CHAPTER-4

METHOD AND PROCEDURE OF THE STUDY

4.1 Introduction:

Research methodology involves systematic procedures starting from the initial identification of the problem to its final conclusions. Its role is to carry out the research work in a scientific and valued manner. It provides tools and techniques by which the research problem is addressed. The selection of an appropriate method for investigating a research problem and specific design within the method, depend upon the nature of problems and upon the kind of data that the problems entail. In the light of the review of related literature and the discussion above, the present study has been attempted to study in the following way. The major aim of the study is to examine the impact of creativity, stress and academic achievement on emotional intelligence of the B. Ed. Students.

4.2 Objective of the Study:

1. To examine the emotional intelligence of the B.Ed. students.

2. To examine the emotional intelligence of the B.Ed. students in relation to creativity.

3. To examine the emotional intelligence of the B.Ed. students in relation to stress.

4. To examine the emotional intelligence of the B.Ed. students in relation to academic achievement.
4.3 Specific Objective of the Study:

1. i) To examine the level of emotional intelligence of the B. Ed. students.

   ii) To study the difference of emotional intelligence of the male and female B. Ed. students.

   iii) To know the difference of emotional intelligence of the rural and urban B. Ed. students.

   iv) To know the difference of emotional intelligence of the B. Ed. students from private and government teacher training colleges.

   v) To know the difference of emotional intelligence of the B. Ed. students from arts and science background.

   vi) To know the difference of emotional intelligence of the graduate and postgraduate B. Ed. students.

   vii) To know the difference of emotional intelligence of the B. Ed. students of below 30 and above 30 years of age.

   viii) To examine the difference of emotional intelligence of the B. Ed. students of in-service and pre-service teacher training.

2. i) To examine the level of creativity of the B. Ed. students.

   ii) To know the level of creativity of different emotional intelligence groups of B. Ed. students.
iii) To study the difference of creativity of the male and female B. Ed. students.

iv) To study the difference of creativity of the rural and urban B. Ed. students.

v) To examine the creativity of the B. Ed. students of private and government teacher training colleges.

vi) To study the difference of creativity of the B. Ed. students from arts and science background.

vii) To examine the difference of creativity of the graduate and postgraduate B. Ed. students.

viii) To know the difference of creativity of the B. Ed. students of below 30 and above 30 years of age.

ix) To examine the difference of creativity of the B. Ed. students of in-service and pre-service teacher training.

3. i) To examine the level of stress of the B. Ed. students.

ii) To know the level of stress of different emotional intelligence groups of B. Ed. students.

iii) To study the difference of stress of the male and female B. Ed. students.

iv) To examine the difference of stress of the rural and urban B. Ed. students.
v) To examine the difference of stress of the B. Ed. students from private and government teacher training colleges.

vi) To study the difference of stress of the B. Ed. students from arts and science background.

vii) To study the difference of stress of the graduate and postgraduate B. Ed. students.

viii) To study the difference of stress of the B.Ed. students of below 30 and above 30 years of age.

ix) To study the difference of stress of the B. Ed. students of in-service and pre-service teacher training.

4. i) To examine the level of academic achievement of the B. Ed. students.

ii) To know the level of academic achievement of different emotional intelligence groups of B. Ed. students.

iii) To study the difference of academic achievement of the male and female B. Ed. students.

iv) To know the difference of academic achievement of the rural and urban B. Ed. students.

v) To examine the difference of academic achievement of the B. Ed. students from private and government teacher training colleges.

vi) To study the difference of academic achievement of the B. Ed. students from arts and science background.
vii) To study the difference of academic achievement of the graduate and postgraduate B. Ed. students.

viii) To study the difference of academic achievement of the B. Ed. students of below 30 and above 30 years of age.

ix) To study the difference of academic achievement of the B. Ed. students of in-service and pre-service teacher training.

5. To study the difference of emotional intelligence of the B. Ed. students of different levels of creativity.

6. To study the difference of emotional intelligence of B. Ed. students of different levels of stress.

7. To study the difference of emotional intelligence of B. Ed. students of different levels of academic achievement.

8. To measure the relationship between emotional intelligence and creativity of the B. Ed. students.

9. To know the relationship between emotional intelligence and creativity of the B. Ed. students of different categories- sex, area, academic background, management, educational qualification, age and type of teacher training.

10. To measure the relationship between emotional intelligence and stress of the B. Ed. students.
11. To know the relationship between emotional intelligence and stress of the B. Ed. students of different category- sex, area, academic background, management, educational qualification, age and type of teacher training.

12. To measure the relationship between emotional intelligence and academic achievement of the B. Ed. students.

13. To know the relationship between emotional intelligence and academic achievement of the B. Ed. students of different category- sex, area, academic background, management, academic qualification, age and type of teacher training.

