CHAPTER III

METHOD OF RESEARCH
METHOD OF RESEARCH:

The researcher wants to study present position of teaching effectiveness, so he used the descriptive survey method.

The term survey is used for the technique of investigation by a direct observation of a phenomena or systematic gathering of data from population by applying personal contact, and interviews when an adequate information about a certain problem is not available in records, files and other sources. The Survey is an important tool together evidences relating to certain social problems.

A.F.Wells defined - "Survey is a fact finding study dealing chiefly with working class, poverty and with the nature and problems of community."

Mark Abrams told that - "A social survey is a process by which quantitative facts are collected about the social aspect of a community's composition and activities."

68. Verma.R.K. and Verma Gopal : "Research Methodology" (Delhi ; Commonwealth publisher, - 1989) P.34
The objectives of the survey may be summarised as below:

1. **Direct and close contact**: Survey helps to researcher to come in direct and close contact with the phenomena under study and thus provides him with all the details that he needs.

2. **To collect General Information**: The purpose of the surveys is to collect general information and they are not meant to prove or disprove anything.

3. **A Basis for hypothesis**: Surveys are started with any hypothesis. But the data collected through these surveys may serve as a basis for a hypothesis.

4. **Opinion and Attitudes**: Surveys are also conducted to know the opinion and attitudes of population.

3.1) **Strategy of Investigation** -

A researcher has to design a research project for successful completion of his study. To design is to plan, that is, designing is the process of making decisions before the situation arises in which the decisions have to be carried out.
JOHAPA & COOK states - "A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevancy to the research purpose with the economy in procedure." 69

The essential steps involved in planning and execution of a social survey are discussed below:

1. Collection of tools for research.
2. Pilot study.
3. Selection of the sample for pilot study.
4. Selection of the students for pilot study.
5. Administration of tests and inventories for pilot study.
6. Selection of sample for main research.
7. Selection of Institutions.
8. Selection of Teachers.
9. Selection of Students.
10. Administration of tests and inventories for the main research.
11. Analysing devices.
12. Hypothesis construction.

69. Verma R.K. & Gopal : "Research Methodology" (Delhi ; Commonwealth publisher - 1989) P.149
3.2) **Tools for Research**

In order to observe the mentioned objectives of the researcher. The researcher intends to use the following tools for necessary data collection from the secondary school teachers and students.

3.3) **IPAT Depression scale**

This was prepared by Samuel E. Krug and James E. Laughlin (1984) were used for depression measurement. The test is prepared of two district validation. Strategies: factor analysis and empirical keying. From practical point of view the test is easy to administer and scoring.

The reliability of the scale is high, averaging about 0.93.

The Validity tests was examined found to be quite satisfactory on all. The S.D., Alpha, and parallel split half are found to be 10.57, 0.85 & 0.89 respectively.

Persons could be classified on the basis of
norms given below:

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Distribution of raw scores</th>
<th>Status Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>40 - 47</td>
<td>non-depressed</td>
</tr>
<tr>
<td>2.</td>
<td>48 - 55</td>
<td>mild-depressed</td>
</tr>
<tr>
<td>3.</td>
<td>56 - 63</td>
<td>moderate</td>
</tr>
<tr>
<td>4.</td>
<td>64 - 71</td>
<td>severe</td>
</tr>
<tr>
<td>5.</td>
<td>72 - 80</td>
<td>very severe</td>
</tr>
</tbody>
</table>

With the help of this classification researcher came to conclusion.

Originally question was in English language. That is translated into Kannada language by experts for Kannada secondary school teachers.

The cyclostyled copies of the question in Kannada medium were mailed to different teachers, principals of B.Ed. colleges and secondary school teachers with self-addressed stamped envelopes. Some respondents returned the questionary with their opinion.

Then again reconstruction of question was done by the researcher.
3.4) **Dimensions of Temperament Scale**

This is prepared by Dr. N. K. Chadha and Miss. Sunanda Chanda (1984). To make a scientific selection of the dimensions of temperament, twenty-three socially relevant and meaningful dimensions of temperament were taken. They are Sociability, Ascendence, Secretiveness, Reflective, Impulsivity, Placid, Accepting, Responsible vigorous, Co-operative, Persistence, Warmth, Aggressiveness, Tolerance and Tough minded. Each item computed on the basis of ratings on 9-point scale.

