORING PROCEDURE
Scoring procedure was at first done by the investigator herself later help was sought from others for rechecking and recounting the right, wrong and omitted responses.

Once the scoring of the test of diagnosis of language errors was done, the test sheets were then arranged according to the order of merit i.e. the highest score at the top and the lowest at the bottom. 27% of top and bottom students score were selected to constitute the high group and low group for each test (see Appendix - 7)
4.7.1 Item Analysis and difficulty value

The objectives of item analysis are “the improvement of total score reliability or of total score validity or both and the achievement of better item sequence and type of score distribution-(Guilford 1965) this has been done for finding the difficulty level of each item.

Difficulty value – The index of item difficulty is the percent or proportion of testees attempting an item correctly, provided the item is scored either zero or one. Difficulty value of an item according to Guilford (1965) in an indicator of empirical probability that a particular population will pass the item. It is also an average index of difficulty for individuals. The greater the value in terms of proportion or percentage of correct responses, the easier the item is and hence it is direct measure of easiness.

In the present case item statistics were calculated with the help of highest and lowest twenty seven percent of the sample, and corrected percent of the number of testee on the two groups were average to get an estimated value of difficulty of an item.

Normally, items having difficulty value of fifty percent are preferred for an achievement test, since it is a diagnostic test the investigator decided on the basis of the opinion of the language experts as well as educationists involve in the diagnostic and remedial teaching programmes to select only
those items which are difficult for more than 25% of the students. *(See Appendix - §)*

### 4.7.2 The final form of the Diagnostic tests

In the final form of the six diagnostic tests only those items were selected which were difficult for more than 25% students. The total number of items selected for the six diagnostic tests are given as below:

1. Hindi spelling correction test - 25
2. Hindi spelling recognition test - 23
3. Vocabulary-Synonymity test - 22
4. Vocabulary-Antonymity test - 22
5. Sentence Structure-word usage test - 17
6. Sentence Structure-word production test - 21

*(Copy of the final form of six diagnostic tests is given in Appendix No.9, 10, 11, 12, 13, 14 respectively)*

### 4.7.3 The time limit

Liberal time limits for the tests were fixed so that majority of students could complete the test. The time taken by each student were noted down separately from their try out test sheets. The period, within which ninety percent of the students could complete the test was estimated. The total time allotted on the basis of the average time taken by students.

The students have to complete the present diagnostic tests in one hour. In this way the complete test format of all the six
diagnostic test of Hindi language errors was prepared for the present investigation purpose.

4.8 COLLECTION OF DATA -
After the construction of all the six diagnostic tests, the next step was to administer these tools on fifth grade students of Municipal Corporation schools of South Delhi for this purpose, a decision regarding the selection of suitable schools had to be taken.

4.8.1 Selection of Schools -
During the last thirty years Delhi has expanded so much as to bring all the so-called nine sites of Delhi into its fold. Beyond the walled city of Delhi as well as New Delhi the numerous colonies which have come up during the last three decades. Old rural and semi-urban centres have been absorbed by these new colonies. There is such a heterogeneity of socio-cultural milieu that one colony differs from another in a variety of ways. Perhaps this is more so in case of South Delhi from where the present investigator wanted to select the sample of schools.

Broadly three kinds of schools could be identified. The first type of schools, which also happen to be in majority are run by MCD or NDMC. They are run by the Government. They have more or less same kind of school facilities and teachers and are running according to a common code. Apart from government schools are aided schools which are also run on the similar lines but being managed by private managements differ in terms of
school facilities and teachers. Apart from these two types, the third type of schools are privately managed public schools. By and large they have much better school facilities and staff. Apart from teaching students through the medium of English, these schools have the same course of studies in Hindi as the other two types of schools.

The main aim of the present investigator’s study was to diagnose language errors and preparation of remedial programme in teaching of Hindi. For this purpose we selected Municipal Corporation Schools of Delhi in which normal procedure is to promote students on the basis of their attendance. In these schools students are promoted to next class even when they do not develop the necessary abilities of reading and writing. It was expected that this study will provide the direction to the primary school teachers in dealing with students who are lacking in appropriate linguistic abilities. The sample was selected from class fifth of the primary school because the foundation of linguistic abilities is laid down among children in the primary schools. If the language errors committed at the primary stage are not rectified immediately, they become permanent block in the mastery of the language which in turn affects pupils scholastic achievement.

The final choice of the investigator, in consultation with the school administrator, therefore, fell on the following four schools of South Delhi, which seemed to satisfy the conditions required for the present investigation.
1. MCD Primary School, Lajpat Nagar
2. MCD Primary School, Seva Nagar
3. MCD Primary School, Andrews Gang
4. MCD Primary School, Amar Colony

Although all the schools seemed to represent different stratas, but actually, MCD belongs either to places of low socio-economic strata viz. Aliganj, Kotla Mubarak Pur, Seva Nagar, Karbala etc. or even if schools belong to the students of high strata they come from lower class families of servants or drivers etc. Therefore all the students in these schools are having more or less similar kind of school and home environment.

The principal and the teachers of these schools assured their cooperation and volunteered to assist the investigator in conducting the investigation.

4.8.2 The test administration –

It was decided to conduct the test administration programme a month before the final examination of the fifth class in the schools. The reason for this decision was taken so that investigator can come to know all the errors of Hindi language which students commit with the help of diagnostic tests. No doubt the teachers were less agreeable to spare their students for any other task except studies and preparation for the examination, the present investigator convinced them explaining the need of the present study. Thus the dates of test administration in each schools were decided in consultation with the principal and teachers of the respective school.
Students and class teachers were approached one day earlier to explain to them the procedure of the test administration with a request for their cooperation. This initial visit was successful in establishing rapport with the students.

4.8.3 Scoring of Tests -
Test administration of the four schools was completed in the February 1998. All the six diagnostic tests were scored with the help of scoring keys prepared earlier.

4.9 TABULATION AND ANALYSIS OF DATA -
After having scored the answer sheets of all the six diagnostic tests, the tables were prepared and analysis of data was done.