CHAPTER – III

METHOD AND PROCEDURE

This chapter provides an overview of the research design used in the present study. The research method to be adopted by the researcher for getting the reliable and valid information as well as for coming at accurate inferences. According to Tuckman, "A research design is a specification of operations for testing of a hypothesis under a given set of condition.

Thus, research design helps us in selecting the appropriate methods and techniques to investigate and analyse the particular research problem. In fact all research problems can not be studied by one design. There may be research designs like exploratory, diagnostic, descriptive or even experimental. It is the nature of the problem which determines as to which design would be most suitable to guide the investigator to reach the final conclusion. Anderson explains that the research design is a crucial step in the thesis, because if a wrong decision is made, the whole study may be criticised on the grounds of inappropriate design and unscientific or illogical approach. The components of the research design employed in the present study are as follows-

3.1. The Population
3.2. The Method
3.3. The Sample
3.4. The Variables
3.5. Tools Used in the Study
3.6. Statistical Analysis

3.1. THE POPULATION:

All the eligible full time teachers on permanent pay rolls of school teacher in Meerut region of Uttar Pradesh run or recognized (privately
managed institutions) by the state department of education constitute the population to the present study. However, some English medium schools including missionary schools and convert schools have been excluded from this population of school in Meerut region. Further, the heads of the institutions, being part of administration effecting role conflict, professional commitment, teacher attitude and frustration tolerance of teachers have not been included in the population. Thus, the result obtained from the present study would be applicable only to the population of teaching community working in these schools.

3.2. THE METHOD:

As already pointed out, the basic purpose of this study was to understand teachers' role conflict in relation to professional commitment, teacher attitude and frustration tolerance of school teacher. Scholars have successfully utilized various methods to study different problems in the area of educational research. After going through the methods and approaches contained in the wide range of studies reviewed in the preceding chapter, the researcher was convinced that normative survey method of research was most suitable for the present study. Moreover, the strategical considerations based on theoretical conceptual frame of research problem, the objectives of study and the resources available to the investigator, also led to the selection of descriptive survey method as the most appropriate one in the context of the present study.

Descriptive survey method of the research, as Good points out, includes presentation of facts or current conditions concerning the nature of a group of object or class of events and it involves the procedure of induction analysis, classification and enumeration of measurement.
According to Sharma, in a normative survey, we are concerned with conditions or relationships that exist, practices that prevail, beliefs, points of view or attitudes that are held, processes that are going on, influences that are being felt and trends that are developing. Rosenberg has rightly declared survey method as a fundamental instrument of sociological research. In the present investigation, almost all the characteristic features and steps involved in survey method as described by many authors like Kerlinger, Sex and Sukhia, have been followed.

3.3. THE SAMPLE:

A sample is a small proportion of the population selected for study. Research work can hardly be undertaken without the use of sampling, because a researcher with limited resources and time can not cover the entire population in his study. So sampling becomes an indispensable technique for him. The study of the total population is not possible and is rather impracticable. The use of representative sample enables us to draw valid inferences from the study of a small portion of the population. Miller has rightly pointed out that the essential requirement of any sample is that it is as representative as possible of the population or inverse from which it has been drawn. Obviously, the validity and reliability of generalization of the findings depend on the representatives of the sample.

The actual unit of the sample in this study is the teacher. But the selection of the sample on the basis of the teachers was found to be difficult as well as inconvenient. So, the researcher used cluster sampling method in which the entire group of teachers working in Sr. secondary school were treated as a unit of study.
As a matter of fact the whole population can be divided on the basis of sex locality and types of school like government and private. So the best choice of sampling in this titration would been stratified random sampling as it would have been provided the best representative sample of the population. But from practical point of view it is very difficult to select individual teachers and there after to contact them in such a widely scattered area of Meerut. Sr. secondary school of Meerut regions are already divided and basis of locality as urban and rural, administration as government and private and gender as male, and female. Hence cluster random sampling was considered to be best choice in present condition. So the main sampling technique of the present study was stratified cluster sampling. The number of sampling was 400.