14. To measure the relationship between creativity and stress of the B. Ed. students.

15. To measure the relationship between creativity and academic achievement of the B. Ed. students.

16. To measure the relationship between stress and academic achievement of the B. Ed. students.

4.4 **Null Hypotheses of the study :**

The null hypotheses formulated in the present study to be tested are-

**Objective 1 :**

\[ H_{o1} : \] There exists no significant difference in the mean scores of emotional intelligence of the male and female B. Ed. students.
\textbf{H}_{o2}: \ There exists no significant difference in the mean scores of emotional intelligence of the rural and urban B.Ed. students.

\textbf{H}_{o3}: \ There exists no significant difference in the mean scores of emotional intelligence of the B. Ed. students from private and government teacher training colleges.

\textbf{H}_{o4}: \ There exists no significant difference in the mean scores of emotional intelligence of the B. Ed. students from arts and science background.

\textbf{H}_{o5}: \ There exists no significant difference in the mean scores of emotional intelligence of graduate and postgraduate B. Ed. students.

\textbf{H}_{o6}: \ There exists no significant difference in the mean scores of emotional intelligence of the B. Ed. students of below 30 and above 30 years of age.

\textbf{H}_{o7}: \ There exists no significant difference in the mean scores of emotional intelligence of in-service and pre-service B. Ed. students.

\textbf{Objective 2 :}

\textbf{H}_{o1}: \ There exists no significant difference in the mean scores of creativity of the male and female B. Ed. students.

\textbf{H}_{o2}: \ There exists no significant difference in the mean scores of creativity of rural and urban B. Ed. students.
\( H_{o3} \): There exists no significant difference in the mean scores of creativity of the B. Ed. students from private and government teacher training colleges.

\( H_{o4} \): There exists no significant difference in the mean scores of creativity of the B. Ed. students from arts and science background.

\( H_{o5} \): There exists no significant difference in the mean scores of creativity of the graduate and postgraduate B. Ed. students.

\( H_{o6} \): There exists no significant difference in the mean scores of creativity of the B. Ed. students of below 30 and above 30 years of age.

\( H_{o7} \): There exists no significant difference in the mean scores of creativity of in-service and pre-service B. Ed. students.

**Objective 3 :**

\( H_{o1} \): There exists no significant difference in the mean scores of stress of the male and female B. Ed. students.

\( H_{o2} \): There exists no significant difference in the mean scores of stress of the rural and urban B. Ed. students.

\( H_{o3} \): There exists no significant difference in the mean scores of stress of the B. Ed. students from private and government teacher training colleges.

\( H_{o4} \): There exists no significant difference in the mean scores of stress of the B. Ed. students from arts and science background.
$H_{05}^c$: There exists no significant difference in the mean scores of stress of graduate and postgraduate B. Ed. students.

$H_{06}^c$: There exists no significant difference in the mean scores of stress of the B. Ed. students of below 30 and above 30 years of age.

$H_{07}^c$: There exists no significant difference in the mean scores of stress of in-service and pre-service B. Ed. students.

**Objective 4:**

$H_{01}^c$: There exists no significant difference in the mean scores of academic achievement of the male and female B. Ed. students.

$H_{02}^c$: There exists no significant difference in the mean scores of academic achievement of the rural and urban B. Ed. students.

$H_{03}^c$: There exists no significant difference in the mean scores of academic achievement of the B. Ed. students from private and government teacher training colleges.

$H_{04}^c$: There exists no significant difference in the mean scores of academic achievement of the B. Ed. students from arts and science background.

$H_{05}^c$: There exists no significant difference in the mean scores of academic achievement of the graduate and postgraduate B. Ed. students.

$H_{06}^c$: There exists no significant difference in the mean scores of academic achievement of the B.Ed. students of below 30 and above 30 years of age.
Objective 5:

$H_{o1}$: There exists no significant difference in the mean score of emotional intelligence of B. Ed. students having high and low creativity.

$H_{o2}$: There exists no significant difference in mean scores of emotional intelligence of the B. Ed. students of high creativity having high and low stress.

$H_{o3}$: There exists no significant difference in the mean scores of emotional intelligence of the B. Ed. students of low creativity having high and low stress.

$H_{o4}$: There exists no significant difference in the mean score of emotional intelligence of the B. Ed. students of high creativity having good and poor academic achievement.

$H_{o5}$: There exists no significant difference in the mean score of emotional intelligence of the B. Ed. students of low creativity having good and poor academic achievement.

Objective 6:

$H_{o6}$: There exists no significant difference in mean scores of emotional intelligence of high and low stress B. Ed. students.
$H_{o2}$: There exists no significant difference in the mean score of emotional intelligence of the B. Ed. students of high stress having high and low level of creativity.

