



CHAPTER - 3

RESEARCH DESIGN

A successful research is a planned research. All research have a basic format. Each stage off research requires conceptualization of the overall organization and a detailed plan before work on the project can begin. In the previous chapter that is "Review of Literature", the researcher went through the supporting literature related to her research topic and summarized the empirical evidences to provide rationale for her own study. This facilitated the researcher to focus her attention and provided some insight regarding strong points and limitations of the previous studies thus enabling the researcher to improve her own investigation. The chapter in hand deals with the research plan/design. A research plan is basic to any research work. It serves as a series of guideposts to keep the progression of research headed in the right direction. Different steps involved in research design of the present study are explained as follows:

3.1 RESEARCH METHOD:

The researcher employed ex-post-facto cum survey method of research for the study undertaken. Before explaining why this particular method was chosen it is important to explain why other methods of study were not employed.

The historical research is the critical investigation of events, developments of the past, but the present study deals with events and developments of the present. Therefore, historical method of research was not appropriate for it.

Experimental method consists in making an event occur under known conditions whereas many extraneous influences as far as possible are

eliminated and close observation is possible so that relationship between phenomena can be revealed – (William I.B. Beveridge). These conditions are not possible in the present study therefore experimental method too was considered inappropriate for the study by the researcher.

Case study is a method of exploring and analysing the life of a social unit – be that unit a person, a family, institution, culture group, or even an entire community." Which is not the case in the present study thus case study method was also rejected.

Survey method is concerned with the present and attempts to determine the status of the phenomena under investigation while ex-post-facto is that research in which the scientist does not have direct control on the independent variable because their manifestations have already occurred or because they are inherently not manipulable and in which the researcher starts with the observation of dependant variables. Then s/he studies the independent variables in retrospect for their possible effects on the dependant variable or variables.

In the case of present study the present status of the phenomenon was determined. The independent variable was the one whose effect was being examined i.e. emotional intelligence. The dependant variables were those which were being predicted or those that were affected by the independent variable i.e. teacher pupil relationship, mental health and teaching effectiveness or performance. Owing to which the researcher employed ex-post-facto cum survey method of study in case of the present research.

3.2 POPULATION:

Population or universe means the entire mass of observations which is the parent group from which a sample is to be formed. In research methodology populations means the characteristics of a specific group.

The population of present study comprised of teachers, teaching in secondary schools of Meerut Educational Region affiliated to Central Board of Secondary Education (C.B.S.E.).

3.3 SAMPLE:

In behavioural science it is not possible to collect data from every respondent relevant to the study but only from some fraction a part of the respondents. The process of selecting the fractional part is called sampling. Sampling is fundamental to all statistical methodology of behavioural research. In the technique of sample investigation certain units from the whole domain of survey are selected as being representative. These are studied in detail and the conclusions arrived from these are extended in the entire field or domain.

In the present study, one hundred and fifty language teachers, One hundred and fifty social study and one hundred and fifty science and maths teachers, total –four hundred and fifty sample units formed the sample of the study.

Essentials of an ideal sample such as : 'Representativeness', i.e., it represents adequately the whole data, 'Independence', i.e., interchangeability of units. 'Adequacy', that is, the number of units included in sample are sufficient to enable derivation of conclusions

applicable to the whole data and 'Homogeneity', i.e., the units included in sample bear likeness with other units, all were taken into view while selecting the sample of the study.

3.4 SAMPLING TECHNIQUE:

The researcher employed Stratified Random Sampling technique for sampling. This method of selecting samples is a mixture of the deliberate and random sampling techniques. In this, first of all the data in domain is split into various classes on the basis of their characteristics and immediately thereafter certain items are selected from these classes by the random sampling technique – in this technique every item or unit of the domain has an equal opportunity for their selection and this selection is in no way influenced by personal bias and predilection of the investigator. The stratified random sampling technique is suitable in those cases in which the data has subdata having special-characteristics. Thus, this technique was considered most suitable by the researcher for the study in hand. Appropriate strata were made according to different disciplines and sex, that is, secondary school language teachers, secondary school social study teachers, secondary school maths and science teachers, secondary school female teachers and secondary school male teachers. From these strata one hundred and fifty teachers each were randomly selected. This can be easily understood with the help of following figure.

Strata

1. Language Teachers
2. Social Study Teachers
3. Maths and Science Teachers
4. Female Teachers
5. Male Teachers

3.5 DESCRIPTION OF TOOLS USED:

The researcher used following tools to collect data regarding the study.

3.5.1. To measure emotional intelligence : Anukool Hyde, Sanjyot Pethe and Upnider Dhar Emotional Intelligence Scale was used.

Anukool Hyde is Assistant Professor in Shri Vaishnav Institute of Management, Indore, Sanijyot Pethe is lecturer in Nirmal Institute of Management, Ahemdabad, Upinder Dhar is Director Prestige Institute of Management and Research, Indore.

Factors of Emotional Intelligence:

The scale was administered on 200 executives and the scores obtained were subjected to factor analysis and ten factors were identified.

