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CHAPTER IV
Planning and Procedure

4.1 Introduction

The previous chapter contained a detailed account of the researches on organizational climate, professional zone of acceptance of teacher and teacher morale carried out in the past and in recent times. Only relevant researches had been reviewed there. Apart from giving him an insight into the problem, it has also helped the investigator in planning the present problem.

Planning is a necessary adjunct even for an ordinary day-to-day work. And when a work is spread over a number of weeks and months, planning must be at core if the work is to be completed without any confusion or disarray. The present research is a multi-dimensional and has multiple phases. Hence every care and caution must be taken in preparing and executing the plan to arrive at definite and valid conclusions.

The study sets forth a major hypothesis that teacher morale is systematically related to school climate, and principal characteristics of the OCDQ measures. Two dimensions of organization climate are posited as significant in this respect. These dimensions are "Open" and "Closed".
climates as delineated by Hoy and Apple Berry

4.2 Phases of Research Study and Their Variables:

The study envisages three phases pertaining to three important variables of school climate, teacher morale and professional zone of acceptance of teachers. They are as under:

(I) School Climate:

The first phase of the study would take OCDQ measures in consideration. The different behaviours of the principals and teachers with regard to "Open" and "Closed" climate schools would be juxtaposed and the interpretations would be drawn with the help of one way analysis of variance. Here the dependent variable would be the different characteristics of Teachers and Principal's scores obtained from the administration of organizational climate Description opinionnaire (OCDQ).

In all nine hypotheses would be tested. They have been described in chapter one in 1.10 paragraph.

(II) OCDQ Measures Vis-a-Vis Teacher Morale with teacher’s Organismic Variables:

The second phase of the research would stress the relationships that existed between the OCDQ measures and the teacher morale. The school climate as independent
variable would act at two levels of 'open' and 'closed' climate schools while the teacher morale as measured by the Purdue Teacher opinionnaire (PTO) would operate at ten levels. There are 10 PTO factors. Accordingly the hypotheses of main effects would be ten and one general interaction hypothesis as described in chapter one would be tested with the help of ANOVA.

(111) **School Climate, Teacher Morale and Professional Zone of Acceptance of Teachers**

Each school has its own climate as perceived by the teachers. The school climate more or less influences the teacher morale which determines the professional zone of acceptance of teachers.

The integrated research design would involve the following variables and their levels.

(1) School climate would act as independent variable and it would operate at two levels of "open" and "closed" climate schools.

(11) Teacher morale would be the second independent variable and it would operate at two levels of "High morale" and "Low morales" of the teachers.

(111) Professional zone of acceptance would act as dependent variable. It would be measured by Professional zone of Acceptance Inventory (PZAI). It was developed by Kunz.
Hence the research design having 2 x 2 dimensions would be involved and the total hypotheses in this phase would be three which are as under:

(1) There is no significant difference between the mean scores of the Professional zone of Acceptance of Teachers (PZAT) of the 'open' and 'closed' climates school.

(11) There is no significant difference between the mean scores of PZAT of High and Low morale of teachers.

(111) There is no significant interaction between school climates and Teacher morale in the production of scores of PZAT.

Now we would take these three phases one by one.

4.3 Phase One: Organizational Climate and Its Measurement:

In a major study of 60 schools, Halpin and Croft identified and described eight basic characteristics of social interaction between the principal and the teachers. Four of the characteristics refer to Teacher Behaviour: Disengagement, Hindrance, Esprit and Intimacy; and the four describe Principal Behaviour: Aloofness, Production Emphasis, Thrust and Consideration. The behaviour described by each characteristic has been given in chapter II of this thesis.
In addition, Halpin and Croft conceptualized social interactions of professional personnel of schools in terms of more general factor, OPENNESS. The openness of a school refers to actions which emerge freely and without constraints; that is the behaviour of the group members is genuine or authentic. The leadership acts are readily initiated from both the principal and the teachers and the group is not inordinately concerned with either task achievement or social needs of satisfaction. Satisfaction on both counts emerges easily and almost effortlessly.