Test-Retest Reliability for the whole scale was found out to be 0.94. The split-half reliability was 0.76 to 0.79. Overall cross-validation found out to be 0.81.

A qualitative description of the scores obtained on the scale as follows:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Distribution of raw scores</th>
<th>Status category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>90 - 102</td>
<td>very low</td>
</tr>
<tr>
<td>2</td>
<td>102 - 114</td>
<td>low</td>
</tr>
<tr>
<td>3</td>
<td>114 - 126</td>
<td>Average</td>
</tr>
<tr>
<td>4</td>
<td>126 - 138</td>
<td>High</td>
</tr>
<tr>
<td>5</td>
<td>138 - 150</td>
<td>Very high</td>
</tr>
</tbody>
</table>
Originally the questionnaire was in English language. That is then translated into Kannada language by experts for Kannada secondary school teachers. The cyclostyled copies of the questionary in Kannada medium were mailed to different teachers, principals of B.Ed colleges and secondary school teachers, with self addressed stamped envelope. Some respondents returned the questionary with their opinion.

Then again reconstruction of questionary was done by the researcher.

3.5) **Teacher Adjustment Inventory**

This was prepared by - Dr. S.K. Mangal (1982). This test consists 253 items. Total adjustment score of a subject thus may range from 0 to 608. The factor analysis gave the five factors or 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.**
The test-retest reliability of the sub-tests ranged between 0.86 to 0.99. And the split half method reliability was 0.99. The validity co-efficient of the Teacher adjustment Inventory against Bells' was found to be - 0.967.

Classification of the individuals can be done on the basis of scores mentioned below:-

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Distribution of raw scores</th>
<th>Status Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>above 555</td>
<td>Very good</td>
</tr>
<tr>
<td>2</td>
<td>471 - 554</td>
<td>Good</td>
</tr>
<tr>
<td>3</td>
<td>385 - 470</td>
<td>Average</td>
</tr>
<tr>
<td>4</td>
<td>301 - 384</td>
<td>Poor</td>
</tr>
<tr>
<td>5</td>
<td>300 - below</td>
<td>Very poor</td>
</tr>
</tbody>
</table>

Originally the question-ary was in English language. That is translated into Kannada language by experts for Kannada. Secondary school teachers.

The cyclostyled copies of the questionnaire in Kannada medium were mailed to different teachers, principals of B.Ed colleges and secondary school teachers, with self addressed stamped envelop. Some respondents returned the questionnaire with their opinion.

Then again reconstruction of questionnaire was done by the researcher.
3.6) **General Teaching Competency Scale (GTCS)** -

The scale was prepared by Dr. B.K. Passi and Dr. (Mrs) M.S. Lalitha (1979). There are 21 items related to 21 teaching skills which encompass the entire teaching-learning process in the classroom. It is a 7 point rating scale measuring the use of the skill by the teacher in the classroom corresponding to each item ranging from '1' for 'Not at all' to '7' for 'very much.'

Reliability of the scale was reported by Joshi, 1977; Passi (1977) and the reported inter-observer reliability coefficients range from 0.85 to 0.91. The Scott's coefficient of inter-observer agreement ranging from 0.78 to 0.82 while observing teachers.

Persons could be classified on the basis of norms given below -

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Distribution of raw scores</th>
<th>Status Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20 - 46</td>
<td>Very poor</td>
</tr>
<tr>
<td>2</td>
<td>46 - 72</td>
<td>Poor</td>
</tr>
<tr>
<td>3</td>
<td>72 - 98</td>
<td>Average</td>
</tr>
<tr>
<td>4</td>
<td>98 - 124</td>
<td>Good</td>
</tr>
<tr>
<td>5</td>
<td>124 - 150</td>
<td>Very good</td>
</tr>
</tbody>
</table>
Originally the questionary was in English language. That is translated into Kannada language by experts for Kannada secondary school teachers.

The cyclostyled copies of the questionary in Kannada medium were mailed to different teachers, principals of B.Ed colleges and secondary school teachers with self addressed stamped envelop. Some respondents returned the questionary with their opinion.

Then again reconstruction of questionary was done by the researcher.

3.7) **Teacher effectiveness scale**

Teacher effectiveness is assessed three types of criteria such as:

(a) process  (b) product  (c) presage

Researcher used process criteria, process refers to the performance and behaviour of the teacher, student behaviour, and the student teacher interactions in the classroom. This is best test of teacher effectiveness.

