“A research design is the arrangement of conditions of collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure.” In fact, the research design is the conceptual structure within which research is conducted. It constitutes the blueprint for the collection, measurement and analysis of data. Research design stands for advanced planning of the methods to be used in their analysis keeping in view the objectives of research.

Design in the research is a mapping strategy which is based on sampling technique. It is an essential statement of the object of inquiry and the strategies for collecting the evidences, analyzing the data and reporting the findings. Thus, research design is the statement of the object of (a) the inquiry and (b) how a satisfactory culmination is to be effected? A research design is the work done before getting the project under way.

Design of the study is essential part of a research project, because design provides a picture of what and how to do the work before starting. It had been determined from time to time that a suitable research design guards against the collection of irrelevant data and gives more economy. So, in any research project, design provides the researcher a blue print of research, indicates the boundaries of project and helps in controlling the experimental, extraneous error, variance of the problem under investigation etc.

The present chapter seeks to outline the procedure followed, design employed, sample selected, tools used, procedure adopted for data collection, and statistical analyses conducted to realize the objectives of the study and stated corresponding hypotheses of the study.
3.1 METHOD

Every study is distinguished on the basis of its different purposes and approaches. Therefore, so many methods have been adopted. For the present study Descriptive Method is used. Because it is considered as one of the best method in education, it describes the current status of the research work. It involves interpretation, comparison, measurement, classification, evaluation and generalization all directed towards a understanding and solution of significant educational problems.

This is a correlation as well as comparative study. In correlation part correlation between dependent variables (Burnout and their dimensions like Emotional Exhaustion, Depersonalization and Personal Accomplishment) and Independent Variables (Organizational Role Stress, Ego Strength and Self-Actualization) of secondary school teachers are studied. The multiple correlation between Dependent and Independent variables are studied and in comparative part, comparison of levels of Burnout between male and female secondary school teachers are studied.

3.2 VARIABLES

(A) Dependent Variable

(1) Burnout

(i) Emotional Exhaustion (EE)

(ii) Depersonalization (DP)

(iii) Reduced Personal Accomplishment (PA)

(B) Independent Variables

(1) Organizational Role Stress (ORS)

- Inter Role Distance
- Role Stagnation
- Role Expectation Conflicts
- Role Erosion
- Role Overload
- Role Isolation
- Personal Inadequacy
- Self Role Distance
- Role Ambiguity
- Resource Inadequacy

(2) Ego Strength
(3) Self Actualization

3.3 POPULATION

All secondary school teachers of government schools of Delhi constituted the population of the study for the present investigation.

3.4 SAMPLING PROCEDURE

To conduct this study the investigator selected a representative sample of total 320 secondary schools teachers of government secondary schools of Delhi. The sample was selected from total eight zones of Delhi. From each zone 40 secondary school teachers were selected randomly. While selecting the sample care was taken that equal number of male and female teachers were selected.

LAYOUT OF SAMPLE
3.5 **TOOLS USED**

The subjects were assessed on the following psychological tests:

1. Maslach Burnout Inventory (MBI) Form Ed. by Christina Maslach and Susan, E. Jackson.
2. Organizational Role Stress Scale (ORS Scale) by Udai Pareek.
3. Hasan’s Ego Strength Scale by Dr. Q. Hasan.
4. Self Actualization Inventory by Dr. K.N. Sharma.

**Description of Tools Used**

(A) **Maslach Burnout Inventory (MBI)**

Though original Maslach Burnout Inventory was designed to measure burnout in a variety of human service professions, but, the MBI Form Ed. has been specially developed for measuring teacher burnout. It is basically the same as the MBI with the only difference that some items have been modified and a separate Educator’s Demographic Data Sheet has been developed (Maslach & Jackson, 1981).

The MBI Form Ed assesses three components of Burnout Stress Syndrome; Emotional Exhaustion (EE), Depersonalization (PP), and Reduced Personal Accomplishment (PA). Each component is measured by a separate sub-scale. The Emotional Exhaustion subscale assesses feelings of being emotionally overextended and exhausted by one’s work. The Depersonalization subscale measures an unfeeling and impersonal response towards recipients of one’s service, care, treatment, or instruction. The Personal Accomplishment subscale assesses feelings of competence and successful achievement in one’s work with people. It consist of 22 statements, out of which 9 statements relate to emotional exhaustion subscale, 5 statements relate to Depersonalization subscale and the remaining 8 statements relate to Personal Accomplishment subscale. For responding to these statements a 'how often' scale ranging from 0-6
Burnout is conceptualized as a continuous variable, ranging from ‘Low' to ‘Moderate' to ‘High’ degrees of experienced feeling. It is not viewed as a dichotomous variable, which is either present or absent.

