CHAPTER III

RESEARCH METHODOLOGY
3.1 INTRODUCTION:

Research is a methodical and scientific action that is directed towards detection and the progress of a structured collection of content and facts.

Research may be defined as follows:

Definitions given by many scholars:

- Research is the implementation of logical steps in the investigation of the problem under study. It is a methodical trial to get the solution to the sensible queries about the happenings by applying scientific methods.
- Research may be defined as a cautious examination or analysis particularly by finding out new theories, principles and facts in any discipline of content.
- Research can also be said as a formal, systematic and intensive process used in the investigation of a problem. In education research may be carried in a class, school, college or an organization.
- Research is a process of identification of a problem, formulation of hypothesis, collection of data using various techniques and deriving conclusions in the form of generalization, principles or theories in a scientific manner. According to John Best, research is the analysis and registering of facts, theories, definitions and principles in an orderly and objective manner which results forecast.

Aims of Research:

1. To create the knowledge in form of generalizations, laws, principles and theories.
2. To modify existing generalizations, laws, principles and facts in the beam of new knowledge and discipline.
3. To solve problems.

The major goals of researches are given below:
1. To determine past and the present status of a phenomenon and predict the future trends.
2. To ascertain the nature, composition and processes that characterizes the selected phenomenon.
3. To stress the growth, development of History, change and the status of a specific phenomenon.
4. To study the cause and effect relationship among and between the phenomenon.
5. Planning is the most important stage in any research work. Just like an architect cannot construct a house or a building without a design, a good research cannot be conducted without an excellent research design. (6:32)

Meaning of Research Design:

Before starting any research work, researcher has to prepare its framework or the outline. So that the work proceeds smoothly and in right direction. With the help of this framework research the work can be implemented smoothly. This pre research plan is nothing but the investigation plan.

The foremost and alarming difficulty which arises after stating the problem under study is to prepare the plan of investigation which is commonly called as plan of investigation. To prepare the research design is a vital step in the research. How research work is carried out is actually imagined with the help of the research design. So the preparation of the same becomes very important.

So as to carry out the research work systematically planning and designing the research procedures and methods to be used in research work becomes important. Research design is the core of research work, to proceed with systematic research, right methodology is necessary as it gives right direction to the research. According to Kothari, plan of investigation is required for the easy execution of different procedures so that it makes the investigation to yield more knowledge with fewer expenses of time, energy and money. Plan of investigation is therefore a conceptual structure within which the investigator conducts his
The research design is an outline or blue print of the research to be conducted.

Investigation plan involves arranging the situations to gather and analyze the data in such a way that it targets to assemble significance to the purpose of research with less expenditure in the process. Research plan must contain the following aspects:

a. Statement of the problem of the study should be clear.

b. Methods and process of data collection from the population needs to be studied carefully.

c. Scientific procedure should be utilized to process and analyze the gathered information.

The subject matter of research design therefore includes planning the research, obtaining relevant information from the data collection and making an analysis of the data. It includes the methods of selecting the subjects for collecting the data, the type of tools required for data collection and the type of statistical procedures used for analyzing the data. Therefore research design is an essential part in research and helps to economize the efforts.

Firstly the researcher has to decide the topic of research. Then she has to verify whether the researches have been done on the same topic or not. After deciding the title and the nature of the problem the time required, overall expenses, sample size, medium of the samples, students or teachers etc. has to be thought about.

Plan of investigation is required for the easy execution of different procedures so that it makes the investigation to yield more knowledge with fewer expenses of time, energy and money. A research design is needed prior to data collection and its analysis.

3.2 METHODOLOGY OF THE STUDY:

Research methods:
Before selecting the methods of the study, the researcher first selects the area of research, identifies and defines the problem, do the review of related literature to get acquainted with the recent development in the field related to the problem of the study, frames the objectives and formulates the hypotheses, finalizes the action plan of research and then starts working on the problem as per the research plan which is designed prior hand. In the planning process the researcher has to decide upon the methodology that can be used to carry out the research work.

Descriptive research methods are not like experimental method as it deals with the relationships between the variables.

Research methods are of very important in the process of research. They describe the various steps of the plan of action which has to be adopted in solving the problem of research such as the manner in which the problems are formulated, the terms are defined, topic is selected, validation of the tools of research, collection of data, statistical analysis and interpretation of the data and the process of conclusions and generalizations.

