Chapter - IV

METHODOLOGY
(1) Construction of the Achievement Test in Literacy
(2) Development of Questionnaire on Motivation and Community Support
(3) Measurement of Attitude
(4) Questionnaire on Physical Facilities and Materials
(5) Rating Scale on Activities of Preraks
(6) Adult Learners Problems Inventory
(7) Selection of the Sample
(8) Collection of Data
(9) Analysis of Data
This chapter deals with the different procedures followed in the construction and development of data gathering instruments relating to different variables included in the study, the method adopted in the selection of sample, collection of data and method of analysis. The testing of the hypotheses framed in the previous chapter required tools to measure 1) achievement of adult learners, 2) motivation, 3) community support, 4) attitude, 5) physical facilities and materials, 6) activities of prerak and 7) problems of adult learners. The personal information relating to adult learners, namely, gender, age, occupation, marital status, income, etc., was assessed from the information provided by the subjects (vide personal data sheet).

1. CONSTRUCTION OF THE ACHIEVEMENT TEST IN LITERACY

For the purpose of the present study, an achievement test in literacy was developed. The measure of achievement in literacy is intended to estimate the level of attainment in reading, writing and arithmetic skills – 3R’s-by the participants of the continuing education programme. The programme participants who have successfully completed the course in literacy programme should have achieved basic literacy skills (reading, writing, arithmetic) to the
extent of fulfilling the norms of literacy stipulated by National Literacy Mission (NLM).

As per the NLM norms, to declare a person as literate he/she has to obtain 50 per cent of marks in each of the three components and 70 per cent as an aggregate. The above criteria was adopted to arrive at literacy attainment rate among the sample of the neo-literates in continuing education centres.

Keeping in view the above facts and based on the National Literacy Mission norms, the investigator has developed 3 sub-tests in literacy viz., reading, writing and arithmetic. In the absence of a suitable achievement test for tribal learners the investigator developed an achievement test consisting of reading, writing and arithmetic test for the purpose of the study.

(i) **Reading Test**

Reading test is intended to identify the level of reading abilities and proficiency achieved by the participants of the programme. Items for the reading test were drawn from the primers and post-literacy materials used in the scheduled tribe centres. The reading test has 3 units: (a) identification of the picture and the slogan, (b) comprehension passage, (c) loud reading and comprehension passage. The above items were decided after taking the opinion of preraks, mandal literacy organizers and experts in the field. The details of the reading test are as follows:

(a) **Identification of Picture and Slogan**

(b) **Comprehension Passage**

A single passage describing a match factory, consisting of 18 words and 3 sentences was given. The sample of learners were supposed to read the passage and answer two questions on the passage.
(c) **Loud Reading and Comprehension**

A passage consisting 26 words and 6 sentences on self-help groups was given. It was a major item for loud reading of a passage. Neo-literates were classified, in loud reading, into three categories i.e., good, average and poor. Marks given were 8, 4 and 2 respectively. Four questions were given on the passage. The intention behind giving the passage is to test the neo-literates capacity to read and understand the given passage.

The preliminary form of the reading test, thus finalised was administered to the sample of 100 neo-literates in continuing education centres individually. The data thus obtained was analysed to find out the differences and discrimination level. As suggested by Garrot (1979), all the items showing discrimination values of 0.30, and above and difficulty values between 0.40 and 0.60, are considered for inclusion in the final form and the rest are ignored.

The final form of the Reading Test with 3 units and scoring of the test is detailed below:

**Scoring Procedure**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Item</th>
<th>Marks for each item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit No. I</td>
<td>Identification of the picture and a slogan (3 + 3)</td>
<td>6</td>
</tr>
<tr>
<td>Unit No. II</td>
<td>Comprehension passage (3 + 3)</td>
<td>6</td>
</tr>
<tr>
<td>Unit No. III</td>
<td>Loud reading and comprehension passage (8+20)</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL</strong></td>
<td><strong>40</strong></td>
</tr>
</tbody>
</table>
ii. Development of Writing Sub-test

A review of the written tests developed by different investigators shows that a comprehensive written test will have 3 sub-tests:

(a) Neo-literate background information

(b) Identifying the picture and writing a sentence.

(c) Writing a letter

(a) Neo-literate Background Information

Unit-I is related to the writing of neo-literates name, father's/husband's name, occupation, prerak's name and address. Five marks are allocated to the item.

(b) Identifying the Picture and Writing a Sentence

Unit-II, four pictures were given. The neo-literate was expected to identify the in pictures and write a sentence on each one of them. Two and half marks were allocated to each picture. Thus, the neo-literate can score totally 10 marks in this section.

(c) Writing a Letter

Unit-III is related to the writing of a representation by the neo-literate to the District Collector informing about a community problem and requesting him to solve it. Seven marks were allocated to writing address and 8 were allocated to the content, the total marks being 15.

