CHAPTER 3
RESEARCH METHODOLOGY

3.1 INTRODUCTION

A research design is a plan of the proposed research work. Selection and formulation of proper research scheme is very important and essential for the successful accomplishment of research. Selecting a design for a study essentially involves selecting the most appropriate methods or techniques to solve the particular problem under investigation.

The research design should be made once the topic and problem of research that have been selected and formulated, objectives have been properly framed. Research design describes samples, variables to be studied, tools, experimental design, the method of data collection, the sample from which we collect the data and qualitative analysis of data.

In this chapter, the investigator presents methodology adopted for the study of objectives, hypothesis of the study, samples, tools used and description of the statistical techniques used for analysis.

3.2 STATEMENT OF THE PROBLEM

"AN ANALYSIS OF SELECTIVE PSYCHOLOGICAL TRAITS AND ACADEMIC PERFORMANCE OF B.ED TRAINEES IN PRE-SERVICE TRAINING"

3.3 OBJECTIVES OF THE STUDY

The objectives of the present study are as follows:

1. To find out the psychological attributes of student-teachers in terms of Qualification, Medium of study, Marital status, Locality, Parents income, Major subjects, Community, Age and Academic achievement.
2. To study and analyze the psychological attributes like Attitude towards teaching profession, Self-confidence, Value, Mental health, Emotional Intelligence and Personality of student-teachers.

3. To find out the relation between different psychological attributes of student-teachers.

4. To study the relation between psychological attributes and the academic achievements of student-teachers.

3.4 HYPOTHESES OF THE STUDY

The hypotheses of the present study are as follows:

HYPOTHESIS 1

Student-Teachers do not differ in their different psychological attributes with respect to the selected sub sample viz., Gender, Qualification, Medium Studied, Locality, Marital Status, Major Subjects, Community, Parents In-come, Age, Type of College.

HYPOTHESIS 1.1

Student-Teachers do not differ in their different psychological attributes with respect to Gender.

HYPOTHESIS 1.2

Student-Teachers do not differ in their different psychological attributes with respect to Qualification.

HYPOTHESIS 1.3

Student-Teachers do not differ in their different psychological attributes with respect to Marital Status.
HYPOTHESIS 1.4

Student-Teachers do not differ in their different psychological attributes with respect to Locality.

HYPOTHESIS 1.5

Student-Teachers do not differ in their different psychological attributes with respect to Medium of Study.

HYPOTHESIS 1.6

Student-Teachers do not differ in their different psychological attributes according to Major Subjects.

HYPOTHESIS 1.7

Student-Teachers do not differ in their different psychological attributes according to Community.

HYPOTHESIS 1.8

Student-Teachers do not differ in their different psychological attributes with respect to Parents In-come.

HYPOTHESIS 1.9

Student-Teachers do not differ in their different psychological attributes according to Age.

HYPOTHESIS 1.10

Student-Teachers do not differ in their different psychological attributes according to Type of College.
HYPOTHESIS 2

Student-Teachers do not differ in their academic achievement in terms of their Gender, Qualification, Medium, Marital Status and Locality, Major Subjects, Community, Age, Parents In-come and Type of College.

HYPOTHESIS 3

Student-Teachers do not differ in their Academic achievement based on their different Psychological attributes.

HYPOTHESIS 4

There is significant relationship between psychological attributes of different B.Ed. College student-teachers.

HYPOTHESIS 5

There is significant relationship between different dimensions of Psychological attributes of Autonomous Female student-teachers.

HYPOTHESIS 6

There is significant relationship between different dimensions of Psychological attributes of Government Female student-teachers.

HYPOTHESIS 7

There is significant relationship between different dimensions of Psychological attributes of Government Male student-teachers.

HYPOTHESIS 8

There is significant relationship between different dimensions of Psychological attributes of Autonomous Male student-teachers.

HYPOTHESIS 9

There is significant relationship between different dimensions of Psychological attributes of Self-Finance Male student-teachers.
HYPOTHESIS 10

There is significant relationship between different dimensions of Psychological attributes of Self-Finance Female student-teachers.

