

Chapter 3

Research Design and Procedure

3.1 Introduction

A research design and research procedure provides a framework of the activities of research which was conducted. “A research design is the set of methods and procedures used in collecting and analyzing measures of the variables specified in the problem research. The design of a study defines the study type (descriptive, correlation, semi-experimental, experimental, review, meta-analytic) and sub-type (e.g., descriptive-longitudinal case study), research problem, hypotheses, independent and dependent variables, experimental design, and, if applicable, data collection methods and a statistical analysis plan. A research design is a framework that has been created to find answers to research questions”.

The present study aims at examine “Impact of Socio-Economic Status and Personality on Teaching Competency of Secondary School Teachers”

Research Design and Procedure

Research Methodology

“Research Methodology is the systematic, theoretical analysis of the methods applied to a field of study. It comprises the theoretical analysis of the body of methods and principles associated with a branch of knowledge. Typically, it encompasses concepts such as paradigm, theoretical model, phases and quantitative or qualitative techniques”. *The methodology guiding the present research has been explained under the following steps:-*

Step I: Research design

Step II: Sample design

Step III: Tools

Step IV: Data collection

Step V: Statistical techniques

STEP I

Research Design

Best and Kahn (1989) stated, “Descriptive research is concerned with all of the following hypothesis formulation and testing, the analysis of the relationship between non-

manipulated variables and the development of generalization. In descriptive research variables that exist or have already occurred are selected and observed”.

STEP II

Sample Design

The Simple Random sampling was used in the present study. The researcher took total number of 300 teachers of Secondary schools from Mahendergarh and Gurugram District of Haryana.

STEP III

Tools

For collecting the data researcher used standardized tool and used semi-structured interview:

1. Tool 1: “Socio-Economic Status Scale Developed by L.N. Dube and B. Nigam, Saraswati Shiksha Mahavidhaliya, Jabalpur”
2. Tool 2: “General Teaching Competency Scale (GTCS) by Prof. B. K. Passi and Mrs. M.S. Lalitha from National Psychological Corporation, Agra”
3. Tool 3: “Eysenck’s Personality Questionnaire-Revised by Dr. S. Jalota and Dr. S.D. Kapoor”
4. Tool 4: “Interview with teachers regarding the incorporation of digital teaching”

Description of the Standardized tests

“A standardized test is a test which is administered and scored in a consistent, or standard, manner. Standardized tests are designed in such a way that the questions, conditions for administering, scoring procedures, and interpretations are consistent and are administered and scored in a predetermined, standard manner”.

1. “**Socio-Economic Status Scale Developed By L.N. Dube and B. Nigam, Saraswati Shiksha Mahavidhaliya, Jabalpur**”

“The Socio- Economic Status indicates the similarity of social position, income, occupation and education. Economic and educational factors play important role in determining the SES. The official position, rights, privileges and respect in society are other factors which raise the SES of the individuals and the family” (Franzen R, 1962).

“The SES may be inherited or achieved, but in modern society it provides certain advantages to the individual and their children. The children perceive their own social and economic status and it determines their social behaviour, their adjustment to social situations and social effectiveness” (Cattell RB, 1942). The SES of the family in community gives the home a distinctive character. The pattern of the family life differs from one social group to another. There are differences in home management, in husband-wife relationship, in parents- children relation, family values, in social conformity, in the use of money, in the child training, attitudes towards discipline and attitude towards personal and family life. Children easily recognize the social status of their families. It has marked effect on their parents especially towards the father, who is the family bread-inner. If their family status is at least equal to their petard, children are proud of their fathers, when they recognize it to be inferior; they are ashamed of their fathers. Children easily discover that the differences the people have and way they live learn that these differences are related to their fathers’ social status and occupations, and that some people are labelled ‘rich’ while others are labelled ‘poor’ and add these meaning to their social development and social behaviour, (Hurlock, E. B., 1996). The social behaviour of the child is directly related to the society in which he lives. The SES directly affects his perception, cognitions, emotions, individual and social behaviour and goals. The SES affects personality development. The people of lower SES have more frustrations, have more experiences of failure and have limited goals of life. Middle SES people suffer from extreme anxiety and pessimistic attitudes when they find that they are not getting ahead in school, business or social life. This makes them self-rejected people from higher SES feel satisfied and honoured and ambitious. The poor economic conditions of the parents bring lot of miseries to their children. Children are deprived of many advantages and develop inferiority complex.

