CHAPTER V

Description of Tools
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To test the hypotheses mentioned in chapter IV, data were collected by using the following tools. A detailed description of the tools used for the study is given below.

1. **Sociometric Test:**

   The sociometric test is a simple method for measuring the extent of acceptance or rejection among individuals in groups. This helps to discover, describe and evaluate how an individual is regarded by a group of which he is a member. In a classroom situation it assists in the identification of students who need help in achieving the kind of group life which will contribute to their personal and social adjustment. It assists in describing the social (sociometric) structure of the school by indicating the integration of classroom groups. In the present study Sharma's (1970) sociometric test has been used. A copy of the sociometric form is given in Appendix A-I. A numerical response chart called 'Sociomatrix' has been prepared and given on page 163.

**Analysis of Data:**

Information given on the sociomatrix is described as under:

(i) **Sociometric Status Score:** The choices received by a pupil are obtained by counting each entry made in
each pupil's vertical column as a value of one. These totals are entered in the row labelled 'Totals' at the bottom of the matrix table which is the sociometric status score.

(ii) Sociometric Categories: According to the sociometric score they received on a sociometric test, the pupils can then be classified into six sociometric categories: Populars; Above-Average; Averages, Below-Averages; Neglectees, and Isolates. The method of classifying them into six sociometric categories is given in appendix A-II, based on Bronfenbrenner's (1945) fixed frame of reference. According to this scoring method, the lower limit which identifies 'neglectees' was one to three choices and the upper limit which identifies 'populars' was fifteen or more choices.

Reliability of the Test:
Rather (1931) reported a reliability coefficient of .93 for a time interval of three weeks.

California Test of Personality:
The California Test of Personality has been developed by Thrope, Louis, P., et al (1953) to identify and reveal the status of certain highly important factors in personality and personal and social adjustment. These are the factors that defy appraisal or diagnosis by means of ordinary ability and achievement tests. I. Rather, A.R., "Influence of Guidance and Counselling upon two sociometric categories - Neglectees and Isolates", Himalayan Journal of Educational Research and Development, vol. 2, No. 1 and 2, January, 1984 : 35-41.
The C.T.P. is a teaching - learning or developmental instrument primarily. Its purpose is to provide the data for aiding individuals to maintain or develop a normal balance between personal and social adjustment. Individual reactions to items are obtained, not primarily for the usefulness of total or section scores, but to detect the areas and specific types of tendencies to think, feel, and act which reveal undesirable individual adjustments.

The California Test of Personality is organized around the concept of life adjustment as a balance between personal and social adjustment. Personal adjustment is assumed to be based on feelings of social security. The items in the personal adjustment are designed to measure evidences of six components of personal security and the items in the social adjustment are designed to measure evidences of six components of social security.

**Personal Adjustment**

**IA Self-Reliance**: An individual's overt action indicates that he can do things independently of others, depend upon himself in various situations, and direct his own activities. He is also emotionally stable, and responsible in his behaviour.

**IB Sense of Personal Worth**: To feel worthy means to feel capable and reasonably attractive. An individual feels a sense of being worthy when he feels that he is well regarded by others.
IC. Sense of Personal Freedom: An individual enjoys a sense of freedom when he is permitted to have a reasonable share in the determination of his conduct and in setting the general policies that shall govern his life and in choosing one’s own friends.

ID. Feeling of Belongingness: An individual feels that he is accepted when he enjoys the love of his family, the well-wishes of his good friends, and a cordial relationship with people in general.

IF. Withdrawing Tendencies: The individual who is said to withdraw is the one who substitutes the joys of a fantasy world for actual successes in real life. Such a person is characteristically sensitive, lonely, and given to self-concern. Normal adjustment is, on the other hand, characterized by reasonable freedom from these tendencies.

IF. Nervous Symptoms: People of this kind may be exhibiting physical expressions of emotional conflicts such as loss of appetite, frequent eye strain, inability to sleep, or a tendency to be chronically tired.