- A ‘Low' degree of Burnout is reflected in low scores on Emotional Exhaustion and Depersonalization sub-scale and high scores on Personal Accomplishment sub-scale.
- The 'Moderate' degree of Burnout is reflected in moderate scores on the three sub-scales.
- A 'High' degree of Burnout is reflected in high scores on the Emotional Exhaustion and Depersonalization sub-scales and in low scores on the Personal Accomplishment sub-scale.

### Table
**Occupational Subgroup Teaching (K-12)**

<table>
<thead>
<tr>
<th>MBI Subscales</th>
<th>Range of Experienced Burnout</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>EE</td>
<td>≤ 16</td>
</tr>
<tr>
<td>DP</td>
<td>≤ 8</td>
</tr>
<tr>
<td>PA</td>
<td>≥ 37</td>
</tr>
</tbody>
</table>

MBI has high reliability, internal consistency was estimated by Chronbach's coefficient alpha (n= 1.316). The reliability coefficient of the subscales are 0.90 for Emotional Exhaustion, 0.76 for Depersonalization and 0.76 for Personal Accomplishment. The standard errors of measurement for each subscale are reported to be 3.804 for Emotional Exhaustion, 3.164 for Depersonalization and 3.73 for Personal Accomplishment.
Coefficient of stability for the subscales are reported to be 0.82, 0.60 and 0.30 respectively for Emotional Exhaustion, Depersonalization and Personal Accomplishment. These coefficients are significant beyond .001 level.

Convergent validity was demonstrated in several ways. First an individual's MBI scores were correlated with behaviourable ratings made independently by a person who knew the individual well, such as a spouse or coworker; second, MBI SCGres were correlated with the presence of certain job characteristics that were expected to contribute to experienced burnout. Third, MBI scores were correlated with measure of various outcomes that had been hypothesized to be related to burnout. All three sets of correlation provided substantial evidence for the validity of the MBI.

**B. Description of Organisational Role Stress Scale by Udai Pareek**

Organizational Role Stress was measured by Organizational Role Stress Scale (Pareek, 1983). This scale provide total scores as well as the scores on ten components/factors which are intra Role Distance, Role Stagnation, Role Expectation Conflicts, Role Erosion, Role Overload, Role Isolation, Personal Inadequacy, Self Role Distance, Role Ambiguity, Resource Inadequacy.

ORS Scale is a 5 point scale, indicating how true a particular statement is for the role. Responses are to be given on a separate answer sheet. ORS Scale has 50 items (statements). The score of each role stress may range from 0 to 20 and the total Organizational Role Stress Score may range from 0 – 200.

**Reliability**

Retest reliability coefficients were calculated for a group of about 500 employees from 3 banks (Sen, 1982). Table gives retest reliability (after 8 weeks) for all the 8 stresses, and the total role stress score. As may be seen all the coefficients, except one, are significant at .001 level; one coefficient is significant at .003 level. The scale has acceptable reliability.
### Table

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Self-Role Distance</td>
<td>.45</td>
<td>.001</td>
</tr>
<tr>
<td>2. Inter-Role Distance</td>
<td>.58</td>
<td>.001</td>
</tr>
<tr>
<td>3. Role Stagnation</td>
<td>.63</td>
<td>.001</td>
</tr>
<tr>
<td>4. Role Ambiguity</td>
<td>.65</td>
<td>.001</td>
</tr>
<tr>
<td>5. Role Overload</td>
<td>.53</td>
<td>.001</td>
</tr>
<tr>
<td>6. Role Erosion</td>
<td>.37</td>
<td>.003</td>
</tr>
<tr>
<td>7. Role Inadequacy</td>
<td>.58</td>
<td>.001</td>
</tr>
<tr>
<td>8. Total Role Stress</td>
<td>.73</td>
<td>.001</td>
</tr>
</tbody>
</table>

#### Validity

Some evidence about validity is provided by a measure of self-consistency of an instrument. Each item was correlated with the total score on the instrument for about 500 respondents. All but two correlations were significant at .001 level at .002 and another at .008 levels. The results show high internal consistency of the scale. As will be seen from the table, only values of 3 items are below 36 (items No. 9, 15 and 25). In the whole scale only two items (9 and 25) were in the positive direction, and item 15 had a positive tone. In the final scale these items were modified.