**Distribution of the sample is as follows:**

<table>
<thead>
<tr>
<th>Teachers</th>
<th>Sample</th>
<th>Urban</th>
<th>Rural</th>
<th>U. Govt. Aided School</th>
<th>R. Govt. Aided School</th>
<th>U. Public School</th>
<th>R. Public School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>200</td>
<td>100</td>
<td>100</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Female</td>
<td>200</td>
<td>100</td>
<td>100</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

**SAMPLE SIZE:** Size of the present sample comes out to be 400 teachers.

**3.4. THE VARIABLES:**

The present study involved three kinds of variables-

(a) Independent Variable

(b) Dependent Variable

(c) Moderator Variable.
(a) **Independent Variable**- The independent variable is that factor which is measured, manipulated or selected by the experimenter to determine the relationship to an observed phenomenon. Role Conflict is the independent variable in this study.

(b) **Dependent Variable**- The dependent variable is that factor which is observed and measured to determine the effect of independent variable. In the present study there are three dependent variable. These three dependent variable are professional commitment, frustration tolerance and teacher attitude.

(c) **Moderator Variable**- Moderator variables of the study are sex, locality and type of school (Government Aided School- Public School).

### 3.5. TOOLS USED IN STUDY:

After selecting the sample, investigator has to choose suitable tools for collecting the data. The selection of tools for a particular study depends upon various factors, such as objectives of the research, availability of suitable tests and investigator's ability. In the present study, following tools have been used-

(a) Teacher's role conflict, the sole independent variable was measured by 'Teachers' role conflict scale' developed by Gupta, S. P.

(b) Teacher's professional commitment, the second dependent variable was measured by teacher's professional commitment by Sharma, A.K. & Sharma B.K.

(c) Frustration Tolerance, the third dependent variable was measured by Prof. S.N. Rai.
(d) Teacher Attitude, the fourth dependent variable was measured by S.P. Ahluwalia.

3.5.1. Role Conflict Scale:

Role Conflict-scale is a very carefully constructed scale. It was constructed by Gupta, S.P. The author, while constructing this tool, passed through all the steps of test construction very systematically. The details of the tool has been discussed in the following pages.

It describes Role-conflict in terms of six dimensions-

1. Role diffusiveness conflict
2. Role vulnerability conflict
3. Role marginal conflict
4. Role commitment conflict
5. Role value conflict
6. Role institutional conflict.

The Role-conflict scale is a multi dimensional measure of teachers role-conflict. It is likert type 5-points scale and yields repeat scores on six dimensions of role-conflict as well as a total role conflict score. It is a verbal test meant for Hindi knowing teachers. The scale consists of 24 items, four items of similar nature have been assigned to each of the six dimensions. Serial number of items in each dimension are as given below-

1. Role diffuseness conflict  
   1, 7, 13, 19
2. Role vulnerability conflict  
   2, 8, 14, 20
3. Role marginal conflict  
   3, 9, 15, 21
4. Role commitment conflict  
   4, 10, 16, 22
5. Role value conflict 5, 11, 17, 23
6. Role institutional conflict 6, 12, 18, 24

Administration-

The test is very easy to administer and most subjects find it interesting. There is no time limit for completing the test, yet it can be completed within 20 to 25 minutes. Instructions are given on the first page on the questionnaire. The test constructor also assured that their replies will be kept confidential and will be used only for research purpose.

Response Mode-

Five response categories have been provided for each item. These are (i) wrong, (ii) partially wrong, (iii) neither right nor wrong, (iv) partially right, (v) right, Subject are to choose any one of these five according to their perceptions and feelings, that is more true for them of each and every item and are required to put a tick (√) mark under the column of that response category infront of the item. Subjects are required to response all the twenty four items.

