CHAPTER III
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METHODOLOGY

3.1 INTRODUCTION

A research work involves a detailed study regarding a particular topic. It is always accompanied by a detailed investigation hereby the researcher tries to study about a specific problem and tries to reach to a solution regarding that problem and in the process, the researcher may even provide ideas for further research. Thus, in order to be able to carry out a fruitful investigation, it is essential for a researcher to decide on a set process or processes based on which he is going to carry out his work. These processes may be referred to as the ‘Methodology’ of the research work.

3.2 RESEARCH DESIGN

The Research Design includes the following:

3.2.1 Population

The term ‘population’ in an ordinary sense and simple explanation means all the inhabitants of a place; a particular group within the total inhabitants of a particular place or area but from statistical point of view, it means the whole of total quantity of something. It means the universe of something. Population generally means the aggregate or totality or whole of something, or total number of things, beings, matters, etc. It is the whole quantity. In research, generally the whole or universe or the totality never can be studied within a very short period of time. Therefore, for systematic and scientific study, samples are collected according to the demands and necessity of research problems undertaken for study.\(^7\)

The population for this study included all the school teachers from Deficit and Private schools of Shillong teaching at the Secondary level.

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3.2.2 Sampling

The term sampling means to take a sample or samples. It is a systematic way of taking a sample or samples from population or universe. In the process of sampling, population is divided into a number of parts which are generally called sampling units. The process of sampling helps the researchers to overcome most of the research problems. Sampling is an essential activity which makes the process of generalization of knowledge on the basis of careful and systematic observation of variables within a relatively small proportion of population, systematic and scientific. Sampling makes research easy and enables the researcher to draw valid inferences or generalizations and perform easy and accurate statistical measurements.  

In this study, the technique used to select a representative sample from the population under study was Random Sampling. The sample size of the study was 100 teachers teaching at Secondary levels in the schools of Shillong.

3.3 Method

The method used was Descriptive Research. Descriptive research studies are designed to obtain pertinent and precise information concerning the current status of phenomena and whenever possible, to draw valid general conclusions from the facts discovered. They are restricted not only to fact finding but may often result in the formulation of important principles of knowledge and solution of significant problems concerning local, state, national and international issues. Descriptive studies are more than just a collection of data; they involve measurement, classification, analysis, comparison and interpretation. They collect and provide three types of information-

1. Of what exists with respect to variables of conditions in a situation
2. Of what we want by identifying standards of norms with which to compare the present conditions or what experts consider to be desirable

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3. Of how to achieve goals by exploring possible ways and means on the basis of the experience of others or the opinions of experts.

The descriptive research method has undoubtedly been the most popular and the most widely used research method in education. It helps to explain educational phenomena in terms of the conditions or relationships that exist, opinions that are held by the students, teachers, parents and experts, processes that are going on, effects that are evident, or trends that are developing.\(^{78}\)

3.4 Tools

The tools used for the study were the Mangal Teacher Adjustment Inventory prepared by Dr. S.K. Mangal for studying Teacher Adjustment and A Teaching Aptitude Test prepared by Prof.S.C.Gakhar and Dr.Rajnish for studying Teaching Aptitude. The details of the tools are given below:

**3.4.1 MANUAL FOR MANGAL TEACHER ADJUSTMENT INVENTORY (MTAI)**

Mangal Teacher Adjustment Inventory has 253 items. It is a preliminary devise to assess the adjustment or mal-adjustment of teachers of both sexes. It does not, in any way pretend to diagnose the type of psychoneurotic disorders or to indicate a finer degree of discrimination of adjustment. It merely attempts to segregate the poorly adjusted teacher from those who are better adjusted. Therefore, it is helpful in identifying the teacher from those who are better adjusted. Therefore, it is helpful in identifying the teacher who may stand in need of psychodiagnostic study and counseling in the specific area of teacher adjustment separately as well as in terms of his total adjustment. Similarly, it may bring into us the teachers who are reasonably satisfied and adjusted and thus maybe entrusted with the task of bringing efficiency and improvement of education. Moreover, as a self-assessment device it may render help to the teachers for modifying and adjusting the behavior according to the demands of the situations.\(^{79}\)

**The Construction of the Inventory**

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In the beginning 21 dimensions or areas of teachers adjustment were arbitrarily selected and in all 410 items were pulled under these dimensions. These items were checked for relatedness, appropriate language and singleness of the idea. It led to the elimination of 23 items out of 410. The remaining 387 items were subjected to item analysis.\textsuperscript{80}

**Item Analysis**

Item analysis was carried out on a stratified proportionate random sample of 150 high school teachers of Haryana state by the methods of (i) Upper and lower thirds (ii) Point biserial ‘r’ (iii) Content Analysis. It led to the elimination of 134 items and retention of 253 items.\textsuperscript{81}

**Factor Analysis**

In the above form of the inventory comprising 21 dimensions sub-tests administered to a stratified proportionate cluster random sample of 400 teachers. The test –retest reliability of the sub-tests ranged between .86 to .99. The data were then computerized for factor analysis.

First order factors were reduced by Principal component method and then Orthogonal rotation was carried out through Kaiser’s Varimax Method. The factor analysis gave the following five factors of broad areas of teacher adjustment.