Mean and SD values of the items were also analysed. The lowest mean value was 1.42 and the highest 3.66. Incidentally the items having low correlation with the total have high mean values: Item 9 (2.4), item 15 (3.6), and item 25 (2.9). The mean of the total scores was found to be 2.1 on a 5-point scale.

#### C. Hasan’s Ego Strength Scale

According to Freud, the propounder of psychoanalytical viewpoint the structure of personality ego is that part of psychic structure, which is primarily concerned with reality testing. However, in classical psychoanalysis, the position of ego is that of a meek mediator between id and superego. Freud (1933) used the analogy of a rider and his horse to explain the relationship
between the two components of personality. Usually, the rider guides the horse but often the rider is obliged to guide the horse in the direction in which it wants to move.

**Reliability**

The odd-even reliability of the adapted scale having 32 items was found to be 0.78 (corrected), which is slightly higher than odd-even reliability (= 0.76) reported by Barron for his 68-item scale. With the gaps of 2 and 5 weeks between subsequent administrations, the test-retest reliability coefficient of the adapted scale were found to be 0.86 and 0.82 respectively.

**Validity**

A brief review of the validation studies of Barron’s E-S Scale has been made by Stein and Chenlin (1967). Most of the studies furnish positive evidence regarding the validity of the scale. The validity of the adapted scale as a predictor of chances of improvements in the psychological health following psychotherapy is yet to be determined. However, the adapted scale was found to be significantly correlated with such meaningful personality characteristics as Neuroticism (measured by M.P.I.). External-Internal Control and Security Insecurity. In a factor analytic study, the adapted E-S Scale was found to have a loading of 0.619 on a factor labelled as Psychological Health (Hassan, 1970: 1974).

The adapted E-S Scale has already been used in a number of researches. In a study of over-under achievement (Hassan and Kumari, 1973) ego-strength was found to bear a curvilinear relationship with the discrepancy between predicted and actual achievement. In an experimental study, Ali and Ahmad (1975) compared the performance of twenty high and twenty low ego-strength subjects in an auditory vigilance task. There were two watch periods of 16 minutes duration. The data showed that high ego-strength subjects detected more signals and made fewer errors, than the low ego-strength subjects.
Besides the studies already reported, the E-S Scale is being employed in the researches on body-image and resistance to family planning which are in progress in the Department of Psychology, Aligarh Muslim University.

**Administration and Scoring**

(1) The scale is self-administered. The tester reads the instructions printed at the top of the sheet aloud and asks the testees to read the same silently with him.

(2) There is no time limit. Usually the scale takes about 20 minutes to complete.

(3) The testees are left to interpret the statements as they like.

(4) One mark is given for each of the ‘No’ (X) responses.

T-score norms of the adapted scale based on a sample of 350 male and 250 female university students in age range of 18-24 years are given below. Since mean E-S scores of male and female groups were not found to differ significantly, there was not need to prepare separate norms for the two sex groups.

**Table of Norms**

<table>
<thead>
<tr>
<th>Class intervals (Raw Scores)</th>
<th>Frequency</th>
<th>T-Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-32</td>
<td>3</td>
<td>77</td>
</tr>
<tr>
<td>27-29</td>
<td>9</td>
<td>72</td>
</tr>
<tr>
<td>24-26</td>
<td>44</td>
<td>67</td>
</tr>
<tr>
<td>21-23</td>
<td>73</td>
<td>60</td>
</tr>
<tr>
<td>18-20</td>
<td>119</td>
<td>55</td>
</tr>
<tr>
<td>15-17</td>
<td>148</td>
<td>49</td>
</tr>
<tr>
<td>12-14</td>
<td>126</td>
<td>43</td>
</tr>
<tr>
<td>9-11</td>
<td>66</td>
<td>36</td>
</tr>
<tr>
<td>6-8</td>
<td>3</td>
<td>29</td>
</tr>
<tr>
<td>3-5</td>
<td>9</td>
<td>25</td>
</tr>
</tbody>
</table>

Mean = 1.67  
S.D. = 4.80
D. Self Actualization Inventory

Self-Actualization was measured by Self Actualization Inventory which was developed by Dr. K.N. Sharma. This inventory contains 75 statement. In front of them there are three possible answers “‘equal to nil’, ‘some’ and ‘much’”. Tick mark in a respective column after going through each statement carefully of a degree of which you think of yourself on that statement. Mark only at one place for one statement.