The 'Teacher effectiveness scale' was prepared by Dr. Pramod Kumar and Dr. N.N. Mutha (1985). The present Likert type scale has been developed to provide a handy instrument for identifying effective or ineffective teachers both for applied and research objectives.

The scale consisted 93 items belonging to eleven different teaching aspects. These items showed 100 percent agreement amongst judges as related to teacher effectiveness. Items were scored as '5', '4', '3', '2', and '1', for strongly agree, agree, undecided, disagree and strongly disagree, respectively. The split half reliability found to be 0.67 with an index of reliability of 0.82.

The test retest reliability of the scale is also studied. It is found to be 0.75 with an index of reliability of 0.85, with two months' interval time. (Kumar & Mutha 1974). The content validity is ensured. Classification of the individuals can be done on the bases of norms mentioned below:

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Distribution of raw scores</th>
<th>Status category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>288 - 345</td>
<td>Most effective</td>
</tr>
<tr>
<td>2</td>
<td>232 - 288</td>
<td>more effective</td>
</tr>
<tr>
<td>3</td>
<td>176 - 232</td>
<td>Average</td>
</tr>
<tr>
<td>4</td>
<td>120 - 176</td>
<td>low effective</td>
</tr>
<tr>
<td>5</td>
<td>65 - 120</td>
<td>Least effective</td>
</tr>
</tbody>
</table>
Originally the questionare was in Hindi language, that is translated into Kannada language by experts for Kannada secondary school teachers.

The cyclostyled copies of the questionnaire in Kannada medium were mailed to different teachers, principals of B.Ed colleges and secondary school teachers with self addressed stamped envelop. Some respondents returned the questionnaire with their opinion.

Then again reconstruction of questionnaire was done by the researcher.

3.8) **Students' reaction towards teachers scale** -

Prepared by the Researcher -

For the construction of scale, the researcher consulted books on teachers' effectiveness, Journals, monographs, theses & other concerned literature available in the libraries.

Initially, the students' reaction towards teachers' scale consists 30 items selected on the basis of previous studies, and interviews with secondary school teachers, Head masters of secondary school, educators & lecturers of Psychology.
Development of the scale -

The scale consists 30 items. These items belonged to the following teaching behaviour categories:

1) Information source
2) Motivator
3) Disciplinarian
4) Advisor and guide
5) Relationship with pupils
6) Teaching skill
7) Co-curricular activities
8) General appearance and habits in relation to class room.
9) Class room management
10) Personality characteristics.

These 30 items belonging to eleven different aspects were given to experts, teachers, principals, Head masters. These items showed 100 per cent agreement amongst judges as related to teacher effectiveness.

All the 30 items of the scale were positively worded. Items were scored as, 5-4-3-2-1 for strongly agree, agree, undecided, disagree, strongly disagree, respectively. The total score of the respondent was obtained by adding the scores given for each items in the scale. The total score varied from 30 to 150, showing lowest reaction to highest reaction.
Sample -

The scale was administered on a group of 100 students - both boys and girls in the city of Bijapur.

Result -

The reactions appears -

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>114.02</td>
</tr>
<tr>
<td>Median</td>
<td>116</td>
</tr>
<tr>
<td>S&lt;</td>
<td>17.87</td>
</tr>
<tr>
<td>Skewness</td>
<td>-0.364</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>0.240</td>
</tr>
</tbody>
</table>

This result reveals that the scale is 100 percent agree:

The key for scoring is -

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Distribution of raw scores</th>
<th>response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>30 - 54</td>
<td>Very poor</td>
</tr>
<tr>
<td>2</td>
<td>54 - 78</td>
<td>Poor</td>
</tr>
<tr>
<td>3</td>
<td>78 - 102</td>
<td>Average</td>
</tr>
<tr>
<td>4</td>
<td>102 - 126</td>
<td>Good</td>
</tr>
<tr>
<td>5</td>
<td>126 - 150</td>
<td>Very good</td>
</tr>
</tbody>
</table>

The questionnaire is then translated into Kannada language by experts for Kannada medium students of Karnataka state.

The cyclostyled copies of the questionnaire in Kannada medium were mailed to different teachers, principals of B.Ed colleges and secondary school teachers.
some respondents returned the questionary with their opinions. Then again reconstruction of questionary was done.

