CHAPTER IV

METHODOLOGY

(1) Measure of Achievement
(2) Schedule on Women Empowerment
(3) Selection of the Sample
(4) Collection of Data
(5) Analysis of Data
This chapter deals with the measure of achievement, schedule on women empowerment, selection of the respondents, collection of data and analysis of data.

The testing of the hypotheses framed in the previous chapter requires measuring reading, writing and numeracy skills of the neo-literates, measure of women's empowerment through achievement test. Personal information sheet was used to know the gender, age, caste, occupation, marital status and income of the select respondents in the study.

1. Measure of Achievement

For the purpose of the present study, a test that can measure the achievement of neo-literates was necessary. Measuring achievement of neo-literates means, estimating the level of attainment in reading, writing and numeracy skills (3 R's). An adult who has successfully completed the course in an adult education centre should have achieved basic skills of reading, writing and arithmetic to the extent of fulfilling the norms of literacy and numeracy stipulated by Nationality Literacy Mission.
Keeping the norms in view, the functionaries in the field of adult education seemed to have developed achievement tests in their own way to measure the final outcome of adult education programme. Examination of some of the tests developed in various projects in Andhra Pradesh to test the achievement of neo-literates revealed that they were based more or less on common sense. This necessitated the investigator to plan and develop an achievement test suitable for testing the achievement of the sample of the present study. The following procedure was followed to develop the test.

1. To start with, the source of the test items and the nature of the test were thought of. The government of Andhra Pradesh has published three primers in regional language (Telugu) for use in adult education projects of the state. These were taken as the source material for testing the knowledge of neo-literates.

2. The comprehensive idea about the achievement of neo-literates can be possible only when the achievement is measured in all the three areas viz., reading ability, writing ability and numeracy skill. Hence, an achievement test developed was used in all these three areas.

Keeping the above in view, and to develop a standard achievement test, a panel of experts from the field functionaries who can assist the investigator in the development of the test was thought of. A panel of experts consisting of five University level teachers, 10 Mandal Literacy Organisers and 10 Preraks (with good educational background) was drawn randomly from the list of preraks and Mandal Literacy Organizers obtained from Zilla Saksharatha Samithi, Anantapur district i.e., area of the study. Each of the members of the expert panel thus drawn was interviewed for knowing their opinion about the way the achievement test should be. The following suggestions were provided by them.
1. There should be separate tests for each of the units (reading, writing and numeracy), as per National Literacy Mission norms.

2. The reading test should be for 40 marks, writing test for 30 marks and numeracy test for 30 marks. The total test should be for 100 marks. As per the National Literacy Mission 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. This should be duly followed.

3. The items should be drawn from the primers and neo-literate materials used in the district. They should be locally relevant.

4. The items should as far as possible related to the primers and should be based on the psychological principles of known to unknown, and simple to difficult.

5. The investigator should prepare 3- 4 items for each of the sub-units of the reading, writing and numeracy tests for drawing the suitable ones.

6. They should be presented to the panel of experts for checking the relevance, suitability and retention of items for the pilot study.

7. The possible items for sub-units of the test may be as follows. Reading test, (reading of words, matching of the words, identification of figures, comprehension etc). Writing test (writing of words, writing of sentences, comprehension passage, identification of figures / symbols etc). Numeracy test (writing the numbers, simple mathematical operations including two or three digits, simple statement sums involving addition, subtraction, multiplication, division, items on time, weights and measures, distance.

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Keeping the above in view, the investigator pooled the items and prepared the preliminary forms of the test with 4 items for each. The panel were requested to go through the items and suggest modifications. Out of four items for each two were deleted and the remaining two were retained for the pilot study by the expert group. The preliminary form of items of the sub-test thus finalized were administered to a sample of 100 neo-literates in order retain one of the items based on difficulty and discrimination levels. The data so obtained were 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, were considered for inclusion in the final form and the rest were ignored. The details of the test items are as follows.

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 centres. The details of the reading test are as follows:

a) Identification of words based on figures

The figures and words for this purpose were drawn from the primers. Further, they were locally relevant. The subject has to identify the figures, read the words and put a tick mark to the appropriate ones.

b) Matching of words

The subject has to match the relevant words with pencil after reading them.
c) Comprehension passage

A single passage relating to self help groups was given. The passage has 26 words. The sample of neo-literate were supposed to read the passage loudly and answer five questions based on the passage. Two alternative answers are given for each question. The subject (respondent) has to read them and put a tick mark to the correct one.

d) Identification of figures

Five figures relating to day life were given. The subject has to identify the figures.