2. Social Adjustment

2A. Social Standards: The individual who recognizes desirable social standards is the one who has come to understand the rights of others and subordinates certain desires to the needs
of the group.

23 Social Skills: An individual may be said to be socially skillful or effective when he shows a liking for people, provides assistance to them and when he is diplomatic in his dealings with both friends and strangers. He subordinates his egoistic tendencies in favour of interest in the problems and activities of his group members.

2C Anti-Social Tendencies: The anti-social person is the one who endeavours to get his satisfaction in ways that are damaging and unfair to others.

2D Family Relations: The individual who exhibits desirable family relationships is the one who feels that he is well treated at home and who enjoys a sense of security and self respect among his family members. Superior family relations also include parental control that is neither too strict nor too lenient.

2E School Relations: The student who is satisfactorily adjusted to his school is the one who feels that he is being liked by other students and teachers and who finds the school work adapted to his level of interest.

2F Community Relations: The individual who may be said to be making good adjustments in his community is the one who mingles happily with his neighbours, who takes pride in community improvements, and who is tolerant in dealing with both strangers and foreigners.
Scoring of the Test:

The key or an unused test booklet with the correct answers as an aid in scoring is used.

1. Each item is considered right or wrong. No partial credits are given for partial answers.

2. The score for each section is the number right.

3. If two answers are given, the wrong item is counted unless the student has attempted to erase or cross out the incorrect answer.

4. All the scores for the twelve components are entered in the boxes provided at the bottom of each column of the test.

5. The possible score for twelve components is 144. The high score indicates high adjustment and low score low adjustment.

Class record sheet given as appendix 3-II, which shows personal adjustment, social adjustment and total adjustment for each student.

Reliability:

Certain outcomes such as knowledges, understandings, and skills, once attained, remain relatively stable and tests designed to reveal their presence may possess relatively high statistical reliability. The normal student, on the other hand,
is a growing organism whose integration must be preserved while his feelings, convictions, and modes of behaviour are changing in accordance with his experiences. Some of the items in this test touch relatively sensitive personal and social areas, and such student attitudes may change in a relatively short time. For these and other reasons, the statistical reliability of instruments of this type will sometimes appear to be somewhat lower than that of good tests of ability and achievement. The coefficients of reliability, number of cases and standard errors of measurement are given below for the sub-sections and totals of the C.T.P. in terms of raw scores. These reliability coefficients have been computed with the Kuder - Richardson formula.

<table>
<thead>
<tr>
<th>Components</th>
<th>Reliability Coefficients (N=648)</th>
<th>Form AA or 33</th>
<th>Both Forms</th>
<th>SC Meas</th>
<th>SC Meas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Personal Adjustment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Self-Reliance</td>
<td>.93</td>
<td>3.44</td>
<td>.96</td>
<td>5.20</td>
<td></td>
</tr>
<tr>
<td>B. Sense of Personal Worth</td>
<td>.64</td>
<td>1.30</td>
<td>.78</td>
<td>2.34</td>
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</tr>
<tr>
<td>C. Sense of Personal Freedom</td>
<td>.79</td>
<td>1.49</td>
<td>.88</td>
<td>2.25</td>
<td></td>
</tr>
<tr>
<td>D. Feeling of Belonging</td>
<td>.77</td>
<td>0.96</td>
<td>.87</td>
<td>1.44</td>
<td></td>
</tr>
<tr>
<td>E. Withdrawing Tendencies</td>
<td>.83</td>
<td>1.65</td>
<td>.91</td>
<td>2.40</td>
<td></td>
</tr>
<tr>
<td>F. Nervous Symptoms</td>
<td>.82</td>
<td>1.48</td>
<td>.90</td>
<td>2.21</td>
<td></td>
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</tbody>
</table>
Reliability Coefficients (N=648)