Reliability and Validity

Reliability coefficient of the scale was computed by Test-retest method with a gap of 15 days, and correlation was found 0.82. Validity coefficient was found out by correlating the scores with SES scale rural, constructed by Dr. S.P Kulshreshta and correlation coefficient was 0.79.

Coefficient of correlation between areas

Areas	Eco.	Edu.	S.S.
Economic status	0.43	0.66	
Educational status	0.43	0.41	
Social status	0.66	0.41	

Norms: Norms are computed by taking into consideration the concept of normality. The range of S D is -1.5 to 2.5. The distribution is as below:

Range of SD Scores

- + 1.5 to 2.5
- + 0.5 to 1.5
- 0.5 to +0.5
- 1.5 to - 0.5

Interpretation of Raw Scores

- Range of scores	Class of SES
- 80 and above	indicates Upper class
- 65-79	indicates Upper Middle class
- 50-64	indicates Middle class
- 35-49	indicates Lower Middle class
- 34 and less	indicates Lower class

Administration of Socio Economic Status Scale

Taking all the sections necessary for administration of the scale, the printed booklets are counted and distributed to the samples. The respondents are asked to put a tick mark against the statements, which seems to be most suitable for them. Time limit was not kept for completing the questioner. However, most of the Learners took about 20 minutes for competing it. All the responded booklets are collected and counted. While administering SES scales following precaution are kept in mind: that a comfortable seating arrangement was made for the teachers in a quite environment. The writing material was arranged for respondents/teachers. The related instructions was read by the researcher with explanation. Respondents/teachers were told to give their responses/answers on the answer sheet only. The respondents/teachers were motivated for free ad frank responses. The doubts were solved before the test starts.

2. “General Teaching Competency Scale (GTCS) By Prof. B. K. Passi and Mrs. M.S. Lalitha from National Psychological Corporation, Agra”

Teaching as a profession which constitutes the tasks of a teacher in the institution and it becomes the reason for the success of an institution. Lot of changes were seen in the society and various question were arrived in the mind of the public that whether really a teacher is still very competent towards teaching and committed towards the society. Whether teacher is applying all types of teaching skills and teaching methods in the classroom. Teacher’s competency is on stake and therefore after rigorous effort Prof. Passi had constructed this standardised test for the benefit of the further research. He defined the objectives for the lesson prepared that it should be very much clearly stated and satisfies all the criteria. The criteria that it should be written in the behavioural terms, very much learner specified, learning conditions must be taken into consideration and standard of achievement. The objective of the lesson must be clearly related to the content and content should be according to the maturity level of the learners. The selection of the subject matter or content needs to be relevant, adequate and accurate. There should be no scope of technical mistake. The organization of Content needs to be logical continuity and psychologically arranged. The supportive teaching aids needs to be appropriate. Audio-Visual Material should be suited to learners and suited to the content and also it should be adequate. The introduction of the lesson makes lot of difference in the teaching and the understanding level of the students where nonverbal participation of learners can be seen initially. Asking previous knowledge questions to the learners relevant to the topic. Delivery of the subject matter should be accurate. Well-structured question which should be grammatically correct, relevant, specific and concise. The evaluation procedures can be recognizing attending behaviour of pupils (verbal and visual), asking questions for feedback, or given them some test items to be answered in the class. The remedial measured can be asking prompting or seeking further information questions, repeating or retouching use of more audio-visual aids using more concrete, simple, and interesting examples and illustrations etc. The distribution of the various items in this tests were related to the different/various classification of teaching skills is given in Table 1.

Table No. 21: Distribution of items in Different Classification of Teaching Skills

Classification of items	No. of items	Serial No. of Teaching skills
Teaching Skill-Planning	4	1 to 4
Teaching Skill-Presentation	11	5 to 15
Teaching Skill-Closing	02	16 & 17
Teaching Skill-Evaluation	02	18 & 19
Teaching Skill-Managerial	02	20 & 21
Total	21	

- a) Reliability of GTCS is as follows: Since this is an observation tool, the more appropriate type of reliability is the inter-observer reliability. The inter-observer reliability coefficient ranged from 0.85 to 0.91.
- b) Validity of the GTCS is as follows: Based on a large number of classroom observations, the observation schedule was revised wherein one of the teaching skills was dropped because of high overlap. The final form of the schedule consisted of 86 well defined categories. Using the schedule 23 teachers from the city of Baroda and 130 teachers of city of Bangalore were observed. It was possible to obtain Scott's coefficient of inter-observer agreement ranging from 0.78 to 0.80 while observing teachers on the process variables chosen.