The items of the final form of reading test and the scoring of the test is detailed below:

Scoring Procedure

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Item</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>Identification words based on figures</td>
<td>5</td>
</tr>
<tr>
<td>II.</td>
<td>Matching of the words</td>
<td>5</td>
</tr>
<tr>
<td>III.</td>
<td>Comprehensive Passage (10+15)</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>-For reading passage at poor level 3 marks, at average level 6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>marks, at above average / good level 10 marks and for</td>
<td></td>
</tr>
<tr>
<td></td>
<td>correctly answering each question 3 marks (3x5=15 marks)</td>
<td></td>
</tr>
<tr>
<td>IV.</td>
<td>Identification of figures</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td>40</td>
</tr>
</tbody>
</table>
II. Writing Test

The details of the writing test are as follows.

a) Writing the names of figures:

Five figures which were locally familiar were given. The subject has to identify the figures and write their names.

b) Neo-literates background information:

The subject has to write his/her name, father’s name, village name, mandal name and name of the district.

c) Fill in the blanks

Five sentences which were drawn from the primers/neo-literate materials were given and the last word of the sentence was left blank in brackets in a shuffled manner and given at the top. The subject has to read the sentences and words and has to write appropriate words in each sentence.

d) Comprehension passage

A comprehension passage dealing with literacy and population of the country was given. The passage has 30 words. The sample of learners were supposed to read the passage and write the answers for the 5 questions relating to the passage.

The items of the final form of writing test and the scoring procedure of the test is detailed below:
Scoring procedure

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Item</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>Writing the names of figures</td>
<td>5</td>
</tr>
<tr>
<td>II.</td>
<td>Neo-literate’s background information</td>
<td>5</td>
</tr>
<tr>
<td>III.</td>
<td>Fill in the blanks</td>
<td>5</td>
</tr>
<tr>
<td>IV.</td>
<td>Writing answers to comprehension passage</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>

III. Numeracy Test

The details of numeracy test are as follows:

a) **Fill in the blanks with numbers**

In a given sequence of a numbers, there are blanks and the subject has to fill in the blanks with appropriate numbers.

b) **Addition**

Three additions covering two or three digits are provided and the subject has to do the additions.

c) **Subtractions**

Three subtractions involving two or three digits are provided and the subject has to do the subtractions.

d) **Divisions**

Three divisions involving two or three digits with a simple number are provided and the subject has to do the divisions.
e) **Statement sums**

Two statement sums one involving multiplication and the other involving division are provided and the subject has to do the sums.

f) **Fill in the blanks**

Five fill in the blanks dealing with weights, measures and time are provided and the subject has to fill up the blanks.

g) **Depicted time**

Two items indicating the time in the watches are provided and the subject has to write the timings in the given watches.

**Scoring procedure**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Item</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>Writing the missing numbers</td>
<td>5</td>
</tr>
<tr>
<td>II.</td>
<td>Simple additions (3), subtractions (3), multiplications (3) and divisions (3) (1 mark for each item)</td>
<td>12</td>
</tr>
<tr>
<td>III.</td>
<td>Statement sums</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>2 Numbers x 3 marks =6 marks</td>
<td></td>
</tr>
<tr>
<td>IV.</td>
<td>Fill in the blanks</td>
<td>5</td>
</tr>
<tr>
<td>V.</td>
<td>Identification of time in the watches</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>

A model test paper with double the number of items was submitted to panel of Five subject experts for their comments they were requested to give suggestions for improvement and their suggestions were incorporated. Then the test was administered 100 neo-literates to know the discrimination and
difficulty levels. 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 literacy test is appended.

VALIDITY AND RELIABILITY

The test developed for measuring a particular aspect is considered appropriate only when its validity is true. The achievement test in 3 R's, developed on the lines described above, (based on review, primers, experts suggestions, pilot study) possessed satisfactory validity with reference to the content validity. The test, re-test method was followed for establishing reliability and the total test was administered to a sample of 100 learners with a gap of three weeks. The correlation co-efficients obtained were 0.72 (reading test), 0.69 (writing test), 0.65 (numeracy test) which were significant as 0.01 level.