3.9) **Pilot study** -

The researcher conducted pilot study, which would help him to acquaint himself with all the available material and literature in the field. It is also desirable for the researcher to have contacts and consultations with experts or other surveyors to know the techniques and methods used in previous studies, their findings & difficulties. 71

Concerned with the pilot study Singho told that "From the data of the pilot test the difficulty level and discriminative power of each and every question are established. It is this item analysis that helps in the selection or rejection of items or even their refinement. It also tells how the distractors have worked." 72

So the researcher started a pilot study, before starting the main study, on a small scale. That was found very useful.

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71. Verma.R.K. & Verma Gopal :"Research Methodology" (Delhi ; Commonwealth publishers, New Delhi-1989) P-197
72. H.S.Singho :"Modern Educational Testing" (Delhi ; Sterling publisher Pvt. Ltd.,-1974)P.148
3.10) **Selection of the sample for pilot study** -

Researcher prepared lists of schools of Bijapur city. Then selected 25% schools by random sampling.

For that researcher numbered all the schools names on small slips of paper which are folded and mixed together in drum thoroughly. A blindfold selection is then made for the required (25% schools) slips of the schools from the total sample by lottery method.

Total number of schools were thirteen. Researcher prepared a list of the teachers from selected school category-wise. The total number of teachers selected for the study were two hundred.

**Selection of students for pilot study** -

Researcher prepared a long list of 10th class students from selected schools.

For that researcher selected one hundred boys and one hundred girls from selected schools, with a technique of random sampling by lottery method. Total number of students selected for the study were two hundred.
3.11) Administration of Tests and Inventories
for pilot study -

The researcher contacted the Head masters (or principals) of the selected institutions personally and sought permission for the administration of various tests & inventories. Researcher requested to rate their own effectiveness. The students were asked to rate effectiveness of the teachers who had taught them.

Before giving any test to the respondents, the researcher explained the purpose of the study. On the first day a test of depression and a test of temperament were given and on the next day a test of Teacher adjustment, a test of competency & test of teaching effectiveness were conducted day by day. The schedule of administration was planned in such a way that the respondent may not feel any fatigue and boredom.

Scoring against the responses of the members of various groups was done with the help of scoring key. After obtaining the information. That was scrutinized for errors.

After scrutiny of the collected information, the scheme of tabulation & analysis. Then that read yielding specific answers to the research questionarys.
3.12) Selection of Sample -

In a social survey sometime complete coverage of the universe is neither possible nor advisable. In such cases a representative sample is generally drawn.

A survey may be conducted by either of the two methods -

(1) Census method, and (2) Sampling method.

The census method is complete enumeration of the whole population, it requires a lot of time, money, manpower and administrative personnel. Hence the sampling method can be used.

Different types of sampling techniques are used for drawing a sample plan.

Random sampling - A random sample is a sample selected in such a way that every item in the population has an equal chance of being included. Random sampling is more suitable in more homogeneous and comparatively larger groups.

Random sampling may be done by

Lottery method - Under this method the various units of the universe are numbered on small and identical slips of paper which are folded and mixed together in a drum thoroughly. A blind fold selection is then made of the number of slips required to constitute the desired size of sample.
The present study is concerned with the study of the effectiveness of higher secondary school teachers of Bijapur district (Karnataka).

Bijapur district consists five talukas namely - Bijapur, Indi, Sindgi, Bagewadi and Muddebehal.

3.13) Selection of Institutions -

The researcher made every effort to select institutions which would represent institutions of both rural and urban categories.

The researcher consulted the educational officer for knowing the names and number of recognised higher secondary schools of their talukas.

The lists were prepared separately for rural and urban schools.

3.14) Selection of Teachers -

Researcher selected talukwise 25% schools from rural and 25% schools from urban area of the total number of schools, by random sampling.
For that researcher numbered all the school names on small slips of paper which are folded and mixed together in a drum thoroughly. A blind fold selection is then made for the required (25%) slips of the schools from the total sample, rural and urban separately by Lottery method.

The total number of schools were seventy six. Researcher prepared a list of the teachers from selected school category-wise. The total number of teachers selected for the study were thousand.

3.15) Selection of students -

Researcher prepared a long list of 10th class students from selected schools.

