CHAPTER - III
METHOD AND PROCEDURE

3.1 RESEARCH METHOD

The present chapter deals with the method and procedure of research comprising description of research tools, collection of data and statistical techniques used for the analysis of data. For the present study the researcher adopted the descriptive survey method. It indicates the gathering of data regarding current conditions and thus knowing the actual prevailing state of affairs. Besides collection of data, the descriptive survey involves measurement, classification, analysis, comparison and interpretation.

3.2 RESEARCH TOOLS

The success of any research problem is mainly dependent upon the tools which are used for data collection. The problem of this study directly necessitated collection of the needed data on the following variables:

- Professional Commitment of teachers
- Self-Efficacy of teachers
- Motivation of teachers.

The following standardized tools were used for this purpose:

- Professional Commitment Scale for Teachers by Baljeet Kaur (2007)

3.2.1 Professional Commitment Scale for Teachers

For selecting a suitable test, a number of scales were studied and analysed and finally after consultation with the supervisor, the Professional Commitment Scale for Teachers constructed by Baljeet Kaur (2001) was selected.

The Scale used Thurstone’s (1929) technique of scale construction. In the 1st draft 98 items were framed. After taking suggestions from experts 77 statements were retained. The
scale was administered to 100 secondary school teachers and data collected on 77 items. Then scale values were worked out. The scale value for a particular statement was calculated by finding the median (S-value) and this represented the degree of agreement or disagreement among respondents. Q-values were calculated by noting down the frequency of responses in each category for each statement. Statements which had Q value lower than 0.5 and higher than 2.0 were rejected. This resulted in rejection of 17 statements and 60 items were retained in the final form.

The scale has 60 items spread over five commitment areas.

(i). Commitment to learner

(ii). Commitment to society

(iii). Commitment to profession

(iv). Commitment to achieve excellence

(v). Commitment to basic values

Out of these 60 items, 12 items were selected on the basis of their relevance for each of the five commitment areas. The distribution of items in each area and the positive, negative items have been shown in Table 3.1 below:

<table>
<thead>
<tr>
<th>Area Code</th>
<th>Commitment Areas</th>
<th>Item No. in each area</th>
<th>No. of Items</th>
<th>Positive Items</th>
<th>Negative Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Commitment to learner</td>
<td>1-12</td>
<td>12</td>
<td>1,3,4,6,8,12</td>
<td>2,5,7,9,10,11</td>
</tr>
<tr>
<td>B</td>
<td>Commitment to society</td>
<td>13-24</td>
<td>12</td>
<td>14,16,18,20,21,24</td>
<td>13,15,17,19,22,23</td>
</tr>
<tr>
<td>C</td>
<td>Commitment to profession</td>
<td>25-36</td>
<td>12</td>
<td>25,26,31,32,34,35</td>
<td>27,28,29,30,33,36</td>
</tr>
<tr>
<td>D</td>
<td>Commitment to achieve excellence</td>
<td>37-48</td>
<td>12</td>
<td>38,40,43,44,46,48</td>
<td>37,39,41,42,45,47</td>
</tr>
<tr>
<td>E</td>
<td>Commitment to basic values</td>
<td>49-60</td>
<td>12</td>
<td>50,51,53,55,56,58</td>
<td>49,52,54,57,59,60</td>
</tr>
</tbody>
</table>
Description of Areas

1) **Commitment to learner:** It involves teacher’s love and affection for children, taking care of their social and emotional development, nurturing their interests, providing opportunities to them to grow, being tolerant towards their mistakes, helping them inside and outside the classroom, looking after their needs and showing concern for their empowerment.

2) **Commitment to society:** It involves having cordial and respectful relations with parents, motivating the community to participate in welfare projects of the government, giving opportunities to students to interact with the society and supporting government policies and programmes.

3) **Commitment to profession:** It involves liking one’s profession and acceptance of pressures and aspirations connected with it. It means working hard, undergoing professional growth and having a progressive outlook.

4) **Commitment to achieve excellence:** It means making special efforts for attaining professional excellence, motivating colleagues and friends, using latest methodology in teaching, being innovative and creative and encouraging critical thinking among learners.

5) **Commitment to basic values:** It involves inculcating moral, social, cultural and spiritual values among learners by being a role model for them. Values like honesty, co-operation, equality, truth, objectivity, punctuality, secularism and social service should be reflected in the teachers

**Reliability**

The scale being heterogeneous and statements having been arranged logically, the two halves could not have been identical. Therefore test-retest reliability criteria was found to be most suitable. Reliability was tested over a sample of 60 secondary school teachers. The product moment coefficient of correlation for the two sets of scores was computed. The reliability was found to be 0.83.