3. "Eysenck's Personality Questionnaire-Revised By Dr. S. Jalota and Dr. S.D. Kapoor"

The Eysenck Personality Questionnaire is the result of many years of developmental work. It was designed to relinquish rough and prepared lives of 3 necessary temperament dimensions: Psychoticism and neurosis. Each of those 3 traits is a unit measured by means of one hundred queries, rigorously designated once extended item analysis and correlational analysis. The earlier history of the development of inventories for the purpose of measuring these three traits has been reviewed in the structure of Human Personality. And the detailed description of the actual derivation of the scales here presented has also been published. The theoretical background and the experimental validation of the concepts of psychoticism, neuroticism, and extraversion have been in a series of books. The final version of the EPQ is described in considerable detail in the book titled

Psychoticism. A Dimension of Personality (Eysenck and Eysenck, 1975): most of the data here given are taken from that book. However accumulation of data has continued beyond the point where the book was written and consequently we have on occasion, given means, standard deviation and other statistics based on large samples than those referred to in the book. Our collection of samples has been much simplified by our finding. The relative lack of importance of social class makes the construction of reasonable sample much easier, and if our claim be accepted that class is of marginal influence only, then our samples may be regarded as reasonably representative. Even so, we have always tried to include members of all social class. We do not claim to have used truly random or representative samples, but we have avoided the frequent error of test makers of using students as representatives of non-psychiatric population, the great majority of our subjects are in fact not students, but wage earners, housewives, and other 'normal' groups. The final version of adult EPQ may prove interesting to the reader to check our factor loadings for each item used in previous studies against the factor loading of the same item as obtained in previous analyses. This is a more convincing argument for factor immutability than statistical estimates of standard errors, or other similar manipulations of data from a single application. Of equal interest, of course, is the comparison of data from the male and female samples, we have looked for consistency in this comparison before accepting items into our final questionnaire

The reliability of Eysenck's Personality Questionnaire: ranges from .80 to .90

4. "semi-structured Interviews were conducted with teachers regarding the incorporation of digital teaching"

- *Question No.1: Do you have any competency of digital use of equipment.*
- *Question No.2: What kind of digital initiative is taken in your institution?*
- *Question No.3: Do you have fully furnished ICT lab in your institution.*
- *Question No.4: Do your classrooms have smart boards.*
- *Question No.5: What kind of digital initiative you are taking in the class.*

3.2 Research Design

Sample Design

A sample design may be defined as the small number of population elements so chosen that they represent the whole study. The research study on these variables are not possible to conduct on a very large population. Practically there were few limitation like Cost and duration of the research. Therefore, Simple Random sampling was used; in the present study the researcher took total number of three hundred teachers were taken from the secondary schools of Mahendergarh and Gurugram District.

3.3 Methods and Procedure Adopted

The present study has adopted specific research design, methodology and procedures to conduct this research. This was an important step for the preparation of writing the present research report. This step provides/give a base line for the conduct of the research and provide the initial direction to the researcher. A very systematic plan and procedure was used by the researcher to complete the entire work and the report writing part is an essential component which researcher tried to complete. J. W. Best (2007) “Research is considered to be the more formal, systematic, intensive process of carrying on the scientific methods of analysis. It involves of more systematic structure of investigation, usually resulting in some sort of formal record of procedures and a report of result or conclusions”. Kothari⁶ stated that “Research Design stands for advance planning of the method to be adopted for collecting the relevant data and the techniques to be used in their analysis, keeping in view the objectives of the research to availability of staff, time and money”. The present research work was **“Impact of Socio-Economic Status and Personality on Teaching Competency of Secondary School Teacher”**.

3.4 Methodology

In this study the researcher followed the mixed method approach. For quantitative method descriptive survey research design were followed by the researcher. For qualitative analysis of the data interviews were used for collecting data.

