CHAPTER- II

DESCRIPTION OF THE TOOLS

The present chapter deals with the description of the tools. Tools are the means of data collection. Suitability, appropriateness, relevance, reliability, validity and language are the main criteria for selection of research tools. It may be revealed that tools play a crucial role in data collection. A researcher therefore, must possess considerable knowledge about a wide variety of techniques and instruments. He must be familiar with the nature of the data they produce; their advantages and limitations; the assumptions upon which their use is based; and the extent of their reliability, validity and subjectivity. Moreover, he must be very skilled in employing, constructing and maintaining tools and interpreting the information they produce (Van Dalen, 1973). The following tools have been used in the proposed study and discussed as below:

2.1 TOOL-I: EMOTIONAL INTELLIGENCE SCALE (EIS) BY ANUKOOL HYDE; SANJYOT PETHE; UPINDAR DHAR (2002) (APPENDIX I)

2.2 TOOL-II: SELF-CONCEPT LIST BY PRATIBHA DEO (1998) (APPENDIX II)

2.3 TOOL-III: ACHIEVEMENT MOTIVATION (N-ACH) SCALE BY DEO-MOHAN (1990) (APPENDIX III)

2.4 TOOL-IV: ACADEMIC ACHIEVEMENT SCORES-AGGREGATE MARKS OBTAINED BY STUDENTS IN FINAL EXAMINATION OF B.ED. CLASS (APPENDIX IV)

2.1 TOOL-I: EMOTIONAL INTELLIGENCE SCALE (EIS)

Emotional Intelligence Scale (EIS) by Anukool Hyde, Sanjyot Pethe and Upinder Dhar (2002) is based on Four- Cornerstone model by Cooper and Sawaf (1997).

Although, a person’s feelings can’t be observed directly by others but they can be inferred from his overt behaviour and verbal report of his introspection, as no one can doubt the reality of emotions as conscious experience. To produce an emotion, a stimulus situation must be related to past experience and seen as having implications in the future. In an organization when an employee feels the presence of a threatening situation, he may
handle it in either of the two ways. He may be confident of his ability to handle the situation and may see it as a challenging opportunity to prove himself or experience fear or dread. Thus, one’s appraisal of situation and subsequent emotions are strongly influenced by one’s own estimate of capabilities. The emotions aroused depend not so much on the events themselves, as on how they are appraised.

Buck (1985) has defined emotion as the process by which motivational potential is realized or ‘read out’, when activated by challenging stimuli. In other words, emotion is seen as a ‘read out’ mechanism carrying information about motivational systems. Emotions have long been considered to be of such depth and power that in Latin, for example, they were described as ‘motus anima’, meaning literally the spirit that moves us. Contrary to most conventional thinking, emotions are inherently neither positive nor negative; rather, they serve as the single most powerful source of human energy. In fact, each feeling provides us with vital and potentially profitable information every minute of the day. This feedback ignites creative genius, improves and shapes trusting relationships, provides an inner compass for one’s life and career, guides to unexpected possibilities and even saves organization from disaster. To exhibit emotions is very easy but doing it at the right time, at the right place, with the right person and to the right degree is difficult. The management of emotions has given to the most talked about term ‘Emotional Intelligence’.

2.1.1 RELIABILITY

The reliability of the scale was determined by calculating reliability coefficient on a sample of 200 subjects. The split-half reliability coefficient was found to be 0.88.

2.1.2 VALIDITY

Besides face validity, as all items were related to the variable under focus, the scale has high content validity. It is evident from the assessment of judges/experts that items of the scale are directly related to the concept of Emotional Intelligence. In order to find out the validity from the coefficient of reliability (Garrett, 1981), the reliability index was calculated, which indicated high validity on account of being 0.93.
2.1.3 FACTORS OF EMOTIONAL INTELLIGENCE

The scale was administered on 200 executives and the scores obtained were subjected to factor analysis and ten factors were identified. These are self awareness, empathy, self motivation, emotional stability, managing relations, integrity, self development, value orientation, commitment and altruistic behaviour.

A. **Self awareness** is being aware of oneself and is measured by items 6, 12, 18, 29. These items are “I can continue to do what I believe in even under severe criticism,” “I have my priorities clear”, “I believe in myself” and “I have built rapport and made and maintained personal friendships with work associates”. This factor is the strongest and explains 26.8 percent variance and has a total factor load of 2.77. The correlation of this factor with total score is 0.66.