A model test paper was submitted to a panel of 5 subject experts for their comments and suggestions were incorporated. Then the test was administered to continuing education centre 60 neo-literates individually. The data thus
obtained were analysed to find out the difficulty and discrimination levels of each of the items included in the test paper. Items showing discrimination value of 0.30 and above and difficulty values between 0.40 and 0.60 were included in the final form.

The final form of the writing test was represented by units consisting of neo-literate background information, identification of the picture and writing a sentence and writing a memorandum. The scoring procedure for the writing sub-test, in brief, is as follows:

**Scoring Procedure**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Item</th>
<th>Total Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Neo-literate background information</td>
<td>5</td>
</tr>
<tr>
<td>II</td>
<td>Identifying the picture and writing a sentence</td>
<td>10</td>
</tr>
<tr>
<td>III</td>
<td>Writing a memorandum / letter</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL</strong></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>

iii. Development of Arithmetic Sub-test

Before developing the numeracy test, available arithmetic tests developed in various projects were examined. Arithmetic test usually contained additions, subtractions, multiplications, divisions and problems of any one or a combination of the above. In addition, the arithmetic tests also consisted of transfiguring the numbers given in the form of words into numerals. The investigator consulted the experts about the possible items to be incorporated in the test and their suggestions were followed.
The investigator pooled all the possible items arrived at through discussions with field staff and experts and designed the test with 7 units as described below:

a. Fill-in the Missing Number

b-c Additions: Arithmetic operation involving addition of 1, 2, 3 and 4 digit numbers in 2 and 3 rows of 6 items.

d Subtraction: Arithmetic operation involving subtraction of 2, 3 and 4 digit numbers of 5 items.

e. Depicted time: Identification of depicted time.

f. Multiplication: Arithmetic operations involving multiplication of 2, 3 and 4 digit numbers with single and double digit numbers of 4 items.

g. Division: Arithmetic operations involving division of 2, 3 and 4 digit numbers with single and double digit numbers of 4 items.

Six problems involving simple arithmetic operations, namely, fill-in the missing numbers, additions, subtraction, depicted time and multiplication were submitted to a panel of 5 experts and their suggestions were incorporated.

Validity and Reliability

The test developed for measuring a particular aspect will be considered appropriate only when its validity is true. The achievement test in 3 R's, developed on the lines described above, possesses satisfactory validity with reference to the content validity. The achievement test is appended. The test rest method was followed for establishing reliability and the total test was administered to a sample of 100 learners with a gap of 3 weeks. The correlation to efficient obtained was 0.89 which is significant at 0.01 level. The achievement test is appended.
2. DEVELOPMENT OF QUESTIONNAIRE ON MOTIVATION AND COMMUNITY SUPPORT

For the purpose of the present study a measure to assess the motivation of adult learners was desired. For this purpose, the investigator visited various continuing education centres in the tribal villages to understand the issues related to motivation. Interactions with beneficiaries of continuing education centres, preraks, nodal preraks, mandal literacy organizers and community leaders were also held to obtain the information relating to the agencies, individuals etc., who could render help to facilitate the effective functioning of the centres. Continuing education programme cannot become successful without the help of different agencies and learners participation is the key to the success of the programme. All educated sections of the society like the village elite, members of the village education committee, continuing education committee, Anganwadi workers, school teachers, youth clubs, mahila mandals, family members of the neo-literates, friends and relatives of neo-literates and preraks, mandal/district level officials residing in the perview of continuing education centre like primary health centre doctors, officials relating to revenue, animal husbandry, small scale industries etc., college students, local voluntary organisations and the like have a vital moral and social obligation to motivate the learners to go to the centres. Activities like kalajathas, door to door campaigns, individual contacts, mass media, slogans, banners, wall writings and meetings and self motivation of learners have a major role in motivating the learners. Motivation of learners is not a one time affair but a continuous process. Unless the learners accord priority to the programme, they may not attend the centres. The scheduled tribes need to be exhorted about the importance of literacy in their day to day life.
Apart from the observation of centres and contacts with a cross section of the community about the support to the centres, review of related literature was considered in gathering the items that serve as for the tool of motivation. The items gathered from various sources were pooled together.

It was noticed that the learners got motivation from the following.

1) Activities conducted by the district administration (cultural activities, meetings etc).

2) Self motivation (internal Urge and interest to learn).

3) Motivation from the local community village level workers.

The panel of experts (3 University level teachers and 2 project officers) were contacted about method of developing the tool for motivation and community support. They have suggested the following.

1) To prepare a questionnaire on motivation consisting of
   a) Efforts of district administration for motivation of learners proposed at the district level.
   b) Self motivation of learners

2. To prepare a separate questionnaire on community support received by the learner at the gross root level from villagers, friends, local workers etc.

3. To utilize the scores obtained on motivation and community support either as a whole or as separately based on the objectives of the study.

While compiling a questionnaire for collecting relevant information, the following points were considered.
Purpose of questionnaire

A good questionnaire must serve two major purposes, first, it must translate the objectives of an investigation into specific questions, the answers to which will provide the data necessary to test the hypotheses and explore the area defined by the objectives. Secondly, it must motivate the respondents to communicate the required information. That is why, it is essential to include a courteous and carefully constructed covering letter to explain the purpose of study.