$H_{o3}$: There exists no significant difference in the mean score of emotional intelligence of the B. Ed. students of low stress having high and low level of creativity.

$H_{o4}$: There exists no significant difference in the mean score of emotional intelligence of the B. Ed. students of high stress having good and poor academic achievement.

$H_{o5}$: There exists no significant difference in the mean score of emotional intelligence of the B. Ed. students of low stress having good and poor academic achievement.

**Objective 7:**

$H_{o1}$: There exists no significant difference in the mean score of emotional intelligence of the B. Ed. students of good and poor academic achievement.

$H_{o2}$: There exists no significant difference in the mean score of emotional intelligence of the B. Ed. students of good academic achievement having high and low creativity.

$H_{o3}$: There exists no significant difference in the mean score of emotional intelligence of the B. Ed. students of poor academic achievement having high and low creativity.
Objective 8:

$H_{o4}$: There exists no significant difference in the mean score of emotional intelligence of the B. Ed. students of good academic achievement having high and low stress.

$H_{o5}$: There exists no significant difference in the mean score of emotional intelligence of the B. Ed. students of poor academic achievement having high and low stress.

Objective 9:

$H_{o1}$: There exists no significant relation in emotional intelligence and creativity of B. Ed. students.

$H_{o2}$: There exists no significant relation between emotional intelligence and creativity of the male B. Ed. students.

$H_{o3}$: There exists no significant relation between emotional intelligence and creativity of the female B. Ed. students.

$H_{o4}$: There exists no significant relation between emotional intelligence and creativity of the rural B. Ed. students.

$H_{o5}$: There exists no significant relation between emotional intelligence and creativity of the B. Ed. students of private teacher training colleges.
H06: There exists no significant relation between emotional intelligence and creativity of the B. Ed. students of government teacher training colleges.

H07: There exists no significant relation between emotional intelligence and creativity of the B. Ed. students from arts background.

H08: There exists no significant relation between emotional intelligence and creativity of the B. Ed. students from science background.

H09: There exists no significant relation between emotional intelligence and creativity of the graduate B. Ed. students.

H010: There exists no significant relation between emotional intelligence and creativity of the postgraduate

H011: There exists no significant relation between emotional intelligence and creativity of the B. Ed. students of below 30 years of age.

H012: There exists no significant relation between emotional intelligence and creativity of the B. Ed. students of above 30 years of age.

H013: There exists no significant relation between emotional intelligence and creativity of the in-service B. Ed. students.

H014: There exists no significant relation between emotional intelligence and creativity of the pre-service B. Ed. students.

Objective 10:

H01: There exists no significant relation between emotional intelligence and stress of B. Ed. students.
Objective 11:

$H_{o1}$: There exists no significant relation between emotional intelligence and stress of the male B. Ed. students.

$H_{o2}$: There exists no significant relation between emotional intelligence and stress of the female B. Ed. students.

$H_{o3}$: There exists no significant relation between emotional intelligence and stress between the rural B. Ed. students.

$H_{o4}$: There exists no significant relation between emotional intelligence and stress of urban B. Ed. students.

$H_{o5}$: There exists no significant relation between emotional intelligence and stress of the B. Ed. students from private teacher training colleges.

$H_{o6}$: There exists no significant relation between emotional intelligence and stress of the B. Ed. students from government teacher training colleges.

$H_{o7}$: There exists no significant relation between emotional intelligence and stress of the B. Ed. students from arts background.

$H_{o8}$: There exists no significant relation between emotional intelligence and stress of the B. Ed. students from science background.

$H_{o9}$: There exists no significant relation between emotional intelligence and stress of the graduate B. Ed. students.
H_{o10}:
There exists no significant relation between emotional intelligence and stress of the postgraduate B. Ed. students.

H_{i1}:
There is no significant relation between emotional intelligence and stress of the B.Ed. students of below 30 years of age.

H_{o2}:
There is no significant relation between emotional intelligence and stress of the B.Ed. students of above 30 years of age.

H_{o3}:
There exists no significant relation between emotional intelligence and stress of the in-service B. Ed. students.

H_{o4}:
There exists no significant relation between emotional intelligence and the stress of the pre-service B. Ed. students.

Objective 12:

H_{o1}:
There exists no significant relation between emotional intelligence and academic achievement of B. Ed. student.

Objective 13:

H_{o1}:
There exists no significant relation between emotional intelligence and academic achievement of the male B. Ed. students.

H_{o2}:
There exists no significant relation between emotional intelligence and academic achievement of the female B. Ed. students.

H_{o3}:
There exists no significant relation between emotional intelligence and academic achievement of the rural B. Ed. students.
$H_{o4}$: There exists no significant relation between emotional intelligence and academic achievement between the urban B. Ed. students.

$H_{o5}$: There exists no significant relation between emotional intelligence and academic achievement of the B. Ed. students from private teacher training colleges.

