Chapter III

Methodology

3.0 Introduction

Methodology lays out a help to the investigation to proceed with the proposed research in a systematic way. In the earlier chapters, a systematic presentation of the conceptual frame work of the present study has been discussed at length. Specifically in Chapter-II, effort has been made to put forth a review of related literature.

In the present Chapter, the title of the study, objectives of the study, sample selected for the study, administration of the tools, statistical procedures adopted for the study and limitations of the study have been furnished.

The present study “A study on cognitive styles of Student Teachers in relation to their social and emotional intelligence” is a simple survey research taking the answers of the respondents by following a systematic sampling procedure.

Descriptive Survey method has been chosen for the present study. According to Best (2007) “The survey is an important type of study. It must not be confused with the mere clerical routine of gathering and tabulating figures. It involves a clearly defined problem and definite objectives. It requires expert and imaginative planning, careful analysis and interpretation of the data gathered and logical and skillful reporting of the findings.”

The word ‘survey’ indicates the gathering of data relating to the current conditions. Worthwhile survey studies collect three types of information as mentioned here.

1. Study and analysis of important aspect of present situation.

2. What is to be achieved by clarifying goals and objectives possibly through a study of the
conditions existing otherwise consider being desirable.

3. How to get through discovering the possible means of achieving the goals on the basis of the experiences of other or the opinions of experts

3.1 Objectives of the Study

The following objectives were framed to carry out the study in a systematic way:

* To study the Cognitive Styles of Student Teachers in Mahabub Nagar District.
* To study the cognitive styles of Student Teachers in relation to their gender, Location (Urban /Rural), Social status.
* To know the Cognitive Styles of Student Teachers in relation to their Social Intelligence.
* To know the Cognitive Styles of Student Teachers in relation to their Emotional Intelligence.
* To correlate the relation between Cognitive Styles, Social Intelligence and Emotional Intelligence among Student Teachers.

3.2 Research Design of the Study

Research design stands for advanced planning of the methods 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 and the availability of staff, time and money. According to the Objectives, this study demands survey method of descriptive research. The main concern of this method was to describe record, analyze and interpret the data and conditions existing in the target group. Under this method, descriptive information is obtained from the target population, namely a group of Student Teachers. The obtained information was analyzed and data was interpreted to know the condition of target group and to illuminate important
Fig 3.1 Research Design

Variables under study

**Independent variables**

* Cognitive Styles  (a) Systematic Style  (b) Intuitive Style  
* Location (a) Urban (b) Rural  
* Social Status (SC/ST/BC/OC)  
* Gender (Male/Female)

**Dependent Variables**

* Social intelligence ( Patience, Cooperativeness, Confidence, Sensitivity, Recognition of Social Environment, Tactfulness, Sense of Humour, Memory)

* Emotional intelligence (Self Awareness, Social Awareness, Self Management, Relationship Management)

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Method of data collection

Descriptive Survey method

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Questionnaire

1. Personal data sheet  
2. Cognitive Styles Inventory  
3. Social Intelligence Scale  
4. Emotional Intelligence Scale

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Sample (= 600)

Student Teachers of B. Ed of Mahaboobnagar Dist.

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Stratified Random Sampling

Strata 1. Location of the Colleges  
Rural(10) Urban(10)  
Strata 2. Gender  
Male (300), Female (300)

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Data Analysis techniques Percentages, Mean, SD, F-test, and Pearson Product moment Correlations
Survey method has been employed to study on cognitive styles of Student Teachers in relation to their social and emotional intelligence. i.e., a set of questions printed or typed in a definite order on a form or set of forms. The respondents have to answer the questions on their own. Researcher had to carefully determine exactly about the type of questions, items of questions, sequence of questions.

In the present study Survey method was used to obtain information about:

* Cognitive Styles among Student Teachers.
* Social Intelligence among Student Teachers.
* Emotional Intelligence among Student Teachers.