B. **Empathy** is feeling and understanding the other person and is measured by items 9, 10, 15, 20 and 25. These are “I pay attention to the worries and concerns of other”, “I can listen to someone without the urge to say something”, “I try to see the other person’s point of view”, “I can stay focused under pressure” and “I am able to handle multiple demands”. This factor explains 7.3 percent variance with a total factor load of 3.11. The correlation of the factor with total score is 0.70.

C. **Self motivation** is being motivated internally and is measured by 2, 4, 7, 8, 31 and 34. These items are “People tell me that I am an inspiration for them”, “I am able to make intelligent decisions using a healthy balance of emotions and reason”, “I am able to assess the situation and then behave”, “I can concentrate on the task at hand despite disturbances”, “I think feelings should be managed” and “I believe that happiness is an attitude”. This factor accounts for 6.3 percent variance and a total factor load of 3.28. Its correlation with total score is 0.77.

D. **Emotional stability** is measured by items 14, 19, 26 and 28. These are “I do not mix unnecessary emotions with issues at hand”, “I am able to stay composed in both good and bad situations”, “I am comfortable and open to novel ideas and new information” and “I am persistent in pursuing goals despite obstacles and
setbacks.” This factor explains 6.0 percent variance with a total factor load of 2.51. The correlation of this factor with total score is 0.75.

E. **Managing relations** is measured by 1, 5, 11 and 17. The statements that measure this factor are “I can encourage others to work even when things are not favourable”, “I do not depend on others’ encouragement to do my work well,” I am perceived as friendly and outgoing” and “I can see the brighter side of any situation”. This factor explains 5.3 percent variance with a total factor load of 2.38. The correlation of this factor with total score is 0.67.

F. **Integrity** is measured by items 16, 27, and 32. “I can stand up for my beliefs”, “I pursue goals beyond what is required of me” and “I am aware of my weaknesses” are the statements that measure this factor. This factor explains 4.6 percent variance with a total factor load of 1.88.

G. **Self-development** is measured by items 30 and 33 which are “I am able to identify and separate my emotions” and “I feel that I must develop myself even when my job does not demand it” and explains 4.1 percent variance with a total load of 1.37.

H. **Value orientation** is measured by items 21, 22. The statements are “I am able to maintain the standards of honesty and integrity” and “I am able to confront unethical actions in others” and explains 4.1 percent variance with a total factor load of 1.29.

I. **Commitment** is measured by the items 23 and 24. “I am able to meet commitments and keep promises” and “I am organized and careful in my work” measure this factor. This factor accounts for 3.6 percent variance with a total factor load of 1.39.

J. **Altruistic behaviour** is measured by the items 3 and 13. The items are “I am able to encourage people to take initiative” and “I can handle conflicts around me.” It explains 3.0 percent variance with a total factor load of 1.3.
2.1.4 USES OF THE SCALE

The scale can be used for research and survey purposes. It can also be used for individual assessment. It is self-administering and does not require the services of highly trained tester. It is eminently suitable for group as well as individual testing.

2.1.5 LIMITATION OF THE SCALE

In all the tests of this nature, the subjects do manage to get some insight into what the purpose is. As such, there is always the factor of “social desirability and faking”. The scale purports to measure learned optimism of which the subject has some awareness. It should not be used as a tool for individual diagnosis unless supported by other evidences. Observation of other self-related perceptions is also required.

2.1.6 INSTRUCTIONS FOR ADMINISTRATION AND SCORING

The instructions printed on the response sheet are sufficient to take care of the questions that are asked. No time limit should be given for completing the scale. 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 responses should be kept confidential. 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. It should be duly emphasized that all statements have to be responded to and no statement should be left unanswered. It is not desirable to tell the subjects the exact purpose for which the scale is being used. Though the scale is self-administering, it has been found useful to read out the instructions printed on the response sheet to the subjects. Manual scoring is done conveniently, hence no scoring key is provided. 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.
2.2 TOOL-II: SELF-CONCEPT LIST

To measure the self-concept of student teachers, Personality Word List (PWL) developed by Deo (1971) is used as a measure of self-concept. One of the simplest and most direct ways of discovering how an individual perceived himself is to ask him to respond to the question, like “who am I?” Self-concept is best conceived as a system of attitudes towards oneself. Just as a person, as a result of experiences, forms attitudes which he organises into a self-consistent system and defends against threats and attacks, so the person also forms attitudes towards himself. Self-concept consists of all the perceptions, feelings, attitudes, aspirations and values of oneself concerning oneself.

Self-concept scale measures ideal self, social self, real self and perceived self. It measures how the teachers perceive themselves. The SCL (Self-Concept List, the revised personality word list) is based on self-reporting technique and is available in both the forms, the check list as well as the rating scale. The SCL in the final form yielded a list of 212 words in the check-list form. The Personality Word List in final revised version contains 90 adjectives in terms of “Words” both in Hindi and English. However, for the present study English version has been used by the investigator.

2.2.1 SCORING OF THE SCALE

The revised PWL contains 90 adjectives of everyday use. It is a self rating word list, rather than a check list, to be rated by the subject on five points scale, as under:

1. Very much like this
2. Much like this
3. Uncertain
4. Not much like this and
5. Not at all this.

Out of 90 adjectives, 53 are related to positive and 31 related to negative traits and 6 related to neutral traits scores with separate stencil hand scoring keys. There is no right or wrong answers.
Scoring is done with the help of stencil hand scoring key. There are separate transparent keys for the positive words and negative words as well as for neutral words. The neutral words are not given any weightage and are ignored in the scoring. For positive words, the scores are taken as 4, 3, 2, 1, 0 and for negative words 0, 1, 2, 3, and 4 respectively. The total composite scores are considered on the indices of the subject’s self concept. The composite scores are obtained by subtracting the total negative scores from the total positive scores. The composite scores for all the dimensions can be calculated.

2.2.2 ADMINISTRATION OF THE PWL

The PWL can measure all the four aspects of the self-concept, i.e. ideal self, social self, real self and perceived self, on the dimensions for both positive and negative classes. Before administrations of PWL, good emotional rapport should be established which is very necessary to get accurate and correct results. Adjectives are printed in three columns. Instructions are given on the other side of the sheet. The student-teachers are given detailed instructions as to how to do the test. They are requested to give the true information and are asked to cooperate with the investigator.

2.2.3 RELIABILITY

Reliability of Deo’s personality word list was determined in terms of scores on the test over certain specified length of time and consistency of scores of subjects was found out between various administrations of the test. The test re-test reliability of PWL was established with time intervals varying between 15 days and 3 months. Reliability coefficient obtained for these were in the range of 0.62 to 0.86.

2.2.4 VALIDITY

The convergent validity of various traits in the list ranges from 0.40 to 0.65. The overall validity co-efficient of scores on Deo’s personality word list and Deo’s self-concept list was 0.56. Moreover, the discriminate validity coefficients for the traits of PWL fall in the range of 0.12 to 0.80.
2.3 TOOL-III: ACHIEVEMENT MOTIVATION (N-ACH) SCALE

Achievement Motivation (n-Ach) scale a verbal scale, was constructed by Dr. Pratibha Deo (Pune) and Dr. Asha Mohan (Chandigarh) in 2002, and has been used to study the achievement motivation of the student-teachers and for the collection of data on the subjects. To prepare the present scale, an effort has been made to study factors suitable for measuring the achievement motivation. The preliminary draft of the present scale was prepared with 115 items. For item analysis and item discrimination values, Johnson’s U.L.I. Method (Guilford, 1954) was applied, taking 27% upper and 27% lower achievers out of a group of 46 boys and girls. Out of 115 items, those which yielded negative or zero values were rejected outright. Finally, it consists of 50 items and 15 areas/dimensions of needs as given in Table 2.1