Researcher selected one hundred boys and one hundred girls from each talukas with a technique of random sampling by lottery method. The total number of students selected for the study were one thousand.
### TABLE No. 1
Table showing talukawise, category & number of schools & number of schools selected.

<table>
<thead>
<tr>
<th>Taluka</th>
<th>No. of Schools</th>
<th>25% of Schools</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bagevadi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>5</td>
<td>3</td>
<td>74</td>
</tr>
<tr>
<td>Rural</td>
<td>43</td>
<td>11</td>
<td>114</td>
</tr>
<tr>
<td>2. Bijapur</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>54</td>
<td>13</td>
<td>198</td>
</tr>
<tr>
<td>Rural</td>
<td>44</td>
<td>12</td>
<td>121</td>
</tr>
<tr>
<td>3. Indi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>9</td>
<td>3</td>
<td>52</td>
</tr>
<tr>
<td>Rural</td>
<td>51</td>
<td>12</td>
<td>104</td>
</tr>
<tr>
<td>4. Sindgi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>5</td>
<td>3</td>
<td>89</td>
</tr>
<tr>
<td>Rural</td>
<td>48</td>
<td>10</td>
<td>106</td>
</tr>
<tr>
<td>5. Muddebihal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>8</td>
<td>2</td>
<td>57</td>
</tr>
<tr>
<td>Rural</td>
<td>35</td>
<td>7</td>
<td>85</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>302</strong></td>
<td><strong>76</strong></td>
<td><strong>1000</strong></td>
</tr>
</tbody>
</table>
A MAP OF BIJAPUR DISTRICT SHOWING TALUKAWISE TOTAL NUMBER OF SCHOOLS & SELECTED NUMBER OF SCHOOLS IN 1998.

FIGURE NO. 1
### TABLE NO. 2 (i)
Table showing - Categorywise number of Teachers selected.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Category</th>
<th>No. of teacher</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Male teachers</td>
<td>641</td>
</tr>
<tr>
<td>2.</td>
<td>Female teachers</td>
<td>359</td>
</tr>
<tr>
<td>3.</td>
<td>Rural male teachers</td>
<td>341</td>
</tr>
<tr>
<td>4.</td>
<td>Urban male teachers</td>
<td>300</td>
</tr>
<tr>
<td>5.</td>
<td>Rural female teachers</td>
<td>189</td>
</tr>
<tr>
<td>6.</td>
<td>Urban female teachers</td>
<td>170</td>
</tr>
<tr>
<td>7.</td>
<td>Male married teachers</td>
<td>482</td>
</tr>
<tr>
<td>8.</td>
<td>Male unmarried teachers</td>
<td>159</td>
</tr>
<tr>
<td>9.</td>
<td>Female married teachers</td>
<td>178</td>
</tr>
<tr>
<td>10.</td>
<td>Female unmarried teachers</td>
<td>181</td>
</tr>
</tbody>
</table>

Total teachers : 1000

### TABLE NO. 2 (ii)
Table showing selected number of students.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Category</th>
<th>No. of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Boys</td>
<td>500</td>
</tr>
<tr>
<td>2.</td>
<td>Girls</td>
<td>500</td>
</tr>
</tbody>
</table>

Total : 1000
3.16) Administration of Tests and Inventories for the main research -

The researcher contacted the Head masters/principals and sought permission for the administration of various tests and inventories.

Method of Presentation -

The inventories and questionnaries were presented to the respondents in a face to face situation. The schedule of administration was planned in such a way that the respondent may not feel any fatigue, boring & cumbersome.

On the first day.

3.17) The Test of Depression -

The Depression scale booklet was distributed to the selected teachers. The researcher mentioned some instructions. Just a few of the high points, like (1) answer every question. (2) Give your first reaction - don't ponder forever over an item (3) use the middle response only when absolutely necessary.

The test itself took about 10 to 20 minutes for an examinee. When the examinee has completed the test, scanning was done to make sure that all
questions have been answered and only one answer to each question.

Scoring was done with the help of cardboard scoring key. The scoring cardboard key was placed over the answer boxes on page 2 of the booklet. Center the star at the top of the page in the hole so marked and the right edge of the key on the vertical line at the right side of the page.

Researcher added the 1's and 2's down the page for those items falling within the unshaded portion of the key & wrote the total in the unshaded box at the bottom of the page.