Scoring System-

The scoring system of role conflict scale is based on a 5-point likert type scale designed as-Right (5), Partially right (4), Neither right nor wrong (3) partially wrong (2) Wrong (1) The sum of all the item scores covering a particular dimension gives dimensional score for that dimension. The sum of all the six dimensionasl scores (i.e. the sum of all the 24 item scores) gives the total role conflict score for a teacher. The theoretical range is 24 to 120, with higher score indicating high role conflict.

Reliability-

Reliability of a measuring device is an indication of the relative freedom from variable errors, i.e. errors which differed from person to
person during any/one testing and which varied from time to time for a given person measured twice by the same instrument.

The reliability of the Role Conflict scale was established by employing the split-half method on a sample of 200 teachers of secondary schools. The reliability coefficients for each of the six dimensions were found very high as shown in the table No. 2 which may be considered satisfactory for the purpose in hand. The researcher himself has not established the reliability as the reliability of the said test has been established by author on the same population as is involved in the present study.

Table 3.1
Reliability Co-efficient of Teachers Role Conflict Scale
For each of the Six dimensions

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Co-efficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Role diffusiveness conflict</td>
<td>.72</td>
</tr>
<tr>
<td>2. Role vulnerability conflict</td>
<td>.64</td>
</tr>
<tr>
<td>3. Role marginal conflict</td>
<td>.73</td>
</tr>
<tr>
<td>4. Role commitment conflict</td>
<td>.70</td>
</tr>
<tr>
<td>5. Role value conflict</td>
<td>.83</td>
</tr>
<tr>
<td>6. Role institutional conflict</td>
<td>.81</td>
</tr>
<tr>
<td>Total Scores</td>
<td>.74</td>
</tr>
</tbody>
</table>

Validity-

It is always necessary to gather some sort of evidence which provide confidence, that a test score really represents what it appears to represent. The extent to which the test measures the train for which it is
designed, is called validity of the test. The scale passes a high degree of validity and has been used widely for research purpose.

3.5.2. Teacher's Professional Commitment Scale

Professional commitment Scale was constructed by Sharma A.K. and Sharma B.K.. He has constructed this scale systematically. This scale measures professional commitment of teacher's. It is a verbal test meant for Hindi knowing teachers. It consists 40 items. Although there is no time limit for completing the test yet it can be completed in 20 minutes. The investigator has assured the teachers during his survey that their replies will be kept confidential and will be used only for research purpose.

Mode of Response-

Three response categories are provided for each item.

(i) Always (ii) Some times (iii) Never. Subjects are to choose any one of these three according to their perceptions and feelings that is more true of each and every item and are requited to encircle the item.

Scoring System-

The scoring system of professional commitment scale is based on a 3-point scale designed as-

(i) Always (ii) Some times (iii) never. The sum of 40 item scores provides the total commitment for a teacher.

Reliability-

A test can not be said "Standardized" until its reliability is unknown so it can be said that Reliability is very important in the process of measurement. Many definition have been given by educationist and
investigators. But the definition given by eminent is considered appropriate definition. According to him, "Reliability may be defined as the extent to which measurements reflects true individual differences among examinees. Individual differences are considered to 'true'. If they represent nonchance factors on condition."

Reliability in present test was calculated by split-half and internal consistency method. Split-half reliability test was found to be .72 and internal consistency reliability was found to be .75.

Validity-

Test was shown to various experts and education's. It was found to have a fair degree of face validity and content validity. In order to establish criterion validity some of principals of some institutions were contacted. They were clarified about in concept of commitment. They were asked to rate their teachers on the basis of commitment. These ratings were correlated with actual score of 100 teachers on commitment scale correlation was found be .48, hence test have fair degree of criterion validity.

