Chapter - IV

METHODOLOGY
This chapter deals with the tools of the study, selection of the sample, administration of the tools and procedure used for data analysis. The information relating to the personal data was collected through a personal data sheet developed for this purpose. The different techniques and procedures followed in the development and adoption of the instruments are discussed below:

4.1 CONSTRUCTION OF JOB SATISFACTION SCALE

In order to measure job satisfaction, methods like interviews, projective techniques, attitude scale and questionnaire can be used. Among the three again, the best specimen of job satisfaction measures is a questionnaire constructed on the basis of attitude scaling methodology with evaluative types of items. The following definitions and explanations wherein the job satisfaction is operationalised also indicate that attitude scales are most preferable to measure job satisfaction than other techniques.

Hoppock (1935) defines job satisfaction as “any combination of psychological and environmental circumstances that cause a person truthfully to say “I am satisfied with my job”. According to Ketzel (1964), job satisfaction is a verbal expression of an incumbent’s evaluation of his job. The verbal evaluation is made operational by some form of attitude questionnaire or scale by means of which the incumbent rates his job on a continuum of 'like-dislike' or approximate synonyms, such as 'satisfied dissatisfied'.

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Job satisfaction is the result of various attitudes possessed by an employee towards his job and related factors like wages, supervision, steadiness of employment, conditions of work, opportunities for advancement, recognition of ability, fair evaluation of work, social relations in the job, prompt settlement of grievances, fair treatment by employer, etc.

This means that the existence of one or more distinct dimensions of evaluation may be shown to be reflected in the items and a scoring method must be devised which weighs each response in terms of the degree of effect expressed on a given dimension. Job satisfaction questionnaire, meeting these specifications, can be constructed on any of the standard attitude scale rationales, such as those of Likert (1932), Thurstone (1946) or Gutman (1947).

In the light of the above discussion and the past research studies referred to in the earlier chapter, a job satisfaction scale was developed keeping in mind all precautions.

Job satisfaction is a generalized attitude resulting from many specific attitudes in three broad categories: specific job factors, individual characteristics and group relationships. Hence, a number of items (opinions) that are related to job satisfaction / dissatisfaction of secondary school teachers were collected from a number of sources as follows:

A preliminary form was given to 50 secondary school teachers and they were requested to write the different problems and issues in the form of statements. These statements could elicit either satisfaction or
dissatisfaction of the subjects. The statements were sorted out, rewritten, and listed. This list of statements was supplemented by a careful study of related literature and informal interviews with the teachers. Thus a large number of items were prepared. Then the item pool, consisting of both positive and negative statements, was translated into Telugu and the copies of the instrument were given to 5 senior teachers. They were requested to add any other statements that might be relevant, point out redundant statements, mark ambiguous and 'double barreled' items, if any and give suggestions for refining the items. Their suggestions were incorporated and finally items were prepared for the pilot study form of the job satisfaction scale. Each of the items was arranged on a five point scale with the following alternatives “strongly agree”, “agree”, “undecided”, “disagree” and “strongly disagree”. The items were randomized to avoid stereotype response set.

Pilot Study

The pilot study was conducted on 50 secondary school teachers selected at random. The instrument was administered to the teachers individually after establishing necessary rapport.

For the purpose of scoring, numerical weights were assigned as shown in table, to each of the 5 categories of responses from 1 to 5 in the case of negative items and 5 to 1 in the case of positive items.
TABLE: Numerical Weights given to the Five Alternative Responses

<table>
<thead>
<tr>
<th>Type of statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Negative</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Item Analysis

The item analysis of the responses given by the teachers was carried out by the method of criterion of internal consistency suggested by Likert (1932). As recommended by Kelly (1939) the criterion groups of 27% of high and 27% of low scores were identified. The internal consistency of each of the items was calculated by finding the difference between mean scores of high and low groups. The discriminative power of each of the items thus obtained was tested for significance applying ‘t’ test as suggested by Edward (1969). As per this procedure, 10 items which had ‘t’ value of 1.96 were deleted and 110 items were retained for the final form.

Validity

There are various methods of estimating the validity of a measuring instrument. The following types of validity were established for the job satisfaction scale.
Content Validity

This form of validity is established by evaluating the relevance of the test items individually and as a whole. Each item should be a sampling of that aspect which the test purports to measure, and taken collectively, the items should constitute a representative sample of the variable that is measured. In the construction of the present instrument, items were collected from a large number of secondary school teachers. They were also supplemented by a review of related literature, by interviewing selected teachers and expert opinions were included to make sure that all possible items were included. Thus, the inventory has content validity.

