Chapter-3

METHOD
OF THE STUDY
In the preceding chapters the statement of the problem, introduction to variables, along with review of related studies, and the description of tools used for the collection of the data, were reported. The present chapter is devoted to the method of investigation. It has been reported under following heads:

- Design of the study
- Listing of tools
- The sample
- Procedure of investigation and
- The statistical techniques used for the analysis of the data

All these aspects have been elaborated in the following paragraphs.

**DESIGN OF THE STUDY**

The present study was experimental in nature. The experimental method is essentially a means of gaining new knowledge by the collection of fresh observations under controlled conditions. This method adds enormously to the scope of scientific inquiry in that the investigator is no longer limited to observing nature’s experiments or phenomena that occur in the natural, social, economic or educational environment.

In experimentation, the purpose is to set up a relatively simple system of cause and effect so that observations on the system constitute data capable of analysis by the ordinary principles of the logic of scientific method and by the appropriate statistical procedures.

For conducting the experiment a simple pretest-posttest design was applied in which pre and post treatment observations were recorded both on value preferences and classroom behaviour. The value clarifying treatment was the independent variable and value preferences were the dependent variable. The class room observations were the second dependent variable. Personality factor E – Conforming versus Stubborn and
Attitude towards Teaching were classification variables on the basis of which prospective teachers were categorised into two groups viz.

- Confirming / Stubborn.
- High Attitude and Low Attitude towards teaching.

The schematic layout of the design of the study may be represented as follows in Fig 3.1
METHOD OF THE STUDY

Fig – 3.1
Schematic Layout Of The Design

Experimental Group
• Pre-experiment stage
  i) Classroom interactions through ETC
  ii) Value Preferences
     a) Personal
     b) Social
  iii) TAI
  iv) 16 P.F.

• Experimental Treatment:
  Clarifying Response Strategy

Control Group
• Pre-experimental stage
  i) Classroom Interactions
  ii) Value Preferences
     a) Personal
     b) Social

• No Experimental Treatment

<table>
<thead>
<tr>
<th>Trial Group</th>
<th>First Trial</th>
<th>Second Trial</th>
<th>Third Trial</th>
<th>Fourth Trial</th>
</tr>
</thead>
<tbody>
<tr>
<td>One group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N=15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N=15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N=15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fourth group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N=15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

• Post Treatment
Observations (N=60)
  i) Value Preferences
     a) Personal
     b) Social
  ii) Classroom interactions through ETC

• Post Treatment
Observations (N=60)
  i) Value Preferences
     a) Personal
     b) Social
  ii) Classroom interactions

A Gap Of 4 months
METHOD OF THE STUDY

Abbreviations used in the figure:-

**TAI** - Teachers Attitude Inventory

**16 PF** - Personality test 16 PF

**VCT** - Value Clarifying Treatment

**VP** - Value Preferences A) Personal B) Social

**ETC** - Equivalent Talk Category System

THE EXPERIMENT

Each unit was comprised of 15 student-teachers and was dropped after each trial. The first trial of the value clarifying treatment was imparted to all the 60 students of experimental group and after the treatment, this unit of 15 student-teachers was dropped from the experimental group after procuring their preferences for Personal and Social values. The second trial of treatment was administered on remaining 45 student-teachers. This was considered to be Two-Trials Group. After second trial, another unit of 15 students was dropped and three-trials group was again administered the fourth round of treatment and finally the value preferences of the whole group (N=60) with one-trial group, (N=15), two trial group (N=15), three trial group (N=15) four trial group N=15 were collected. This was done after academic session of the college was complete. The observations were also recorded for classroom interactional patterns of both the experimental and control group.