<table>
<thead>
<tr>
<th>Components</th>
<th>Form AA or B3</th>
<th>Both Forms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SE Meas</td>
<td>SE Meas</td>
</tr>
<tr>
<td>2. Social Adjustment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Social Standards</td>
<td>.59</td>
<td>.74</td>
</tr>
<tr>
<td>B. Social Skills</td>
<td>.73</td>
<td>.84</td>
</tr>
<tr>
<td>C. Anti-Social Tendencies</td>
<td>.77</td>
<td>.87</td>
</tr>
<tr>
<td>D. Family Relations</td>
<td>.77</td>
<td>.87</td>
</tr>
<tr>
<td>E. School Relations</td>
<td>.78</td>
<td>.88</td>
</tr>
<tr>
<td>F. Community Relations</td>
<td>.79</td>
<td>.88</td>
</tr>
<tr>
<td>Total Adjustment</td>
<td>.94</td>
<td>.97</td>
</tr>
</tbody>
</table>

Validity:

An instrument is valid if it accomplishes the purpose or purposes for which it is designed. If, therefore, an instrument has several purposes it may have several validities. In fact, the use of a given test may involve several types of validity depending upon the nature and conditions of each problem being investigated. Among the purposes for which the C.T.P. was designed are described as under:

1. To provide a frame of reference (including a conceptual structure and a sampling of specific types of thinking, feeling, and acting patterns) regarding the nature of personality determinants and their relationships to each other and to the total functioning personality.
(2) To provide information about individuals which is useful in understanding their problems and improving their adjustment.

(3) To serve as an instrument of research for obtaining other types of information.

(4) The Educational Research Bulletin of the New York City Schools carries this statement regarding the California Test of Personality: "This procedure, (inventories organized so students can answer questions by themselves) which is followed in the C.T.P. is perhaps the most diagnostic of any test of this type. It is, however, best used for clinical procedure and is particularly useful with problem boys and girls".

Taylor and Combs (1952) provided additional evidence on the validity of the C.T.P. It had long been held by workers in this field that well-adjusted people can accept more self-damaging statements or criticisms than the poorly adjusted. They had 168 sixth-grade children check on a list such damaging-to-self statements as were true about themselves. Pupils were informed that the results of the check list would remain anonymous. The same group of children

were tested with the C.T.P. and divided into two groups, the upper 50 percent (better adjusted) and the lower 50 percent (poorer adjusted). The test revealed a statistically significant difference in favour of the better-adjusted group; that is, the better-adjusted half of the class checked a statistically significant larger number of self-damaging statements than the more poorly-adjusted half.

The C.T.P. was twice administered by Kimber (1947) to 400 students in an elementary psychology course at the University of Southern California. The students were instructed to answer the first time they took the test as they believed a happy, well-adjusted student would answer. The second time they took the test, they were told to answer exactly as they felt. Findings indicate that some students have a high degree of insight into the items of the test, others only a low degree; that women exceed men in degree of insight; that in spite of the special instruction given to examinees to answer from two different points of view, there is a high correlation between the scores on the first and second tests, even among psychology students.

The Demos Dropout Scale:

The Demos D (Dropout) scale has been prepared by Demos, George D. (1965) in order to provide an objective method for obtaining expressions of attitudes related to dropping out of school. It helps in identifying students with
strongly negative attitudes towards teachers and school, so preventive or corrective work can take place while students are still in school. Information from the DDS is helpful in understanding the student, and can be used in assisting students through counselling programmes, planning, remediation, training, and support so he is helped to make more effective uses of his abilities and potentials.

The 29 DDS scales of continua were rated into successive intervals by seven professional judges according to the degree of favourableness - unfavourableness which each scale expressed. To make certain that the investigator was not gratuitously assuming these qualities in the positions of the scales, statements from all scales were placed in random order on one list. The judges characterized each statement as highly favourable, favourable, neutral, unfavourable, or highly unfavourable. Only statements which had the unanimous agreement of the seven judges were incorporated into the DDS. Thus 145 statements were used in formulating the 29 DDS attitude continua; five statements for each of the 29 attitude continua.