### 3.2 Sample Design

<table>
<thead>
<tr>
<th></th>
<th>Sample(600)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban(300)</td>
<td>Rural(300)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>150</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>300</td>
<td>600</td>
<td>300</td>
</tr>
</tbody>
</table>

### 3.3. Universe

The Osmania University and Telangana State Council of Higher Education (TSCHE) provided the list of B.Ed Colleges in Mahabubnagar District of Telangana State. The population of the study consisted of Urban and Rural B.Ed Colleges in Mahabubnagar District of Telangana State. Student Teachers pursuing B.Ed constituted the universe of the
study. There are 41 B.Ed colleges which have been enrolled for the academic year 2014-15 and 4285 Student Teachers joined into the course in various colleges located in the district which includes Rural and Urban areas.

3.4 Research Method Employed

‘Survey’ technique under ‘Descriptive Methods of Research’ was employed for conducting present investigation.

3.5 Sample of the Study

The sample is the representation of a population. The appropriate sampling technique will help to draw representative sample which reflect the characteristics of population. The size of the sample will help to bring it to the near view of population. By observing the characteristics of the sample, one can make certain influences about the characteristics of the population from which it is drawn. Sample for the present study has been chosen by using Stratified Random Sampling Technique. The sample size of the study is 600, which includes Student Teachers. Out of 4285 population, 600—Student Teachers (B.Ed) sample has been derived by Stratified Random sampling method i.e.15% (600) which includes Location, gender, Social status.

In the present study, the sample was selected in the three phases.

* Selection of district

* Selection of Colleges (Urban & Rural)

* Selection of Student Teachers

All three above phases in sample selection is discussed below:

* Selection of district: In India, there are 29 states out of which Telangana was selected. Telangana has 10 districts. One district was chosen for the present study i.e. Mahabubnagar district which constitutes urban as well as rural population.
* Selection of colleges: Random Sampling Technique was used to select B.Ed Colleges for the study. The total numbers of colleges selected were 20; colleges selected were from two areas i.e. Rural and Urban.

<table>
<thead>
<tr>
<th>District</th>
<th>Colleges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mahabubnagar</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
</tr>
</tbody>
</table>

Selection of Student Teachers: After selection of B.Ed colleges, Student Teachers were selected. Student Teachers were selected from 20 colleges. From each college, 30 Student Teachers were selected randomly. Thus, the total student sample selected was 600 Student Teachers.

<table>
<thead>
<tr>
<th>Area</th>
<th>Student Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>300</td>
</tr>
<tr>
<td>Rural</td>
<td>300</td>
</tr>
<tr>
<td>Total</td>
<td>600</td>
</tr>
</tbody>
</table>

3.6 Variables

A concept that can take on different qualitative value is known as variable. A variable is an object, event, idea, feeling, time period, or any other type of category that can be measured. An important step in designing all quantitative research projects is defining or identifying the variables that will be manipulated, measured, described or controlled.

There are two different types of variables, i.e., Independent and dependent variables. If one variable depends upon or was dependent upon and is consequence of other variable, it is termed as the Dependent variable and the variable that is antecedent to the dependent
variable is termed as Independent variable. The present study demands the information on the following issues related to B.Ed College Student Teachers in Mahabub Nagar District.

**Independent variables**

* Cognitive Styles
  a) Systematic Style
  b) Intuitive Style

* Location
  a) Urban
  b) Rural

* Social Status (SC/ST/BC/OC)

* Gender (Male/Female)

**Dependent Variables**

* Social intelligence
  a) Patience
  b) Cooperativeness
  c) Confidence
  d) Sensitivity
  e) Recognition of Social Environment
  f) Tactfulness
  g) Sense of Humour
  h) Memory

* Emotional intelligence
  a) Self Awareness
b) Social Awareness  
c) Self Management  
d) Relationship Management

3.7 Tools of the Study

Tools were used for obtaining information on different variables of the study. These tools were selected with the purpose of procuring as much information as possible. Tools that were used in the present study were as follows.

1. Personal data sheet
2. Cognitive Styles Inventory
3. Social Intelligence Scale
4. Emotional Intelligence Scale

3.7.1 Personal Data Sheet

Personal data sheet was constructed to obtain personal data of the Student Teachers. It consists of the following items.