Research methods can be classified as follows:

1. Experimental Research.
2. Historical Research.
3. Descriptive Research.

- Experimental Research describes what will be the result when certain variables are controlled or manipulated.

- Historical Research deals with the study of past events and developments.

- Descriptive Research on other hand is concerned with the present situations and studies the relationships / differences that exist.

Descriptive studies investigate the phenomena in their existing settings. Such studies provide useful information to solve the local problems as well as it provides data to form the basis of research more of fundamental nature. Descriptive research differs from other types of research in the purpose of research and the scope of the study. It involves the events that have already occurred and are related to the present situation.
The sequential steps in a descriptive research are given below:

- Identification and definition of a problem.
- Determination of objective and hypotheses to be tested.
- Listing out the assumptions upon which these hypotheses and procedures are based.
- Choosing of appropriate subject and sources materials, selected and construction of tools for collection data.
- Descriptive, analysis and interpretation of the data.
- Drawing the significant and meaningful conclusion.

**Descriptive studies are of the following types:**

a. Correlational Studies.

b. Causal – Comparative Studies.

c. Case Studies.

d. Survey.

e. Developmental Studies.

**Correlational method:**

This is an approach which analyzes the correlation between the variables in a way that the inherent, functional and constant conjunction of two events or of values of two variables can be observed. It also permits the measurement of several variables and studies their inter-relationships simultaneously in realistic settings. The expectation is that if a variable is systematically associated with other variable, prediction of future phenomena may suggest additional or computing hypothesis to test.

In this method, the researcher selects a sample in such a way that there is variance in the scores of both the variables. A major advantage of the Correlational method is that an investigator can explore a wide variety of different relationships in the same study. However, a correlational study does not imply a cause and effect relationship. (1:26)

In the present study, this method has been used to ascertain the strength and direction of the relationship of mental health of B. Ed. students and teacher behavior, social status and
economic status. It is not merely a statistical technique but an approach of studying relationships amongst variables measured at one point of time.

The correlational method is found to be appropriate in the present study because:

- It aims to discover or clarify correlation between the variables of the study.
- It is the most appropriate method that suits the definitions of mental health of B.Ed. students, teacher behavior, social status and economic status, described in the chapter-I.
- The variable of the present study and the theoretical framework do not lend them to the experimental method and controlled manipulations.

In the present study, the descriptive method of correlational type has been used for processing the data, classifying, analyzing them and interpreting the findings so that the researcher can draw conclusive evidence from the study and arrive at the generalizations. The study describes the impact of teacher behavior, social status and economic status on the mental health of B.Ed. students.

### 3.3 SAMPLE OF THE STUDY:

It becomes inconvenient to study the entire universe and then draw the conclusions. This impediment is overcome by the process of sampling which includes studying only some representative cases from the whole population.

A populace is a set of persons with one or more than one similar feature that is of investigator’s concern. A sample or an example is a minute portion of populace chosen for the study. A sample refers to the subgroup of the larger population under study and form which inferences are drawn about the larger population. The study aims at describing the mental health of B.Ed. students in relation to teacher behavior social status and economic status. It therefore requires that the data to be collected from the B.Ed. trainee teachers of Thane district, which thus forms the population of the study.

In the present study, the data have been collected from B.Ed. trainee teachers of B.Ed. colleges of Thane district affiliated to university of Mumbai, which thus is the sample of the study.
According to Vockell, Sampling is the methodology which helps the investigator to choose a small group from a bigger one so as to utilize it as foundation for formulating conclusions and interpretation about the bigger group. The various types of sampling techniques that can be employed to obtain a representative sample are as follows:

- **Simple random sampling:**
  Here the sample is selected such that each and every unit of the sample gets the equal opportunity of selection through the use of random number tables or the lottery method.

- **Stratified random sampling:**
  When the units in a sample are proportional to their presence in the population, the sample is said to be stratified. The population is subdivided into a smaller homogeneous groups or strata and individuals are then chosen at random from each of the subgroups to get a more accurate representation from each stratum.

- **Systematic sampling:**
  When the frame of the population can be listed and is finite, the researcher starts by selecting a unit at random from the first $K$ units and the $K^{th}$ subsequent unit is selected.