**Basic Areas of Expression:**

Analysis of the 20 continua indicated that four basic areas of expression constituted the DDS. These were:

1. **Attitudes towards Teachers (10 items) (Coded T)**
2. **Attitudes towards Education (9 items) (Coded E)**
3. Influences by Peers or Parents (5 items) (Coded P)
4. School Behaviour (5 items) (Coded S)

Scoring:

The scoring of the DOS is easy to accomplish. Above the responses in the Protocol Booklet is a row reading as follows:

B-1 W-5 C-2 S-4 G-3 T-2 H-4 M-1 R-5

Responses are so arranged that circled responses appear under one of the above letter numbers. All circled responses under B-1 have a scoring value of 1 point. Letters have no significance; only the numbers establish the scoring value of the response. Circled responses under W-5 have a scoring value of 5; circled responses under C-2 have a scoring value of 2, etc. All circled response values are added. This sum is the DOS Total Score. It is placed in the DOS Profile in the DOS Protocol Booklet.

There are five DOS scores which provide data to be compared with the standardization groups used so that similarities of tested students' DOS scores can be compared with those of both the non-dropout and the dropout groups. The five DOS scores are:

(1) DOS Total Score: This score is the most important DOS datum. On the basis of clinical experiences with the DOS, these scores are interpreted in the following
way in terms of probabilities: chances of scores identifying potential dropouts. Scores range from 29-145.

**DJS Total Scores Converted to Clinical Probabilities**

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Probability of dropping out of school</th>
</tr>
</thead>
<tbody>
<tr>
<td>29</td>
<td>Little probability 5 chances in 100</td>
</tr>
<tr>
<td>30 - 39</td>
<td>Some probability 25 chances in 100</td>
</tr>
<tr>
<td>40 - 79</td>
<td>Even chance 50 chances in 100</td>
</tr>
<tr>
<td>80 - 89</td>
<td>Strong probability 70 chances in 100</td>
</tr>
<tr>
<td>90 - 145</td>
<td>Very strong probability 90 chances in 100</td>
</tr>
</tbody>
</table>

**Validity and Reliability:**

Attitudes by definition involve verbal expression and acceptance of certain positions or situations. To determine such expressions or positions relative to dropping out of school, the verbal approach to identifying and understanding attitudes of students who remain in school and students who dropout of school, seemed to be the most practical and meaningful one to pursue, and was used. Researchers in the field of attitude study consider verbal expressions dealing with attitudes as revealing - or more revealing - than observations and interpretations of non-verbal behaviour. While reviewing the DJS, Gordon, L. V., (1972) has also conformed to the views given by the author 3.

of the DDS in terms of its validity and reliability. However, he has recommended for computing the standard deviations and test of significance.

The primary purpose of the DDS is to determine verbalized opinions which reflect attitudes presumably related to dropping out of school. When such opinions are obtained, the DDS has accomplished its purpose, and can be said to possess validity. In all experimental and clinical situations tested, the DDS elicited such expressions.

Remmas (1951) points out that if one is interested in knowing present attitudes in a given area, when such expressions are obtained, validity equates with reliability; thus where there is high validity, there will be high reliability. The author of the DDS points out that in the DDS validity and reliability are synonymous, and can be considered to be high, since DDS attitude responses are readily obtained. He further says that identification of DDS validity and reliability was the establishment of mean DDS total score differences as well as individual DDS differences between the non-dropout groups and the dropout groups.

Riker's (1945) researches with regard to the reliability indicate that a logical approach to the development of attitudinal scales, such as the OUS, had retest reliability coefficients of correlation ranging from +.50 to +.86.

The author has determined the face validity and content validity of the OUS by the use of psychological experts as judges, serving as one operational criterion. Sixty nine judges scrutinized and screened all of the attitude scales prior to their final development, eliminating all elements of item irrelevance and ambiguity.

Verbal Test of Creative Thinking:

Verbal Test of Creative Thinking was prepared by Mehdii (1973) to identify creative talent at all stages of education except pre-primary and primary. The types of tasks involved in the test have been chosen so that they could be most easily and economically administered over a wide age-range of sample starting from middle school and going up to the graduate level.