The concept of openness in organizational behaviour seems highly compatible with teacher morale and their effectiveness. Hence, the investigator was simply concerned with types of organizational climate into 'open' and 'closed' climates.

The OCDQ is composed of 64 Likert-type items. By factor analysis of school profiles, the authors identified general 'openness' factor. Openness scores for schools can be computed by summing the Esprit and Thrust (3 + 7) and then subtracting the Disengagement (1) scores. Thus, the investigator tried to use the method suggested by Halpin & Croft and used by Hoy and Apple Berry, cited earlier.
Instructions:

OCDQ can be administered individually or in a group. In order to make the teachers feel more free, the principal's or head master's presence is to be avoided. Moreover, the respondents should remain incognito. That may give them greater sense of security. The time generally taken for completing the questionnaire is 30 minutes.

The purpose of the questionnaire is to secure a description of the different ways in which teachers and principals behave in schools and of the various conditions under which they must work. The items in the questionnaire describe typical behaviours of conditions that occur within a school organization. The items are not to be evaluated in terms of "good" or "bad" behaviour, but they are to be responded in terms of how well the statement best describes the typical behaviour of teachers in group and the principal.

The scale against which the respondents indicate the extent to which each statement characterises his/her school, is defined by following four categories:

(1) Very frequently
(2) Often occurs
(3) Sometimes occurs
(4) Rarely occurs

Below is the example of a statement in the questionnaire:

"Teachers call each other by their first names" : 1 2

(3) 4. In this example, the respondent marked alternative 3.
(three) to show the inter-personal relationship described by this item "Occasionally" at his\her school. Of course, any of the other alternative could be selected, depending upon how often the behaviour described by the item indeed occurs in the school. The same way the responder is required to encircle one of the four alternatives which he thinks characterises the school to the extent indicated.

**Scoring:**

The four categories of responses can be scored by simply assigning the respective categories. Any four successive integers such as 1, 2, 3, 4 scores can be converted from one scale to another by merely adding or substracting a constant, and this can be done without affecting the variance. Only five items i.e. item nos. 15, 16, 33, 41, 42 have to be scored negatively i.e. assigning the score of 4, 3, 2, 1. The person who encircles 1, gets a score of 4, if 2, gets a score 3 and so on. To find out the raw score for each person, the scores of items for each sub-test have to be added and divided by the number of items in the corresponding sub-test. This will give eight sub-tests by sub-test raw score for each person. The names and item numbers pertaining to the sub-test are given in table 4.1ow we Shelat^\textsuperscript{4}. 
<table>
<thead>
<tr>
<th>Sub-test</th>
<th>No. of items</th>
<th>Total No. of items</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Teacher's behaviour</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Disengagement</td>
<td>1, 2, 3, 4, 5, 6, 7, 8, 9</td>
<td>10</td>
</tr>
<tr>
<td>2. Hindrance</td>
<td>11, 12, 13, 14, 15, 16</td>
<td>6</td>
</tr>
<tr>
<td>3. Esprit</td>
<td>17, 18, 19, 20, 21, 22, 23, 24, 25</td>
<td>9</td>
</tr>
<tr>
<td>4. Intimacy</td>
<td>26, 27, 28, 29, 30, 31, 32, 33</td>
<td>9</td>
</tr>
<tr>
<td><strong>Principal's behaviour</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Aloofness</td>
<td>34, 35, 36, 37, 38, 39, 40, 41, 42</td>
<td>9</td>
</tr>
<tr>
<td>2. Production Emphasis</td>
<td>43, 44, 45, 46, 47, 48, 49</td>
<td>7</td>
</tr>
<tr>
<td>3. Thrust</td>
<td>50, 51, 52, 53, 54, 55, 56, 57, 58</td>
<td>9</td>
</tr>
<tr>
<td>4. Consideration</td>
<td>59, 60, 61, 62, 63, 64</td>
<td>6</td>
</tr>
</tbody>
</table>
4.3.1 Research Questions for Phase One:

For the first phase of the study for identifying Teacher's characteristics and Principal's characteristics in the context of openness of the school climates, the following research questions were posed:

1. Do teachers significantly differ as to the perceived characteristics of teachers of "open" and "closed" climate schools?