Language

The language used in the questionnaire should offer maximum opportunity for communication of ideas between the investigator and respondent.

➤ Define or qualify terms that could easily be misinterpreted. Words such as good, bad', value, large, new, etc., are liable for misinterpretation.

➤ Be careful in using descriptive adjective and adverbs that have no agreed upon meaning, for example words like frequently', 'rarely', 'some times', 'occasionally' do not have the same meaning to different persons.

➤ Avoid double negatives in single statement.

➤ Underline a word if you wish to indicate special emphasis.

➤ When asking for rating or comparisons a point of reference is necessary.

➤ Leading questions are to be avoided.

➤ The questions should be arranged sequentially to permit the ideas of the respondents to flow logically.
The form of the questionnaire – "Closed Form" (in which the response is restricted) or "Open Form" (in which free response can be given) – should be carefully selected according to the purpose.

The questionnaire should be of reasonable length. It should not irritate the respondent.

The prepared questionnaire should be submitted to the experts for criticism and modified.

A preliminary form was prepared consisting of 50 statements or items. This was presented to a panel of 5 experts in the field of adult education to suggest modifications and additions wherever necessary.

A) Scoring Procedure for the Items

The panel suggested two opinions to be considered while finalizing the tool namely, individuals/agencies who have supported the learners and the extent of such support to the learners / neo-literates. In addition, the panel of experts suggested the method of marking as: Very Good (5 marks), Good (4 marks), Moderate (3 marks), Poor (2 marks) and Very Poor (1 mark).

The suggestions of the experts were duly carried out and 45 items remained in the preliminary form. In order to know the suitability in terms of the language and presentation, the form was administered to 60 adult learners.

Keeping in view the proposed sample subjects of the study and opinion of experts, it was felt that the rating should be as simple as possible to avoid unnecessary mental strain and confusion among the subjects while giving the responses. The procedure of scoring, as suggested by the panel, was duly considered.
B) Pilot Study

The questionnaire on motivation thus prepared with 45 questions was subjected to a pilot study on a sample of 100 learners. Adequate care was taken to see that the preraks paid attention in filling up the questionnaire. The responses were tabulated and analysed.

C) Selection of Questions for the Final Form

In order to determine the discriminative power and usefulness of questions for the measure, 't' values were calculated. Statements that had calculated 't' values equal or greater than 1.96 were selected for the final form. Based on this procedure, out of 45 questions, 10 questions were discarded and 35 questions remained in the final form. At this stage the panel of experts were consulted to check overlapping and for checking the placement of items under 2 categories

a) Questions relating to motivation.

b) Question relating to community support.

Accordingly, 14 questions under motivation and 21 questions in the community support scale were finalised. The final forms of the tools is appended. The details of 't' values obtained for the questions are appended.

D) Reliability

For the purpose of establishing reliability for the measure of community support, test retest method was adopted. For this purpose of establishing the reliability the measure of community support was administered with a gap of two weeks to the same 100 preraks. The correlation co-efficient between ratings was 0.613 which is highly reliable.
E) Validity

Though there are various methods of estimating the validity of a measuring instrument, the content validity, item validity and intrinsic validity were established for the measure of motivation.

Content Validity

As the items were collected from the field level experiences by contacting the adult learners, preraks, nodal preraks, supervisors, mandal literacy organizers, community members and from the review of related literature, duly checked by university level teachers in adult education and project officers at the field level, a representative sample of items were there in the measure of motivation. Therefore, it can be stated that the instrument was possessing content validity.

Item Validity

Item validity depends upon the number of discriminations of the desired sort that the item is capable of making. It emphasizes the extent to which the item predicts the segregation of the examinees into those with high versus low criteria scores. The discriminative power of each of these items can be established and tested for significance of difference between the criterion groups before including them in the final form.

Intrinsic Validity

Intrinsic validity is stated how well the obtained scores measure the test's true score component. This validity is given by the square root of the proportion of true variance i.e., the square root of its reliability. The intrinsic validity of the measure of community support is therefore $\sqrt{0.613} = 0.78$. The final form of the measure is appended.
3. **MEASURE OF ATTITUDE**

A measure that can rate attitude of adult learners towards adult education was needed for the purpose of the present investigation. From the review of literature (vide Chapter 2) it is clear that there were no suitable standardised tests to measure the attitude of adult learners towards adult education. In view of this, the investigator had to develop an attitude measure to suit the purpose of the present study.

Various methods were followed in attitude measurement like Thurstone method, Likert method, Semantic differential and so on. In the context of the present investigation, development of attitude measure based on Likert method of attitude scale construction was considered more appropriate. The Likert method was preferred over the other methods due to certain advantages namely: (a) the scale construction procedure was easier and simpler, (b) the technique was claimed to provide more information about subjects attitude since the responses would be given to each of the many items and (c) the method was relatively more reliable, valid and better understood.