2. SCHEDULE ON WOMEN EMPOWERMENT

For the purpose of the present study, a measure to assess women empowerment was desired. In the absence of a standardized tool the investigator developed a measure of women empowerment for which the panel of experts (5 experts at university level and 5 experts having adequate experience in ICDS, DRDA and adult education projects) have suggested for the development of a questionnaire. To start with, the investigator has contacted 20 self-help groups leaders and 40 members who were active in running of their SHGs and who have become literate through adult and continuing education programmes. Questions were raised about the nature of empowerment, areas, methods and key aspects relating to empowerment were discussed with the above groups.
Apart from the observation and contacts with a cross section of the community about women empowerment, the help of review of related literature, discussion with government and voluntary agencies was also considered in gathering the items for the tool of women's empowerment. The items gathered from various sources were pooled together. As far as possible, the ambiguous, repetitive and irrelevant items were deleted.

A preliminary form was prepared consisting of 110 items. This was presented to the panel of experts (5 experts at university level and 5 experts having adequate experience in ICDS, DRDA and adult education projects) to suggest modifications and additions wherever necessary. The following suggestions were offered by the experts.

1. The aspects of empowerment should be considered from the viewpoint of Anantapur district but not state, national and global levels.

2. The items should be relevant from the women's point of view representing SHGs and participation in adult education and continuing education activities (neo-literates).

3. The questions should be simple and in an understandable manner. Technical terms should not be used as far as possible.

4. Questions should be written separately for each area i.e., education, social, economic, health, political and legal aspects for eliciting information area-wise. In the case of shortage of relevant items both political and legal aspects may be clubbed into one area.
5. Each question should have two parts. Part-A should deal with the need / knowledge of the item and Part-B should deal with the extent to which the beneficiary / neo-literate could get empowerment under five levels (very high, high, moderate, low and very low).

6. No marks should be allotted for Part-A of the item. For Part-B responses five marks should be allotted for very high, four marks should be allotted for high, three marks should be allotted for moderate, two marks for low level and one mark for very low level.

7. Each area can have 10-20 questions and the total questions should not exceed 100 in order have crispness and suitability to the sample.

The suggestions of the experts were duly carried out and 90 items remained in the preliminary form. The form was administered to 50 neo-literates in order to know the suitability in terms of the language and presentation.

Pilot Study

A tool on women empowerment is prepared with 90 questions and a pilot study was conducted on a sample of 200 neo-literate. Adequate care was taken to see that the neo-literates paid attention in filling up the tools. The responses were tabulated and analysed.

Reliability

For the purpose of establishing reliability for the measure of women empowerment test retest method was adopted. For the purpose of establishing the reliability the measure of women empowerment was administered with a
gap of two weeks to the same 100 neo-literates. The correlation co-efficient between ratings was 0.69 which is highly reliable. The final form of the measure is appended.

Validity

Though there are various methods of establishing the validity of a measuring instrument, the content validity and intrinsic validity were established for the measure of women empowerment.

Content Validity

As the items were collected from the field level experiences, contacting the review of related literature, interaction with ICDS, DRDA officials and adult education functionaries, members of voluntary agencies, post-literacy and continuing education materials – a representative sample of items were there in the measure. Hence, it can be stated that the tool possesses content validity.

Intrinsic Validity

Intrinsic validity is stated how well the obtained scores measure the test's true scores 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 the health facilities and services is, therefore, \( \sqrt{0.69} = 0.83 \).

3. SELECTION OF THE SAMPLE

Anantapur district is one of the four districts of Rayalaseema region. It consists of three revenue divisions (Anantapur, Dharamavaram and Penukonda). At the first stage one revenue division was randomly selected (Dharmavaram). It consists of 17 mandals. At the second stage four mandals
(two rural and two urban) were randomly selected. At the third stage from each mandal 2 panchayats were randomly selected. At the fourth stage, a sample of 30 SHG members participating in continuing education centres was randomly selected. Thus, the total sample of study consists of $(1 \times 4 \times 2 \times 30) = 240$ members.

4. COLLECTION OF DATA

The data required for the study were collected from the learners by contacting 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 tools. The measures were administered to the learners in two sessions. In the first session, achievement test was administered. During the second session, measures of attitude, and 16 PF questionnaire were administered. An interval of 15-30 minutes was given between the administrations of the tests. It took approximately two hours for the completion of all the tools by each neo-literate. Personal data relating to the learner's name, gender, age, caste, occupation, marital status and income was collected by utilizing the personal data sheet. Thus, the final data relating to study were collected.

5. ANALYSIS OF DATA

The data collected were analysed by 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, results and discussion are presented.