**TABLE : 2.1**

**DIMENSIONS OF ACHIEVEMENT MOTIVATION TEST**

<table>
<thead>
<tr>
<th>S. NO.</th>
<th>FACTOR</th>
<th>NO. OF ITEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Academic Motivation</td>
<td>4</td>
</tr>
<tr>
<td>2.</td>
<td>Need Achievement</td>
<td>4</td>
</tr>
<tr>
<td>3.</td>
<td>Academic Challenge</td>
<td>4</td>
</tr>
<tr>
<td>4.</td>
<td>Achievement Anxiety</td>
<td>1</td>
</tr>
<tr>
<td>5.</td>
<td>Importance of Grades/ marks</td>
<td>2</td>
</tr>
<tr>
<td>6.</td>
<td>Meaningfulness of Task</td>
<td>4</td>
</tr>
<tr>
<td>7.</td>
<td>Relevance of School/ College to further goal</td>
<td>2</td>
</tr>
<tr>
<td>8.</td>
<td>Attitude towards Education</td>
<td>4</td>
</tr>
<tr>
<td>9.</td>
<td>Working method</td>
<td>5</td>
</tr>
<tr>
<td>10.</td>
<td>Attitude towards teachers</td>
<td>3</td>
</tr>
<tr>
<td>11.</td>
<td>Interpersonal Relations</td>
<td>4</td>
</tr>
<tr>
<td>12.</td>
<td>Individual Concern</td>
<td>2</td>
</tr>
<tr>
<td>13.</td>
<td>General Interests</td>
<td>4</td>
</tr>
<tr>
<td>14.</td>
<td>Dramatics</td>
<td>2</td>
</tr>
<tr>
<td>15.</td>
<td>Sports etc.</td>
<td>5</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>50</td>
</tr>
</tbody>
</table>
In the final scale, out of 50 items 13 are negative and 37 are positive items. A positive item carries the weightage of 4, 3, 2, 1 and 0 respectively for the categories of Always, Frequently, Sometimes, Rarely and Never. A negative item carries the weightage of 0, 1, 2, 3 and 4 for the same categories respectively. It is published in English as well as in Hindi. For the present study, English version of the scale has been used.

2.3.1 RELIABILITY OF THE SCALE

Test-retest method was applied to obtain the reliability co-efficient of the scale. Taking different sets of sample; the administration of scale was repeated on several occasions. The results are given in Table 2.2

<table>
<thead>
<tr>
<th>SAMPLE</th>
<th>N</th>
<th>INTERVAL</th>
<th>RELIABILITY (r)</th>
<th>SIGNIFICANCE LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIXED GROUP</td>
<td>51</td>
<td>4 weeks</td>
<td>.69</td>
<td>.01</td>
</tr>
<tr>
<td>MALE</td>
<td>33</td>
<td>5 – 6 weeks</td>
<td>.67</td>
<td>.01</td>
</tr>
<tr>
<td>FEMALE</td>
<td>50</td>
<td>5 – 6 weeks</td>
<td>.78</td>
<td>.01</td>
</tr>
</tbody>
</table>

These coefficients of reliability are sufficiently high and scale can be considered as reliable for use.

2.3.2 VALIDITY OF THE SCALE

As far as the validity of the scale is concerned in the first instance, the item validity established by the high-low discrimination method was accepted as the validity of the whole measure. Besides, this scale was also used for validating the projective test of Achievement Motivation. The co-efficient of correlation between the verbal scale and projective test was observed to be .54 which speaks for the validity of the scale also, the validity being of concurrent nature. Finally, the scale scores were also correlated with the scores obtained by administering the Aberdeen Academic Motivation Inventory of Entwistle (1968) yielding a coefficient of correlation as .75 for a mixed sample of 93 adolescents. This correlation is high enough to establish the validity of the scale.
2.3.3 INSTRUCTIONS AND ADMINISTRATION OF THE SCALE

The scale is administered in a group. The student-teachers are made to sit comfortably, at some distance from each other. First, the answer sheets and pens are distributed and the subjects are asked to write down his/her particulars i.e. name, age, gender and college name and address, phone number, residence particulars etc. After ensuring that this is properly done, scale booklets are distributed, giving one to each subject. The directions printed in the test booklet are read out loudly and properly explained verbally. Doubts are clarified. The subjects are told that there is no time limit but they are expected to work fast and give their honest, frank and first response to each item so as to complete the test in 40 to 50 minutes. Every item is to be answered and no item is to be left blank. It is not an ability test, and therefore, there is no right or wrong response. After the student-teachers finish marking their responses, the test booklets are collected along with the answer sheets.

2.3.4 SCORING

Two stencil keys were used for scoring, one for positive items and other for negative items. The positive items were given weightage of 4, 3, 2, 1 and 0 respectively for the categories of always, frequently, sometimes, rarely and never. The negative items were scored 0, 1, 2, 3 and 4 for same categories respectively as given above. The summation of all the positive and negative items gave the total score.

2.4 TOOL-IV: ACADEMIC ACHIEVEMENT SCORES

For measuring academic achievement of students, the total marks of B. Ed. Examination have been taken as a measure of academic achievement or Grade Point Average (GAP) from the result sheets of the Colleges for the session 2007-08. No separate questionnaire has been used for this purpose. As the present study is emphasized on the academic achievement of the student-teachers, this variable has been taken as an independent variable. All the B. Ed. Students have appeared in their final examination from one of the universities namely Panjab University, Punjabi University and Guru Nanak Dev University. Due to the uniformity by NCTE, the investigator has not used any other tools to measure the academic achievement of the student-teachers.