3.5.3. Frustration Tolerance Test:

In the present study the frustration tolerance test, prepared by Dr. S.N. Rai was used as the research tool. This test has been prepared as puzzle form. Brief information about this test is given below

Name of Test : Frustration Tolerance
Author : Dr. S.N. Rai
Nature : Group / Individual Test
Structure : Four Puzzle
Administration and Scoring Procedure: The subject was asked to sit comfortably. Rapport is established. Instructions are given to him/her. After making instructions clear, the subject is asked to start the work. When he starts the work, stopwatch is also started. Subject's work is observed throughout from a distance so that he may not feel disturbed. If the subject works on the first puzzle upto 10 minutes, he/she is asked to move to the next puzzle since the time is up and 10 minutes time is noted. If he moves before, 10 minutes, the time which he has given to the first puzzle is noted. Sometimes the subject says that he has solved the puzzle. At that time stop watch is stopped and he is asked to draw the figure before the E (experimenter). Certainly he has drawn in a wrong manner since the first and third puzzles are insoluble. The mistake is pointed out and if the subject tries again to draw the figure, stop watch is started again and both the times, for that puzzle are added and noted. Then the subject moves to the second puzzle which is soluble. No time is noted for this puzzle. Then the subject moves to the third puzzle. For this puzzle exactly the same procedure is followed which has been followed for the first puzzle. The time given for this puzzle is also noted down. Then the subject solves the fourth puzzle which is soluble Time for this puzzle is noted. After this subject is thanked for his cooperation in the experiment.

Reliability

Reliability refers to the consistency of scores obtained by the same persons when they are re-examined with the same test on different occasions, or with different sets of equivalent items, or scored by
different scorers at the same time, or under other variables examining conditions. The degree of consistency between two measures of the same thing or the measure of how stable, dependable, trustworthy, and consistent a test is in measuring the same thing each time. The reliability or suitability of a test is usually expressed as a correlation coefficient. Inter observer or inter scorer reliability has been calculated by using Pearson’s product moment coefficient of correlation symbolically represented by “r”.

**Validity**

Validity of a test concerns what the test measures and how well it does so. Truthfulness: Does the test measure what it purports to measure? the extent to which certain inferences can be made from test scores or other measurement or the degree to which they accomplish the purpose for which they are being used. It tells us what can be inferred from test scores. Validity can also be thought of as utility.

**3.5.4 Teacher Attitude:**

This inventory is a 90 item Likert instrument consisting of six sub-scales. These sub-scales were developed the Likert summated ratings procedure. Each scale has 15 statements that pertain to a particular aspect of prospective and practise teacher’s professional attitudes. The six aspects dealt within the inventory are Attitude towards:

- Teaching Profession
- Class-room Teaching
- Child-centred Practices
- Educational Process
- Pupils
Teachers

The inventory has been constructed and standardized by Dr. S.P. Ahluwalia, then reader in Education, Banaras Hindu University with the help of research assistants under a project of the National Council for Educational Research and Training, New Delhi. The form of the items is akin to the usual Likert format. The items were selected from a longer list by a scientific statistical procedure. The items in the final sub-scales were selected by item analysis.

Originally 300 attitude statements, 50 on each sub-scale were collected from diverse sources. After careful discussions and cautious deliberations in two seminars of educators, teacher-educators, measurement specialists and persons knowledgeable in the fields of Education, Psychology and Sociology, weak and poor items were either modified and improved or dropped. The selected 180 attitude statements, 30 on each sub-scale were discussed in a small group (N = 25) of pupil-teachers and teachers. On the basis of their judgement and reasoning only 150 attitude statements, 25 on each sub-scale, were retained for inclusion in the preliminary form of the Teacher Attitude Inventory (TAI) for wide scale tryout.

The answer-sheets were scored and arranged in descending order. The upper 27% and lower 27% of cases were taken to find out the t-value of each attitude statement by using the formula given by Edwards 1959, p. 152.

Keeping the rationale of attitude scale construction in mind 90 psychometrically "good" attitude statements, 15 on each sub-scale were selected to constitute the final form of the TAI. Out of 90 items 56 are in positive declarative form and 34 of them are in negative form. Again 43
items are meant to assess attitude in favourable direction and 46 in unfavourable direction. Thus the favourable-unfavourable continuum adequately measures the aforesaid six selected areas.

The TAI consists of a bilingual (English and Hindi) reusable test-booklet with a separate answer-sheet.

Table 1 shows the total number of favourable and unfavourable items and their distribution in each sub-scale.