For the preparation of the preliminary form first, the nature and scope of the statements that were to be included in the proposed attitude scale were examined in the light of the operational definition of the concept 'Attitude towards adult education'. All the favourable or unfavourable statements that were suggested to indicate the attitude of the adult learners on various aspects of adult education were pooled together from the available literature. The statements were further supplemented by interviewing various field functionaries and community representatives chosen randomly from the district.
They were asked to list either favourable or unfavourable statements that were supposed to indicate attitude towards adult education. The statements thus obtained were subjected to scrutiny and relevant ones were chosen and added to the list. After this, in order to avoid ambiguity and overlapping, all the statements together were reviewed and rewritten.

The preliminary form, thus prepared, consisted of 35 statements of which 18 were supposed to represent positive attitude and the remaining 17 statements negative attitude towards adult education. This was presented to a panel of 5 experts (in the field with academic background) with a request to suggest improvements wherever necessary. The suggestions of the experts were carried out. In all, 30 statements remained in preliminary form of which fifty per cent were supposed to represent negative attitude towards adult education and the rest positive attitude.

The preliminary form of the attitude measure thus formulated was administered to 50 adult learners (chosen randomly) from the tribal centres of the district. The preliminary form was administered to the learners in order to examine whether the statements were easily understood by the learners and to know whether they possessed clarity or not. In the light of experience gained improvements were carried out in the statements wherever necessary. In doing so, assistance was taken from the three university level teachers (who served as panel experts for the scrutiny of the statements in the preliminary form). Then, the positive and negative statements were mixed together with the help of random numbers. While doing this, the sequence of the statements was maintained as far as possible (the assistance of the university level teachers was taken here also). After this, the preliminary form of the attitude scale was subjected to standardisation.
Rating Procedure for the Statements

Before taking up standardisation, the way the adult learners of the sample have to rate each statement in the final form was also determined. In doing so, the background of the subjects of the sample and the opinion of the experts (who assisted in the scrutiny of the statements of the preliminary form) were kept in view. It was thought appropriate to consider the rating that would be as simple as possible in order to help the adult learners indicate their rating with ease. The numerical rating scale consisting of 5 descriptive cues, viz., Strongly Agree, Agree, Undecided, Disagree and Strongly Disagree, was chosen considering it as appropriate one for the sample. The adult learners were supposed to agree with any of the above alternative cues provided against each statement to indicate the intensity of their attitude towards adult education.

Procedure of Standardisation

The purpose of the present attitude test was to measure the quantum of positive / negative attitude possessed by the adult learners towards adult education. In view of this, adult learners who had just completed the course representing tribal neo-literates were considered as appropriate sample for standardisation of the measure. Hence, a sample of 100 learners were chosen randomly from different adult education centres of scheduled tribe centres. The measure was administered to each of the adult learners of the sample individually by the investigator. The instructions relating to the method of indicating responses to the statements in the measure were first read out to the subjects.
Scoring of the Statements

For the purpose of scoring of the statements, numerical values were assigned to the five categories of responses (ratings) against each statement. The following numerical values were assigned to the ratings of positive / negative statements in the scale.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Nature of Response</th>
<th>Numerical Value assigned</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Strongly Agree</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>Agree</td>
<td>4</td>
</tr>
<tr>
<td>3.</td>
<td>Undecided</td>
<td>3</td>
</tr>
<tr>
<td>4.</td>
<td>Disagree</td>
<td>2</td>
</tr>
<tr>
<td>5.</td>
<td>Strongly Disagree</td>
<td>1</td>
</tr>
</tbody>
</table>

Selection of the Statements

The 't' test values for each of the statements of the measure were calculated to find out the discrimination power and usefulness of the statements chosen. Statements that had calculated 't' value equal to or greater than 1.96 were selected for inclusion in the final form. All the other statements with 't' value less than 1.96 were discarded. As per this procedure, 5 statements were discarded. Of these 25 statements, 13 statements were positive attitude indicators and the remaining 12 negative attitude indicators.

Reliability of the Measure

An attitude test developed to measure the attitude of specific group of individuals representing specific category will be sound on establishment of its
reliability. In order to find the effectiveness of the attitude measure developed, its test-retest reliability was examined by obtaining ratings for the measure with an interval of two weeks between the first and second administration of the measure to the same set of 100 adult learners. The correlation co-efficient between the ratings was 0.845 which was significant at 0.01 level. Hence, the measure may be considered as having high reliability.

Validity of the Scale

Validity is another criteria considered to estimate the appropriateness of any measure developed to examine a particular aspect of an individual's attitude. The attitude measure of the present study developed on the lines described above indicated satisfying content validity, item (statement) validity and intrinsic validity. The details relating to them were as described below:

Content Validity

Content validity refers to the establishment and evaluation of the significance of the test items individually and as a whole. Every item should be a sampling of that aspect which the test purports to measure. In addition, items should collectively constitute a representative sample of the variable that is measured.