Repeated this process for page 3 using the same key. Researcher transferred the scores from pages 2 and 3 to unshaded boxes on the back page and added them together. This was the total score.

Researcher prepared a long list of all teachers & these scores.

This method was explained in 'Hand book' written by Krug. [73]

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3.18) The Test of Temperament -

The researcher distributed questionary booklet to the selected teachers.

The researcher mentioned some instructions to the teachers. The essential points are -

1) A separate answer sheet is provided where you have to make your responses in either of the cell against each question.

2) Try and decide whether cells indicating 'Yes' or 'No' represents your usual way of acting or feeling, then put a tick mark on the either cell.

3) Work quickly and do not spend too much time over any question.

4) Please do not omit any question.

5) Mark your best possible answer honestly and sincerely.

6) Read and understand each question properly and then put your mark on the answer sheet only.

7) Please do not write anything on the book-let.

When the examinee has completed the test, scanning was done to make sure that all questions have been answered and only one answer to each question.
Scoring scheme for each item is given below:

<table>
<thead>
<tr>
<th>Sl. No. of the Item(s)</th>
<th>Mode of Response</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>12, 40, 125, 17, 27, 67, 94, 106, 34, 95, 128, 35, 44, 36, 70, 13, 21, 37, 118</td>
<td>Yes</td>
<td>Zero</td>
</tr>
<tr>
<td>136, 22, 99, 131, 72, 11, 39, 49, 88, 133, 75, 89, 102, 111</td>
<td>No</td>
<td>One</td>
</tr>
<tr>
<td>For the remaining 119 times.</td>
<td>Yes</td>
<td>One</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>Zero</td>
</tr>
</tbody>
</table>

Researcher added them together. This was the total score. Researcher prepared a long list of all teachers and there scores.\\\textsuperscript{74}

3.19) The test for Adjustment -

The Adjustment scale questionary booklet was distributed to the selected teachers.

Researcher mentioned some instructions to the examinees. These essential points are -

1) No answer is right or wrong. Your answer simply tells about you.

Please do not write anything in the booklet. For responding you are given a separate answer sheet. There are three alternatives - Yes, No, or ?

You have to fill a circle with ink, one of the three alternatives, Yes, No, or ?

Please do not leave any question unanswered.

Although no time limit is drawn, you are requested to finish your work at your earliest.

Please do not leave any questions unanswered.

When the examinee has completed the test, scanning was done to make sure that all questions have been answered, and only one answer to each question.

Scoring scheme for each item is given below:

<table>
<thead>
<tr>
<th>Sr. No. of the items</th>
<th>Mode of Response</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>?</td>
<td>1</td>
</tr>
<tr>
<td>2) For the remaining 212 items.</td>
<td>No</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>?</td>
<td>1</td>
</tr>
</tbody>
</table>
In this scheme total adjustment score of a subject is dependent upon his scores in all the five factors of adjustment.  

3.20) General Teaching Competency test -

The GTC scale is generally used for measuring teaching competency of a teacher-individually by direct observations of his classroom behaviour for the entire teaching period.

As the teacher teaches, the researcher sat at the back for observation. At the end of the teaching period, he gave his ratings on the GTC scale against all the items. To facilitate this process, researcher wrote verbal descriptions against each item which would help him in giving ratings more objectively.

The scoring procedure is as follows -

"The scale is a 7-point rating scale measuring the use of the skill by the teacher in the classroom corresponding to each item ranging from 1 for 'Not at all' to 7 for 'very much!'"  

Researcher added them together. This was the total score. Researcher prepared a long list of all teachers and the scores.

75. Mangal S.K. : "Manual for Teacher Adjustment Inventory" (Agra; National Psychological Corporation -1982) P- 7-9

76. Passi B.K. & Lalitha M.S.: "General Teaching Competency scale manual" (Agra; National Psychological Corporation- 1979) P- 4 & 13
3.21) **Teacher teaching effectiveness Test** -

The researcher distributed questionnaire booklet to the selected teachers.

It was emphasized that no item should be omitted and there was nothing right or wrong about these questions. They were encouraged to answer each item according to their personal agreement or disagreement. It was also assured that their replies would be kept confidential. The subject was requested to read the instruction carefully. There was no time limit for the scale.