HYPOTHESIS 11

There is significant relationship between Academic achievement and Psychological attributes of student-teachers.

HYPOTHESIS 12

There is significant relationship between Academic achievement and Psychological attributes of student-teachers in different type of B.Ed. colleges.

HYPOTHESIS 13

There is a relationship between Academic achievement and Psychological attributes of Male student-teachers studying in Government B.Ed. colleges.

3.5 RESEARCH METHOD

In the present study, the investigator followed the Normative Survey method. In educational research, Survey method is the application and adaption of the classical method. The research paradigm indicates 'Normative Survey' is generally used for the type of research that attempts to find out that normal or typical condition or practice at the present time.

The normative survey is the most commonly used approach to solve educational problems. It is followed in studying local as well as state, national and international aspects of education. It involves interpretation, comparison, measurement, classification and generalization all directed towards a proper understanding and solution of significant educational problems.

3.6 VARIABLES USED IN THE STUDY

Selection of proper variable is an important ingredient of a good research work. In the present study the following dependent and independent variables are used.
<table>
<thead>
<tr>
<th>S. No</th>
<th>VARIABLES</th>
<th>TYPES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Gender</td>
<td>Male and Female</td>
</tr>
<tr>
<td>2.</td>
<td>Age</td>
<td>21, 22, 23, 24 and above</td>
</tr>
<tr>
<td>3.</td>
<td>Qualification</td>
<td>UG and PG</td>
</tr>
<tr>
<td>4</td>
<td>Major Subject</td>
<td>Language, Arts and Science</td>
</tr>
<tr>
<td>5</td>
<td>Medium Studied</td>
<td>Tamil and English</td>
</tr>
<tr>
<td>6</td>
<td>Marital Status</td>
<td>Married and Un-married</td>
</tr>
<tr>
<td>7</td>
<td>Locality</td>
<td>Rural and Urban</td>
</tr>
<tr>
<td>8</td>
<td>Community</td>
<td>OC, MBC, BC, SC/ST</td>
</tr>
<tr>
<td>9</td>
<td>Parents Income</td>
<td>Up to Rs. 5000,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rs.5001 to Rs. 10000,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rs.10001 to Rs. 15000,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rs.15001 to Rs. 20000,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rs.20001 to Rs. 25000,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rs.25001 to Rs. 30000,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>above Rs. 30000 Per Month</td>
</tr>
<tr>
<td>10</td>
<td>Type of college</td>
<td>Autonomous, Government and Self finance</td>
</tr>
</tbody>
</table>
3.7 SAMPLING TECHNIQUE USED

The investigator used **Stratified Sampling technique** to select the sample. Cluster sampling is a probability sampling method in which the sampling units are divided into mutually exclusive and collectively exhaustive sub-population called clusters. Each cluster is assumed to be the representative of the heterogeneity of the target population. Groups of elements that would have heterogeneity among the members within each group are chosen for study in cluster sampling.

Several groups with intra group heterogeneity and intergroup homogeneity are found. A random sampling of the clusters or groups is done and information is gathered from each of the members in the randomly chosen clusters. Cluster sampling offers more of heterogeneity within groups and more homogeneity among the groups.
### 3.8 SELECTION OF THE SAMPLE

#### TABLE (2) LIST OF B.ED COLLEGES SELECTED FOR THE SAMPLE

<table>
<thead>
<tr>
<th>S.NO</th>
<th>NAME OF THE COLLEGE</th>
<th>NO. OF SAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>MALE</td>
</tr>
<tr>
<td>1</td>
<td>Sri Sarada College of Education (Autonomous) Salem</td>
<td>Nil</td>
</tr>
<tr>
<td>2</td>
<td>Sri Ramakrishna College of Education (Autonomous) Coimbatore</td>
<td>106</td>
</tr>
<tr>
<td>3</td>
<td>Government College of Education Kumarapalayam</td>
<td>49</td>
</tr>
<tr>
<td>4</td>
<td>Government College of Education Pudukottai</td>
<td>48</td>
</tr>
<tr>
<td>5</td>
<td>Shree Amirtha College of Education Namakkal</td>
<td>28</td>
</tr>
<tr>
<td>6</td>
<td>K.S.R. College of Education Thiruchengodu</td>
<td>33</td>
</tr>
<tr>
<td>7</td>
<td>Star College of Education Periyamanali</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td><strong>Total Sample</strong></td>
<td><strong>301</strong></td>
</tr>
</tbody>
</table>
FIGURE (1) SHOWING THE DETAILS OF THE SAMPLE ACCORDING TO TYPE OF COLLEGE