These are –

- a. *Self awareness* – being aware of oneself and is measured by items 6, 12, 18, 29.

- b. *Empathy* – feeling and understanding the other person and is measured by items 9, 10, 15, 20 and 25.
- c. *Self motivation* – being motivated internally and is measured by items 2,4,7,8,31 and 34.
- d. *Emotional stability* – managing disruptive emotions and impulses and is measured by items 14, 19, 26 and 28.
- e. *Managing relations* – is nurturing instrumental relationships that are mutually beneficial and is measured by items 1, 5, 11 and 17.
- f. *Integrity* – is to act ethically, build trust through reliability and authenticity and is measured by items 16, 27 and 32.
- g. *Self development* – is to improve or meet a standard of excellence is measured by items 30, 33.
- h. *Value orientation* – maintaining standards of honesty and integrity and to confront unethical actions in others, is measured by items 21, 22.
- i. *Commitment* – aligning with the goals of the group or organization, is measured by items 23 and 24.
- j. *Altruistic behaviour* – to encourage people to take initiative and handle conflicts, is measured by the items 3 and 13.

Reliability:

The reliability of the scale was determined by calculating reliability coefficient on a sample of 200 subjects. The split half reliability coefficient

was found to be 0.88. The researcher estimated the reliability of the test by using test-retest method & reliability coefficient was found to be 0.65.

Validity:

Besides face validity, as all items were related to the variable under focus, the scale has high content validity. In order to find out the validity from the coefficient of reliability (Garrett, 1981), the reliability index was calculated, which indicated high validity on account of being 0.93. The final form of the scale constituted 34 items.

Administration:

The instructions printed on the response sheet were sufficient to take care of the questions that were asked. It was emphasized orally that responses should be checked as quickly as possible. The scale is self-administering.

Time Limit:

There is no time limit for completing the Scale. However most respondents complete it in about ten minutes.

Scoring:

Each item was scored 5 for 'strongly agree', 4 for 'agree', 3 for 'neutral', 2 for 'disagree' and 1 for 'strongly disagree'.

3.5.2 To measure mental health : Mental health check-list constructed by Pramod Kumar (D.Phil.) was used.

It consists of 11 items having discrimination value of .30 or above. The checklist includes 6 mental and 5 somatic items, presented in a 4-point rating format.

Reliability :

The split half reliability, correlating the odd even items (applying the Spearman-Brown formula for doubling the test length) has been found to be .70 (N=30) with an index of reliability of .83 (Garrett, 1961).

The test-retest reliability has also been studied. It has been found to be .65 (N=30) with an index of reliability of .81. The retest was given with a time interval of two weeks.

The r-value of 0.70 and 0.65, respectively have been found to be significant at .01 level of confidence, showing that the test is reliable both in terms of its internal consistency and stability of scores.

The researcher calculated the reliability by using test-retest method on her own population. It was found to be .62.

Validity:

The face validity of Mental Health Checking appears to be fairly high as items were prepared by asking teachers of psychology to list all such symptoms which according to them showed poor mental health. The content validity was adequately assured as only those symptoms which

showed 100 percent agreement amongst the judges regarding their relevance to the study of mental health were selected.

Administration:

The check-list is self-administerable. The instructions printed on the response sheet were sufficient to take care of questions asked.

Time Limit:

There is no time limit for completing mental health check-list.

Scoring:

It is presented in a four point rating format. 4 marks are given for 'always'; 3 for 'often'; 2 for 'at times', and 1 for 'rarely'.

3.5.3 To measure teachers effectiveness: Kulsum Teachers effectiveness scale was used.

It is a self anchoring striving scale constructed on the lines of the self-anchoring striving scale of Kilpatrick and Cantril (1960) constructed by Dr. (Mrs.) Umme Kulsum, Lecturer, Deptt. of Education, Bangalore. It consists of 60 statements covering five areas.

Areas of Scale:

- a. *Preparation and planning for teaching* – This area includes statements pertaining to the ability of the teacher in preparing, planning and organizing for teaching in accordance with the course objectives by using different source material.

- b. *Classroom Management* – This area includes statements pertaining to the ability of the teacher to successfully communicate, motivate the students and evaluate the teaching learning process and also to maintain discipline in the classroom within the framework of democratic set-up.
- c. *Knowledge of subject matter: its Delivery and Presentation* including, B.B. Summary : This area includes statement on the ability of the teacher in acquiring, retaining, interpreting and making use of the contents of the subject s/he is dealing within the classroom situations. Delivery of course contents, and its presentation including B.B. Summary constitute essential aspect of the teaching learning process.
- d. *Teacher characteristics* : This area includes statements pertaining to the personality make-up and its behavioural manifestations that have their own level of acceptability or unacceptability in the teaching profession. Ability to arouse, 'A perspective Mass' and seeking active participation of pupils constitute essential demand characteristics of effective teachers.
- e. *Interpersonal Relations*: The ability of the teacher to adopt himself/herself to maintain cordial relation with his/her colleagues, pupils, their parents and other persons in the community with whom s/he is to interact as part and parcel of his/her profession form the basis to have statements pertaining to this area.