- **Cluster sampling:**
  When the populace is infinite or distributed over a vast geographical region, this method is used where the entire area is divided into smaller groups and simple random sampling is done from each of the sub-areas.

- **Incidental sampling:**
  This is a non-probability sampling technique where the subjects that are readily available are included in the sample. (2: 56)

For the purpose of the present study, a two stage sampling technique was used. At the first stage of sampling, the selection of B.Ed. colleges was done using simple random sampling. At the second stage of sampling, B.Ed. teacher trainees were chosen from these institutions.
by the technique of incidental sampling. This sampling method was used as others were beyond the control of the investigator.

Table 3.1 shows the sample size of students included in the study.

**TABLE 3.1**

SAMPLE SIZE OF B.ED. TEACHER TRAINEES

<table>
<thead>
<tr>
<th>Number Of B.Ed. Trainees Included In The Study</th>
<th>600</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Of Incomplete Forms Discarded</td>
<td>10</td>
<td>1.67%</td>
</tr>
<tr>
<td>Final Sample Size</td>
<td>590</td>
<td>98.33%</td>
</tr>
</tbody>
</table>

The tools were distributed to 600 B.Ed. teacher trainees out of which only 10 forms were not returned and were incompletely filled forms. Hence the final sample size was 590 B.Ed. teacher trainees.

Table 3.1 shows that the wastage rate on account of forms not returned and incomplete, was 1.67%.

Figure 3.1 shows the total sample size included in the study.

**FIGURE 3.1**
From the bar diagram it is clear that the wastage rate of data on account of incomplete information was 1.67.

Table 3.2 shows gender wise distribution of the final sample.
TABLE 3.2
SAMPLE SIZE BY GENDER

<table>
<thead>
<tr>
<th>Sr. no.</th>
<th>Gender</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Girls</td>
<td>448</td>
<td>75.93</td>
</tr>
<tr>
<td>2</td>
<td>Boys</td>
<td>142</td>
<td>24.07</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>590</td>
<td>100</td>
</tr>
</tbody>
</table>

The preceding table 3.2 shows that though both boys and girl teacher trainees were included in the present study, the proportion of female teacher trainees far exceeds that of male teacher trainees. This is due to the fact that the number of male teacher trainees in the population is less than that of the female teacher trainees.

Figure 3.2 shows the gender wise sample included in the study
Figure 3.2 shows the gender wise sample size included in the study. It can be seen that out of 590 sample size, 75.93% of the total sample was of girls and 24.07% was of boys.

The data were collected from B.Ed. teacher trainees doing B.Ed. through different mediums:

- English
- Marathi
Table 3.3 shows the number of B.Ed. teacher trainees doing B.Ed. through different mediums.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Medium</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>English</td>
<td>186</td>
<td>31.53</td>
</tr>
<tr>
<td>2</td>
<td>Marathi</td>
<td>214</td>
<td>36.27</td>
</tr>
<tr>
<td>3</td>
<td>Hindi</td>
<td>190</td>
<td>32.20</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>590</td>
<td>100</td>
</tr>
</tbody>
</table>

The preceding table 3.3 shows that the number of B.Ed. teacher trainees doing the B.Ed. course in Marathi medium is greater than that of English medium and Hindi medium. Whereas B.Ed. teacher trainees doing B.Ed. course in Hindi medium is slightly less than that of English medium. This is due to the fact that the number of Marathi speaking B.Ed. teacher trainees is more while Hindi speaking B.Ed. teacher trainees is less in Thane district.

Figure 3.3 shows the medium wise sample size included in the study.
Figure 3.3 shows the medium wise sample size included in the study. It can be seen that out of 590 sample size, 31.53% of total sample was of English medium students, 36.27% was of Marathi medium students and 32.2% was that of the Hindi medium students.

The data were collected from B.Ed. colleges situated within the limits of Thane district. The list of B.Ed. colleges included in the sample is given in Appendix-A:

Major variables of the study:
The following variables were taken into account by the researcher in the present study:

1. Mental health of B.Ed. teacher trainees
2. Teacher behavior
3. Social status
4. Economic status.

**Tools used for the data collection:**

For the collection of data there are various devices. The devices used as way of collection of information are called tools. Various instruments are suitable for collecting various sort of information. The usage of a specific investigation device is dependent on the research type. The investigator may employ one or more devices as required by combining the devices together for the rationale of the study.