$H_{o6}$: There exists no significant relation between emotional intelligence and academic achievement of the B. Ed. students from government teacher training colleges.

$H_{o7}$: There exists no significant relation between emotional intelligence and academic achievement of the B. Ed. students from arts background.

$H_{o8}$: There exists no significant relation between emotional intelligence and academic achievement of the B. Ed. students from science background.

$H_{o9}$: There exists no significant relation between emotional intelligence and academic achievement of the graduate B. Ed. students.

$H_{o10}$: There exists no significant relation between emotional intelligence and academic achievement of the postgraduate B. Ed. students.

$H_{o11}$: There exists no significant relation between emotional intelligence and academic achievement of the B. Ed. students below 30 years of age.
H_{o12} : There exists no significant relation between emotional intelligence and academic achievement of the B. Ed. students of above 30 years of age.

H_{o13} : There exists no significant relation between emotional intelligence and academic achievement of the in-service B. Ed. students.

H_{o14} : There exists no significant relation between emotional intelligence and academic achievement of the pre-service B. Ed. students.

Objective 14 :

H_{o1} : There exists no significant relation between creativity and stress of the B. Ed. students.

Objective 15 :

H_{o1} : There exists no significant relation between creativity and academic achievement of the B. Ed. students.

Objective 16 :

H_{o1} : There exists no significant relation between stress and academic achievement of the B. Ed. students.
4.5 Method of the Study:

Proper planning provides a definite direction to attain the objectives. Planning of a study refers to the methodology to be adopted in selection of representative sample, selection of tools for collection of data and proper data collection.

Normative survey method is used to study the emotional intelligence of the B. Ed. students in relation to creativity, stress and academic achievement. Normative survey method is that type of investigation that attempts to describe and interpret what exist at present. It is employed to collect detail descriptions of existing phenomena with the intent of employing data to justify current condition and practices or to make more intelligent plans for improving them. Its objective is not only to analyze, interpret and report the status of an institution, group or areas in order to guide, practice in the immediate future, but also to determine the adequacy of status by compiling it with established standards.

4.5.1 Variables in the Study:

On the basis of different studies in different cultural settings, the investigator feels it necessary to study about emotional intelligence of the B. Ed. students of Kamrup district and accordingly it is hypothesized that the three variables—creativity, stress and academic achievement have impact on emotional intelligence of the B. Ed. Students.
1. Dependent Variable:

Emotional intelligence as influenced by three independent variables mentioned below is taken as dependent variable in the study. The variable is dependent or response variable because it’s values depends upon the value of the independent variables.

2. Independent Variables:

These variables have been taken as independent variables or stimulus variables because it can be measured, manipulated or selected by the investigator to determine the relationship with the dependent variable.

a) Creativity: The first independent variable is ‘creativity’. It has been varied at two levels – High and Low creativity.

b) Stress: The second independent variable is ‘stress’ which has been varied at two levels - High and Low stress.

c) Academic Achievement: The third independent variable mentioned is ‘academic achievement’. It has been varied at good and poor academic achievement.

The study also takes into consideration other background variables that seem to be important in developing emotional Intelligence abilities, like – sex, area, management, academic background, educational qualification, age and type of training.
4.6 Population of the study:

Sampling is indispensible technique of the research studies. The practical implication of cost, time etc. usually stands in the way of studying the total population. The investigator has selected a sample of 500 B. Ed. students from Kamrup district of Assam which contains a sizable number of 12 teacher training colleges out of 42 teacher training colleges of Assam. The teacher training colleges of Kamrup district affiliated to Gauhati University has been selected for selection of student sample with intake capacity of 100 each. So, the population of the study consists of all the B.Ed. students studying in the B.Ed. Colleges of Kamrup district in the session 2008 – 09, 09 – 10. (Source – http:ncte.in.org).

4.6.1 Sample of the Study:

The investigator made use of simple random sampling method for obtaining sample from the universe. The existing student teachers in the last part of the academic years were considered to be having maturity about their feelings and experiences. A total sample, almost 800 B.Ed. students have been selected for the study from both Government and Private B.Ed. Colleges. However, only 500 B.Ed. students were finally selected as rest of the response sheets were found to be somehow incomplete. The details of the sample selected is given in table -4.1
### Table - 4.1

Sample Structure of the Study

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<th>Sl. No.</th>
<th>Category</th>
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<td></td>
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<tr>
<td></td>
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<td>Postgraduate</td>
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<td>Above 30 Yrs.</td>
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<tr>
<td></td>
<td>Pre-service</td>
<td>298</td>
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</table>
4.7 Tools used for collection of Data:

After reviewing different literature on ‘Emotional Intelligence’ and other variables five types of tools were selected for the present study.

Tools Used:

1. An adapted Emotional Intelligence Scale for measuring Emotional Intelligence based on Goleman’s competence based model of Emotional Intelligence.
2. Non-Verbal Test of Creative Thinking – by Baquer Mehdi.
3. Personal Problem Index Scale Measuring Stress.
4. The Academic Achievement score of the B.Ed. final examination of the B.Ed. students.
5. Personal Information Sheet.

A brief discussion of the tools:

4.7.1 Emotional Intelligence Scale:

An emotional intelligence scale was tried to adapt for the study mainly based on the Self-report Emotional Intelligence appraisal by Bredberry and Greaves. The emotional Intelligence Scale used in the study measure mainly four aspects of Emotional Intelligence: namely – Self Awareness, Self Management, Social Awareness and Relationship Management, as mentioned in
competence based model of Emotional Intelligence by Danial Goleman (2001b). Some published works on Emotional Intelligence measurement was helpful in preparing this Emotional Intelligence Scale. The main point with respect to the use of the tool was that it was adapted on B.Ed. students and translated into local language and tried out on a sample for finalizing the instructions and procedures.

The proposed ‘Emotional Intelligence Scale’ was a scale of modified Likert technique where some statements were given with quantitative response mode. The preparation of item was made basically from the ‘Emotional Intelligence Appraisal’ by Breadberry and Greaves and also from related literature, informal discussion with students as well as teacher educators of teacher training colleges. In the draft, while some items were given in positive form some were in negative, to assess the emotional abilities in more appropriate way. From different affective aspects, abilities having direct or indirect relation with teaching learning environment had been incorporated in the proposed tool. The items had been classified into four different component of emotional intelligence.

For adaptation of the Emotional Intelligence Scale for B.Ed. students, 200 samples were taken and the following steps were followed.

1) The available conceptual and research literature related to Emotional Intelligence and its measure was studied.

   (i) Statements constituting emotional intelligence were framed covering both favorable and unfavorable and presented to teachers and subject experts for their opinion. Then the statements were checked, edited properly and subjected to expert’s criticism.
A total of 70 statements were selected for the first draft.

The scoring key for the statements was decided to be 4, 3, 2, 1 & 0 for the responses always, usually, sometimes, rarely and never. For the unfavorable statements the reverse i.e. 0, 1, 2, 3, & 4 scoring key was used.

To measure each competence there are some statements about different feeling experience in which the subject has to check each question in a five point check list. Finding out the result of these four competencies the total Emotional Intelligence Score was found out.

**Tryout of the Draft Emotional Intelligence Scale for B. Ed. students:**

After preparation of the test items the tool was made ready for tryout of the draft Emotional Intelligence Scale and administered to a representative group of sample of 200 B.Ed. students selected from 8 B.Ed. colleges of Kamrup District (Assam). With permission from the concerned institutions and prior information and fixation of time required rapport was tried to established with the B.Ed. students, the draft ‘Emotional Intelligence Scale’ was administered. Necessary instruction was also given by the investigator to understand the instrument and to remove any doubts. It was observed that majority of B.Ed. students completed the appraisal almost within 25 minutes.
**Item Analysis:**

To construct the ‘Emotional Intelligence Scale,’ summated rating method based on Likert’s scale was used. The item analysis was done on the basis of 200 answer sheets of the tryout sample to reveal any ambiguities. It involves the following steps.

1. The answer sheets were scored by using the answer key and the scores were arranged in order from the highest score to the lowest score.

2. While analyzing items of any psychometric tests, two types of information are usually needed, index of statement difficulty and validity. The question of statement difficulty does not arise in emotional inventories, as there is no pass or fail in response. To determine the statement validity, summated rating based on Likert’s scale was used.

3. After arranging the answer sheets according to the scores 25% from the top highest scores and 25% from the bottom lowest scores were taken and set aside. Thus two groups were found, the high scoring group and the low scoring group.

4. The mean score obtained on each individual item by the high scoring group and low scoring group were computed. The significant of difference between mean scores obtained by these groups on a particular item was found out. This difference was considered as discriminating power of that item.
5. To find out whether the discriminating power of an item is significant or not, was found out by computing the ‘t’ value for each item. As a rule of thumb, the discriminating value found equal to or greater than .75 and t’ value 1.75 in each item was selected for the final scale. The t’ value of each item was calculated by using the formula given by Allen L. Edward (1957).

Thus the selection of items in the final version of Emotional Intelligence Scale' was made on the basis of the following three criteria.

1. Expert’s opinion.
2. Discriminating power of the statement.
3. ‘t. value of discrimination

In Appendix (1) the discriminative t’ indices of the 32 selected items were presented.

**Final administration of the ‘Emotional Intelligence Scale’:**

The statements selected for the final version of the Emotional Intelligence Scale were arranged in systematic order in a single form. Each subject was to respond by reacting to the statements putting a tick mark against the column with which he or she agreed. This appraisal consists of 32 statements aimed to identify the emotional intelligence of B.Ed. students. For each statement five alternatives were given. There was no rigid time limit. Higher scores on this scale are indicative of better Emotional Intelligence.
Scoring:

The total score of the scale was 128. The scores obtained for each item were summated to get a total score. In the EI Scale, item nos. 7,8,15,16,23,24,31 and 32 are in negative form. Negative statements were scored in reverse order. The level of the scores can be categorized as follows in Table – 4.2.

Table - 4.2

Showing the Interpretation of the Emotional Intelligence Scores

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Categories</th>
<th>Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High Emotional Intelligence</td>
<td>97 - 128</td>
</tr>
<tr>
<td>2</td>
<td>Average Emotional Intelligence</td>
<td>65 - 96</td>
</tr>
<tr>
<td>3</td>
<td>Low Emotional Intelligence</td>
<td>33 - 64</td>
</tr>
</tbody>
</table>

Validity:

The ‘Emotional Intelligence Scale’ possesses face validity as seen by the agreement of the experts. Empirical validity of the scale was assessed by correlating the scale with external criteria. The external criteria taken in the present study was a sample of 40 subjects on which both the test, namely, EQ test standardized by Prof. N. K. Chadha and Dr. Dalip Singh and adapted ‘Emotional Intelligence Scale’ applied. The score obtained from both tests are correlated to determine the validity index. The reliability was found to be 0.62.
**Reliability**:

To establish reliability of the Emotional Intelligence Scale the test – retest method with two months interval was adopted, which yield a positive r’ value of 0.67. On each item, subject were required to check and report one choices that describes his or her feelings best.

**4.7.2 Non-verbal test of creative thinking by Baquer Mehdi**:

Creativity, a major independent variable in the study has been interpreted as the act of producing new idea, approaches or actions. To measure the creative thinking ability of the subjects, the investigator adopt one of the existing tools, the non-verbal test of creative thinking, constructed and standardized by Baquer Mehdi (1971). The reported item validity and factor validity are significant at 0.01 level.

The non-verbal test of creative thinking is a part of the total battery comprising both verbal and non-verbal test, intended to measure the individual’s ability to deal with figural content in a creative manner. The time required for administering the test is 40 minutes. Three types of activities were used for this purpose, picture construction, picture completion and triangles and ellipses. The picture construction activity presented the subjects with two simple geometrical figures, a semi-circle and a rhomb, and required him to construct an elaborate picture using each figure as an integral part by building on his own imagination. This activity allowed for unrestricted fluency of ideas which may enable the subjects to use his unconscious mind to help him to construct a picture which was relevant
to his thought and personality structure. In the incomplete figural activity, to produce an original response, the subject had usually to control his tensions and delay gratification of his impulse to closure. In the triangles and ellipses activity subject’s novelty were well addressed. Each item was scored for elaboration and originality. The three activities taken together provide ample opportunity to the subject to use his imagination with different types of figural and come out with some novel ideas. In order to find out the creativity of a subject, the raw scores on originality and elaboration were converted separately into standard scores and added together, as suggested by author. Tryout was done in a sample of 50 students with two months interval to find out the reliability. The test retests indices reliability were .75 and .69 respectively for elaboration and originality. The total test-retest indices were .72.

The reason of selecting this tool was due to its simplicity and wide acceptance. Besides, as the test emphasized on performance and emotional intelligence enhanced performance of the individual (as supported by Goleman), the test seems to test creativity of the B.Ed. students.

4.7.3 Personal problem index scale measuring Stress:

A stress measuring tool was prepared to measure stress consisting 20 questions. It includes all the four aspects of stressed experience in a questionnaire form (closed type) to be answered with ‘yes’ or ‘no’. The questions included were related to the profile of personal problems in four selected areas – (a) physical consisting questions related to the physical ailments, (b) mental and educational
consist of questions related to academic performance (c) emotional consist of 
questions related to emotional state of mind and (d) social aspects consist of 
questions related to socialization and its related aspects and stressful experience 
each containing five questions. The scoring process was for ‘yes’ (1) implying 
stress and for ‘no’ (0) meaning there absence of stress. The stress measuring tool 
was tried out with 50 B Ed student sample and the test-retest reliability with two 
months interval was found to be 0.48. Thus, it was made ready for final 
administration.

4.7.4 Academic Achievement Score :

The index of academic achievement for the study was the B.Ed. final 
examination marks secured by the students. The marks were collected from the 
respective colleges selected for study after results were declared. The results for 
each student were converted into percentage. With this each students recorded a 
double digit score in percentage.

4.7.5 Personal Information Sheet :

For collecting information relating to the personal and social background of 
the respondents a personal inventory was prepared. Information regarding the 
subject’s personal aspects, i.e. sex, age, academic qualification, area of the 
institution, management of the institution, educational background and type of 
training were gathered through the personal information sheet.
4.8.1 Context of the testing Sessions :

Test Language:

The ‘emotional intelligence scale’ is presented both in Assamese and English, because the investigator found that the B.Ed. students were better able to express their feelings in mother tongue. All other tools for data collection were presented in English only.

Place of Testing :

All the subjects were administered the tools in their own colleges during the regular class periods. In all the cases, the investigator herself administered the tests to the samples with the assistance of the teacher educators of the concerned teacher training colleges.

4.8.2 Collection of data :

To collect the data, the investigator approached to the principals of the teacher training colleges for having necessary permission. The testing sessions were conducted in classroom setting of a group of 15-20 subjects. After self-introduction for necessary rapport, the purpose and objectives of the study was mentioned to the students in brief. The subjects were assured of maintenance of confidentiality of their responses. Clear and detail instruction were given about the data collection tools in both Assamese and English. After ensuring proper arrangement, the tools were administered in a phased manner. The data were
thus collected in a group situation in one session of approximately one and half hour.

4.8.3 Administration of Tools :

This study was conducted in four stages –

Step 1 : Obtaining general information from the students.

Step 2 : Administering Baquer Mehdi’s’ Non-Verbal Creative Thinking Test.

Step 3 : Administering ‘Emotional Intelligence Scale.’

Step 4 : Administering Personal Problem Index Scale Measuring Stress.

Step 5 : Collection of B.Ed. final Marks of all subjects obtained in B.Ed. final examination from the records of respective B.Ed. Colleges, percentage of the marks were calculated for statistical analysis.

4.9 Instruction given by the Investigator :

After ensuring that all the arrangement was proper, general instruction for non-verbal test of creative thinking was given both in Assamese and English in the following way:

1. “Novelty, originality, and Creative ability play an important role in man’s life. All inventions are the result of man’s ability to think
in novel ways. There are many things in this world which can be made more interesting and useful by the use of our imagination and creative thinking. People who possess this ability have been responsible for many new inventions and discoveries.”

2. “On the following pages in this booklet you will find mentioned some drawing which is to be used as a base for making novel and interesting pictures by the use of your imagination and creative thinking. Look at each drawing carefully and then make the best use of your imagination and creative thinking to draw as interesting and novel a picture as possible. For each picture you have also to find out an interesting and imaginative title which you have to write in the space provided. You will enjoy working on these activities.

3. “You have been given three activities to do. Each activity is separately timed for your convenience. Try to work as quickly as possible on each activity. If you finish an activity before the time for it is up, do not go to the next activity until you are told to do so. Use your time to make your picture more elaborate by adding new ideas to it. You will be given five minutes extra at the end of the three activities so that if you have got any new idea for any of the three activities or its parts you may add it during the extra time allowed to you.”
4. “Attempt every task of the three activities. When you are asked to begin, immediately start your work. If you have to ask any thing, please do it now. If you have no difficulty now but find one later quietly raise your hand from your seat so that your difficulty may be removed.”

After the general instructions had been given, the investigator had make it sure that the B.Ed. students understood everything. The investigator then asked them to open the booklet and read the instructions for the first activity asking the student teacher to proceed silently. The instructions given in the test booklet were in Assamese and English. An English rendering of the instructions is given below.

**Instructions for Activity 1 :**

‘On the next page you have been given two simple line drawings. Using each as a base, you have to draw picture which in your opinion no one else will be able to think of. You can turn the page in any direction you like-upside down, right, left etc. in order to draw your picture. Try to make picture as novel and interesting as possible by adding new ideas to it. When you have completed the picture, give a title to it in the space provided. Try to make the title as interesting and unusual as possible. You need not place much emphasis on accuracy and exactness. What is expected of you is that your picture should be as unusual as possible. So coping will not be of any help. You will get ten minutes to construct the two pictures.’
The investigator then pointed out the example that by using the line-drawing given at the top, two different pictures have been constructed, one in which that part has been used as a turban and the other in which the same part has been used as a nest by turning the page around. The investigator then also point out how in drawing the two pictures many ideas have been added over and above the main picture.

After finishing explaining the example, the investigator asked the B. Ed. students to go ahead with their work. At the end of five minutes the test-administrator asked the B. Ed. students to construct the next picture. When five minutes for the second picture were also over, the test-administrator again asked the B.Ed. students to put down their pens and open the page for Activity II and also read the instruction for Activity II.

**Instructions for Activity II :**

“On this and the following two pages you have been given ten incomplete figures. In order to complete the drawings you have draw, with the help of new lines added to each, a novel and interesting picture which in your opinion no one else will be able to make. You may add as many lines as you like in order to make the picture as interesting as possible. You will get fifteen minutes to draw the pictures.”