2. Do teachers significantly differ as to the perceived characteristics of the principals of "open" and "closed" climate schools?

3. Do teachers significantly differ as to the perceived "Openness" scores of the "open" and "closed" climate schools?

The above questions were utilized in generating the null hypotheses for the first phase, which have been stated in the first chapter earlier.

The first and second questions would each elicit four hypothesis as there are four sub-tests in each. The third question has only one hypothesis. Thus, there would be nine hypotheses of this phase, which have been given in the first chapter earlier.

4.3.2 The Sample and Its Selection Criteria:

The initial sample for this phase of study was drawn from 143 schools which met the following criteria.
1. The schools should be situated in the districts of the central Gujarat.

2. Such schools should be accredited by the State Department of Education.

3. The members of the sample should be only teachers of both sex from rural and urban areas.

4. The teacher must be having atleast three years of tenure in their positions.

Initially 143 schools were randomly selected by employing stratified sampling procedure. The teachers of these schools were given OCDQ for their opinion. Complete response for each item was the criterion for accepting the form. Thus 560 teachers responded the tool. The teachers of 99 schools responded the tool completely and correctly. Their responses were scored according to the instructions given in the manual. The scored were tabulated and their means, variances and openness scores were computed.

Out of these 99 schools, 49 schools having high openness scores and 49 schools having low openness scores were selected. The remaining one school having medium openness score were ignored from the sample. Thus 98 schools remained in the study, 49 each of the two categories, open and closed climate schools. The full data would be given in chapter five.
The teachers of these ninety eight schools had been given the other tools for collection of relevant data. The sample with relevant characteristics is given in table 4.2.

4.4 Phase Two: QCDQ Measures and Teacher Morale:

As explained earlier in this chapter, the second phase of the investigation would be undertaken. In the second phase, the teacher morale as perceived by the teachers of the participating schools acted as the dependent variables.

4.4.1 Measurement of Teacher Morale: Instrument and its Reliability:

To assess the level of teacher morale, Purdue Teacher Opinionnaire (PTO) as devised and standardized by Rampel & Bentley had been used. Its validity and reliability coefficients established by the authors are satisfactory and the population on which it was standardized was also considered adequate. The investigator translated the PTO in Gujarati language and its translation was submitted to eleven experts who were well-versed with Gujarati as well as English language. According to their suggestions, modifications were made in Gujarati version before it was printed. Before using to the large sample the present investigator thought that the instrument's reliability should be tested on the present sample. He administered the PTO instrument to 30 teachers of both the sexes of rural and urban area. He again
administered this instrument on this same sample after an interval of 30 days. The two scores of first and second administrations were correlated. The product moment correlation was found to be .91 which was considered quite high.

4.4.2 Mode of Administration of PTO:

Initially teachers of 99 secondary schools of the district of central Gujarat were administered PTO and scored strictly on the lines as suggested by the manual. Usable data of teachers were found adequate. The PTO is divided into ten scores representative of ten factors. The summation of these ten scores would give a composite score of the teacher morale. The ANOVA procedures were used to determine whether significant differences existed among them, and among different characteristics of Principals.

4.4.3 Factors of PTO:

The ten PTO factors, together with brief descriptions and test-retest correlations are given below in parenthesis:

Factor 1 - Teacher rapport with principal deals with the teacher's feelings about the principal (.86)

Factor 2 - Satisfaction with teaching pertains to teacher relationships with students and feelings of satisfaction with teaching (.84)

Factor 3 - Rapport among teachers takes into account teachers' relationship with other teachers (.80)
Factor 4 - Teacher salary pertains primarily to the teacher's feelings about salaries and salary policy (.81)

Factor 5 - Teacher load deals with such matters as record keeping, clerical work, community demands and keeping up to date professionally (.77)

Factor 6 - Curriculum issues solicit teacher relations to the adequacy of school programme in meeting student needs and in preparing students for effective citizenship (.76)

Factor 7 - Teacher Status samples feeling about prestige, security and benefits afforded by teacher (.81)

Factor 8 - Community support of education deals with community understanding and willingness to support a sound educational programme (.78)

Factor 9 - School facilities and services have to do with the adequacy of facilities, supplies and equipment and the efficiency of procedure for obtaining materials and services (.80)

Factor 10 - Community pressures gives special attention to community expectations of teacher's personal standards, his participation in outside-school activities, and his freedom to discuss controversial issues in the classroom (.62)

Reliability of total score is .87

The distribution of the items of each factor together with the maximum scores is given below in table 4.
Table 4.2: Distribution of Items in the PTO.