"All the 69 items of the scale were positively worded. Items were given a score of '5', '4', '3', '2' and '1' for 'strongly agree', 'agree', 'undecided' 'disagree' and 'strongly disagree' respectively. The sum of these values gives the teacher effectiveness score for the subject. The total score varies from 69 to 345, showing least teacher-effectiveness to highest teacher-effectiveness."**77**

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77. Pramod Kumar & Matha.D.W :"Manual for Teacher Effectiveness Scale"
(Agra ; National Educational Corporation-1985) P- 3
3.22) **Students reactions towards teachers -**

The researcher distributed two questionary book-lets to each selected male and female students.

It was emphasized that no item should be omitted and there was nothing right or wrong about these questions. They were encouraged to answer each item, according to their personal agreement or disagreement. It was also assured that their replies would be kept confidential. The subject was requested to read the instruction carefully. There was no time limit for the scale. Out of two book-lets one was meant for their male teacher who taught them. Another for their female teacher.

All the 30 items of the scale was positively worded. Items were given a score of '5', '4', '3', '2', and '1' for 'strongly agree', 'agree', 'undecided', 'disagree', and 'strongly disagree' respectively. The sum of these values gives the reactions of the students.
3.23) **Analysing devices** -

The scores of teachers obtained through various tests or inventories and the student reaction scores were analysed with the help of statistics.

In Book 'Mathematical Statistics' by Gunta explained the importance of statistics as- "By statistics we mean aggregates of facts affected to a marked extent by multiplicity of causes numerically expressed, enumerated or estimated according to reasonable standards of accuracy, collected in a systematic manner for a pre-determined purpose and placed in relation to each other." 

Kamat, E.C. in his book -"An Introduction to statistics" explained the steps of analysis as- "The first necessary step in statistics is to condence the raw data, because the large number of big figures are not only confusing to our mind, but difficult to analyse also. In order to reduce the complexity of data and make them easily comparable. It is essential that the given observations or data must be converted in to a single figure. That is by the means of various methods. The measures are -

1) Classification

2) Tabulation

Kamat in his book explained about the graphs as - "Too many figures are often confusing and may fail to convey the message effectively to those for whom they are meant. One of the most convincing and appealing ways in which statistical results may be presented is through graphs. Graphs are extremely useful because of the reasons -

1. They give bird's eye view of the entire data.
2. They are attractive to the eye.
3. They have great memorising effect.
4. They facilitate comparison of data relating to different periods of time, different situations, conditions, or of a different groups.
5. They bring out hidden facts and relationships and can stimulate as well as aid analytical thinking and investigation."80

79. Kamat.B.C. :"An Introduction to statistics"
(Gadag ; Vijaya Book Depot, Gadag - 1984) P.161
80. Kamat.B.C. :"An Introduction to Statistics"
(Gadag ; Vijaya Book Depot, Gadag - 1984) P.250
So the researcher tried to represent the data in the form of graph.

3.24) **Hypotheses** -

A hypothesis is a speculation about the phenomena. It is based on the common sense, theory or empirical facts. The hypothesis is a necessary link between the theory and the investigation which leads to the discovery of additions to knowledge.

Rummel and Balline - explained that - "A statement capable of being tested and thereby verified or rejected."

Good and Scates told that - "A hypothesis is a shrewed guess or inference that is formulated and provisionally adopted to explain observed facts or conditions and to guide in further investigation."

Verma stated some characteristics of Hypothesis characteristics of Hypothesis -

Good and Hatt discussed that -
1. Hypothesis must be defined clearly and it should be commonly accepted.
2. Hypothesis should have empirical reference.

3. Hypothesis must be specific in terms of its purpose, clarity and testability.

4. Hypothesis should be related to available techniques which may make its formulation worthwhile.

5. Hypothesis should be related to a body of theory.

On the bases of these characteristics researcher constructed the Hypothesis. 81

The following hypothesis have been formulated keeping the specific objectives in view -

1. There is no significant relationship between depression and teaching effectiveness.

2. There is no significant relationship between temperament and teaching effectiveness.

3. There is no significant relationship between adjustment teaching effectiveness.

4. There is no significant relationship between competency and teaching effectiveness.

5. There is no significant difference in the effectiveness of rural and urban male teachers.

6. There is no significant difference in the effectiveness of rural and urban female teachers.

7. There is no significant difference in the effectiveness of married and unmarried male teachers.

8. There is no significant difference in the effectiveness of married and unmarried female teachers.