Self-Actualization has been variously thought of – a need, a cognitive style, a trait, a life process etc. It may either cover one or more such components. Maslow (1954) who started with need theory through of Self-Actualization only as a highest order need but later on in 1970 he extended its concept to be a source of well-being. His pyramid of need-hierarchy indicated physiological, security, social/belongingness, esteem, and self-actualization as needs placed respectively in order of their degree of highness and chronological origins. He believed that without the fulfillment of a lower need, a higher need next to it could not be fulfilled. He postulated, “A person who does not have a basic need fulfill is sick, just as a man is sick who lacks vitamins and minerals” (Maslow, 1954). Although this concept can neither be acceptable theoretically nor tenable practically in its basic formats, but its enlarged and revised concept is more flexible, adequate and considerable to talk of. For example, in the ancient ages and even middle ages, the self-actualized persons were of different breeds than what we find in the later part of the twentieth century. Therefore, the concept seems to be more applicable to the new situations. More prominently we may believe that in the so called highly developed and cultural societies, its explanation may be worthwhile to think of.

Although self-actualization indicates highest motivating individual, its explanation is not so simple. Who are then self –actualized? Maslow has given fifteen characteristics to be found in self-actualized individuals.
Administration and Instructions

Instructions are written overleaf of the Inventory in Hindi. It can be administered either in group or individual situations, and given the following instructions:

"Below are some statements. In front of them there are places for three possible answers: 'equal to nil', 'some', and 'much'. Tick mark in a respective column after going through each statement carefully of a degree of which you think of yourself on that statement. Mark only at one place for one statement. Your answer must be accurate after well thought. There is less time. Therefore, please hurry up."

Although there is no time limit for the administration of the Inventory, usually the inventory takes about 30 minutes to complete.

Scoring

The scoring is simple. The three alternatives: dHkh ugha ] izk;]
rFkk vf/kd have been assigned 1, 2, 3 weights respectively.

<table>
<thead>
<tr>
<th>Alternatives</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>dHkh ugha</td>
<td>1</td>
</tr>
<tr>
<td>izk;</td>
<td>2</td>
</tr>
<tr>
<td>vf/kd</td>
<td>3</td>
</tr>
</tbody>
</table>

The scorer has to count and put the totals of the tick marks on each page in the three respective boxes provided for the purpose. At the end, the grand totals of the marks should be multiplied by the above weights, i.e. respective obtained frequencies of the three total response categories x respective weights.

<table>
<thead>
<tr>
<th>Maximum Score</th>
<th>225</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Score</td>
<td>75</td>
</tr>
</tbody>
</table>

Since some of the S – A dimensions were not highly correlated because of heterogeneity and diversions of their functionality, their dimensional
approach was not found-feasible.

It has also been seen that because of self-exposition, the scores on the items are obtained on a little higher side of the score continuum. The trend being in general, it does not affect the results.

However, the degree of self-actualization of a person can be compared to the three degrees obtained by Flanagan's method given in the table below:

<table>
<thead>
<tr>
<th>Raw Score</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>187 &amp; above</td>
<td>High Self Actualization</td>
</tr>
<tr>
<td>163-1a6</td>
<td>Medium Self Actualization</td>
</tr>
<tr>
<td>82-162</td>
<td>Low Self Actualization</td>
</tr>
</tbody>
</table>

The cut values of these degrees may vary from group to group, and therefore, the users may find them afresh for their own groups.

Reliability

The test-retest reliability of the Inventory on a small sample of 100 eighth class students was found to be 0.85.

Validity

Since there is no test of self-actualization available except POI which has its own limitations, criterion validation could not be done. However, the content validation of the items has already been made thoroughly. A correlation of 0.27 was found against Kakkar's Self-Acceptance Inventory, and .29 with NCERT's Self-Perception Inventory.

3.6 PROCEDURE OF DATA COLLECTION

After making preliminary preparations i.e. selecting the schools, getting test booklets, their answer sheets and making sure that they are complete, the present study was conducted. The investigator contacted the teachers personally after getting permission from the principal of schools and fixed the
appointment for test administration. On the fixed date and time the investigator approached the teacher. First of all sincere effort was made to establish rapport with subjects and told them that their responses will be kept confidential and will be used for the research purpose only.

First of all the performa pertaining to Burnout was given to them. Thereafter the performas pertaining to Organizational Role Stress, Ego Strength and Self-Actualization were handed over to them one by one which they had to complete with the specified instructions for the specified test. They were given the instruction that there is no time limit for any test but you have to complete as early as possible.

3.7 STATISTICAL TECHNIQUES

Keeping in view the objectives of the study the data so collected was statistically analysed by using mean, S.D., ‘t’ - test, correlation, multiple correlation, partial correlation.

SPSS (Statistical Package for Social Science) 15.0 version is used to calculate and analyse the data.