<table>
<thead>
<tr>
<th>Factor No.</th>
<th>Name of the factor</th>
<th>No. of item</th>
<th>Maximum score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Teacher rapport with principal</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>2</td>
<td>Satisfaction with Teaching</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>3</td>
<td>Rapport among Teachers</td>
<td>14</td>
<td>56</td>
</tr>
<tr>
<td>4</td>
<td>Teacher Salary</td>
<td>7</td>
<td>28</td>
</tr>
<tr>
<td>5</td>
<td>Teacher Load</td>
<td>11</td>
<td>44</td>
</tr>
<tr>
<td>6</td>
<td>Curriculum issues</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>7</td>
<td>Teacher Status</td>
<td>8</td>
<td>32</td>
</tr>
<tr>
<td>8</td>
<td>Community support of education</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>9</td>
<td>School facilities and service</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>10</td>
<td>Community pressures</td>
<td>5</td>
<td>20</td>
</tr>
</tbody>
</table>

Total... 100 400

The responses on PTO by teachers would be tabulated in the next chapter while analysing them. The raw scores and their means would be utilized for the purpose.

4.4.4 Research Questions for the Second Phase:

Looking to the problem of investigation, the following questions that relate to the second phase of research were posed:

(1) What are the different factors that existed for differential teacher morale under principals differing in leader characteristics?
(i) What are the Principal's characteristics instrumental in inducing maximum PTO factors?

(ii) What are the principal's behaviour patterns instrumental in inducing least PTO factors?

4.4.5 Research Design for the second Phase:

This phase of the investigation dealt with the relationship that existed between principals & the teacher morale. Here the behavioural pattern would act as independent variable operating at four levels while the PTO factors would operateing at ten levels. The researcher was not interested in the interactive effects of PTO X behavioural Patterns. He was chiefly interested in the main effects of behavioural patterns as to how they produced differential teacher morale. The factorial design of 2 x 10 would be invoked but the different effects of interaction would be shown as composite sum of squares.

Schematically the research design would be as under. In the body of the scheme cell notations would be shown in Table 4.3.
Table 4.3
Schematic Representation of Factorial Design of 10 x 4.

<table>
<thead>
<tr>
<th>Pattern A</th>
<th>Principal's Behaviour</th>
<th>Patterns (1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTQ Factors B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>31</td>
<td>32</td>
<td>33</td>
<td>34</td>
<td></td>
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<tr>
<td>4</td>
<td>41</td>
<td>42</td>
<td>43</td>
<td>44</td>
<td></td>
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<tr>
<td>5</td>
<td>51</td>
<td>52</td>
<td>53</td>
<td>54</td>
<td></td>
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<tr>
<td>6</td>
<td>61</td>
<td>62</td>
<td>63</td>
<td>64</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>71</td>
<td>72</td>
<td>73</td>
<td>74</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>81</td>
<td>82</td>
<td>83</td>
<td>84</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>91</td>
<td>92</td>
<td>93</td>
<td>94</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>101</td>
<td>102</td>
<td>103</td>
<td>104</td>
<td></td>
</tr>
</tbody>
</table>

4.4.6 Definition of Structural model for score for Second Phase:

Here the teacher morale score obtained by the administration of PTO instrument to the teachers would be analyzed. The ANOVA would show the main effects of principal's behavioural patterns and the different factors of PTO. A complete structural model for a score of teacher morale in a 10 x 4 factorial design is postulated below:
Y = G + A + B + AB + Error score
where
G = Grand Mean
A = Effect due to Patterns
B = Effect due to PTO factors

For both the phases of research, i.e. second & third phase, the factorial design would have equal cell size in order to have precision and accuracy in interpreting the results.5,6

4.5 Phase Three:

Professional zone of Acceptance of Teachers:

Teacher's acceptance of principal's directives is the input for the ultimate output of the school organization. As explained earlier, it depends on various factors or variables. The most important variables influencing is the teacher, the principal and the school climate.