- Sri Saradha College of Education, Salem, (Autonomous)
- Shri Ramakrishna College of Education, Coimbatore, (Autonomous)
- Government College of Education, Kumarapalayam
- Government College of education, Pudukottai
- Shree Amirtha College of Education, Namakkal
- K.S.R. College of Education, Thiruchengodu
- Star College of education, Periyamanali
TABLE (3) SHOWING THE DETAILS OF THE SAMPLE ACCORDING TO TYPE OF COLLEGE

<table>
<thead>
<tr>
<th>S.No</th>
<th>TYPE OF THE COLLEGE</th>
<th>NO OF SAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>MALE</td>
</tr>
<tr>
<td>1</td>
<td>Autonomous College of Education</td>
<td>106</td>
</tr>
<tr>
<td>2</td>
<td>Government College of Education</td>
<td>97</td>
</tr>
<tr>
<td>3</td>
<td>Self- Finance College of Education</td>
<td>98</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>301</strong></td>
</tr>
</tbody>
</table>
FIGURE (2) SHOWING THE DETAILS OF MALE AND FEMALE STUDENT TEACHER ACCORDING TO THE TYPE OF COLLEGE
<table>
<thead>
<tr>
<th>S.NO</th>
<th>CATEGORY</th>
<th>NO. OF STUDENTS</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GENDER</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>301</td>
<td>594</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>293</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>QUALIFICATION</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>UG</td>
<td>385</td>
<td>594</td>
</tr>
<tr>
<td></td>
<td>PG</td>
<td>209</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>MEDIUM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tamil</td>
<td>238</td>
<td>594</td>
</tr>
<tr>
<td></td>
<td>English</td>
<td>356</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>MARITAL STATUS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Married</td>
<td>93</td>
<td>594</td>
</tr>
<tr>
<td></td>
<td>Un-married</td>
<td>501</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>LOCALITY</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rural</td>
<td>379</td>
<td>594</td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>215</td>
<td></td>
</tr>
</tbody>
</table>
Figure (3) Distribution of samples according to Independent variables

[Bar chart showing the distribution of samples based on various independent variables: Gender (Men, Women), Qualification (UG, PG), Language (Tamil, English), Marital Status (Married, Unmarried), and Locality (Rural, Urban).]
3.9 TOOLS USED IN THIS STUDY

A suitable research tool contributes to the validity of the findings of any research study. The success of any research study depends largely on the nature of tools used. Factual materials unknown so far are necessary for every study. They can be obtained from any sources, direct or indirect. It is necessary to adopt a systematic procedure to collect essential data. For collecting new and unknown data required for the study of any problem, various devices are made use of and the selection of such devices is of vital importance for any successful research. Different and appropriate tools are to be used for collecting various kinds of information for assorted purpose. The researcher used more than one tool in the present study.

THE TOOLS USED FOR THE PRESENT STUDY:

The investigator used a booklet which contains 6 parts in the form of questionnaire. They are:

3. Self-confidence Inventory - M. Basavanna (1975)
5. Value Scale - Reddy
6. Emotional Intelligence - Constructed by the Investigator

3.10 DESCRIPTION OF THE TOOLS

3.10.1 PERSONAL DATA OF THE STUDENTS:

This part consists of the Personal Data of the students viz: Gender, Age, Qualification, Major Subject, Academic achievement of B.Ed trainees in UG degree level, Parent In-come, Marital Status, Community, Locality of the B.Ed Students.
3.10.2 ATTITUDE TOWARDS TEACHING PROFESSION SCALE

The attitude towards teaching profession was constructed and standardized by S.P. Ahluwalia (1974) was used in this study. The Inventory consists of 90 statements under five point scale. They are: Strongly Agree, Agree, Undecided, Disagree, Strongly Disagree. Out of 90 items, 43 items are positive and 47 items are negative. The reliability of this scale is 0.753.