The Verbal Test of Creativity includes four sub-tests, namely, consequences test; unusual uses test; similarity test, and product improvement test. They are described briefly as under:

(1) **Consequences Test:** This test consists of three hypothetical situations and the subject is required to think as many consequences of the given situations as he can, and write them under each situation in the space provided. The situations being hypothetical, minimize the effect of experience and also provide the subject with an unlimited opportunity to make responses with his own imagination and originality. The time allowed for the three problems is four minutes each.

(2) **Unusual Uses Test:** This test presents the subject with the names of three common objects and requires him to write as many novel, interesting and unusual uses of these objects as he may think of. This test measures the subject's ability to retrieve items of information from his personal information in storage. The time allowed for the three tasks is five minutes each.

(3) **New Relationships Test:** This test presents the subject with three pairs of words apparently different and requires him to think and write as many novel relationships as possible between the two objects of each pair in the space provided. Like other sub-tests, this test also provides an opportunity for the free play of imagination and originality. The time allowed for each pair of words is five minutes.
(4) **Product Improvement Test:** In this test, the subject is asked to think of a simple wooden toy of a horse and suggest addition of new things to it in order to make it more interesting for the children to play. The time allowed is six minutes.

**Administration:**

Before administering the test, the following points are taken into cognizance:

(1) The place for administering the test should be such that children may work comfortably and without any disturbance. The usual setting for the test is the classroom with 30 to 35 students.

(2) The word 'test' however should never be used throughout the session. The threatening situation which is frequently associated with the testing should be avoided. The children should be told that they would soon be involved in an interesting activity in which they would be required to give interesting and novel responses to certain situations provided in the booklet. In brief, the pupils should be motivated fully.

(3) The timings given for each activity should be strictly adhered to.
The preliminary instructions to be given to the pupils are recorded on the test booklet.

Procedure For Scoring: Scoring guide in the manual is used in scoring the items.

Scoring For Fluency: In scoring for fluency, irrelevant and repeated responses are crossed out. Then the remaining number of responses is counted and this number is the fluency score for the item and is entered in the appropriate box in the answer sheet.

Scoring For Flexibility: In scoring for flexibility, the scorer should note in bracket against each response, the alphabet serial of the category to which it belongs. If the response is such that it belongs to an entirely new category not considered in the scoring guide, he should give it a new alphabet serial, and note it down in bracket against the response in question. The flexibility score will be the total number of different alphabet serials used. Here, the testee has to determine the responses as to how many categories they belong.

Scoring For Originality: Originality scoring is done on the basis of statistical, uncommonness of responses. The weights for originality scoring have been determined on the basis of the following scheme. If a response has been given by .1% to .99% of the testees, then the responses will get an
originality weight of 5; if a response has been given by 1% to 1.99% of the testees, then the response will get an originality weight of 4 etc etc. Responses given by 5% or more of the testees will get an originality weight of zero.

**Scoring Summary:**

A table has been provided in the answer-sheet to summarize the scores for fluency, flexibility, and originality obtained by the testees on different activities (Appendix D-II). The total fluency, flexibility, and originality scores have to be entered in the appropriate columns of the table. The composite creativity scores should be entered after converting the raw scores into standard scores. This is necessary because the standard deviations of the three scores sometimes markedly vary, and if raw scores are added up then the ranking will be greatly affected.

**Reliability:**

The test-retest reliabilities of the factor scores and also the total score were obtained on a small scale (N = 31). The reliabilities for fluency, flexibility and originality were found .945, .921 and .895 respectively and for total creativity score it was .959. Thus, both the factor score and the total creativity score reliabilities
are considerably high. In one more study, inter-scorer reliabilities for the factor scores were found to range from .653 to .981.