**Validity**

Since there was no other such tool available to establish concurrent validity of the scale content validity was established. The tool was constituted after extensively studying...
literature and after having been critically inspected by experts. Only highly discriminating items were retained. The specimen copy of the scale has been provided in Appendix-I.

### 3.2.2 Teacher Self-Efficacy Scale

For collecting data on the variable of self-efficacy of teachers the tool named as Teacher Self-efficacy Scale by Ralf Schwarzer, Gerdamarie S. Schmitz and Gary T. Daytner (1999) was used. A number of self-efficacy scales were studied but this was found to be the only specific instrument to measure self-efficacy of teachers. The first step in its development was the identification of different job skills within the teaching profession. Four major areas which appeared to be of vital importance for successful teaching were identified – (a) job accomplishment (b) skill development on the job (c) social interaction with students, parents and colleagues and (d) coping with job stress. For each of these four domains the teachers may hold different self-efficacy expectations.

The second step included the development of 27 items to assess these four major areas. All items were constructed by explicitly following Bandura’s social cognitive theory (Bandura, 1986; Schwarzer, 1992, 1993). The theory argues for a certain semantic structure for self-efficacy items. First the subject should be “I” since the aim is to assess an individual’s subjective belief. An item should contain verbs like “can” or “be able to” making clear that the item asks for succeeding because of personal competence. Furthermore, items have to contain a barrier since there is no use in asking for self-efficacy expectancies for actions that are not difficult to perform or that might just be routine. Besides being a barrier, ‘can’ also becomes a resource that helps to perform a demanding task and can also be used to imply the grade of difficulty.

**Description of Areas**

The scale consists of four areas:

1. Job accomplishment
2. Skill development on the job
3. Social interaction with students, parents and colleagues.
1. **Job accomplishment:** It includes motivating the students, teaching relevant subject content successfully even to the most difficult students, and influencing the personal and academic development of students.

2. **Skill development on the job:** It involves continuing to become more and more capable of addressing students’ needs and developing creative ways to cope with system constraints.

3. **Social interaction:** It involves positive interaction with students, parents and colleagues; being responsive to the needs of students even during a bad day; maintaining cordial relations with parents even during tensions; and remaining confident even when opposed by colleagues.

4. **Coping with job stress:** It involves maintaining one’s composure during difficult times with students and colleagues and still being responsive to the students’ needs.

**Reliability**

The lengthy questionnaire of 27 items was administered three times to 300 German teachers within the nationwide field study self-efficacious schools. The aim was to extract 10 items to economically assess efficacy beliefs within the four areas mentioned above. Thus, Cronbach’s alpha in the three samples was found to be between .76 and .82, test-retest reliability was .67 (N=158) and .76 (N=193) respectively for a period of one year. For the period of two years it was found to be .65 (N=161).

As it was a foreign test, its suitability had to be seen in the Indian conditions. Therefore, to overcome cultural differences it was cross validated (N=50) and its reliability found. Cronbach’s alpha was found to be 0.89. The reliability was calculated by split – half method. The reliability coefficient was found to be 0.86.

**Validity**

The primary aim in the reduction of items was to optimize the validity of the instrument rather than maximizing the internal consistency. As expected, this specific instrument yielded higher association than the General Self-Efficacy Scale. This was the first indication of discriminant validity. Moreover, the time teachers spent voluntarily with their students was strongly associated with their teacher self-efficacy. The specimen copy of the scale has been provided in Appendix-II.
3.2.3 ULN’s Teacher Motivation Scale

Teacher Motivation Scale (1986) constructed by U.L. Narayan and standardized by Satya Rao (2008) was used in order to find out the teachers’ motivation to work. This is a five point scale and has 35 items. The following table (3.2) shows the number of items in each dimension and distribution of positive and negative items under its nine dimensions.