As already described, items for the measure were collected from different sources viz., review of literature, adult education project officers, mandal literacy organisers, preraks, adult learners and community representatives. In addition, it was also supplemented by interviewing selected
learners and experts to make sure that all possible items were covered. Thus, it can be reasonably assumed that the attitude scale developed possesses satisfactory content validity.

**Item Validity**

Item validity stresses the number of discriminations of the desired sort that the item is capable of making. It stresses the extent to which the item predicts segregation of respondents into those with high versus low criterion scores. The discriminative power of each of the items of the present measure was established by calculating their 't' values as illustrated under the heading, 'selection of statements'. Thus, the items chosen for the measure were found to be satisfactorily valid.

**Intrinsic Validity**

According to Guilford (1954), intrinsic validity indicates the degree to which the test measures what it purports to measure. This in other words means verification of how well the obtained scores measure the test true score component. Intrinsic validity of a test is expressed in terms of square root its reliability value. Thus, the intrinsic validity of the attitude measure developed was \( \sqrt{0.845} = 0.91 \) which can be assumed as highly satisfactory intrinsic validity. The final form of attitude scale is appended.

4. **QUESTIONNAIRE ON PHYSICAL FACILITIES AND MATERIALS**

The investigation required a measure that can effectively estimate the impact of physical facilities and materials on the achievement of learners. An examination of the available literature indicated that attempts to study the effect
of physical facilities and materials on achievement of adult learners were few, if any. Thus, absence of a suitable tool necessitated the investigator to develop a tool for measurement of physical facilities and materials.

Thus, under the area ‘physical facilities’, factors like lighting, ventilation, location of the centre and such other facilities were covered by researchers. The term, ‘material facilities’, was used to refer to factors relating to appropriateness of reading materials viz., size, shape, colour, simplicity of language, relevance of material to daily life and the like. It also includes the different games and sports materials provided to continuing education centres.

It was thought appropriate to pool various items relating to physical facilities and materials. Items from different sources (centre observation, discussion with officials, review of related literature) were pooled under each of the above broad areas depending upon their appropriateness. In doing so, first items or statements were pooled carefully from the available literature. The descriptive statements thus obtained were subjected to scrutiny and the relevant statements were added to the list.

The preliminary form of the physical facilities and materials measure, thus prepared, consisted of 40 items. This was presented to the panel of experts (drawn to assist in the development of the test) and they were requested (a) to suggest improvements (omissions and additions) wherever necessary, (b) to check the appropriateness of the items, and (c) to suggest the better way of presentation of items, if any, in order to elicit information. The suggestions of the experts with regard to improvements to be made as well as regrouping of items wherever necessary was carried out. Further, the experts suggested that each item should be presented in a question form. It should aim
at the level to which the learner perceived it. All the items were rewritten incorporating the suggestions offered by the experts and were again circulated to them for scrutiny about clarity, simplicity and coverage of each item. The suggestions given by the experts were incorporated wherever necessary. The form thus finalised consisted of 35 items.

Rating Procedure for the Items

Before taking up the preliminary form for a pilot study, the way the subjects of the sample had to rate each item in the form was also determined. Taking into consideration the background of the subjects of the sample and the opinion of the majority of the experts in the field (who assisted in the scrutiny of the statements of the preliminary form) it was thought appropriate to choose simple rating which helps the subjects indicate their response with ease. In this context, the numerical rating consisting of 5 descriptive cues viz., (1) Very Good, (2) Good, (3) Average, (4) Poor and (5) Very Poor, was thought appropriate. The respondents were supposed to agree with any one of the alternative cues provided against each statement to indicate the intensity of effect of that particular item.

Standardisation

The measure was administered to 100 adult learners of the sample individually by the investigator. The instructions relating to the method of indicating the responses to the statements in the measure were first read out to the subjects. Then, the statements in the measure were read out one after another and the subjects had to indicate his/her rating by agreeing with any one of the five alternatives given against each item. The ratings thus obtained from the subjects were analysed.
Scoring of the Items

For the purpose of scoring of the items, the following numerical values were assigned to each of the five descriptive cues against each item.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Descriptive Cue</th>
<th>Numerical Value assigned</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Very Good</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>Good</td>
<td>4</td>
</tr>
<tr>
<td>3.</td>
<td>Average</td>
<td>3</td>
</tr>
<tr>
<td>4.</td>
<td>Poor</td>
<td>2</td>
</tr>
<tr>
<td>5.</td>
<td>Very Poor</td>
<td>1</td>
</tr>
</tbody>
</table>

Selection of the Items

In order to know the usefulness of the items chosen for the measure, 't' values were calculated for both parts of each item included under the preliminary form greater than 1.96 for were selected for inclusion in the final form. Further, all the items with 't' value of less than 1.96 were discarded. Thus from the 35 items chosen for the preliminary form, 24 items were selected for inclusion in the final form and the rest were discarded.