*Structure of the personal data sheet:*

1. Name of the Student Teacher
2. Gender
3. Category
4. Type of College Management
5. Location of College

3.7.2 Cognitive Style Inventory

Cognitive Style Inventory (CSI) developed by Praveen Kumar Jha (2010) is a self-report measure of the ways of thinking, judging, remembering, storing information, decision
making and believing in interpersonal relationship. Cognition is a mediating process that is the centre of a resurgence of interest. The current cognitive learning perspective is that the organism responds to its cognitive construction of the environment rather than to the objective reality. Several common characteristics among the cognitive approaches to personality that have become popular during the last twenty years; were described as; (1) Individual differences in style of thinking as a starting point; (2) An emphasis on style over contact; (3) The assumption that cognitive styles are related to other personality characteristics of individuals; and (4) The treatment of cognitive styles as traits (i.e.; the characteristics are dependent of situational influences, a position leading to on the consistency of the style).

In social stimulus situation, social cognition refers to the ways in which we process, store, remember and use social information (Forgas, 1994: Isen & Baron, 1991). Research on this topic indicates that in fact the relationship between affective and cognitive aspect of behaviour is very much a two-way street; Our feelings and moods exert strong effects on several aspects of cognition, and cognition, in turn, exerts strong effects on our feelings and moods (Seta Hays & Seta, 1994). Thus, social cognition involves the process through which we notice, interpret, remember and later use information about the social world.

But at the same time sources of error in social cognition is not out of question as human beings are definitely not computers. While we can imagine being able to reason in a perfectly logical manner, we know from our own experiences that often we fall short of this goal. This is definitely true with respect to many aspects of social thought. In our efforts to understand others and make senses out of the social world, we are subject to a wide these aspects of social thought do sometimes result in error; they are also quite adaptive. They help
us to focus on the kinds of information that are usually most informative, and they reduce the quantum of effort required for understanding the social world. As is true of virtually all important aspects of human behaviour, these tendencies can be beneficial as well potentially damaging. In fact our thinking is far from perfectly rational in many situations.

A model of cognition proposed recently by Epstein and his colleagues (i.e.; Denes-Raj & Epstein, 1994) offers one explanation. According to this model; known as cognitive-experiential self-theory (C E S T); our efforts to understand the world around us proceed in two distinct ways. One of these is deliberate, rational thinking, which follows basic rules of logic. The other is a more intuitive system, which operates in a more automatic, holistic manner—a kind of “Fly-by-the-seat of our pants”--approach, in which we make quick decisions according to simple heuristics (i.e.; rules that allow us to make social judgments rapidly and with reduced effort) we have developed through experiences. Cognitive–experiential self-theory (C E S T) suggests that we tend to use these contrasting styles of thought in different kinds of situations. ‘Rational thinking’ is used in situations involving analytical thought; for example; solving mathematical problems. Intuitive thinking is used in many other situations including the most social ones. In other words, when we try to understand others behaviour, we often revert to intuitive, gut-level thinking.

It is conceptualized as an one-dimensional psychological state of an individual. It is a self report tool which gives an estimate of cognitive style of an individual on a five point Likert scale. It is two-dimensional measure of systematic style and intuitive style consisting of 20 items each.
<table>
<thead>
<tr>
<th>S.No</th>
<th>Styles</th>
<th>No.of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Systematic Style</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>Intuitive Style</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td><strong>40</strong></td>
</tr>
</tbody>
</table>

**Scoring:** Cognitive Style Inventory (CSI) is a self-report research tool which gives an estimate of cognitive style of an individual in a five-point-Likert format. Five response categories are: Strongly Disagree; Disagree; Undecided; Agree : Strongly Agree. To avoid monotony on the part of respondents due to repetition of response categories in words and number against each item and to shorten the length of the questionnaire five response categories in words and their corresponding number from 1 to 5 have been given only on the top. For each statement, the respondent has to refer to the above scale and decide which number corresponds to his/her level of agreement with the statement and write that number in the blank space provided on the left of each statement. The responses are scored by adding all the response numbers as indicated in left of each item which yield a systematic score and an intuitive score. These scores are interpreted; which helps to determine to what degree they specialize in systematic and intuitive styles and identify the specific cognitive style to which they might belong.