### Table 3.2
Dimension-Wise Distribution of Positive and Negative Items in Teacher Motivation Scale

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Item No. in each dimension</th>
<th>No. of Items</th>
<th>Positive Items</th>
<th>Negative Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom Teaching</td>
<td>1-5</td>
<td>05</td>
<td>1,2,3,4</td>
<td>5</td>
</tr>
<tr>
<td>School Administration</td>
<td>6-9</td>
<td>04</td>
<td>6,8</td>
<td>7,9</td>
</tr>
<tr>
<td>Professional Pleasure</td>
<td>10-13</td>
<td>04</td>
<td>10,11,12,13</td>
<td>Nil</td>
</tr>
<tr>
<td>Climatic Factors</td>
<td>14-16</td>
<td>03</td>
<td>14,16</td>
<td>15</td>
</tr>
<tr>
<td>Inter-personal relations</td>
<td>17-19</td>
<td>03</td>
<td>18,19</td>
<td>17</td>
</tr>
<tr>
<td>Student Behaviour</td>
<td>20-24</td>
<td>05</td>
<td>20,22,23,24</td>
<td>21</td>
</tr>
<tr>
<td>Working Conditions</td>
<td>25-27</td>
<td>03</td>
<td>25,26,27</td>
<td>Nil</td>
</tr>
<tr>
<td>Professional Development</td>
<td>28-31</td>
<td>04</td>
<td>28,29,31</td>
<td>30</td>
</tr>
<tr>
<td>Personal Factors</td>
<td>32-35</td>
<td>04</td>
<td>32,34,35</td>
<td>33</td>
</tr>
</tbody>
</table>

### Description of Dimensions

Description of items in nine dimensions of teacher motivation is as follows:-

**Classroom Teaching** – This is an important dimension in which the items pertain to adequate preparation, innovative techniques and suitable methods of teaching.

**School Administration** – School Administration is one of the sources of motivation. It includes items like head master’s attitude, guidance of the head and opportunity in decision-making.

**Professional Pleasure** – Professional Pleasure is considered to be the important resultant feeling of motivated teachers. Items included in this dimension pertain to pleasure of teaching, love of profession and pleasure in guiding students.
**Climatic factors** – Most of the teachers would be motivated through climatic factors in the school like congenial atmosphere and amenities of school.

**Interpersonal Relations** – Interpersonal relationship is another source of motivation. Items under this dimension pertain to attitude of parents, cordial relations with students and relation with higher authorities.

**Student Behaviour** – Another important source of motivation is student behaviour which pertains to creativity among children, discipline and performance of students.

**Working Conditions** – Working conditions also play a dominant role in motivation. Hence the items included in this dimension pertain to salary, place of work and advancement schemes.

**Professional Development** – Most of the teachers would be motivated if there is a scope for their professional development. Therefore, the items included in this dimension pertain to in-service training programmes and improvement of academic qualifications.

**Personal Factors**– Above all, a teacher’s personal home conditions also play a very important role in their motivation. The items included in this dimension pertain to home conditions and success of their children.

**Reliability and Validity**

The reliability of the scale was calculated by split half method. The reliability co-efficient was found to be 0.878.

‘Known group technique’ was used for establishing the validity of the scale. The validity was estimated from the teacher motivation of two groups of teachers – one low teacher motivation and other high teacher motivation. The tool was administered to these two groups of teachers and ‘t’ value was calculated. The value of ‘t’ was found to be highly significant and hence the tool was believed to be a valid tool.

Since the tool was constructed 25 years ago its reliability and validity was once again calculated on a sample of 100 teachers. Cronbach’s Alpha was found to be 0.76. Reliability was calculated through split half method. The reliability coefficient was found to be 0.71. The specimen copy of the scale has been provided in Appendix- III.
3.3 POPULATION AND SAMPLE OF THE STUDY

The population of the study (2010-11) was 30,604 (now = 31,893) secondary school teachers teaching in 3262 (now = 4862) government secondary schools in Punjab (Unified District Information System for Education, SSA-MIS Wing, Government of Punjab). A sample is a subgroup of the target population that the researcher plans to study for generalising about the target population. For the present investigation the sample consisted of 1000 teachers teaching in government schools of Punjab at the secondary level. 500 teachers teaching in urban schools and 500 teachers teaching in rural schools were drawn for the study. Out of 500 urban teachers 161 were male and 339 were female teachers. Out of rural teachers 236 were male and 264 were female teachers. Distribution of the sample has been shown in Figure 3.1 below:

Since the study was concerned with the whole of Punjab State and it was difficult to cover all the teachers of the state so a sample was randomly selected by dividing the state into four zones (Majha, Malwa, Doaba and Puadhi). Tarn Taran and Amritsar districts were selected out of Majha area, Jalandhar out of Doaba area, Roopnagar out of Puadhi area and Mansa and Ferozepur out of Malwa region. The position of these districts has been highlighted in the political map of the Punjab (Figure 3.2). Stratified random sampling technique was used.
Figure 3.2: District Wise Coverage of Sample

From a total of 3262 government secondary schools 160 schools were selected which constitute 4.90% of the total schools. From these schools all teachers teaching 9th to 12th classes were selected. 160 schools from 6 districts (total = 22) of Punjab were included in the sample. District wise distribution of rural and urban schools is shown in table 3.3. District wise list of schools and sample size has been given in Appendix-IV.