Regression: When two related variables have cause and effect relationship and when a change in one variable induces a change in the other variable then there exists correlation between them. Thus, the strength of relationship between them can be known and measured by the correlation. If the average value of one variable is to be estimated corresponding to the given value of the other variable then regression is used. Here, of course the cause and effect relationship between two variables is tacitly implied. A variable in which change occurs is called a cause variable or independent variable. We shall call it an independent variable and we shall denote it by X. the other variable whose value is to be estimated corresponding to a given change in X is called an effect variable or dependent variable and we shall denote it by Y. In statistical terms, we say that there is some definite mathematical relationship with an error term.

$$Y = \alpha + \beta X + \mu(\text{error term})$$

Where,

Y = Dependent variable

X = Explanatory variable/Independent variable

α = Constant term

β = Coefficient term/ slope of the equation

(Regression analysis was utilized with the help of statistical Package for the social Sciences (SPSS) Statistical Package to find out the co-relation between socio-economic status, personality, teaching competency of teachers and further the scores of the standardized of teaching competency and academic scores of the students.)

3.5 Population and Sample

In this research study, the population is defined as the secondary school teacher's teachers of the state Haryana. In order to select the sample District Mahendergarh and Gurugram was taken. Sample of 300 secondary school teachers were selected from the two districts through simple random sampling. The mean score of the learners were taken into consideration for the academic achievement. The scores of class 10th was taken because it was board examination and the question paper was well structured.

Table: List of the Schools

District Gurugram	
Sr. No.	School Name
1	Gyan Devi Public School Secondary-17Gurugram
2	Lion Public School Secondary-10A Gurugram
3	Selwan Public School Secondary- 15 P2Gurugram
4	DAV Public School Gurugram, Sec-14
5	Gurgaon Public School Secondary- 55Gurugram
6	Government Senior Secondary School Bajghera
7	Government Senior Secondary School GahriHarsauGurugram
8	Government Senior Secondary School KasanGurugram
9	Government Senior Secondary School Manesar BoysGurugram
10	Government Girls Senior Secondary School ManesarGurugram
11	Government Senior Secondary School MankronaGurugram
12	Government Senior Secondary School ShikhopurGurugram
13	Government Senior Secondary School BasiGurugram
14	Government Senior Secondary School Gurugram sec.-4
15	Amity International School Maneser Gurugram
16	Blue Bells Model School Gurugram Sec-4
17	Colonel`s Central Academy School Gurugram Sec-4
18	Canterbury Public School Gurugram
19	D.A.V. Public School Gurugram Sec-14
20	D.P.S. School DLF City Gurugram
21	Excelsior American School Gurugram Sec-43
22	G.D.Goenka Public School Gurugram, Sec-48
23	Ajanta Public school Gurugram Sec-31
24	Indus World School Gurugram Sec-70
25	Shiv Nadar School DLF City,Gurugram
26	Delhi Public School Sec-45Gurugram
27	Kapil Public School Sec-22Gurugram
28	MDS Sec-37 Gurugram
29	Lancer International SchoolSec-53 Gurugram

30	Lord Jesus Public School Sec-8 Gurugram
31	Lotus Valley International School Sec-50 Gurugram
32	Matrikiran High School Vatika Sec-83 Gurugram
33	Hans Raj Public School Sec-7 Gurugram
34	Modern Public School Sec-84 Gurugram
35	Presidium School Sec-57 Gurugram
36	Aravali Public School Panchgaon Gurugram
37	Rabindranath World School DLF Phase-3 Gurugram
38	Ridge Valley School DLF Phase-5 Gurugram
39	Ryan International School Sec-40 Gurugram
40	Scottish High School Sec-57 Gurugram
41	Shalom Hills International School Sec-52 A Gurugram
42	Sherwood Convent School Sec-25 Gurugram
43	Gurugram Public School Sec-55 Gurugram
44	Shri Ram Global School Gurugram

District Mahendergarh	
Sr. No.	School Name
1	Government High School Tigra District Mahendergarh
2	Government Senior Secondary School Bihali , District Mahendergarh
3	Government Senior Secondary School Bacchod, District Mahendergarh
4	Government Senior Secondary School Silarpur,-District Mahendergarh
5	Government Senior Secondary School NangalChoudhary
6	Government Senior Secondary School Chanrpura
7	Aarohi Modal School Mandana District Mahendergarh
8	Government Senior Secondary School Ateli, District Mahendergarh
9	Government Senior Secondary School Narnaul
10	Government Senior Secondary School Narnaul
11	Government Senior Secondary School DulothJat, District Mahendergarh
12	Government Senior Secondary School DongraAhir, District Mahendergarh
13	Government Girls Senior Secondary School. Champa Devi Ateli