**Table 3.1**

**Post-Experiment Stage**

<table>
<thead>
<tr>
<th>Experimental Group</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>i) Class-room observations</td>
<td>i) Classroom observation through</td>
</tr>
<tr>
<td>through ETC</td>
<td>ETC</td>
</tr>
<tr>
<td>ii) Preferences of values</td>
<td>ii) Preference of values</td>
</tr>
<tr>
<td>a) Personal b) Social</td>
<td>a) Personal b) Social</td>
</tr>
</tbody>
</table>
Controls for the Experiment

One of the main contestants in every empirical study is that conclusions always have to be inferred from observations (Norton, 1952; De-Klerk, 1979). Identification and control of relevant variables are two of the most critical tasks confronting most researchers (D’Amato, 1970). Although the control of known or potentially relevant variable is often not difficult to accomplish, their identification frequently requires insight and ingenuity (Church, 1964; Rescoria, 1967; Solomon, and Lessac, 1968; Seligma, 1969). The matter of detecting unrecognized relevant variables rests entirely with the experimenter’s perceptiveness (Solomon, and Lessac, 1968). The reason the experimenter wishes to control known and potentially relevant variables is to avoid repetition and contamination (Seligma, 1969). One goal of experimental research is to determine how the independent variables of the study affect the dependent variables (D’Amto, 1970). Most control measures fall into one of the three general types of control techniques: Matching, Randomization, and Counterbalancing.

In matching techniques, the investigator obtains full control of the relevant variables for a particular experiment being investigated (Church, 1964; Scriven, 1967; D’Amato, 1970). Control is achieved by equalization of the effects of the relevant variables over all values of the independent variable of the study (Seligma, 1969). And this may be well equated in a particular experiment particularly if the number of the total sample involved is small (Rescoria, 1967). Counterbalancing techniques on the other hand, can provide either type of control i.e. equalisation of the effects of the relevant variables in the single experiment or over the long run (Rescoria, 1967).

In the present investigation, the controls were exercised using these control techniques:

- **Matching** of the groups was one control wherein all the relevant variables were controlled. The groups were matched on all the relevant variables like age, marital status and subjects of the learners.
- **Randomization** was another control, which was exercised for the allocation of students to various treatment groups.
The problem of controlling the non-experimental factors is especially difficult. Non-experimental factors are those conditions in the system isolated for experimentation, which should be uniform for both the experimental and control groups. The two groups shall be identical with respect to the potential achievement of the criterion, and that they shall be treated alike in all other respects except for the factors to be tested.

Randomization and replication are necessary in order to estimate the closeness of the matching.

Every effort was made to control the intervening variables. The two groups were matched for age, marital status and subject distribution.

TOOLS

Following tools were used to collect data:

- **Value – Survey Form** developed by the investigator:
  ii) Developing Value Survey Form: Personal and Social values.
  iii) Value mediators developed and validated by the investigator herself.

- **Value clarifying instrument** developed by Rath (1978) adapted by Chinara Benudhar (1991) consisting of following steps:
  i) Establishing rapport,
  ii) Awareness of values,
  iii) Choosing, prizing and acting upon values.

- **Observations of classroom interaction**: Equivalent Talk Category System, developed and standardized by Obers and Miller (1971).

- **Teacher Attitude Inventory**: Developed and Standardized by Ahluwalia, S.P. 1978.

- **Sixteen Personality Factor Questionnaire** – (16 PF) by Cattel and Eber (1972)
METHOD OF THE STUDY

SAMPLE

The method of investigation by sample has for its purpose the description of the properties of an accurately defined population by means of the information obtained from the sample.

Sampling or the selection of a part to represent the whole of a population, is a procedure of long standing and importance. There are at least three major reasons for the very rapid development in the use of samples in obtaining information:

- Reduced Costs: Expenditures are smaller when data are obtained for only a small part rather than for the whole of a population.
- Greater Speed: Data can be more rapidly collected, processed and published with a sample than with a complete enumeration of the population. This is often of vital importance when information is urgently needed.
- Greater Accuracy: A sample may actually provide more accurate information than that provided by the kind of complete study of a population that would prove practical at any given time.

Various techniques have been devised for obtaining a sample, which will be representative of its population. Most commonly used sampling techniques are:

- Random sampling,
- Stratified or Quota Sampling,
- Incidental sampling and
- Purposive sampling.

The descriptive term random is often misunderstood. It does not mean that the sample has been chosen in an offhand, careless and haphazard fashion (Garrett, 1966; 1981). Random sampling means that we rely upon a certain technique of selection called random to provide an unbiased cross section from the larger group or population.

The criteria for randomness are met when:

- Every individual in the population or supply has the same chance of being chosen for the sample;
- The selection of one individual or thing in no way influences the choice of another.
METHOD OF THE STUDY

Stratified sampling is a technique designed to ensure representativeness and avoid bias by use of modified random sampling method. It is applicable when the population is composed of sub-groups or strata of different sizes so that a representative sample must contain individuals drawn from each category or stratum in accordance with the sizes of the sub-groups. Within each stratum or sub-group, the sampling is random or as nearly as possible. This involves dividing the population into a number of groups or strata where members of a particular group share a particular characteristic.

Incidental sampling is sometimes referred to as accidental sampling. It is applied to those groups, which are used chiefly because they are easily or readily obtainable. School children, college students are readily available, and laboratory animals are also readily available at all times in numbers and under conditions none of which may be of experimenter’s choice. Such casual groups rarely contribute random samples of any definable population.

In purposive sampling, a sample is built up which enables the investigator to satisfy his specific needs in the project. The principle of selection in purposive sampling is the investigator’s judgement of the typicality of his interest.

The sample in the present investigation was selected at three levels:

- College sample
- Sample of prospective teachers
- Schools sample

• College Sample:

College sample in the present investigation consisted of two teacher training colleges of Chandigarh: Govt. College of Education, Sector-20, Chandigarh and Dev Samaj College of Education, Sector-36, Chandigarh. Since there are only two training colleges in Chandigarh, therefore both were selected for the present investigation.

• Sample of Prospective Teachers:

Sixty prospective teachers from each college was selected at random by taking 6-7 tutorial groups comprising of 10 students in each tutorial group. For 200 seats of B.Ed in each of these two colleges, twenty lecturers are employed. Each lecturer is
assigned one tutorial group. Roll number wise distribution of tutorial groups is	normally done in both the colleges.

- Roll No. 1, 21, 41, 61, 81, 101 and so on constituted tutorial group No.1.
- Roll No. 2, 22, 42, 62, 82, 102 and so on were placed in tutorial group No.2.

Same pattern was followed till tutorial group No. 20, was formed.
Table No. 3.2
The scheme of forming tutorial groups in both the colleges

<table>
<thead>
<tr>
<th>Serial No. of Tutorial Group</th>
<th>Roll Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1 21 41 61 81 101 121 141 161 181</td>
</tr>
<tr>
<td>2.</td>
<td>2 22 42 62 82 102 122 142 162 182</td>
</tr>
<tr>
<td>3.</td>
<td>3 23 43 63 83 103 123 143 163 183</td>
</tr>
<tr>
<td>4.</td>
<td>4 24 44 64 84 104 124 144 164 184</td>
</tr>
<tr>
<td>5.</td>
<td>5 25 45 65 85 105 125 145 165 185</td>
</tr>
<tr>
<td>6.</td>
<td>6 26 46 66 86 106 126 146 166 186</td>
</tr>
<tr>
<td>7.</td>
<td>7 27 47 67 87 107 127 147 167 187</td>
</tr>
<tr>
<td>8.</td>
<td>8 28 48 68 88 108 128 148 168 188</td>
</tr>
<tr>
<td>9.</td>
<td>9 29 49 69 89 109 129 149 169 189</td>
</tr>
<tr>
<td>10.</td>
<td>10 30 50 70 90 110 130 150 170 190</td>
</tr>
<tr>
<td>11.</td>
<td>11 31 51 71 91 111 131 151 171 191</td>
</tr>
<tr>
<td>12.</td>
<td>12 32 52 72 92 112 132 152 172 192</td>
</tr>
<tr>
<td>13.</td>
<td>13 33 53 73 93 113 133 153 173 193</td>
</tr>
<tr>
<td>14.</td>
<td>14 34 54 74 94 114 134 154 174 194</td>
</tr>
<tr>
<td>15.</td>
<td>15 35 55 75 95 115 135 155 175 195</td>
</tr>
<tr>
<td>16.</td>
<td>16 36 56 76 96 116 136 156 176 196</td>
</tr>
<tr>
<td>17.</td>
<td>17 37 57 77 97 117 137 157 177 197</td>
</tr>
<tr>
<td>18.</td>
<td>18 38 58 78 98 118 138 158 178 198</td>
</tr>
<tr>
<td>19.</td>
<td>19 39 59 79 99 119 139 159 179 199</td>
</tr>
<tr>
<td>20.</td>
<td>20 40 60 80 100 120 140 160 180 200</td>
</tr>
</tbody>
</table>
Out of 20 tutorials, 6 tutorial groups of prospective teachers were selected randomly for experimental group.

Same procedure was followed to select sample from both the colleges of education. Two groups of 60 students each were selected to form the experimental and control groups. The students of experimental and control groups were matched with respect to age, marital status and subject distribution. The distribution of the sample of prospective teachers has been given below in the table 3.3.

Table 3.3
Subject wise structure of the experimental and control groups.

<table>
<thead>
<tr>
<th>Teaching Subjects</th>
<th>Experimental group (Govt. College of Education)</th>
<th>Control Group (Dev Samaj College of Education)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Languages</td>
<td>44</td>
<td>40</td>
<td>84</td>
</tr>
<tr>
<td>Social Studies</td>
<td>24</td>
<td>26</td>
<td>50</td>
</tr>
<tr>
<td>Science and Maths</td>
<td>44</td>
<td>44</td>
<td>88</td>
</tr>
<tr>
<td>Music, Fine Arts</td>
<td>8</td>
<td>10</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
<td>120</td>
<td>240</td>
</tr>
</tbody>
</table>

Sample from Govt. College of Education was considered as experimental group and sample drawn from Dev Samaj College of Education was considered as control group. This was done due to the fact that the investigator herself is on the teaching staff of Govt. College of Education, Sector-20, Chandigarh. To conduct the experiment with rigorous value clarifying sessions could be possible with day-to-day interactions with the participants of the experimental group. Value clarifying treatment was given to sixty prospective teachers in four sessions, dropping a unit of 15 student-teachers after each session. The control group, consisting of N=60 student-teachers was administered only the pre-treatment and post-treatment Value Survey Forms.
• **The School Sample**

The selected prospective teachers were supposed to rank Personal and Social Values in their preference order before and after treatment in order to study change in their preference orders due to value clarifying treatment. They were also observed for their teaching behaviour through classroom interaction, before and after treatment to explore effect of value clarifying treatment on their classroom behaviour. Hence the lists of schools where prospective teachers of both the colleges were practicing, were procured from their respective colleges.

Out of 20 schools where practice of teaching for Govt. College of Education was organised, five schools were finally selected for the present study. This was done with a design so that the student-teachers who were practicing in the experiment could be observed for their teaching. The five schools were selected for experimental group because two tutorial groups of prospective teachers (10+10) were sent to the same school viz. Govt. Senior Secondary School, Sector-20, Chandigarh. Three schools were selected for control group as 20 pupil-teachers were sent to one school for practice teaching by Dev Samaj College of education, Sector 36, Chandigarh. These were the student-teachers who were pre-tested for their value preferences also. They happened to cluster in three schools. The schools selected for classroom interactions of prospective teachers of experimental and control groups have been presented in the following tables 3.4 and 3.5.

**Table 3.4**

<table>
<thead>
<tr>
<th>Group</th>
<th>Name of School</th>
<th>Sector</th>
<th>No. of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Govt. Sr. Sec. School</td>
<td>Sector 28</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>Govt. Sr. Sec. School</td>
<td>Sector 29</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>Govt. Sr. Sec. School</td>
<td>Sector 21</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>Govt. Sr. Sec. School</td>
<td>Sector 22</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>Govt. Sr. Sec. School</td>
<td>Sector 20</td>
<td>20 (Two tutorial groups were combined)</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td>60</td>
</tr>
</tbody>
</table>
METHOD OF THE STUDY

Table 3.5

Three schools were selected for control group

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of School</th>
<th>Sector</th>
<th>No. of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Govt. Sr. Sec. School</td>
<td>Sector 35</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>Govt. Sr. Sec. School</td>
<td>Sector 46</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>Dev Samaj Sr. Sec.</td>
<td>Sector 21</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>School</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td><strong>60</strong></td>
</tr>
</tbody>
</table>

PROCEDURE OF INVESTIGATION

Phase - I

After selecting the sample from both the colleges (as discussed under the heading “Sample” of this chapter), the investigator contacted the principals of both the colleges to seek formal permission from them to collect data. The teachers in charge of the tutorial groups, selected as experimental and control groups were contacted to solicit the co-operation of the supervisors of these tutorials.

The very important aspect of the conduct of experiment was the co-operation rendered by the respective tutorial in charge and supervisors of teaching practice.

Phase-II Pre-Treatment Recordings:

The experimental group was administered with the attitude inventory and 16 – PF questionnaire as pre-treatment recordings. Value preferences on Personal and Social value survey forms were also procured before implementing the experimental treatment. The pre-testing also included observations of classroom interactions for each participating prospective teacher. As the periods for observation of various trainees were distributed over different times and schools, the investigator was unable to observe them all in a particular period at the same time. In some periods 3-4 students were simultaneously teaching in their respective classes and schools. Therefore, in order to finish with the pre-treatment classroom observations within stipulated time (First practice teaching is
conducted for 15 days), the investigator used audiocassette recorders to record some lessons for 20 minutes each. She took the help of four research scholars trained in recording classroom observations, they also used audiocassette recorder which were later played to encode teaching behaviour in the presence of the investigator. Similar observations of the classroom interactions were made in control group. The pre-treatment observations were completed in first teaching practice i.e. in fifteen days as revealed in Table 3.6.

Phase – III The Experiment: Value Clarifying Treatment:

60 pupils of experimental group were divided into four units. Each unit comprised of 15 prospective teachers. Treatment of value clarifying strategy was given to all the 60 pupils individually. Some times 2-3 pupils were made to sit together for value clarifying treatment.

It was decided to establish healthy rapport with the subjects by asking them about their names, hobbies, likes or dislikes. Thus, Establishing Rapport was introduced as a first step in the instrument. The description here was made on the basis of observations. Accordingly, Becoming aware of one’s own values and choosing, prizing and acting upon values were regarded as second and third step respectively.

The clarifying response as a dialogue strategy operates through three different steps. In the first step rapport was established with the participants by initiating informal conversation for building up a rapport between the clarifier and the subject.

Second step was to become aware of one’s values. In this step the subject was served with a Value Survey Form (Personal and Social) and was requested to rank the values in terms of importance as guiding principles in his or her life. By doing so, the subject becomes aware of his/her own value system.

In the step III (choosing, prizing and acting upon values) the subject was conducted through the valuing process with the help of clarifying responses. Clarifying responses touching one or more sub-processes of valuing were directed to the first two top values and/or the bottom two values. The copy of the instrument has been enclosed in the appendix 2(iv).
METHOD OF THE STUDY

The first treatment was over after getting value preferences forms filled again. Only once from one trial group, twice from two trials group, thrice from three trials group and four times from four trials group to each participant individually. The treatment was meted out for one hour through dialogue strategy. The value preferences were taken after every treatment. With each treatment trial, one unit of subjects was dropped. The interval between two treatments was at least one month.

After each treatment trial, value preferences were procured and once again final class-room interaction of each participant was observed through ETC.

The schedule of the value clarifying treatment given to experimental group has been given in the following table 3.6:
### Method of the Study

#### Table 3.6

**TIME-SCHEDULE OF VARIOUS STAGES OF THE TREATMENT**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Time</th>
<th>Stages of experiment</th>
<th>No. of Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Nov. 6 to 23, 2000</td>
<td>Pre-treatment observations of class room teaching</td>
<td>60 (expt. Group)</td>
</tr>
<tr>
<td>2.</td>
<td>Nov. 8 to 24, 2000</td>
<td>Pre-treatment observations of class room teaching</td>
<td>60 (control Group)</td>
</tr>
<tr>
<td>3.</td>
<td>Dec. 2000</td>
<td>Value clarifying treatment-I. Complete one month. Sometimes two or three pupils were made to sit together.</td>
<td>60 (expt. Group)</td>
</tr>
<tr>
<td>4.</td>
<td>Jan 2001</td>
<td>Value clarifying treatment-II</td>
<td>45 (expt. Group)</td>
</tr>
<tr>
<td>5.</td>
<td>Feb. 2001</td>
<td>Value clarifying treatment-III</td>
<td>30 (expt. Group)</td>
</tr>
<tr>
<td>6.</td>
<td>1-15 March and 1-15 April</td>
<td>Value clarifying treatment-IV. 15th March onwards students took II house tests and 15th April onwards students took Final B.Ed examination.</td>
<td>15 (expt. Group)</td>
</tr>
<tr>
<td>7.</td>
<td>May 4, 2001 to May 20, 2001</td>
<td>Post-Treatment observations of class room interactions.</td>
<td>60 (expt. Group) 60 (control Group)</td>
</tr>
</tbody>
</table>