<table>
<thead>
<tr>
<th>Districts</th>
<th>Rural</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferozepur</td>
<td>09</td>
<td>08</td>
<td>17</td>
</tr>
<tr>
<td>Mansa</td>
<td>10</td>
<td>04</td>
<td>14</td>
</tr>
<tr>
<td>Tarn Taran</td>
<td>29</td>
<td>05</td>
<td>34</td>
</tr>
<tr>
<td>Amritsar</td>
<td>-</td>
<td>04</td>
<td>04</td>
</tr>
<tr>
<td>Roopnagar</td>
<td>32</td>
<td>09</td>
<td>41</td>
</tr>
<tr>
<td>Jalandhar</td>
<td>27</td>
<td>23</td>
<td>50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>107</td>
<td>53</td>
<td>160</td>
</tr>
</tbody>
</table>
3.4 DATA COLLECTION PROCEDURE

The investigator personally visited the schools and also took the help of known teachers and friends. After taking permission from the school principals the teachers were handed over the questionnaires and instructions were given. In some schools the questionnaires were got filled immediately whereas in others they were distributed the first time and collected after a week. The teachers were explained the nature and purpose of the test, they were motivated and assured that their answers would remain confidential. The teachers were requested to give personal information on the title page, then read all statements carefully and tick the correct response.

The investigator encountered problems during the administration of self-efficacy scale. First, the concept of self-efficacy was never heard of. Therefore, the teachers were made aware of the concept. Certain items of the test had to be simplified and explained. The language used for giving instructions was kept as simple as possible.

3.5 SCORING PROCEDURE

The response sheets were then scored according to the scoring procedure laid out in the manual.

Professional Commitment Scale

It is a five point scale on which the responses vary from ‘Always’, ‘Most of the time’, ‘Generally’, ‘Seldom’ and ‘Never’. The teachers were instructed to tick mark the appropriate response. The scoring was done for positive items, ‘5 for always’, ‘4 for most of the time’, ‘3 for generally’, ‘2 for seldom’, ‘1 for never’ responses. For negative items the process of scoring was reversed i.e. ‘5 for never’, ‘4 for seldom’, ‘3 for generally’, ‘2 for most of the time’, ‘1 for always’. The total score on the scale ranged from 60 to 300, score of 240 and above indicated high professional commitment, 206 to 239 indicated moderate professional commitment and 205 and below indicated low professional commitment.

Teacher Self-Efficacy Scale

The respondents were required to respond to each statement on a four point continuum i.e. not at all true, barely true, moderately true and exactly true. All items were positively worded and one – dimensional. Each statement was assigned the scores 1, 2, 3, & 4. The possible range of scores was in the range of 10 to 40.
ULN’s Teacher Motivation Scale  

It is a five point-scale on which the responses vary from ‘Strongly Agree’, ‘Agree’, ‘Neutral’, ‘Disagree’ and ‘Strongly Disagree’. The teachers were instructed to tick the appropriate response. The scoring was done for positive items, ‘5 for Strongly Agree’, ‘4 for Agree’, ‘3 for Neutral’, ‘2 for Disagree’ and ‘1 for Strongly Disagree’. For the negative items the process for scoring was reversed that is ‘5 for Strongly Disagree’, ‘4 for Disagree’, ‘3 for Neutral’, ‘2 for Agree’ and ‘1 for Strongly Agree’. The total score on the scale ranged from 35-175.

3.6 STATISTICAL TREATMENT OF DATA

Subsequent to scoring, the data was organised and tabulated, the statistical techniques were applied and data was analysed. Scores of 1000 teachers on different variables were classified according to the background variables of gender, location of the school and length of teaching experience. Statistical treatment was given to the data to test the hypotheses.

Both descriptive and inferential statistical techniques were used to analyse data. The following statistical techniques were used (Table 3.4):

Table 3.4
Objective Numbers and Statistical Techniques Used.

<table>
<thead>
<tr>
<th>OBJECTIVE NUMBER</th>
<th>STATISTICAL TECHNIQUES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-9</td>
<td>Mean , SD, t-test, ANOVA</td>
</tr>
<tr>
<td>10, 11</td>
<td>Karl Pearson Product Moment Correlation</td>
</tr>
<tr>
<td>12</td>
<td>Regression Analysis</td>
</tr>
</tbody>
</table>

In order to study the variables on the basis of gender, location and teaching experience, Mean and SD were computed. t-test was used to find out the difference between the mean scores of two groups. Correlations were computed using Pearson’s Product Moment Method to find the relationship between variables. ANOVA was used to find significance of difference on the basis of teaching experience. Regression analysis was applied to find significant predictors of professional commitment.