The data required for the present study were as follows:

- Personal data
- Mental health of B.Ed. teacher trainees
- Teacher behavior
- Social status
- Economic status.

In order to measure the variables mentioned in the preceding paragraph, the following tools were used in the present research.

**3.4 THE TOOLS OF RESEARCH:**

A researcher will require many tools for collecting information which may differ in their involvedness, plan, utility and understanding. Specific device is apt for collecting specific kind of data. The major data gathering tools of research may be categorized as follows:
1. Inquiry Forms:

- Questionnaire.
- Schedule.
- Checklist.
- Rating Scale.
- Score Card.
- Opinionnaire.
- Attitude Scale.

2. Observation Schedules.

3. Interview Schedules.

4. Psychological Test.

- Achievement test.
- Aptitude Test.
- Intelligence Test.
- Interest Inventory.
- Personality Test.

**Tools used in the Present Study:**

For the purpose of the present study, the researcher has rating scales. The information from that attempt to measure quality judgments or opinions and indicate their degree or amount is known as a rating scale. In a rating scale, descriptions of different degree of the quality to be measured are set linearly and this line is the range. The scale is used to measure those qualities, which are often difficult to measure objectives otherwise.

For the purpose of the study, the investigator has used four tools to collect information from students. These include self prepared tools by the researcher.

**Researcher Made Tools:**

- Personal data sheet.
- Mental health of B.Ed. teacher trainees (MH).
Preparation of the tool:

To measure the mental health of B.Ed. teacher trainees, a rating scale was prepared by the investigator for which the investigator took the help of her guide in framing the appropriate statements based on the dimensions of the variables. The items in the tool were based on the researchers’ own experience as a B.Ed. teacher trainee and also as a teacher educator, her colleagues’ experience and the conceptual literature available in the subject. After framing the appropriate statements a pre-pilot study was conducted.

Pre-pilot study:

The pre-pilot study describes the two aspects of the preparation of tools.

- Validity.
- Item analysis.

Validity:

Validity implies the degree at which a device or a tool gauges that it purports to compute. Without ascertaining the validity, the tools can lead incorrect research conclusions which in turn can influence educational decisions. Generally four types of test validity are identified.

They are as follows:

1. Face validity.
2. Content validity.

1. Face Validity: A tool has face validity when the items look like they measure what the tool is supposed to measure. Face validity is determined by superficial determination of tool
either by respondent of the tool or by qualified experts. In the other words, it refers to what
the tool appears to measure.

2. **Content Validity**: It is concerned with determining the adequacy of sampling of items
from the universe of potential items and is a measure of finding out whether the items
represent the entire concrete matter and whether the items are relevant to the definition of the
concept. Content Validity is always judged by qualified expert judges.

3. **Criterion Validity**: It is the coverage to which the tool correlates with the criterion of the
variable being studied. If this correlation coefficient is high, criterion validity is high.

It is of 2 types:

- Predictive Validity.
- Concurrent Validity.

4. **Construct Validity**: It is the coverage to which values on the tool correlate with the
clarifying constructs of a resonance theory.

Content validity is the coverage to which the sample of items highlights what the test is
designed to measure. Content validity is determined by systematically defining the specific
content in precise terms, specifying the objectives and describing how the data will be
sampled to develop test items. It is ascertained by obtaining options of experts regarding the
relevance of these items.

In the present study, the content validity of MH, TB, SS and ES has been ascertained.

For this purpose, pool of items was prepared for each tool on the basis of the definition of the
variable concerned. The tool was then given to ten experts who belonged to the field of
education to ascertain the relevance of items so as to ensure the content validity of the tools.
The list of the experts is given in Appendix B.

The items which were agreed upon by 95% of the experts were retained and others were
discarded or modified as per experts suggestions.

**Item analysis:**

The core objective of item analysis was to determine item validity by computing the
discrimination index for each item.
For the pilot study, a sample of 40 B.Ed. teacher trainees was selected from Thane district.

Table 3.4 shows the name of the B.Ed. College and the sample size for the pilot study.