When the time for this Activity was over the investigator asked the students to open the page for Activity III. The instructions for Activity III were given below.
Instructions for Activity III:

“On this and the following pages you have been given a few triangles and ellipses. Taking each drawing as a base, you have to make your picture as interesting as possible. Your picture should be such as, in your opinion, no one else to make. Try to make each picture different from the other. In other words, each picture should be complete in itself. It is not necessary that you first finish all the triangles and then start the ellipses. When you are unable to think of a new idea with regard to triangles, you may go over to the ellipses and make your pictures based on them. You will get ten minutes for this task.”

At the end of five minutes, the investigator told the time so that B.Ed. students may move on a uniform speed. After the time for this activity is over, the investigator announced that 5 minutes extra will be allowed so that anyone who wants to do additional work could do so.

After completion of creativity test, some rest was given to the students and the other tools were administered. Instructions for Emotional intelligence and personal problems index scale for measuring stress were given to the students as per the test manual.

4.10 Scoring of the Tools:

Non verbal Test of creative thinking consisted of a battery of three sets of activities. Scoring of these activities provides scores for two basic dimensions of creativity namely elaboration and originality. The test responses were scored as per respective scoring procedure mentioned in the manuals. The mean and standard
deviation of raw scores on creativity of the B. Ed students were calculated as per the formula suggested in the test manual. For scoring Emotional intelligence Scale, all the 32 statements of each sample B. Ed students were scored as per the manual in a five point scale. Similarly, stress of the B. Ed students were also calculated giving 1 score to each statement indicating existence of stress. Academic achievement score in B. Ed final examination of the selected B. Ed students have been collected from the respective colleges after result was announced.

4.11 Criteria of classification:

4.11.1 Classification of Emotional Intelligence level:

In order to select High, Average and Low level of Emotional Intelligence of the B.Ed. students, scores 97–128, were taken as high, students scores 65 – 96 were taken as average and 33 – 64 were categorized as per classification.

4.11.2 Classification of creativity:

The creativity scores were transformed to ‘T’ scores. The midpoint score was taken as the cut off point for shorting out B.Ed. students having high and low creative respectively. The B.Ed. students scoring 101 and below were taken as subjects having low creativity and the subjects scoring above 101 were selected possessing high creative thinking.
4.11.3 Classification of stress level:

The highest stress score was found to be 15 and lowest 1. Accordingly, the midpoint score ‘8’, above 8 was accepted as high stress level and 8 and below were considered as low stress level.

4.11.4 Classification of level of academic achievement:

The highest academic achievement score (in percentage) was found to be 68 and the lowest 47. The median split approach (53.5) was used to divide the scores of academic achievement as it divide the scores into two equal halves, good academic achiever and low academic achiever groups of B. Ed students.

4.12 Library Work:

To collect up to date information on the topic of the study, various books, journals, periodicals, dissertations and thesis were consulted. For this purpose, the investigator visited the following libraries.

2. North-Eastern Hill University Library.
3. Omeo Kr. Das Institute of Social Science and Development, Guwahati, Assam.
4.13 Treatment of the Data:

The following statistical techniques were selected for the analysis of the data.

1. The major objectives of the study are to know the emotional intelligence, creativity, stress and academic achievement of the B.Ed. students. For that purpose, the data were analyzed by computing frequencies, mean and SD.

2. The second major objective of the study is to know the differences of emotional intelligence, creativity, stress and academic achievement in respect of different background variables. For this ‘t’ test of significance of difference were tried.

3. The third major objective of the study is to know the relationship of different independent variables like- creativity, stress and academic achievement with the dependent variables emotional intelligence. For that purpose, it was decided to use the Pearsons’ product moment method of Computing (r). The value of (r) thus obtained for the group were tested for significance at 0.05 and 0.01 level.

Thus, the major statistical techniques which were used in the study were the following.

1. Descriptive statistics like Mean, Median, Mode, SD, Kurtosis and Skewness.
2. Test of significance of difference between Means, Pearsons’ product moment Co-efficient of correlation followed by test of significance of r. Thus, first the investigator presents the descriptive analysis, second differential analysis, third correlation analysis.

4.14 Pilot Study :

A pilot study was conducted on the sample of 100 B.Ed. students of three teacher training Colleges. 28 male and 72 female B.Ed. students were selected from the Colleges of Education. The study was conducted during the regular class hours in the session 2008 – 09. The pilot study was undertaken to know the feasibility, applicability of the study and to find out the utility and suitability of the tools on the sample selected for the present study. The pilot study was found very useful in knowing the study, its procedure of administration, instruction to be given, scoring procedure and appropriate duration of time required for each tool.