The investigator was interested to see the effects of these variables upon the professional zone of acceptance of teachers. In past various studies had been done but they were single variable study. So a composite study involving these major independent variables seemed to be warranted, the description of which has been given in greater detail in the earlier pages of this chapter.

Professional zone of Acceptance Inventory (PZAI)

PZAI measures teacher's probable degree of compliance with their principal's directives within the professional
discretion area termed as "Professional Zone of Acceptance" of teachers.

The tool was constructed and standardized by Daniel W. Kunz in 1977 originally there were 30 items of likert type which are to be responded by the teachers by ticking appropriately. There are five options for the respondents to choose from:

A — Always
B — Often
C — Occasionally
D — Seldom
E — Never

The tool was administered by Kunz to 380 teachers of 50 secondary schools. 15 items were extracted from original 30 — one factor solution using principal component analysis with orthogonal rotation attempted. The first factor accounted for 92% of variance. Correlation of 15 to original 30 with N = 380 at secondary level was .97. The test-retest reliability found by Kunz is .91 after one week duration.

The investigator used the original PZAI having 30 items. He has attempted to find out reliability coefficient after translating the items in Gujarati proper care was taken. The translated version was given to five experts who know Gujarati and English language perfectly. Their
suggestions were taken into consideration. Then this version was given to 30 teachers of secondary schools. After 15 days again it was given. The scores of these two administrations were correlated product moment correlation was .90.

4.5.1 Research Design for Phase Three:

Professional zone of acceptance of teachers of different school climates, of different leadership behavior of principals, having different teacher morale would be studied in the phase three.

Professional zone of acceptance of teachers would act as the dependent variable. The scores of PZAT would be taken into consideration.

The major independent variables and their levels would be as under:

1. Organizational Climate:

As explained earlier, an index called 'openness' was calculated for each school. The less score describes closed climate while the more score would describe open climate.

2. Principal's Characteristics of OCDQ Measures:

The OCDQ score would describe the Principal's characteristic patterns of the principal. These behavior patterns would be at four levels:

Pattern I
Pattern II
Pattern III
Pattern IV
3. **Teacher morale:**

The teachers serving under principals of the schools having different school climates would show differing teacher morale. From the distribution of teacher morale scores, median would be found out. Those below median would have low morale while above median score would have high morale.

4. **Scores of Professional zone of acceptance of Teachers:**

These scores would be obtained by administering professional zone of acceptance of teachers to the teacher's. These scores would act as dependent variable.

**Table 4.4**

<table>
<thead>
<tr>
<th>Climate A</th>
<th>Open</th>
<th>Close</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal's Characteristics</td>
<td>I 1</td>
<td>II 2</td>
</tr>
<tr>
<td>Patterns B</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Teacher Morale C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High 1</td>
<td>111 121 131 141</td>
<td>112 122 132 142</td>
</tr>
<tr>
<td>Low 2</td>
<td>211 221 231 241</td>
<td>212 222 232 242</td>
</tr>
</tbody>
</table>

4.5.2 research Questions for phase Three:

The following questions were posed:

1. Do open and closed climates of the schools have identical scores of PZAT?
2. Do different Principal's characteristic patterns produce identical scores of PZAT?
3. Do high and low levels of teacher morale have identical scores of PZAT?

4. Are there any significant interactions perceptible between/among independent variables?

4.5.3 **Definition of Structural Model of a Score**

The per cent score of the pupils had been taken from the result sheets of the various schools. These scores would be analyzed keeping in mind the "fixed effect" ANOVA model. For the present research design, a complete structural model for a score in $2 \times 4 \times 2$ factorial design is postulated below:

$$Y = G + A + B + C + AB + AC + BC + ABC + Error$$

where

- $G = \text{Grand Mean}$
- $A = \text{Effect due to school climate}$
- $B = \text{Effect due to principal's characteristics patterns}$
- $C = \text{Effect due to teacher morale}$
- $E = \text{Effect due to error score}$.