**TABLE 3.4**

**NAME OF THE B.ED. COLLEGE AND SAMPLE SIZE**

<table>
<thead>
<tr>
<th>Name of the college</th>
<th>Sample size</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>SSM College Of Education And Research</td>
<td>12</td>
<td>38</td>
</tr>
</tbody>
</table>

After administering the tool, the responses were quantified. According to the total scores on each variable, the forms were arranged in the descending order. Therefore, upper 27% and lower 27% of the 50 forms were taken out. Scores of each item from the upper group (upper 27%) and lower groups (lower 27%) were noted down and then the discrimination index of each item was computed using the following formula.

\[
D.\ I. = \frac{N_U - N_L}{1/2N}
\]

Where,

\( N_U = \) Number of respondents getting a high score in upper 27% of the group.

\( N_L = \) Number of respondents getting high score in lower 27% group.

\( N = \) Sample size.

D.I. is the discriminating index.

After calculating the discrimination index, of each item, the items whose discrimination index was less than 0.20 were discarded. The items whose discrimination index was more than 0.20 were accepted. Hence, after computing discrimination index of the items and ascertaining the
content validity of the tools, the numbers of items retained in each tool are shown in the tables 3.5, 3.6, 3.7 and 3.8.

Table 3.5 showing the effect of item analysis on MH, so as to include the number of items in the final version of the scale.

TABLE 3.5

EFFECT OF ITEM ANALYSIS ON MH

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No of items previously framed</td>
<td>31</td>
</tr>
<tr>
<td>No of items dropped</td>
<td>05</td>
</tr>
<tr>
<td>No of items modified</td>
<td>17</td>
</tr>
<tr>
<td>No of items not modified</td>
<td>09</td>
</tr>
<tr>
<td>Total no of items in the final tool</td>
<td>26</td>
</tr>
</tbody>
</table>

The final MH rating scale had 26 items.

Table 3.6 showing the effect of item analysis on TB, so as to include the number of items in the final version of the scale.

TABLE 3.6

EFFECT OF ITEM ANALYSIS ON TB

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No of items previously framed</td>
<td>37</td>
</tr>
<tr>
<td>No of items dropped</td>
<td>02</td>
</tr>
<tr>
<td>No of items modified</td>
<td>30</td>
</tr>
<tr>
<td>No of items not modified</td>
<td>05</td>
</tr>
<tr>
<td>Total no of items in the final tool</td>
<td>35</td>
</tr>
</tbody>
</table>

The final TB rating scale had 35 items.

Table 3.7 showing the effect of item analysis on SS, so as to include the number of items in the final version of the scale.

TABLE 3.7
EFFECT OF ITEM ANALYSIS ON SS

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No of items previously framed</td>
<td>35</td>
</tr>
<tr>
<td>No of items dropped</td>
<td>03</td>
</tr>
<tr>
<td>No of items modified</td>
<td>25</td>
</tr>
<tr>
<td>No of items not modified</td>
<td>07</td>
</tr>
<tr>
<td>Total no of items in the final tool</td>
<td>32</td>
</tr>
</tbody>
</table>

The final SS rating scale had 32 items.

Table 3.8 showing the effect of item analysis on ES, so as to include the number of items in the final version of the scale.

Table 3.8

EFFECT OF ITEM ANALYSIS ON ES

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No of items previously framed</td>
<td>27</td>
</tr>
<tr>
<td>No of items dropped</td>
<td>00</td>
</tr>
<tr>
<td>No of items modified</td>
<td>21</td>
</tr>
<tr>
<td>No of items not modified</td>
<td>06</td>
</tr>
<tr>
<td>Total no of items in the final tool</td>
<td>27</td>
</tr>
</tbody>
</table>

The final ES rating scale had 27 items.

Table 3.9 shows the no of items included in the final version of the MH, TB, SS and ES scale.
TABLE 3.9

NUMBER OF ITEMS IN THE FINAL VERSION OF THE TOOL

<table>
<thead>
<tr>
<th>Rating scale</th>
<th>No of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>MH</td>
<td>26</td>
</tr>
<tr>
<td>TB</td>
<td>35</td>
</tr>
<tr>
<td>SS</td>
<td>32</td>
</tr>
<tr>
<td>ES</td>
<td>27</td>
</tr>
</tbody>
</table>

Pilot Study:
A pilot study was conducted to determine the consistency of the tool.

Reliability:
A test is said to be reliable to the degree that it gauges perfectly and constantly over time.