**Phase – IV: Post-Testing:**

Each trial of value clarifying treatment was followed by filling up of value preferences forms for (a) Personal values (b) Social values.
METHOD OF THE STUDY

The structure of the value clarifying instrument and the technique of conducting value clarifying sessions have already been discussed in chapter II.

After procuring final value preferences of both experimental and control groups, all the prospective teachers were observed again in their classroom for recording their classroom-interaction in final teaching practice at the end of the session.

The pre and post-testing was done exactly on the same pattern for control group also. Only, the treatment of value inculcation was not administered on this group.

Experimental and control group were post-tested for Personal and Social Values.
- Value preferences
- Observations of classroom interactions through ETC.

The investigator herself observed the classes of prospective teachers, using ETC system of class-room observation. Each of the 120 prospective teachers, was observed twice individually for about 20 minutes. The lessons were also recorded with the help of cassette recorder and just after the class, the lesson was decoded using ETC system. The encoded behaviours were collected on a 20 x 20 response sheet and each response sheet was converted into an interpretation matrix for each individual teacher. In order to ensure comparability, interpretation matrix of each individual teacher was transformed into millage matrices, which were later pooled w.r.t. the classification variables viz.

- Pre-post observations for studying value-inculcation treatment.
- Pooled matrices according to the attitude towards teaching.
- Pooled matrices according to conformity.stubborn behaviour of teachers.

The whole process of pre-testing, treatment trials and post-testing took almost full one session.
STATISTICAL TECHNIQUES

The following statistical techniques were employed to analyse the data obtained from the study in order to test the hypotheses.

**Effect of value clarifying strategy on value preference patterns of different trial groups.**

- Master ranks for preferences of each value (both Personal and Social) were computed to study the most preferred and least preferred values (characteristic value patterns of prospective teachers) for experimental and control group.
- One way ANOVA by ranks (Kruskal Wallis) was used to study the effect of treatment trials of value clarifying strategy, on value preferences of prospective teachers, with respect to:
  - Pre-treatment value preferences of experimental and control groups for Personal and Social values.
  - Post-treatment value preferences of experimental and control groups for Personal and Social values.
  - Pre-Post differences in value preferences of experimental group (Personal and Social values).
  - Pre-Post differences in value preferences of control group (Personal and Social values).
  - Pre-Post differences in rank ordering Personal and Social values of:
    a) One Trial group.
    b) Two Trials group.
    c) Three Trials group.
    d) Four Trials group.
  - Line diagrams for master ranks on Personal and Social values of corresponding groups were used-
Analyses related with impact of value clarifying strategy on teaching behaviour:

- Aggregates of rows and columns of millage matrices were converted into category percentages for further computation of the data.
- T-test was applied separately on various behavioural indices for pre-treatment and post-treatment differences.
  - For experimental group / Control group:
    - Total group, One-trial group, Two-trials group, Three-trials group and Four-trials group
  - According to personality type: Conforming and Stubborn prospective teachers
  - According to attitude towards teaching: High and Low

Following behavioural indices were calculated and used for interpreting data:

- Teacher Talk
- Student Talk
- Silence/Confusion
- Teacher Question
- Teacher Question : Restricted Thinking.
- Teacher Question : Expanded Thinking.
- Teacher Response.
- Teachers Response : Restricted Thinking.
- Teacher Response : Expanded Thinking.
- Teacher Reaction.
- Teacher Reaction : Maintaining Level.
- Teacher Reaction : Extending Level.
- Teacher Reaction : Terminating Level.
- Teacher Structuring : Directions.

The results based on interpretations of analysis of data have been discussed in following paragraphs of chapter IV.

166