**Table – 3.2**

**Total number of favourable and unfavourable items and scale-wise their serial numbers**

<table>
<thead>
<tr>
<th>Sub Scale</th>
<th>Conditions</th>
<th>Item Serial Numbers</th>
<th>Total No. of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>I F</td>
<td>1, 8, 20, 33, 41, 66, 85</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>I UF</td>
<td>13, 34, 46, 48, 60, 72, 79, 86</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>II F</td>
<td>2, 9, 14, 17, 42, 47, 53, 67</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>II UF</td>
<td>35, 38, 59, 61, 65, 73, 84</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>III F</td>
<td>3, 11, 16, 21, 27, 39, 49, 62, 64, 80</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>III UF</td>
<td>25, 54, 75, 83, 90</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>IV F</td>
<td>15, 28, 36, 43, 50, 55, 71, 87</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>IV UF</td>
<td>4, 7, 10, 32, 63, 74, 76</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>V F</td>
<td>5, 44, 81, 82, 89</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>V UF</td>
<td>18, 22, 29, 31, 37, 51, 56, 58, 70, 77</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>VI F</td>
<td>6, 23, 40, 52, 88</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>VI UF</td>
<td>12, 19, 24, 26, 30, 45, 57, 68, 69, 78</td>
<td>10</td>
<td>15</td>
</tr>
</tbody>
</table>

F = Favourable — UF = Unfavourable-

SA = 4, A = 3, U - 2, D = 1, SD = 0 . SA = 0, A = 1, U = 2,- D = 3,- SD = 4
Scoring

Each item alternative is assigned a weight ranging from 4 (strongly) to 0 (strongly disagree) for favourable items. In the case of unfavourable items range of weights is reversed i.e. from 0 (strongly agree) to 4 (strongly disagree). The attitude score of a subject is the sum total of items scores of all the six sub-scales. The theoretical range of scores is from 0 to 360 with the higher score indicating the more favourable attitude towards teaching and allied aspects.

Reliability

Reliability was estimated by the split-half (odd-even) method and found to be .79 (corrected to .88) for a sample of 239 prospective teachers. The test-retest reliability coefficients after the interval of 3 months and 9 months are found to be .59 (N = 102) and .64 (N = 290). The details of reliability coefficients, indices of reliability, corrected reliability coefficients and standard errors of measurement are given in Table 3.2.

Table – 3.3
Reliability coefficients, indices of reliability, corrected coefficients and standard errors of measurement

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Method</th>
<th>Reliability Obtained $r_{11}$</th>
<th>Coefficients Correlated $r$</th>
<th>Index of Reliability $r_{100}$</th>
<th>Standard Error of Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Split half (odd-even)</td>
<td>.79</td>
<td>.88</td>
<td>.89</td>
<td>11.37</td>
</tr>
<tr>
<td>2.</td>
<td>Test-retest (3 months)</td>
<td>-.58</td>
<td>-.75</td>
<td>.76</td>
<td>16.17</td>
</tr>
<tr>
<td>3.</td>
<td>Test-retest (9 months)</td>
<td>.64</td>
<td>.78</td>
<td>.80</td>
<td>15.16</td>
</tr>
<tr>
<td>4.</td>
<td>Rational Equivalence (KR21)</td>
<td>.54</td>
<td>.70</td>
<td>.73</td>
<td>20.10</td>
</tr>
</tbody>
</table>
Validity

As per manual of the test (Ahulwalia, S.P.) determination of validity of an attitude inventory is a hard task.

The inventory appears to have content validity, and the method of selecting items supports this supposition. In addition, differences in means scores were found among some selected "known" groups. The mean scores for B.A. Part I and II students offering and not offering Education as an Elective subject, B. Ed. trainees and practising teachers were computed and compared. The observed differences were found to be in the expected direction.