Whenever factorial designs were encountered in this thesis, the investigator had kept the cell size constant. That was because of the following reasons:

1. By keeping constant cell-size, the homogeneity of variance test is not needed.
2. Cell-size being constant, the computation would be straightforward and easy.

3. The interpretations and conclusions drawn from such designs would be valid, reliable and accurate.

4.6 Sample

This aspect has discussed earlier. There are three districts of central Gujarat. To give proper representation, from each district appropriate number of schools were selected randomly from among the clusters of school of the district. From these clusters adequate number of schools were again randomly selected. Thus in all 143 schools were selected. From each of the 143 schools, five teachers from each school were selected keeping in mind their sex, qualifications, age and number of years of their services.

The overall sample profile for the present research has been given in table 4.5 below:
Table 4.5
Sample Profile of the Research

<table>
<thead>
<tr>
<th></th>
<th>Rural</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. No. of schools selected</td>
<td>72</td>
<td>71</td>
<td>143</td>
</tr>
<tr>
<td>2. OCDQ Responses received from</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>schools</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>From teachers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male teachers</td>
<td>123</td>
<td>123</td>
<td>246</td>
</tr>
<tr>
<td>Female teachers</td>
<td>122</td>
<td>122</td>
<td>244</td>
</tr>
<tr>
<td></td>
<td>245</td>
<td>245</td>
<td>490</td>
</tr>
<tr>
<td>3. PTO Responses received from</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>140</td>
<td>125</td>
<td>265</td>
</tr>
<tr>
<td>Female</td>
<td>117</td>
<td>108</td>
<td>225</td>
</tr>
<tr>
<td></td>
<td>257</td>
<td>233</td>
<td>490</td>
</tr>
<tr>
<td>3.1 Age categories of the teachers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. upto 25 years</td>
<td>M 37</td>
<td>F 32</td>
<td>M 32</td>
</tr>
<tr>
<td>2. Upto 26 - 35 years</td>
<td>42</td>
<td>43</td>
<td>40</td>
</tr>
<tr>
<td>3. above 36 years</td>
<td>42</td>
<td>41</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>121</td>
<td>161</td>
<td>114</td>
</tr>
<tr>
<td>3.2 Responses of teachers from</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Different salary slabs:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. 2000 - 3000</td>
<td>30</td>
<td>26</td>
<td>35</td>
</tr>
<tr>
<td>2. 3001 - 4000</td>
<td>46</td>
<td>48</td>
<td>40</td>
</tr>
<tr>
<td>3. 4001 - 5000 +</td>
<td>45</td>
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<td>121</td>
<td>116</td>
<td>114</td>
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<td>3.3 FZAI Responses of teachers:</td>
<td></td>
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<tr>
<td>Male</td>
<td>115</td>
<td>98</td>
<td>213</td>
</tr>
<tr>
<td>Female</td>
<td>102</td>
<td>92</td>
<td>194</td>
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<tr>
<td></td>
<td>217</td>
<td>190</td>
<td>407</td>
</tr>
</tbody>
</table>
3.4 PZAI Responded from teachers of Low qualification
M  53   46  99
F  45   61 106
High Qualification M  62  52 114
F  57  31  88

4.7 Statistical Techniques to be Used:
For the first study, because of its simplicity in design, one-way analysis of variance technique would be used.
For factorial design for studies 2, 3 & 4 ANOVA would be used for computing sum of squares and subsequent F-ratios.
Because of large and complex nature of data, all the computations would be done with the help of the computer. To locate the significance of means for more than two groups, Newnan's Sequential Range Test would be employed because of its conservative nature and robustness. Dayton is of the view that NK Test is the ideal test to locate the significance of means when factorial design is invoked.
Components of variance as suggested by Kerlinger would also be computed and the contribution of each main effects and significant interaction effects would be shown.
Moreover, if need arises, the investigator intends to use Chi-square technique for some special data.
Now, the next chapter would deal with data analysis and their interpretations.
4.9 References:


