2. No time limit should be given for completing the scale. However, most respondents should complete it in about 10 minutes.

3. Before administering the scale, it is advisable to emphasize orally that responses should be checked as quickly as possible and sincere cooperation is sought for the same. The response should be kept confidential.

4. It should also be emphasized that there is no right or wrong answer to the statements. The statements are designed to understand the differences in individual reactions to various situations. The scale is meant to know the difference between individuals and not meant to rank them as good or bad.

5. It should be duly emphasized that all statements have to be responded to and no statement should be left unanswered.

6. It is not desirable to tell the subjects the exact purpose for which the scale is being used.

7. Though the scale is self-administering, it has been found useful to read out the instruction printed on the response sheet to the subjects.

8. Manual scoring is done conveniently, hence no scoring key is provided.

9. Each item or statement should be scored 5 for strongly agree, 4 for agree, 3 for neutral, 2 for disagree and 1 for strongly disagree.

TEACHER EFFECTIVENESS SCALE (TES)

Development of the scale

Teacher effectiveness scale was developed by Pramod Kumar and D.N. Mutha. Initially, the Teacher Effectiveness Scale consisted of 93
items solicited on the basis of previous studies and interviews with 30 secondary school teachers, 25 principals of secondary schools and 15 teacher educators and lecturers of Psychology. These items belonged to the following teaching behaviour categories (i) Information source, (ii) Motivator, (iii) Disciplinarian, (iv) Advisor and guide, (v) Relationship with pupils, fellow—teachers, principals and parents, (vi) Teaching skill, (vii) co-curricular activities, (viii) Professional knowledge, (ix) General appearance and habits in relation to class-room, (x) Class-room management, and (xi) Personality characteristics

These 93 items belonging to eleven different teaching aspects were given to a group of 25 experts for their opinions and comments. These were also discussed with 20 teachers and 10 principals of secondary schools. In view of the criticisms and comments offered by experts and teachers and principals of secondary schools, 22 items were altogether rejected while others were modified or rewritten. These items showed 100 per cent agreement amongst judges as related to teacher effectiveness.

**Scoring Procedure:**
All the 69 items of the scale are positively worded. Items are 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.

**Reliability**
The split-half reliability (correlating the odd/even items) for the scale, applying the Spearman-Brown formula is found to be .67 (N100) with an index of reliability of .82.
The test-retest reliability of the scale is also studied. It is found to be .75 (N=50) with an index of reliability of .85 with two months interval time (Kumar & Mutha, 1974). The r-values have been found to be significant at 0.01 level, showing the scale is highly reliable both in terms of its internal Consistency and stability of scores.

Showing Split Half and Test-Retest Reliability

<table>
<thead>
<tr>
<th>Reliability</th>
<th>N</th>
<th>r-value</th>
<th>Index of Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Split-half</td>
<td>100</td>
<td>0.67</td>
<td>0.82</td>
</tr>
<tr>
<td>Test-retest</td>
<td>60</td>
<td>0.75</td>
<td>0.86</td>
</tr>
</tbody>
</table>

Validity

Only highly discriminating items are included in the scale. The upper 27% and lower 27% served as criterion groups (Garrett, 1961). Discriminating value of each item has been determined by calculating C.R. on the basis of the responses of upper and lower groups.

The face validity of the measures is fairly high. The content validity is ensured as the items for which there has been 100 per cent agreement amongst judges regarding their relevance to teacher effectiveness are included in the scale.

Further, the scale has been validated against principal’s ratings. The correlation between principal’s rating and self-rating is found to be .77 (N50), with an index of reliability of 0.87 (Table 5)

Showing Correlation Between Principal’s Rating and Self-Rating

<table>
<thead>
<tr>
<th>N</th>
<th>r-value</th>
<th>Index of Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>0.77</td>
<td>0.87</td>
</tr>
</tbody>
</table>

Chapter III
Percentile Norms

Separate percentile norms for the male and female teachers are given in the Table 6. These are to be interpreted in the conventional manner.

<table>
<thead>
<tr>
<th>Percentile</th>
<th>Male (N=300)</th>
<th>Female (N=100)</th>
<th>Effectiveness Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td>326.91</td>
<td>329.91</td>
<td>Most effective</td>
</tr>
<tr>
<td>80</td>
<td>313.21</td>
<td>315.81</td>
<td></td>
</tr>
<tr>
<td>75</td>
<td>311.81</td>
<td>312.91</td>
<td>More effective</td>
</tr>
<tr>
<td>70</td>
<td>307.71</td>
<td>310.63</td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>299.91</td>
<td>302.72</td>
<td>Average</td>
</tr>
<tr>
<td>50</td>
<td>293.47</td>
<td>295.39</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>285.72</td>
<td>287.31</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>276.03</td>
<td>278.03</td>
<td>Low effective</td>
</tr>
<tr>
<td>25</td>
<td>271.80</td>
<td>273.81</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>265.61</td>
<td>269.32</td>
<td>Least effective</td>
</tr>
<tr>
<td>10</td>
<td>250.00</td>
<td>254.01</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>293.47</td>
<td>295.39</td>
<td></td>
</tr>
</tbody>
</table>

PROFESSIONAL COMMITMENT SCALE (PCS)

The focal importance of the teacher is not new to educational thinking. It is generally believed that that quality of education depends upon the quality of the teachers.

A few scales of teacher’s commitment in India were available a
particular mention may be made of P.M. Raju (1991) and that of B.K. Punia (2000), but those scales did not include the various dimension of commitment as visualized by Amrita Maheshwari (2002). Amrita’s scale was for secondary teachers only, hence the investigator was propelled to construct his own scale for measuring professional commitment of elementary teachers. The present test has been constructed by the investigator, is an effort to contribute a legible with a view to satisfy the long felt need of such a test. The scale included 35 items, all the items were positive and drawn from the discussions contained in NCTE’S three books on competency based and commitment oriented teacher education for quality school education (1998).

DEVELOPMENT OF THE TEST

The scale included 35 items, all the items were positive and drawn from the discussions contained in NCTE’S three books on competency based and commitment oriented teacher education for quality school education (1998). The following whole test consist the following five dimensions of the commitment.

1. **Commitment to the Learner**: Including love for the learner, redness to help learners, concern for their all round development etc.

2. **Commitment to the Society**: Such a awareness and concern about impact of teacher's work on the degree of advancement of families, community and nation.

3. **Commitment to the Profession**: That is, internal acceptance of the role and responsibility of the teacher's profession, no matter under what circumstances one entered in to it.

4. **Commitment to Achieve Excellence**: That is, care and concern for doing everything in the classroom, in the school and

Chapter III
in the community in the best possible manner and in the spirit of whatever you do, 'do it well', attitude and;

5. **Commitment to Basic Human Values:** Including the role model comprising genuine practice of professional values such as impartially, objectivity, intellectual honesty, national loyalty etc. with consistency.

**STANDARDIZATION**

**Selection of items:** The sources of selection of items were four; the scale of commitment constructed by P.M. Raju, B.K. Punia, Amrita Maheshwari and NCTE’s books. In addition to it the twenty principals of elementary schools were approached for identifying the most committed teachers. The items selected by the investigator were put before them for their critical examination. The selected items were seventy in all. The items, which were identified by them as reflecting the professional commitment of teachers, were retained. The list thus prepared was further referred to retired professors of education from C.C.S. University who were located at Meerut. Thus a final list of forty items was prepared.

**Try-out:** The questionnaire containing those forty items was tried out on 100 teachers of primary schools for the purpose of pre-testing. After scoring the above test, next step was to select the best items.

**Item Analysis:** In order to make selection of item objective and scientific, item analysis is required. The items, which are internally consistent to a fair degree, should only be selected. For this the top-bottom 27% method as suggested by Davis (1959) was used. Finally 35 items for professional commitment were taken out.
Scoring of Scale of Professional Commitment: All the items were positive. Each item in this scale was provided with five alternative—strongly agree, agree, undecided, disagree and strongly disagree. The minimum-maximum score was 5 to 1 for scoring purposes, in all 35 items of professional commitment the strongly agree alternative were assigned maximum value i.e. 5 and strongly disagree was assigned the minimum value i.e.1, in the final construction of the scale. The score on each dimension fall in the rage 1 to 5. This rage is easy to interpret and handle. Likewise in order to bring the total professional commitment score within the range of 1 to 5, to total final score was divided by 35.

Reliability of the scale: In order to obtain test-retest reliability. It was re-administered to the same group after an internal of 3 weeks. As is obvious from Table-1 the test had high reliability both the spit half and Test-Retest methods.