**Reliability**

Established by the Split half method and Test – Retest method. Systematic Style reliability was .83 and Intuitive Style reliability was .78.

**Validity**

Judges Validity, Concurrent Validity and Internal Validity was established for the tool. Concurrent Validity is a correlation coefficient of .262(p<.01,df=98) was obtained which was
satisfactorily significant beyond .01 level of confidence.

### 3.7.3 Social Intelligence Scale

Social Intelligence Scale was developed by N. K. Chadha and Usha Ganesan (2009). It measures social intelligence in eight areas- patience, cooperativeness, confidence level, sensitivity, recognition of social environment, tactfulness, sense of humour, and memory.

#### Selection of Dimensions

The initial selections of the dimensions that measure social intelligence were determined on the basis of the judgment of 25 experts in the field of behavioural sciences. In order to construct the scale the dimensions of social intelligence were selected in a scientific manner. Accordingly, sixteen relevant and meaningful dimensions of social intelligence were selected and defined.

#### Table 3.1: showing the dimensions of Social Intelligence and Reliability

<table>
<thead>
<tr>
<th>S.No</th>
<th>Dimensions</th>
<th>No.of Items</th>
<th>Split half method</th>
<th>Test-Retest method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Patience</td>
<td>08</td>
<td>.98</td>
<td>.94</td>
</tr>
<tr>
<td>2</td>
<td>Co-operativeness</td>
<td>11</td>
<td>.91</td>
<td>.91</td>
</tr>
<tr>
<td>3</td>
<td>Confidence</td>
<td>08</td>
<td>.89</td>
<td>.90</td>
</tr>
<tr>
<td>4</td>
<td>Sensitivity</td>
<td>09</td>
<td>.90</td>
<td>.93</td>
</tr>
<tr>
<td>5</td>
<td>Recognition of Social Environment</td>
<td>03</td>
<td>.95</td>
<td>.95</td>
</tr>
<tr>
<td>6</td>
<td>Tactfulness</td>
<td>07</td>
<td>.91</td>
<td>.91</td>
</tr>
<tr>
<td>7</td>
<td>Sense of Humour</td>
<td>08</td>
<td>.90</td>
<td>.90</td>
</tr>
<tr>
<td>8</td>
<td>Memory</td>
<td>12</td>
<td>.96</td>
<td>.97</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>66</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Their operationally defined structure was as under:

A. **Patience**---- Calm endurance under stressful situations.

B. **Co-operativeness**---- Ability to interact with others in a pleasant way to be able to view matters from all angles.

C. **Confidence Level**---- Firm trust in oneself and ones chances.

D. **Sensitivity**---- To be acutely aware of and responsive to human behaviour.

E. **Recognition of Social Environment**---- Ability to perceive the nature and atmosphere of the existing situation.

F. **Tactfulness**---- Delicate perception of the right thing to say or do.

G. **Sense of Humor**---- Capacity to feel and cause amusement; to be able to see the lighter side of life.

H. **Memory**---- Ability to remember all relevant issues; names and faces of people.

**Reliability:** The reliability of the scale was established by the split half method and Test – Retest method.

**Validity:** Empirical validity and Cross validation was established for the tool is .80.

**3.7.4 Emotional Intelligence Scale**

Emotional Intelligence Scale was developed by P. Srinivasan / K. Murugesan (2013). (This scale consists 40 items divided into four Dimension– (i) Self Awareness, (ii) Social Awareness, (iii) Self Management, ( iv) Relationship Management.)
### Table 3.2: showing the domains of Emotional Intelligence

<table>
<thead>
<tr>
<th>S.No</th>
<th>Domains</th>
<th>No.of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Self Awareness</td>
<td>06</td>
</tr>
<tr>
<td>2</td>
<td>Social Awareness</td>
<td>06</td>
</tr>
<tr>
<td>3</td>
<td>Self Management</td>
<td>12</td>
</tr>
<tr>
<td>4</td>
<td>Relationship Management</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>40</strong></td>
</tr>
</tbody>
</table>

**Scoring:** This scale consists of 40 multiple choice statements. A score of one was given to each correct answer and zero was given to each wrong answer and the maximum marks for a question is 1 and the minimum is 0.