The total number of items with their serial numbers and their distribution over different areas/dimensions in the final scale after item analyses is as follows:

	Areas /Dimensions	Serial Number of Items	Total No. of items
a.	Preparation for teaching and planning	2,6,11,23,27,33,37,44,49,54,58	11
b.	Classroom Management	3,7,12,16,20,24,28,38,45,50,51,55,59	14
c.	Knowledge of subject matter etc.	1,8,14,17,29,39,46	7
d.	Teacher characteristics	4,9,13,18,21,25,30,31,34,35,36,40,41,47,48,52,57	17
e.	Interpersonal relations	5,10,15,19,22,26,32,42,43,53,60	11
		Total	60

Reliability:

Reliability was established on a sample of 180 secondary school teachers from the city of Bangalore by Test retest and split-half reliability techniques. The test-retest reliability co-efficient of correlation was found to be 0.63 with a time gap of 16 days. The spit half reliability co-efficient correlation was found to be 0.68. After applying the Spearman Brown Prophecy formula, the reliability coefficient went upto 0.94.

The researcher calculated the reliability by using test-retest method on her own population. It was found to be .60 with a time gap of 2 weeks.

Validity:

The teacher effectiveness scale has high criterion related validity.

Administration:

The scale is self-administerable. To ensure careful understanding of the instructions, proper instructions were given by the researcher besides the individual reading them.

Time Limit :

There is no time limit given for completing the scale.

Scoring :

Each item elicits two responses; (1) step number on Now and (2) step number aspiring to attain in next three years. The time dimensions of the next three years was to score as a frame of reference for the 'now' (present) effectiveness, hence the step number given for each item for present time was taken as the score of the effectiveness of each of the respondent teacher. Total score of the respondent ranges from 0 to 600.

3.5.4 To measure Teacher Pupil Relationship : Teacher-pupil relationship scale by Mrs. Anita Choudhary was used.

There are seven dimensions of teacher-student relationship in the scale. The dimensions are:

1. Class room management
2. Teaching learning process
3. Discipline
4. Family aspect
5. Social aspect
6. Economical aspect and

7. Miscellaneous.

There are atleast 10 items in each dimensions of teacher-student relationship. In preliminary plan 80 items were included. Finally 75 items included in the scale

The Areas Involved:

A critical analysis of the concept of teacher-student relationship was made to delimit and breakdown the areas involved. The main dimension for the development of this scale were: Class room management, teaching learning process, discipline, Family aspect, social aspect, economical aspect and miscellaneous.

Reliability:

For the purpose of establishing the reliability of the scale test-retest reliability was calculated. Obtained reliability coefficient was found 0.79.

The researcher calculated the reliability by using test-retest method on her own population with a time gap of 2 weeks. The reliability index was found to be .74.

Validity:

Face or Content Validity: This type of validity was demonstrated by 100% agreement among the some judges (all educationists and Psychologists) regarding the relevance of the items content to the teacher-student relationship measured by the scale.

Administration:-

The scale is self administerable. To ensure careful understanding of the instructions. Proper instructions were given by the researcher besides the individual reading them.

Time Limit :

There is no time limit for completing the scale.

Scoring:

The Scoring System is based on a 5 point Likert type scale designed as: Strongly disagree (1); Disagree (2); Indifferent (3); Agree (4) and Strongly agree (5). The direction of item scores is reversed for negatively worded items, so that a response of strongly agree is given a value of 1, agree 2, indifferent 3, disagree 4, and strongly disagree 5.

3.6 PROCEDURE:

Emotional intelligence scale, teacher pupil relationship scale, mental health checklist and Kulsum teacher effectiveness scale were administered to sample subjects of each school on four different days. On first day emotional intelligence scale was administered, on second day teacher pupil relationship scale was administered, on third day mental health checklist was administered and on the fourth day Kulsum teacher effectiveness scale was administered. This was replicated in all secondary schools which constituted the sample of the study. Answer sheets were scored on the basis of scoring keys given in the test manual.

3.7 STATISTICAL TECHNIQUES USED:

The different statistical techniques used by the researcher for analysis of data in the present study are enumerated as follows:

1. Mean
2. Standard deviation
3. 't' test

The formulae used-

$$1) \text{ Mean} = \text{A.M.} + \frac{\sum fx}{n} \times CI$$

Where, AM = Assumed Mean

$\sum fx$ = Summation of Product of frequencies & deviations

N = Number of frequencies.

CI = Length of class interval

$$2) \text{ Standard deviation } (\sigma) = \sqrt{\frac{\sum fx^2}{N} - \left(\frac{\sum fx}{N}\right)^2} \times CI$$

Where - N = total number of frequencies.

fx = Product of frequencies and deviation

fx^2 = Product of frequencies and deviation square.

$$3) t = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}$$

where N1 & N2 total number of frequencies of first and second sample

σ_1 = standard deviation of first sample

σ_2 = standard deviation of second sample

M_1 = Mean of first sample

M_2 = Mean of second sample.

CHAPTER - A

ANALYSIS AND INTERPRETATION OF DATA