Validity:

The test was administered to two samples - one urban and the other rural studying in classes VII and VIII. The item scores were correlated, first, with the total activity scores and then with the grand total, i.e., the total of all the four activities. The total activity scores were also correlated with the grand total. All correlations were found significant beyond .01 level. Another method for studying the usefulness of the items in a given activity was to obtain separate scores for fluency, flexibility, and originality for each set of items under a given activity in order to see how the factor scores were correlated among themselves and how they correlated with the grand total. All the correlations were found significant beyond .01 level. The results show that (i) the items in each activity are correlating highly with the activity total indicating that together they are measuring the same thing, and (ii) their correlations with the grand total are also considerably high, again pointing to the fact that the items are highly internally consistent. In brief, such high correlations show the usefulness of the activities in measuring the creative thinking abilities of the individual which the test purports to do.
The correlations between the verbal and the non-verbal tests of creativity based on the total creativity scores were found to be .456 and .356 for the urban and rural samples respectively, indicating that while two tests are measuring the same construct, namely, creativity. The validity coefficients against the teacher ratings for each fluency, flexibility, originality and total creativity score are .40, .32, .34, and .39 respectively. The validity coefficients for factor scores and the total creativity scores are high enough (significant beyond .01 level) to place confidence in the use of the test.

**Socio-Economic Status Scale Questionnaire (Urban):**

In order to measure the socio-economic status of the students, the SES scale prepared by Kapoor (1970) was used. The questionnaire contains 13 items covering areas such as, parental occupation, father's/guardian's education, monthly income, house type, household material possessions, cultural sub-factors, education of respondent's brothers and sisters, level of aspiration, concept of social prestige and belief in castes. Directions for administering the questionnaire were followed as given in its manual. The scoring key was used for the purpose of scoring the items in the questionnaire. The total possible raw score on the S.E.S. scale is 75. The subjects are categorized on the basis of their total raw score as under:
Co-efficient of stability was calculated by the test-retest method. The correlation of the scores of 150 subjects taken at two different times with an interval of one month was found to be .99. The concurrent validity of the scale has been established after testing the identifiable groups. Pandey's original scale was also applied to those 150 students. Correlation of scores on this scale with those on Pandey's scale was found to be .92 as reported in the manual.

**Socio-Economic Status Scale (Rural).**

This scale has been prepared by Pareek and Trivedi (1964) to measure the socio-economic status of rural families. The scale consists of nine main items of a rural family such as, the occupation, education, and social participation of the head of the family and the caste, their land, house, farm power, material possession and type and size of family. The scale has the added advantage in its simplicity of administration. Directions for administering and scoring the items of the scale were followed as contained in its manual. The possible total score is 48. The subjects are categorized on the basis of

<table>
<thead>
<tr>
<th>Raw Score</th>
<th>Categories</th>
<th>Raw Scores</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>63 and above</td>
<td>Upper Strata</td>
<td>12 to 28</td>
<td>Upper Lower Strata</td>
</tr>
<tr>
<td>46 to 62</td>
<td>Upper Middle Strata</td>
<td>11 and Below Lower Lower Strata</td>
<td></td>
</tr>
<tr>
<td>29 to 45</td>
<td>Lower Middle Strata</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
their total raw scores as under. The categories suggested here were developed empirically by administering the scale over 500 rural families in the villages around Delhi.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Category</th>
<th>Scores on the scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Upper class</td>
<td>Above 43</td>
</tr>
<tr>
<td>B</td>
<td>Upper middle class</td>
<td>33 - 42</td>
</tr>
<tr>
<td>C</td>
<td>Middle class</td>
<td>24 - 32</td>
</tr>
<tr>
<td>D</td>
<td>Lower middle class</td>
<td>13 - 23</td>
</tr>
<tr>
<td>E</td>
<td>Lower class</td>
<td>Below 13</td>
</tr>
</tbody>
</table>

Both reliability and validity of the scale were found out by using several well known methods. Co-efficient of stability was calculated by the test-retest method. The correlation of the scale scores taken at two different times with a time interval of two months on 25 persons selected at random from different villages indicated 0.87 coefficient of stability which is quite high. Inter-judge reliability was found out by applying rank-order correlation test, the value of the rho obtained was 0.93 which is also very high. The content validity, concurrent validity and construct validity have also been tested for the present scale.