1. Adjustment with Academic and General Environment of the institution.
2. Socio-psycho- physical Adjustment
3. Professional Relationship Adjustment
4. Personal Life Adjustment
5. Financial Adjustment and Job Satisfaction

In view of the results of factor analysis 21 dimension sub-tests of the inventory were rearranged as to yield factor wise and total adjustment scores with more ease and convenience.\textsuperscript{82}

\textsuperscript{80} Mangal.S.K. Page no.3
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Standardization of the Inventory

The above final form of the inventory was put to standardization on the population of High Schools of Haryana State. Sample for the standardization of the inventory consisted of 1217 teachers (714 males and 503 females) belonging to 100 high schools of all the 11 districts (existing at that time) of Haryana. It was obtained by stratified proportionate cluster random sampling technique.83

Reliability

Reliability of the Inventory was estimated thorough test-retest and split half methods. The following table gives the reliability coefficients determined by these two methods.84

Validity

Three types of validity have been established for the inventory-(i) Content Validity (ii) Construct or Factorial Validity (iii) Criterion related Validity. Content Validity has been established on the basis of the opinion of eight judges. As the final form of the Mangal Teacher Adjustment Inventory has been framed in light of the five factors derived from factor analysis, hence it may be taken that the Inventory in the present has Factorial Validity. For the Criterion related Validity the following two different external measures were used – Bell’s Adjustment Inventory and Rating of teachers by their Headmasters. A Hindi translation of the Bell’s Adjustment Inventory prepared by Dr. I.B.Ve rma was used for the required validation. Bell’s Adjustment Inventory gives scores on male adjustment side while the teachers’ adjustment inventory gives scores on adjustment side. The validity coefficient of the Teachers Adjustment Inventory against Bell’s was found to be .967 (N=250). For the rating of teachers by their headmasters, a teacher adjustment rating scale was constructed on the line of Semantic Differential Scale. The headmasters of 25 high schools selected randomly from the 100 schools in the standardized sample were asked to rate their teachers on the Seven point continuum of the Semantic Differential Scales with reference to each of the five areas of teacher adjustment. The

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adjustment rating scores of the 270 teachers were correlated with their adjustment scores on Mangal Teacher Adjustment Inventory. The results are given below.  

**Norms**

Percentile norms were computed separately for both male and female teachers with respect to their adjustment in each of the five areas or factors of teachers adjustment and also in terms of their total adjustment.

**Scoring Procedure**

The mode of response to each of the item of the inventory is in the form of ‘Yes’, ‘No’ or ‘?’. Indicating complete agreement, disagreement or neither agreement nor disagreement with the proposed statement respectively. In the Mangal Teacher Adjustment Inventory 41 items are such where the response ‘Yes’ shows adjustment. For the remaining 212 items the response ‘No’ shows adjustment. In the scoring scheme it has been planned to assign score 2 for the response indicating adjustment, score 1 for the undecided (?) response and zero for the response indicating lack of adjustment or maladjustment.

### 3.4.2 MANUAL FOR TEACHING APTITUDE TEST (TAT)

Academic qualifications, interview or a combination of two are used for selection of candidates for B.Ed admission. Sometimes, teaching experience and co-curricular activities are also given some weightage in some institutions but as there are variations in the academic standards and admission procedures of various universities and as interviews are generally subjective, there is need to devise a test which can assess the qualities of a candidate which equip him to be a good teacher and which can ensure objectivity, equity and social justice for all the candidates.

To ensure that right kind of candidates are selected for B.Ed admission in the light of heavy rush for admission to teacher education institution and to eliminate malpractices in B.Ed admission, there is absence of some standardized tool which can be used as an entrance test for

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B.Ed admission. The investigators in the present study have given steps for the standardization of Teaching Aptitude Test.

This tool can also be used successfully at the time of recruitment of teachers to select right, good and dedicated teachers. 88

ITEM ANALYSIS OF THE TEST

(A) Discriminating Value

Discriminating Value of the statements were found out with the help of following formula by taking 27% top and 27% bottom trainees divided on the basis of their performance.

(B) Difficulty Value

Statements having the difficulty value either too small or too high were dropped. It was observed that 35 statements were having discriminating value more than .24. All these statements were selected. Hence, this final test comprised of 35 statements divided into 6 categories.

Test-retest method was used for finding reliability on a sample of 40 trainees. Reliability coefficient was found to be .76. Validity was found out by correlating the scores of Teaching Aptitude Test with that of Shah’s Teaching Aptitude Test on a sample of 40 trainees. Validity coefficient was found out to be .68. 89

Scoring Procedure

The Teaching Aptitude Test (TAT) that was used comprised of 35 statements divided into six categories. Each statement had 4 options under it and the subject was asked to mark the option which he or she considered to be most appropriate. The responses of the subjects were then verified using the Scoring Key provided in the Manual for Teaching Aptitude Test.

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3.5 DATA COLLECTION

Collection of data was done by administering the tools as mentioned above. Along with this, the investigator sought permission to carry out his research work. Once permission was granted by the head of the institutions, the investigator then collected data from the subjects of the study.

3.6 DATA ANALYSIS

The data was analyzed using the methods of determining the frequency, mean, standard deviation and inferential statistical tests like t test and r test.