Item Validity

There are numerous procedures by which the item validity can be determined, one of which stresses the number of discriminations of the desired sort that the item is capable of making. It emphasizes the extent to which the item predicts segregation of examinees into those with high versus low criterion scores. The discriminative power of each of the items was established and tested for significance at 0.05 level, before including them into the final form. Thus, each item of the job satisfaction scale is valid.
Intrinsic Validity

Guilford (1954) defines intrinsic validity as ‘the degree to which a test measures what it measures’. This can also be stated in terms of how well the obtained scored measure the test’s true score component. This validity is given by the square root of its reliability. Hence, the intrinsic validity of the scale was $\sqrt{0.63} = 0.79$.

Reliability

For the purpose of reliability, test retest method was used. The instrument was administered to 50 teachers twice with a gap of two weeks. The correlation co-efficient between the ratings was 0.66.

4.2 DEVELOPMENT OF QUESTIONNAIRE ON QUALITIES POSSESSED BY TEACHERS

For the purpose of the study, a measure to assess the qualities possessed by teachers was derived. For this purpose the investigator visited 50 secondary schools, interacted with 100 teachers, 50 head masters and 40 retired teachers and collected items about the qualities desired on the part of the teachers. Further, items were also collected from review of related literature and previously developed tools. As many as 30 items were collected. A panel of 3 university level teachers and 5 experienced teachers were consulted about the nature of questions to the included. The panel have suggested the following:
1. Each question should have 2 parts. Part A should deal with possession of the quality by the teachers; and

2. Part B should deal with influence of the quality on the job satisfaction of teachers.

In addition, the basic aspects like purpose of the questionnaire and language aspects were kept in mind.

Purpose of Questionnaire

A good questionnaire must serve two major purposes. First it must translate the objectives of the 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 the study.

Language

The language used in the questionnaire should offer maximum opportunity for communication of ideas between the investigator and respondent. The following items relating to language were suggested by the panel.

- Define or qualify terms that could easily be misinterpreted. Words such as good, bad value, large, new, etc., are liable for misinterpretation.
• 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 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 questionnaire prepared should be submitted to the experts for criticism and modified.

    A preliminary form was prepared consisting of 30 statements or items. This was presented to the panel of experts (stated above) to suggest modifications wherever necessary.
Scoring Procedure for the Items

Keeping in view, the proposed sample subjects of the study and opinion of experts, it was felt that 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.

Pilot Study

The questionnaire on qualities possessed by the teachers thus prepared with 30 questions was subjected to a pilot study on a sample of 50 teachers. Adequate care was taken to see that the teachers paid attention in filling up the questionnaire. The responses were tabulated and analysed.

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. Out of 30 questions 4 questions were deleted and 26 items remained in the final form. The final form is appended.

Scoring Procedure

The panel have suggested the following scoring procedure for each questions.
### Reliability

For the purpose of establishing reliability for the measure, test-retest method was adopted. For the purpose of establishing the reliability, the tool was administered with a gap of two weeks to the same 50 secondary school teachers. The correlation co-efficient obtained was 0.65 which is highly reliable.

### 4.3 CHECKLIST ON PHYSICAL FACILITIES

In the present study, it was intended to know the effect of physical facilities available in the secondary schools on the job satisfaction of teachers. The physical facilities of the schools can be assessed through questionnaire, checklist, interview, case study, etc. For the purpose of the present study checklist was felt suitable. Checklist is a type of questionnaire in the form of a set of items which the respondent is asked
to check. It is used to record the presence or absence of the phenomena under study. Responses to the checklist items are thus as a matter of fact, not of judgement. It is an important tool in gathering facts for educational surveys.

Useful hints in constructing a checklist

The following are some of the important points in constructing a checklist.

- Examine closely the checklists prepared and used for the purpose of educational research by the investigators.

- Determine the items / details on which you require information.

While developing the checklist on physical facilities available in secondary schools the following procedure was adopted.

1. The investigator visited 50 secondary schools in the study area and had discussion with 100 teachers and 30 headmasters.

2. Review of related literature on physical facilities of the schools was considered.

3. Discussions were held with 10 retired experienced teachers about the ideal physical facilities of the schools.

   Items covering the library facilities, laboratory facilities, and like were incorporated in the checklist meant for the study.
The pilot form with 30 items was prepared. It was presented to the panel of experts who served for finalizing the earlier tools. Their suggestions with regard to content coverage, language aspects were duly considered.

The scoring procedure as suggested by them was duly followed.

1. For the availability of the item : 1 mark
2. For the non-availability of the item : No mark

The checklist prepared in the above lines was considered to possess content validity. The final form of the measure is appended.

