Chapter III

PLAN AND PROCEDURE OF THE STUDY

With progressive democratisation of educational opportunities and with the industrial and technological advancements achieved in the sphere of national reconstruction, it has become imperative that the development of the country is enhanced by a suitable channelizing of the energy of our youth. This also needs a careful planning and action in advance. One such vital step is towards locating with a youth of desired abilities at an early stage and then to build up this talent so that we may get good researchers. The secondary stage of education appears to be the right stage for identifying the English talent.

In view of the above discussion, it will be worthwhile to find out the cognitive factors i.e. contribution of achievement in English so that proper tools, such as achievement test, may be developed for discovering the students’ abilities at secondary stage for higher study and other professional courses. The teaching of English is also likely to improve with the knowledge of clusters in which different aspects of scholastic achievements in English subjects are tied together on the basis of common factor. This information should lead to better coordination of different courses at higher level.

In view of the above considerations, it was undertaken to explore the domain of achievement in English at secondary stage, with the help of factor analysis, which might provide fruitful
concepts regarding the constellations in which the different aspects of English get grouped. L.L. Thurstone says, “Factorial Analysis is useful, especially in those domains where basic and fruitful concepts are essentially lacking and where crucial experiments have been difficult to conceive. The new methods have a humble role. They enable us to make the crudest first map of a new domain. But if we have an intuition and sufficient ingenuity, the rough factorial map of a new domain will enable us proceed beyond the exploratory stage to the more direct forms of psychological experimentation in the laboratory.

The problem:

The researcher hoped to get an idea to these groupings which might be helpful in bringing about to overall improvement and advancement in the selection for and teaching at the secondary stage. Hence, she chose the following problem for her investigation:

“A factorial study of abilities involved in learning different aspects of English at secondary stage.”

For factor-analysis of the achievement in different aspects of English, it was necessary to decide the level at which the measurements were to be taken, to select the aspects of achievement that were to be assessed, to construct reliable measuring instruments, and to apply appropriate statistical techniques for finding out correlations and factorizing them. The researcher thus decides to measure the achievements at secondary stage, that is, of the students studying in class eleventh and students
who have completed their whole course of English by the end of their session. The following considerations led to this decision:

(i) The average age of the students at the end of class tenth is about 15 years, and it can be pre-assumed that abilities get fairly differentiated by this age.

(ii) All the students are expected to have completed a uniform course prescribed by Central Board of Secondary Education, New Delhi/Board of School Education Haryana, Bhiwani fairly satisfactorily.

(iii) The students studying in class tenth have had a course of English for about five years, which may be presumed to be a fairly long period for acquisition of an appreciable and measureable amount of knowledge and understanding in different aspects of English.

The next decision that had to be taken was with regard to the aspects of achievement that were to be measured. The demarcation of the aspects had to be made on a rational basis, as the psychological foundations of these achievements were not known.

In order to test the hypotheses stated earlier, tests to measure achievement in different aspects of English were required. As suggested by Thorndike (1949) and Guilford (1954) the best way was to select tests out of the available pool of standardized test in order to economize on resources, time and efforts. But in case such tests were not available which could help to conduct investigation according to the objectives of the study, the obvious alternative was to construct these tests. From the available pool of test to measure
achievement in different aspects of English at secondary stage, not a single standardized test was commercially available.

The tests on different aspects of English were concerned; no standardized achievement test in English was available. The present investigator, therefore, planned to construct 06 achievement tests herself. In order to economize on time and effort for item analysis of data, the present investigator planned to use the method given by Natrajan for finding out the difficulty and discrimination indices for item analysis. On the basis of item analysis data, items of sufficient difficulty and discrimination values were planned to be selected. These, then were planned to be arranged in an ascending order of difficulty for each aspect together with the instructions worked out earlier for tryout form.

The six achievement tests were next planned to be administered upon the sample of class tenth students studying in various schools of four districts of Haryana (Jhajjar, Bhiwani, Rohtak, Hisar). Keeping in view the time required for administration of these tests, other factor like test fatigue, school programme and other constraints, the investigator planned to develop test administration schedule after consulting the school administration and co-operating teachers in them. After having administered the test, the investigator planned to score the tests according to the scoring key of tests. Keeping in view the objectives of the investigation, the investigator planned to get inter-correlations among different aspects of English. The inter-correlation matrices of their tests were next planned to be subjected
to factor analysis according to the centroid method to extract factors for learning different aspects of English.

### 3.1.0 Objective of the study:

1. To construct 6 objective type achievement tests for assessing the achievement in the following different aspects of English at secondary stage:
   
   1. Pictorial  
   2. Textual  
   3. Comprehensive  
   4. Grammar & usage  
   5. Vocabulary & Spelling  
   6. Composition

2. To find out the correlations between the achievement in different aspects and to apply factor-analysis in order to extract common factors.

3. To interpret the factors and study the factor-pattern in order to discuss the clusters in which the different aspects of achievement in English fall.

### 3.2.0 Delimitations and scope:

**Due to feasibility problems the study has been delimited in following aspects:**

1. Mostly urban and few rural school from four districts (Rohtak, Jhajjar Bhiwani and Hisar) of Haryana state have been selected for data collection.

2. The study was delimited to English course of Class IX & X.
3. The study was delimited to 250 students studying in various schools of Haryana.

4. Learning outcomes of the students in english courses were based on an achievement test constructed by the investigator on the syllabus of 9th & 10th. However, it is tried to represent the whole syllabus in the tests as far as possible.

5. As the aim of constructing the achievement tests was only subordinate to the main aim of factor-analysis of the achievements, the tests were not standardized to the extent of providing norms for the assessment of individual achievement. The scores were only to be used for reliably ranking the testees for computation of correlations. Hence, if any of these tests is to be used for evaluation of individual, the norms will have to be determined first. The researcher may undertake this work herself later on, or someone else interested in it may do so. In spite of this short coming in the tests, teachers might use these tests for finding out the areas of weakness of their pupils in English. Besides, it is hoped that the tests will provide patterns for objective type of items that may be used for classroom tests. The Boards of secondary Examinations in our country have begun to introduce objective tests, but, unfortunately the items are often loose, i.e., they permit an unmanageable number of responses that may be deemed correct.

6. The underlying order that has been discerned after rotation and the concepts that have been formulated to cover this domain of achievement are not to be taken as absolute. In
this connection Thurstone says, “The choice of a set of fundamental concepts in terms of which any domain of nature is to be comprehended, is probably meaningless to nature. The choice is for us to make in terms that will attain intellectual control and consistency, as empirically determined, and by which this control can be attained, as far as possible, with ideas that are already familiar to us. **Fundamental scientific concepts that are successful in this sense are as social as other inventions.** To hunt for a unique solution in the comprehension of a set of related phenomena is an illusory hunt for absolutes. It is probably safe to say that an apparently unique set of concepts in any domain is merely the symbol of our immaturity in the exploration of that domain. The recognition of the lack of uniqueness in scientific concepts does not imply that some sets are not more useful and fruitful than others. Those parameters are preferred which reveal the phenomena as of a simple underlying order”(P.332). Later on, on next page, he adds, “As regards psychological interpretation it may be expected that this will be modified or extended with repeated studies.”(P.333).