3.10.3 PERSONALITY INVENTORY SCALE

The Personality Inventory was constructed and standardized by B.L. Dubey, P. Dwivedi and S.K. Verma (year) was used in this study. The Inventory consists of 50 statements under five point scale. They are: Strongly Agree, Agree, Undecided, Disagree, Strongly Disagree.

The Personality Inventory Scale is used to measure certain well known dimensions of personalities like

a. Extraversion
b. Psychotism
c. Emotional instability
d. Depression
e. Social Desirability

Among the 50 statements, the Extraversion statements are (No.) 9, 14, 19, 24, 34, 39, 44, 49.

Psychotism statements are (No.) 1, 3, 6, 8, 11, 13, 16, 17, 21, 28, 31, 33, 43, 48, 36, 37, 38, 41.

Emotional instability statements are (No.) 4, 20, 23, 40, 42.

Depression statements are (No.) 2, 7, 12, 18, 22, 27, 32, 46, 47.

Social Desirability statements are (No.) 5, 10, 15, 25, 26, 29, 30, 35, 45, 50.

The reliability of this scale is 0.682.
3.10.4 VALUE SCALE

The Value Scale was constructed and standardized by Reddy, it is used in this study. The Inventory consists of 56 statements under five point scale. They are: Strongly Agree, Agree, Undecided, disagree, Strongly Disagree. Out of 56 items, 30 items indicate Modernism and 26 items indicate Traditionalism. The reliability of this scale is 0.674.

3.10.5 SELF – CONFIDENCE SCALE

The Self-Confidence Scale was constructed and standardized by M.BASAVANNA (1975) was used in this study. The Inventory consists of 100 statements under Yes/No (closed) type. It is changed into five point scale. Out of 100 items, 61 items are negative and 39 items are positive.

The manual of the tool and the scoring key were used for scoring of the items.

As the tool consists of more numbers of negative items, the norm is the higher the score indicates lower self-confidence and vice-versa. The reliability of this scale is 0.841.

3.10.6 MENTAL HEALTH SCALE

In this study the Mental Health Inventory by Jagdish and Srivastava was used to measure the Mental Health of B.Ed students. This Inventory consists of 55 items. It is a four point scale. They are: Always, Often, Sometimes, Rarely, Never. The reliability of the inventory was determined by split-half method using odd-even procedure. Overall reliability of the inventory was 0.54.

3.10.7 EMOTIONAL INTELLIGENCE SCALE

Emotional intelligence scale was constructed by the Investigator. It is used to measure the Emotional Intelligence of B.Ed. students.

(A copy of the tools are given in Appendix A.)

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3.11 DESCRIPTION OF THE EMOTIONAL INTELLIGENCE TOOL

Each item carried five alternatives. The respondents had to tick their response from the alternatives. The scoring key was prepared and accordingly scoring was done.

This tool was prepared to assess to emotional Intelligence of student teachers in B.Ed. colleges having in mind the student’s awareness of emotions of their own, self-motivation, and empathy towards others emotions and their relationship with others.

This tool consists of 50 items. The items are arranged in the form of statements for which the relations of the students are given in the form of four actions. The student teachers have to select one answer from the four options.

3.12 PILOT STUDY

Pilot study is a cardinal role in research that one must ‘try out’ or pilot test the questionnaire to find out whether it operates properly before using it in a research study. The following are some of objectives of a pilot study:

1. To identify weak and defective items.
2. To find out the discriminating power of each item.
3. To provide data needed to determine how many items should constitute the final form of the tool.
4. To decide the proper format.

The investigator selected 65 items for Emotional Intelligence. After the discussion with her colleagues modifications were done in the organization of the items. The drafted questionnaire was given to a panel of judges consisting of guide, three professors and two principals. From their suggestions, a few items have been deleted and a few others added and a few modifications have been carried out.