4.4 DEVELOPMENT OF ATTITUDE SCALE TOWARDS THE PROFESSION

Construction of the Preliminary Form

Bearing in mind the important dimensions of teaching like curriculum, students, teaching methods, teachers' status, merits and demerits of teaching profession, etc., a number of items (opinions) were collected from different sources and an attitude scale towards teaching profession was developed.

Fifty men and women primary school teachers were requested to write the different problems and factors, which cause favourable or unfavourable attitude towards their profession in the form of statements. These statements were sorted out and a large number of items were prepared. The item pool was presented to 20 experienced teachers of the primary schools, who were requested to –
a) add other statements that might be relevant to the subject,

b) point out redundant statements,

c) mark ambiguous and double barreled items if any and

d) give suggestions for refining the items.

The list of the statements thus, prepared was supplemented by a careful study of related literature and informal discussions with the senior teachers was made, their suggestions were incorporated and finally 30 items were prepared for the pilot form of the attitude towards teaching scale. The pool of items or universe of items.

a) The statements must be clear, precise and straightforward,

b) They should be short and to the point,

c) Double barreled statements should be removed,

d) They must be in such form of accepted or rejected,

e) Both the favourable and unfavourable statements must be included and

f) Positive and negative statements must be arranged randomly through out the scale.

The item pool was randomized with positive and negative statements and the preliminary form of the attitude towards teaching scale was prepared. Each of the item was arranged on a five point scale
with the following alternatives: Strongly Agree (SA), Agree (A), Doubtful (D), Disagree (DA) and Strongly Disagree (SD). To avoid faking of the responses, the questionnaire was made anonymous.

Pilot Study

A pilot study was conducted on 100 men and women primary school teachers, selected randomly from 50 secondary schools, under different managements. The instrument, which was self administrating, was administrated to the sample of teachers individually through personal contact, after establishing necessary rapport in their leisure hours.

The teachers selected for the sample were explained the purpose of the research and the way they had to answer the items. They were also assured that the data would be used only for the research purpose and the information given by them would be kept confidential. For the purpose of scoring, numerical weights were assigned to each of the 5 categories of responses, viz., Strongly Agree, Agree, Doubtful, Disagree and Strongly Disagree as suggested by Likert (1932).

Table: Numerical weights given to the five alternative responses

<table>
<thead>
<tr>
<th>Type of Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Doubtful</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>5</td>
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<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Selection of the items for the final form

(a) Item analysis: Item analysis is the process of analyzing item characteristics on the basis of which an item may be retained or rejected for the test under consideration. Item analysis of the responses given by the teachers was carried by the method of criterion of internal consistency suggested by Likert (1932). The results obtained by this method agree very well with the results of the traditional method of item analysis.

For the purpose of item analysis, in this study, the top 27% and bottom 27% scores of the teachers were taken in line with Kelly (1939), who found that all these tail ends the administrative power of the item was maximum. The value of each of the items obtained was tested for significance by applying 't' test as suggested by Edwards (1968). The discriminative power of the items was calculated using the following formula:

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\text{Discriminative Power of an item} = \frac{\text{Mean score of the item in the high group}}{} - \frac{\text{Mean score of the item in the low group}}{}
\]

In the present analysis, the difference between the mean scores of high and low groups on each of the items was tested for significance by applying 't' test. Out of the 30 items 20 items were significant at or above 0.05 level were selected. The final form is appended.
4.5 SELECTION OF THE SAMPLE

Kurnool District consists of 3 revenue divisions (Kurnool, Adoni and Nandyal). At first stage two divisions i.e., Kurnool and Nandyal were randomly selected. At the second stage out of 20 mandals in the divisions, 8 mandals were randomly selected. Each of the mandals consists of 80-100 teachers and from each mandal a sample of 40 secondary school teachers were randomly selected. Thus, multistage random sampling was followed in the present study (Stage 1 – Revenue Division level, Stage 2 – Mandal level, Stage 3 – Teachers level). Thus, the sample of the study is $2 \times 8 \times 40 = 640$ secondary school teachers.

4.6 COLLECTION OF DATA

Data were collected from the sample by contacting them individually at their respective schools or residence. Necessary rapport was established and the investigator explained to the subjects the purpose of the investigation before collecting the data. It took approximately two hours for the completion of all tools by the subjects.

4.7 ANALYSIS OF THE DATA

The data collected on different measures (job satisfaction, physical facilities, qualities of the teacher, attitude towards the profession from 640 secondary school teachers were pooled and analysed. ‘t’ test and ‘F’ test were employed while anlayising the data.

In the next chapter, results and discussion are presented.