Table – 3.4

Mean, Standard Deviation and other measures of some selected group

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Group</th>
<th>N</th>
<th>M</th>
<th>SEM</th>
<th>SD</th>
<th>SE SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>B.A. Part I (Not offering education elective)</td>
<td>56</td>
<td>230.53</td>
<td>2.94</td>
<td>21.98</td>
<td>2.09</td>
</tr>
<tr>
<td>2.</td>
<td>B.A. Part II (Not offering education elective)</td>
<td>53</td>
<td>230.73</td>
<td>3.44</td>
<td>28.74</td>
<td>2.44</td>
</tr>
<tr>
<td>3.</td>
<td>B.A. Part I (Offering education elective)</td>
<td>70</td>
<td>237.98</td>
<td>3.41</td>
<td>23.36</td>
<td>2.41</td>
</tr>
<tr>
<td>4.</td>
<td>B.A. Part II (Offering education elective)</td>
<td>47</td>
<td>251.91</td>
<td>4.65</td>
<td>33.91</td>
<td>3.30</td>
</tr>
<tr>
<td>5.</td>
<td>Practising teacher</td>
<td>122</td>
<td>251.41</td>
<td>2.78</td>
<td>30.70</td>
<td>1.97</td>
</tr>
<tr>
<td>6.</td>
<td>Prospective teachers (At the time of B.Ed. admission)</td>
<td>86</td>
<td>251.45</td>
<td>3.35</td>
<td>31.12</td>
<td>2.39</td>
</tr>
<tr>
<td>7.</td>
<td>Prospective teachers (After 9 months of B.Ed. training)</td>
<td>86</td>
<td>256.29</td>
<td>3.60</td>
<td>33.38</td>
<td>2.56</td>
</tr>
</tbody>
</table>

For determining the concurrent validity the scores on TAI were compared with the scores on the Hindi Adaptation of the MTAI developed by Dr. M.C. Joshi. The obtained correlation coefficient for
prospective teachers (N=79) came out to be positive but low. This may be
due to the fact that the MTAI is meant for elementary teachers, is largely
culture based and has become perhaps out of date of some extent. Table
3.5 shows the obtained correlation coefficient in a summary form.

Table – 3.5

Correlation between scores on TAI and the MTAI scores N = 79

<table>
<thead>
<tr>
<th>Variables</th>
<th>Correlation Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTAI Scores and Scores on Factor I of TAI</td>
<td>+ .42</td>
</tr>
<tr>
<td>MTAI Scores and Scores on Factor II of TAI</td>
<td>+ .32</td>
</tr>
<tr>
<td>MTAI Scores and Scores on Factor III of TAI</td>
<td>+ .02</td>
</tr>
<tr>
<td>MTAI Scores and Scores on Factor IV of TAI</td>
<td>+ .27</td>
</tr>
<tr>
<td>MTAI Scores and Scores on Factor V of TAI</td>
<td>+ .23</td>
</tr>
<tr>
<td>MTAI Scores and Scores on Factor VI of TAI</td>
<td>+ .07</td>
</tr>
<tr>
<td>MTAI Scores and TAI Scores</td>
<td>+ .23</td>
</tr>
</tbody>
</table>

The high discriminatory power of the items is a testimony of its
internal consistency.

3.6. STATISTICAL ANALYSIS:

Study is based mainly on correlational design correlations were
obtained between (i) Role Conflict, professional commitment, teacher
attitude and frustration tolerance and (ii) Role Conflict and Professional
commitment. These correlations have been obtained from whole sample
and on sub groups divided on the basis of for each sub group formed on
the basis sex, locality type of school by and whole sample, product
moment correlation coefficient was used for it

\[ r = \frac{\Sigma xy}{N\sigma_x\sigma_y} \]
(ii) Further significance of difference of the above relationship in reference to Male-Female, Rural-urban and Government-Private will be ascertained by test of significance of the difference between correlation coefficient (converting r to z).

\[ \sigma_{Dz} = \sqrt{\frac{1}{N_1 - 3} + \frac{1}{N_2 - 3}} \]

\[ t = \frac{Z_1 - Z_2}{\sigma_{Dz}} \]