Reliability of the Measure

The measure of physical facilities and materials developed to know the extent of availability for adult learners will be sound only on establishment of its reliability. For this purpose, the test-retest reliability of the measure was examined by obtaining ratings for the measure with an interval of three weeks between the first and second administration of the measure to the same set of
100 adult learners. The correlation co-efficient between the ratings was 0.88 which was significant at 0.01 level. Hence, the measure may be considered as having high reliability.

Validity of the Measure

Validity is another criterion considered to estimate the appropriateness of any measure developed to examine a particular aspect. The environmental stimulation measure developed on the lines described above indicated satisfactory content validity, item validity and intrinsic validity. The details relating to them were as described below:

Content Validity

Content validity refers to the establishment and evaluation of the significance of the test items individually and as a whole. Every item should be a sampling of that aspect which the test purports to measure. In addition, items should collectively constitute a representative sample of the variable that is measured.

As already described, items for the physical facilities and materials measure were collected from different sources viz., review of literature, university level teachers, Adult Education Project Officers, Mandal Literacy Organisers, preraks, neo-literates and community representatives. In addition, these were supplemented by noting the comments of field experts to make sure that all the possible items were covered. Thus, it can be reasonably assumed that the measure of physical facilities and materials developed possessed satisfactory content validity.
Item Validity

Item validity shows the number of discriminations of the desired sort that the item is capable of making. It indicates the extent to which the item predicts segregation of respondents into those with high versus those with low criterion scores. The discrimination power of each of the item of the present measure was established by calculating its 't' values as illustrated under 'selection of the items'. Thus, the items chosen for the measure were found to possess good item validity.

Intrinsic Validity

According to Guilford (1964), intrinsic validity indicates the degree to which the test measures what it purports to measure. This in other words means verification of how well the obtained scores measure its true score component. Intrinsic validity of a test is expressed in terms of square root of its reliability values. Thus, the intrinsic validity of the measure of physical facilities and materials developed was $\sqrt{0.86} = 0.93$ which can be assumed as sound intrinsic validity. The final form of the measure is appended.

5. RATING SCALE ON ACTIVITIES OF PRERAKS

Prerak is the key person for the organisation of continuing education centre. Hence, the performance of the prerak plays a predominant role in achieving the objectives of the continuing education programme and the achievement of adult learners. The performance of the prerak also depends on the educational environment that is created, community background and support, personal abilities of the prerak, his/her exposure to training, his interest and aptitude for the job. Being a grassroot level functionary, he/she has to
interact with the neo-literate at the field level and programme administrators at the district level. Basically, the wide and varied activities of prerak (cultural activities, academic and income generating activities etc.) are likely to have a long lasting impression in the minds of the learners and thereby lead to the academic progress of the learners.

For the purpose of the study, a measure that can rate the performance of the prerak as expressed by neo-literates with reference to the roles assigned to him is necessary. The prerak has to perform specific functions viz., organisation of evening classes, maintaining the library with a reading room, conducting training programmes of short duration, organising charcha mandal, conducting sports and games, recreational and cultural activities and providing information, relating to aspects, communication and development programmes. In order to identify the performance of the prerak, an enquiry was made to measure the performance of various roles of continuing education centres. From the review of literature, it appears that no systematic attempt has been made by any researcher in the field of adult education to develop and standardize the test that could rate preraks of continuing education. The performance of the preraks needs to be assessed in a scientific and systematic manner. A rating scale provides more opportunity to clearly rate the performance of the preraks in relation to questionnaire and observation. This necessitated the construction of a rating scale for the study to rate the performance of the preraks. In developing the rating scale, the following steps are followed.

**Preparation of the Preliminary Form**

The preraks' performance can be identified by using various methods such as interview, observation, checklist, questionnaire, ratings from the
learners and other suitable parameters. In this present investigation, ratings from the neo-literates was considered.

First, a list of items supposed to describe the performance of the prerak from different angles, was proposed using information from different sources like adult learners, preraks, participants of the programme, administrators of the programme, experts in the field etc. Further, the list thus prepared was supplemented with a list of items drawn from review of literature and the guidelines issued by Government of India prescribing the scheme of continuing education centres and roles to be performed by the preraks. The list thus prepared was submitted to a panel of 5 experts with a request to scrutiny the statements for their appropriateness and for refinement. For the purpose of the study, the rating scale method was used. The ratings were obtained from the scheduled tribe learners.

Development of the Tool

A list of prerak's activities was prepared from different sources like personal interviews with the preraks, village co-ordinators, participants of the programme, based on consultation with the experts in the field and the review of related literature. The items pooled were again rewritten for removing the ambiguous items, items without clarity, repetition and inaccuracies. These items were arranged under different headings. The list thus prepared was presented to a panel of 5 experts and suggestions of the experts are incorporated and finally 35 items are taken for rating.

Rating Procedure

For the purpose of present study, numerical rating technique was chosen, keeping in view its advantages, background of the sample and the opinion of the experts. In rating the items, the popular numerical rating scale consisting of five descriptive cues was chosen. The five descriptive cues viz.,
strongly agree, agree, undecided, disagree, strongly disagree having the scores 5, 4, 3, 2 and 1, was chosen. The respondents were supposed to agree with any one of the alternative cues and mark the level of performance of the prerak in that particular role under consideration.