For the purpose of the present study, the internal consistency and the test-retest reliability have been computed.

1. The internal consistency reliability
Formula which is used to calculate the internal consistency of the tools to measure the MH, TB, SS and ES is as follows:

\[
r = \frac{2r_{1/2}}{1 + r_{1/2}}
\]

\[
r_{1/2} = \frac{N \sum{XY} - \sum{X} \cdot \sum{Y}}{\sqrt{(N \sum{X^2} - (\sum{X})^2)N \sum{Y^2} - (\sum{Y})^2}}
\]

Where
\[ \sum X = \text{the sum of scores on variable } X. \]
\[ \sum Y = \text{the sum of scores on variable } Y. \]
\[ N = \text{sample size.} \]
\[ \sum XY = \text{sum of the product of scores on variable } X \text{ and variable } Y. \]
\[ \sum X^2 = \text{sum of squares of scores on variable } X. \]
\[ \sum Y^2 = \text{sum of squares of scores on variable } Y. \]

The internal consistency reliability of MH, TB, SS and ES was found to be 0.92, 0.81, 0.77 and 0.79 respectively.

**Interpretation:**

Reliability of MH, TB, SS and ES scales were high. Hence the scales were found to be internally consistent.

2. Stability over time / Test- Retest.

In order to compute the coefficient of stability over time, the tool was administered twice to the same group of sample over a period of time. Scores obtained from the two administrations were then correlated and the coefficient of correlation thus obtained gave the coefficient of stability of the instrument over time. (1: 77)

For the purpose of the present study the test- retest reliability of the researcher made tool viz. MH, TB, SS and ES were determined and found to be 0.88, 0.76, 0.71 and 0.72.

Table 3.10 gives the reliability coefficient of MH, TB, SS and ES.

<table>
<thead>
<tr>
<th>TABLE 3.10</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RELIABILITY COEFFICIENT OF THE RATING SCALE</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rating scale</th>
<th>Internal consistency reliability</th>
<th>Coefficient of stability overtime</th>
</tr>
</thead>
<tbody>
<tr>
<td>MH</td>
<td>0.92</td>
<td>0.88</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>TB</td>
<td>0.81</td>
<td>0.76</td>
</tr>
<tr>
<td>SS</td>
<td>0.77</td>
<td>0.71</td>
</tr>
<tr>
<td>ES</td>
<td>0.79</td>
<td>0.72</td>
</tr>
</tbody>
</table>

Figure 3.4 shows the reliability coefficient of the rating scale.
The above figure shows the reliability coefficient of MH, TB, SS and ES.

Description Of The Researcher Made Tool:
1. The Personal Data Sheet:

This instrument was devised to obtain the background information regarding the respondents i.e. the B.Ed. teacher trainees, such as name of the B.Ed. teacher trainee, gender, name of the college, special methods opted, medium of instruction and whether the college is situated in rural or urban area.

The personal data sheet for B.Ed. teacher trainees is given in Appendix -C.

2. MH.

In all there are 26 items in the scale. The MH is a five point rating scale with the following response categories and scale values, given in bracket for positively worded statements.

A : Always (5)
O : Often (4)
S : Sometimes (3)
R : Rarely (2)
N : Never (1)

For negatively worded items, the scoring is reverse in order.

A : Always (1)
O : Often (2)
S : Sometimes (3)
R : Rarely (4)
N : Never (5)

The maximum and minimum possible scores are 130 and 26 respectively.
Some statements of this rating scale are as follows:

MH is given in Appendix- D.

3. TB

In all there are 35 items in the scale. The TB is a five point rating scale with the following response categories and scale values, given in bracket for positively worded statements.

A : Always (5)
O : Often (4)
S : Sometimes (3)
R : Rarely (2)
N : Never (1)

For negatively worded items, the scoring is reverse in order.

A : Always (1)
O : Often (2)
S : Sometimes (3)
R : Rarely (4)
N : Never (5)

The maximum and minimum possible scores are 175 and 35 respectively.

Some statements of this rating scale are as follows:

<table>
<thead>
<tr>
<th>Sr.No</th>
<th>Statement</th>
<th>A</th>
<th>O</th>
<th>S</th>
<th>R</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I worry on pity matter for a long time.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I perform well even in adverse conditions.</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4. SS

In all there are 32 items in the scale. The SS is a five point rating scale with the following response categories and scale values, given in bracket for positively worded statements.