**Reliability of Emotional Intelligence Scale**

The final format of 40 test items was administered to a sample of 300 adults (123 Male and 177 Female). For every correct response one mark was given. There is no negative mark. For getting the total score of an individual each response marks of given statement should be added together to get total score of the test. Reliability refers to the accuracy of the data in the sense of their stability or precision. The reliability values are given in table

### Table 3.3: Reliability Quotient of Emotion Intelligence Scale

<table>
<thead>
<tr>
<th>Sr.No</th>
<th>Reliability Method</th>
<th>Number of sample</th>
<th>Reliability value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Split half method</td>
<td>300</td>
<td>0.62</td>
</tr>
<tr>
<td>2.</td>
<td>Cronbach’s alpha method</td>
<td>300</td>
<td>0.71</td>
</tr>
</tbody>
</table>

The reliability of the scale was established by the split half method and cronbach’s alpha method. The reliability split half method calculated was found to be 0.62. cronbach alpha
method was found to be 0.71. Both the results are significant at .01 level of significance.

**Validity Analysis of Emotional Intelligence Scale**

**Content Validity**

Content validity is a process of matching the test items with the objectives. The content validity was established by a group which consists of the constructors, one professor of Education and two Associate professors of Education. The items were constructed and finalized based on the concepts and dimensions proposed by Daniel Goleman and Richard Boyatzis. So the tool possesses content validity.

**Concurrent Validity**

Concurrent validity is correlating the test scores with another set of criterion scores. The concurrent validity of the tool was established by the constructors by administering the emotional intelligence scale prepared by them and another emotional intelligence scale developed and validated by Anukool Hyde (2007) to the sample of 100 adults, which was significant at .01 level of significance. The correlation between the two scores was 0.92 significant. So, the correlation coefficient revealed that the scale of emotional intelligence possesses level of concurrent validity.

**3.8 Collection of Data**

The researcher visited the B. Ed colleges for the purpose of collecting data. Good rapport was established with the Principal, Teacher Educators and Student Teachers by giving a self introduction and by explaining the purpose and objectives of the study.

The Personal Data Sheet (PDS) was distributed among the Student Teachers of B. Ed. The Student Teachers were asked to fill in the columns for Name, College name, Caste etc.
The other questions asked in (PDS) were explained. After the general instructions had been given, the researcher confirmed that they understood.

The Student Teachers were allowed to ask any questions regarding the PDS during the session. The researcher was present throughout to answer questions. The subjects were assured that the information given by them would be kept confidential. After the completion of the test, the booklets were collected.

The test booklets of Cognitive Styles Inventory (CSI) were distributed to them and instructions read out. Sufficient time and directions were given to them for completion of the Scale. Similarly, the other scales ‘Social Intelligence Scale (SIS)’ and ‘Emotional Intelligence Scale (EIS)’ were also administered in different timings on the sample subjects.

3.9 Statistical Analysis of Data

The data was collected and analyzed. The following statistical techniques were employed for the analysis of the data.

1. Mean and Standard deviation were calculated for the entire sample with respect to all variables.

2. ‘Analysis of Variance’ (ANOVA) was applied to test whether is any significant differences exist between dependent variables and independent variables.

3. Pearson’s Product Moment Correlation is employed to find out the relationship between different dimensions of Cognitive styles, Social intelligence and Emotional intelligence.

4. Pearson’s Product Moment Correlation is employed to find out the relationship between Cognitive styles and Social Intelligence.
5. Pearson’s Product Moment Correlation is employed to find out the relationship between Cognitive styles and Emotional intelligence.

The raw data obtained from the questionnaire were coded. All the calculations were done on the computer with the help of a Microsoft Excel and software package named as Statistical Package for Social Sciences (SPSS) IBM version 20.0.