<table>
<thead>
<tr>
<th>Reliability</th>
<th>N</th>
<th>Index of Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Split-half</td>
<td>100</td>
<td>0.91</td>
</tr>
<tr>
<td>Test-retest</td>
<td>50</td>
<td>0.84</td>
</tr>
</tbody>
</table>

Validity of the scale: For establishing the validity, scale was observed by investigator himself and it as shown to eminent psychologists and sociologists. Its language, format, instruction and size were found suitable for respondents. All specialists were unanimous in their opinion hence; test has fair degree of face validity.

As regards its content validity, test was shown to principals, educationists and psychologists. Beside this item of the scale were selected after carefully scrutinizing the definitions of Professional Chapter III
commitment and its dimensions. Some of the items were dropped, because of its irrelevancy; hence test has fare degree of content validity.

In order to establish criterion validity, principals were asked to rate their teachers with reference to their professional commitment. Principals were clarified beforehand about the concept of professional commitment and its dimensions. Correlation between these grading and actual scores of teacher on newly constructed scale, was calculated. The correlation was found to be 0.63, which was of fairly moderate degree. Hence the scale can be set to have high criterion validity.

**Norms of the Scale:** Norms of the scale are available on a sample of 400 subjects. These norms can be regarded as reference points for interpreting the Emotional Intelligence scores

<table>
<thead>
<tr>
<th>(N=400)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (M)</td>
<td>133</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>23</td>
</tr>
<tr>
<td>Normal Range</td>
<td>121-141</td>
</tr>
<tr>
<td>High</td>
<td>142 and above</td>
</tr>
<tr>
<td>Low</td>
<td>120 and below</td>
</tr>
</tbody>
</table>

**3.6 Statistical Techniques**

It is obligatory on the part of a research worker that she should be able to make probability concerning the tenability of his testable hypothesis. The utility of any research work is judged by the
acceptance or rejection of these hypotheses, which contribute to the scientific development of a particular area. Completion at any scientific analysis is possible only with the use of some form of statistical processing. These statistical techniques play an important role in the analysis and interpretation of data.

The following statistical techniques were adopted for the analysis of data.

**MEAN**

The most popular and widely used measure for representing the entire data by one value is called average and the statisticians call the arithmetic mean. The formula used for computing mean is:

\[ M = A + i \frac{\sum fd}{N} \times i \]

Whereas:

- \( M \) = Mean
- \( A \) = Assumed Mean
- \( fd \) = Multiplication of Frequency and Deviation
- \( N \) = \( \sum f \) = total No. of frequencies
- \( i \) = Size of the class-interval

**STANDARD DEVIATION**

The standard deviation is most commonly used indicator of the degree of variability. The standard deviation is a kind of average of all deviation from the mean. It may be defined as the square root of the mean of the squared deviation take from the arithmetical mean of the
distribution. The formula used for computing standard deviation is:

II. \( S.D. = \frac{1}{N} \sqrt{N \sum f d^2 - (\sum f d)^2} \)

Where

- \( S.D. (\sigma) = \) Standard Deviation
- \( i = \) Size of the class-interval
- \( N = \sum f = \) Total No. of frequencies
- \( f = \) Frequency
- \( d = \) deviation

“\( t \)” TEST

‘\( t \)” test is a statistical test that allows the investigator to compare two means to determine the probability that the difference between two means is a real difference rather than a chance difference. It involves the computation of the ration between observed variance (observed difference between two means) and error variance (the sampling error factor). The value of ‘\( t \)” is computed by the formula:

III \( t = \frac{M_1 - M_2}{\sigma_D} \)

Whereas:

- \( M_1 = \) Mean of First Group
- \( M_2 = \) Mean of Second Group
- \( \sigma_D = \) Standard Error of the difference between means

DEGREE OF FREEDOM

The degree of freedom for ‘\( t \)” test is \( N_1 + N_2 - 2 \)
LEVEL OF SIGNIFICANCE

The confidences with which an investigator rejects or accepts a null hypothesis depends upon the level of significance used in the present study are 0.01.

DECISION RULE

I. If calculated 't' value < table 't' value, we accepted null hypothesis i.e. there is no significance difference between two series.

II. If calculated 't' value > table 't' value, we reject null hypothesis i.e. there is significant difference between two series.

COMPUTATIONS

The mean, S.D. of large sample can be easily calculated by the assistance of computer under the guidance of an expert social scientist Mr. Sunil Gupta. After making all the necessary computations, the result were summarized and interpreted. There have been set forth in the tables appearing in the next chapter.