Scoring of the Items

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Nature of Response</th>
<th>Numerical Value assigned</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Strongly Agree</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>Agree</td>
<td>4</td>
</tr>
<tr>
<td>3.</td>
<td>Undecided</td>
<td>3</td>
</tr>
<tr>
<td>4.</td>
<td>Disagree</td>
<td>2</td>
</tr>
<tr>
<td>5.</td>
<td>Strongly Disagree</td>
<td>1</td>
</tr>
</tbody>
</table>

Pilot Study

A sample 60 learners were selected at random from different continuing education centres in Chittoor District. However, care is taken to see that the sample selected represents the scheduled tribe community. Before administering the scale, the purpose and mode of filling the scale was explained to the learners.

Selection of Items

To find out the discriminative power and usefulness of the items chosen for prerak performance scale, the 't' values for each of the items in the scale are calculated. Items that has 't' value equal to and greater than 1.96 were selected for inclusion in the final form and those with 't' values less than 1.96 are discarded. Thus, 8 items were discarded out of 35 items. The final measure was for 27 items.
Reliability of the Tool

There are several methods of estimating the reliability of the scale. Some of the commonly used methods for finding out the reliability of the scale are:

- Test, re-test reliability
- Split-half reliability
- Alternate (or) parallel form reliability
- Kuder-Richardson Estimates

For the purpose of present study test-retest reliability of the scale was examined. This was done by obtaining the rating for the scale twice with an interval of one month between the first and second administration of the instrument to the same set of (100) preraks. The correlation coefficient between the rating was 0.92 which is significant at 0.01 level. Therefore, the prerak performance tool used in the study is highly reliable.

Validity of the Tool

Any instrument developed for measuring a particular aspect will be considered appropriate only when its validity is proved. The prerak performance scale, developed on the lines described above, possesses satisfactory validity with reference to the content, items and intrinsic validity. The description of details relating to validity of the scale is as follows:

(i) Content Validity

Content validity means establishment and evaluation of the relevance of the test items individually and as a whole. Every item should be a sampling of that aspect which the test purports to measure. Further, when taken collectively, the items constitute a representative sample of the variable that is measured.
The present scale is developed keeping the above aspects in view. As already described, items for the scale are collected from different sources viz., preraks, neo-literates and community members. Further, they are also supplemented by a review of related literature and also by interviewing selected preraks to make sure that all possible items are included. Thus, it is reasonable to assume that the instrument possesses a satisfactory content validity.

(ii) Item Validity

Item validity stresses the number of discriminations of the desired sort that the item is capable of making. It emphasises the extent to which the item predicts segregation of examinees into those with high versus those with low criterion scores. The discriminative power of each of the items of the present scale is established by calculating the 't' values as described above. Thus, the items chosen for the scale are found to be effectively valid.

(iii) Intrinsic Validity

Intrinsic validity indicates the degree to which a test measures what it purports to measure. Thus, it can also be stated as how well the obtained scores measure the tests, true score component. Square root of the reliability value of the scale means its intrinsic validity. Thus, the intrinsic validity of the scale is $\sqrt{0.92} = 0.96$ which can be assumed as highly satisfying intrinsic validity score. The full format of the scale is appended.

6. ADULT LEARNERS PROBLEMS INVENTORY

One of the aims of the present study is to identify the problems of the adult learners attending the centres. Keeping in mind the needs of the present study, the available literature was reviewed to identify a suitable tool for measuring the problems of the learners. The review of literature revealed that
suitable tool required for the present study, is not readily available. Hence, the investigator decided to develop a problem inventory for adult learners.

**Preparation of Preliminary Adult learners Problems Inventory**

The adult learners problems can be identified and studied by adopting various methods and sources. They can be identified through methods such as interview, observation, checklist, questionnaire, ratings and other suitable parameters. The sources of identification of the problems can be personal interview with the volunteers, enquiry with the field functionaries and similar others.

Each of the above methods and sources has its own merits and demerits. However, for the purpose of the present study, the rating scale method will be appropriate not only for identifying the problems but also to study their intensity. Hence, for the purpose of the study, the rating scale method was used through which one can identify the problems as well as their intensity. Further, this method helps in categorising the problems on their intensity as expressed by adult learners.

**Advantages of the Rating Scales**

The advantages of the rating scale are as follows:

1. Rating requires much less time than the ranking method.
2. The procedure becomes interesting when graphic method is employed.
3. That can be used with persons of minimum training.
4. The range of its applications is very wide. It can be used for teacher ratings, personality ratings, testing validity or papers, pencil inventories, academic appraisal and several others.
Development of Tool

A list of adult learners problems was gathered from different sources like personal interviews with the learners, preraks, village co-ordinators and community members, based on consultations with the experts in the field and the review of related literature. The items pooled were again rewritten for removing the ambiguous items, items without clarity, repetition and inaccuracies. These items were arranged under different sub-headings. The list thus prepared was presented to a panel of 5 experts and suggestions of the experts were carried out. At this stage, there were 20 items in the inventory.