This pilot study helps to find out whether the proposed study is feasible or not. It also reveals whether the problem needs restatement or modification before it is considered searchable and helps the investigator to modify the research plan.
The questionnaire was administrated to a representative sample of 25 student-teachers belonging to B.Ed. College with the consent and co-operation of the college authorities. Necessary instructions were given to the student teachers as to how they should give their responses. The data gathered were scored and processed. A scoring key was prepared by the investigator and the scoring was done.

3.13 SELECTION OF THE ITEMS FOR THE FINAL TOOL

After scoring 60 items, the items answered by 85% of the student-teachers are taken for the final test. The items answered by 15% of the student-teachers are deleted from the tool. Thus the final tool with 50 items are selected and administered to the sample. The reliability of this scale is 0.813.

3.14 ADMINISTRATION OF THE TOOL

The investigator administrated the questionnaire to B.Ed. students of different colleges in Namakkal, Salem, Coimbatore and Pudukottai districts. The investigator visited to B.Ed. colleges and met the Principals and got permission to collect the data from the B.Ed students. It took four months to collect the data from the respondents. Finally the investigator got 592 filled Questionnaire from the respondents.

3.15 DATA COLLECTION

It is an important stage in any research programme. After having chosen the colleges, the investigator personally went to the B.Ed. colleges and met the Principals concerned and sought the permission to utilize the students of their institution for this study. Finally, 600 students were been earmarked and with the co-operation of various subject teacher educators, the investigator distributed the copies of the tools to the students on various dates.

The students are requested to register their responses freely. The doubts raised by the students are cleared. In every institution, under the direct supervision of the investigator, the data was collected. After completion of the data collection process, the copies of tools are pooled and the scoring was done on the basis of the
scoring procedure as already explained in the same chapter. The collected data was subjected to Statistical Analysis.

3.16 SCORING AND TABULATION

The responses of B.Ed. students in different colleges are scored according to the weight assigned by the tool constructors. The incomplete (or) partially answered items are left out. The scores obtained are kept as raw score as converted into ‘t’ scores.

The ‘t’ score are used for finding the level of Psychological attributes of B.Ed. students. For testing the difference between the means and difference among the means raw scores are used. Raw scores are used for finding the relationship between the dependent and independent variables.

**TABLE(5) SHOWING THE SCORING PROCEDURE FOR THE STATEMENTS**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Responses</th>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Strongly Agree</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>Agree</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>3.</td>
<td>Undecided</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Disagree</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

3.17 RELIABILITY OF THE TOOLS

1. Attitude towards teaching profession reliability is 0.753.
2. Personality Inventory reliability is 0.682.
3. Value scale is reliability 0.674.
4. Self confidence Inventory reliability is 0.841.
5. Mental Health Inventory reliability is 0.54.
6. Emotional Intelligence scale reliability is 0.813.
3.18 VALIDITY OF THE TOOLS

In the present study validity of the test was verified by subject experts in the field of education and authentic information and suggestion from the experts were considered and certain changes were made in the questionnaire before administering this test.

3.19 ACADEMIC ACHIEVEMENT

The investigator collected the percentage of academic achievement of B.Ed trainees in UG degree level. The investigator converted the raw scores in to ‘t’ scores. For interpreting the academic achievement of the respondents, the investigator found the level as given below.

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>50% - 60%</td>
<td>1</td>
</tr>
<tr>
<td>61% - 70%</td>
<td>2</td>
</tr>
<tr>
<td>71% - 80%</td>
<td>3</td>
</tr>
<tr>
<td>81% - 90%</td>
<td>4</td>
</tr>
<tr>
<td>91% - 100%</td>
<td>5</td>
</tr>
</tbody>
</table>

3.20 STATISTICAL TECHNIQUE USED

The statistical techniques used for the present study are the descriptive statistics like Mean, Median, Mode, Standard Deviation etc., and the inferential statistics like test of significance, ANOVA and Correlation.

3.21 SUMMARY

In this chapter the research design and sampling technique was given in detail. The procedure for construction and finalization of the tool was also described. The collected questionnaires were scored properly and suitable statistical analysis was carried out. The details of analysis and discussion are given in the next chapter.