14	Government Senior Secondary School District Mahendergarh
15	Government Senior Secondary School Nangal Sirohi
16	Ganpati Shiksha Niketan Bhorl District Mahendergarh
17	M.R.P.S. Mittarpura, District Mahendergarh
18	RNR Public School Ateli District Mahendergarh
19	Ram Krishana Public District Mahendergarh
20	Government High School Ateli Begpur District Mahendergarh
21	Baba Kheta Nath Sihma District Mahendergarh
22	Government High School Ganiyar District Mahendergarh
23	Government Senior Secondary School Kheri District Mahendergarh
24	Lord Krishan Sihma District Mahendergarh
25	Yaduvanshi School Narnaul District Mahendergarh
26	RPS Narnaul District Mahendergarh
27	RPS District Mahendergarh
28	SURAJ School Kanina District Mahendergarh
29	Balaji Public School Bhungarka District Mahendergarh
30	Shri Krishan Bhungarka District Mahendergarh
31	Jyoti High School Ateli District Mahendergarh
32	Modran High School Bhojawas District Mahendergarh
33	Vidya Devi International School Ateli District Mahendergarh
34	Aishly Public School Ateli, District Mahendergarh

3.6 Treatment of Data

In present study researcher has applied both quantitative and qualitative techniques. "Data and information or knowledge are often used interchangeably; however data becomes information when it is viewed in context or in post-analysis."^[2] While the concept of data is commonly associated with scientific research, data is collected by a huge range of organizations and institutions, including businesses (e.g., sales data, revenue, profits, stock price), governments (e.g., crime rates, unemployment rates, literacy rates) and non-governmental organizations (e.g., censuses of the number of homeless people by non-profit organizations)⁷. *Regression analysis was utilized with the help of statistical Package for the social Sciences (SPSS) Statistical Package to find out the co-relation between socio-economic status, personality, teaching competency of teachers and further*

the scores of the standardized of teaching competency and academic scores of the students". In-depth interactions were also done with Learners, parents and teachers so as to understand the data more comprehensively and discuss the result more emphatically. This provided the researcher an opportunity to understand the dichotomy between quantitative and qualitative assessment of data. This was used just to corroborate the findings derived from statistical tools.

In the present research work researcher has applied both quantitative and qualitative techniques. Therefore the statistical techniques were used to provide meaning to the raw data. For this the researcher has applied SPSS to measure various statistical value/parameter with minimizing human error. Statistical techniques i.e. Regression analysis was used.

3.7 Experience and challenges during data collection

No research is conducted by any researcher without facing any problems and challenges in the field. Finding solution to these problems and challenges provides an insight to the researcher to carry forward one's own research on the one hand and on the other, it paves the way for coming generation of researcher to economize and plan their research more accurately. One of the major challenges that the researcher faced is related to seeking permission from the schools for collection of data and administrator' apathy towards access of sample subject as the teachers are reluctant sending learners to take the test. These problems are sorted out by making rapport with the principal and teachers. They are convinced that the research will strengthen school education and will benefit all those who are concerned with school education. The researcher also encountered problems due to examination in some of the schools that are going on and the sample Learners are busy in its preparation. It could have been far better if the schedule of the school chosen as sample had been procured beforehand for the reason of time scheduling.

In present study have been analyzed quantitatively have been presented and analyzed in the next chapter. As has been mentioned earlier that tools namely "**Socio-Economic Status and Personality of Teaching Competency of Secondary School Teachers**". Regression analysis was used to analyze the data in order to see the impact of the independent variable on the dependent one.

Further, the data gathered through in-depth interaction based on referral points included, sample Learners, parents and teachers of sample Learners. Their points included, sample Learners, parents and teachers of sample Learners. Their narrative has been processed ad-verbatim while processing the data which were initially written on a master sheet. Similar and dissimilar points from the interaction were noted down so as to process easily. The narratives were employed to understand the data more comprehensively and discuss the result more emphatically.