Rating Procedure

Keeping in view the background of the sample and the opinion of the experts in the field, it was thought that the rating chosen should be as simple as possible to facilitate the sample to indicate the rating with ease and accuracy. The five-point numerical rating scale consisting of five descriptive cues viz., very high, high, moderate, to some extent and to the least extent, having the scores 5, 4, 3, 2 and 1, was chosen. The respondents were supposed to agree to any of the alternative cues to indicate the intensity of the problems that they are facing.

Pilot Study

The appropriate sample for pilot study were the adult learners. A sample of 100 learners were selected at random from different tribal literacy centres of the study area in Chittoor District. Before administering of the scale, the purpose and mode of filling the scale was explained to the volunteers.

Selection of Items

Based on the adult learners, problem inventory scores, problem inventories were arranged in the descending order. The top 27 scored adult learners problems inventories (27 per cent) and the bottom 27 scored
volunteers' problem inventories' (27 per cent) were chosen to find out the discriminative power and usefulness of the items chosen for the inventory. The 't' values for each of the items were calculated. Items that had calculated 't' value equal or greater than 1.96 were selected for inclusion in the final form and all those items with 't' values less than 1.96 were discarded. Based on this procedure, 6 items were discarded and final form of the inventory consisted of 14 problems. The problems were related to prerak, administration, personal problem of learners, etc.

**Reliability of the Tool**

For the purpose of the present study, test, re-test reliability of the scale was adopted. This was done by obtaining the ratings for the scale twice with an interval of one month between the first and the second administration of the scale to the sample. The obtained correlation coefficient between the two ratings was 0.88 which is significant. Therefore, the adult learners, problem inventory used in the study is highly reliable.

**Validity of the Tool**

Any instrument developed for measuring a particular aspect will be considered appropriate only when its validity is proved. The adult learners problem inventory developed on the lines described above possesses satisfactory validity with reference to the content, items and intrinsic validity.

(i) **Content Validity**

Content validity indicates how adequate is the content of the test - sampling, the domain about which inferences are to be drawn. Further, when taken collectively, the items should constitute a representative sample of the variable that is measured. The present adult learners problem inventory was
developed keeping the above in view i.e., while selecting the items, the
functionaries of the programme, the adult learners, community researchers and
review of literature was consulted. Thus, it can reasonably be assumed that the
instrument possesses satisfactory content validity.

(ii) Item Validity

Item validity stresses the extent to which the item predicts segregation of
examinees into those with high versus those with low criterion scores. The
discriminative power of the each of the items of the present scale was
established by calculating 't' values as described under the heading 'Selection
of Items'. Thus, the items chosen for both parts of the scale were found to be
effectively valid.

(iii) Intrinsic Validity

Intrinsic validity indicates the degree to which a test measures what it
purports to measure. This can also be stated as how well the obtained scores
measure the tests true score component. Intrinsic validity refers to the square
root of its reliability. Thus, the intrinsic validity of the adult learners problems
inventory was the square root of its reliability $\sqrt{0.88} = 0.93$ which can be
assumed that the scores have highly satisfying intrinsic validity. The full format
of the scale is appended.

7. SELECTION OF THE SAMPLE

Chittoor District consists of 66 mandals in which tribals are scarcely
located. At the first stage 4 mandals were randomly selected. Each mandal
consists of 30 to 40 continuing education centres. At the second stage from
each mandal 5 centres were randomly selected. At the third stage from each
centre 14 scheduled tribe neo-literates (representing 7 men and 7 women) were
randomly selected. Thus the sample of the study is $4 \times 5 \times 14 = 280$ neo-literates.

The lists of the centres and preraks organising continuing education centres were collected from the office of the Zilla Saksharatha Samithi, Chittoor. The list of neo-literates were collected from the prerak in order to select the learners by adopting simple random sampling.

8. COLLECTION OF DATA

The data required for the study was collected from the learners by continuing them individually at the centres. Necessary rapport was established before collecting the data from them. The help of the prerak was sought by the investigator in administering the schedules to the tribal learners. The measures were administered to the learners in three sessions. In the first session, measures namely, achievement test, motivation and community support were administered. During the second session, measures, attitude, physical facilities and materials were administered. In the third session, the remaining 2 measures activities of preraks and problems of learners were administrated. In each session, an interval of 15-30 minutes was given between the administration of the tests. It took approximately two and half hours for the completion of all the tools by each learner. Personal data relating to the learners' name, gender, age, occupation, marital status, income and type of house was collected by utilizing the personal data sheet. Thus the final data relating to study was collected.

9. ANALYSIS OF DATA

The data collected was analysed using relevant statistical techniques like 't' test and 'F' test to find out the differences among the groups. The multiple correlation 'R' was calculated by carrying out stepwise regression analysis.

In the next chapter, the results and discussion are presented.