- **A**: Always (5)
- **O**: Often (4)
- **S**: Sometimes (3)
- **R**: Rarely (2)
- **N**: Never (1)

For negatively worded items, the scoring is reverse in order.

- **A**: Always (1)
- **O**: Often (2)
- **S**: Sometimes (3)
- **R**: Rarely (4)
- **N**: Never (5)

The maximum and minimum possible scores are 160 and 32 respectively.

Some statements of this rating scale are as follows:

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Statement</th>
<th>A</th>
<th>O</th>
<th>S</th>
<th>R</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>My confidence lowers when my teacher neglects me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Teacher listens to our personal problems.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In all there are 27 items in the scale. The ES is a five point rating scale with the following response categories and scale values, given in bracket for positively worded statements.

<table>
<thead>
<tr>
<th></th>
<th>Statement</th>
<th>A</th>
<th>O</th>
<th>S</th>
<th>R</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I mould myself according to the circumstances.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I feel isolated in the class.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
DATA COLLECTION:

This stage involves the actual collection of the information required for the purpose of this study. In order to collect information from the B.Ed. teacher trainees studying in different colleges, it was necessary to seek permission from the concerned school authorities. The investigator personally went to each B.Ed. College to take permission for the data collection. On the appointed date and time given by the college principals, the researcher went to each college with the tools and explained the purpose and procedure to the B.Ed. teacher trainees in order to obtain the responses on the rating scales.

Quantification of the Data:

After collection of the data, the responses of the B.Ed. teacher trainees were quantified by assigning scale values to the items and the scores were so organized that the process of tabulation would become an easy task.

Tabulation of the Data:

Tabulation refers to the recording of the classified scores. The method of tabulation depends upon the aims and objectives of the study. In the present research, one-fold tables have been used for data analysis.

Analysis of the Data:
At this stage, the tabulated data are scientifically and systematically studied in order to determine the underlying, inherent facts or relationships. During this process, the existing complex factors are broken down into smaller and simpler parts. These parts are then put together in new arrangements, so as to synthesize and interpret them.

**Unit of Analysis:**

The unit of analysis in the present study is the individual B.Ed. teacher trainee. The choice of the unit of analysis depends on the aims and objectives of the study. It uses the individual B.Ed. teacher trainee as the unit of analysis for the following reasons:

- The individual is the fundamental unit of human behavior.
- Every individual possess unique concerns, beliefs, personality orientations, values, perceptions and attitudes. These qualities or characteristics of an individual are likely to influence his/her behavior, performance, idea, and views in a unique way.

**3.5 Statistical Techniques of Data Analysis:**

The contribution of statistical methods is considerably high in the general process of analyzing the data in the present study.

The analysis in the present study is of two types:

- Descriptive Analysis.
- Inferential Analysis.

1. **Descriptive Analysis:**

The characteristic of a particular group can be studied by descriptive statistical measures. The generalization is limited up to that particular group studied. No conclusions can be extended beyond this group. The statistical techniques used by the investigator for descriptive analysis of are as follows:

- Measures of central tendency: This includes the mean.
- Measures of variability: This includes the standard deviation.
- Estimation: Estimation of population parameters of the mean and standard deviation.
- Graphical methods: This includes bar diagrams.
2. Inferential Analysis:

It involves the use of statistical techniques to study the nature of data and the relationships between the variables of the study.

Generalizations made by inferential analysis can be extended to infer population. Characteristics for the purpose of inferential analysis of the data in the present study, following techniques have been used.

- Coefficient of correlation:
  - This technique has been used to ascertain the relationship between the mental health of B.Ed. trainees and teacher behavior, social status and economic status.
  - The Pearson’s r or product moment coefficient of correlation has been used for this purpose.

- t-Test:
  - This technique has been used to find whether there exist any differences in the mental health of B.Ed. trainees with teacher behavior, social status and economic status, gender wise and medium wise.

- ANOVA:
  - Analysis of Variance or ANOVA is a statistical method opted for comparison of means of two or more samples. It checks the null hypothesis that samples from two or more sets are pinched from the populace having similar mean scores. (6:48)

3.6 Bibliography and References:

Unpublished Dissertations: