CHAPTER – 3
METHODOLOGY

3.1 INTRODUCTION:

In the present chapter, the following aspects, which are concerned with the design the present study, have been discussed in detail.

Statement of the problem, variables of the study, operational definitions, objectives, hypotheses, design of the study, sample, tools used and procedure for data collection, limitations of the study.

Methodology means the present chapter presents, the detailed design of research. Research design is a framework for research problems. Research design in the plan, structure and strategy of investigation conceived so as to obtain answers to research questions. It is a process of deliberate anticipation dedicated towards bringing out an unexpected situation under control. Designing is regarded as the heart of the study because it is the part of the study, which decided the fate of the research. It is upon the design that the native of the data and analyzing data in an economic efficient and relevant manner. Therefore it is desirable plan.

3.2. STATEMENT OF THE STUDY:

“A STUDY OF THE EFFECTIVENESS OF COMPUTER BASED TEACHING ON PROMOTING THE ACADEMIC ACHIEVEMENT OF SLOW LEARNERS OF HIGHER PRIMARY SCHOOL STUDENTS OF VIJAYAPUR DISTRICT”.

64
3.3. VARIABLES OF THE STUDY:

Variables can be defined as that factor, which is selected measured, manipulated and observed for the purpose of conducting research.

Variables are intended to see the difference among different factors. In this present study there are three types of variables. They are follows:

- **Independent Variable:**
  - The Computer Based Teaching method is the independent variable.

- **Dependent Variable:**
  - Academic achievement is the dependent variable
  - The performance of the slow learners in the achievement test depends on their assimilation of the matter taught. The topic being the different, the operant factors here is the different method of teaching.

- **Moderate Variable:**
  1. Intelligence
  2. Interest
  3. Gender

3.4. OPERATIONAL DEFINITIONS OF THE TERMS USED:

3.4.1 Effectiveness.

According to research investigator, the term effectiveness refers to the understanding of the subject taught by different methods for the improvement of the slow learners.

3.4.2 Computer Based Teaching.

Computer based teaching is nothing but a teaching machine device through which computer assisted instruction can be given which makes use of computers as an advanced form of teaching machine for presenting the instructional material. Here the research investigator has constructed a
teaching package by taking a lesson in social science and taught to the students by using computer teaching technique.

3.4.3 Academic Achievement.

It is the performance of the slow learners at the end of the learning. Tested by conducting a test, the scores gained by them indicate their Academic Achievement in that subject.

3.4.4 Slow Learner.

“Slow Learning child is one who compared with other pupils of the same chronological age shows marked educational deficiency”. Educationally, he is not able to attain what he should. In other words, his educational attainment falls below his normal abilities.

3.4.5 Intelligence

Intelligence means common sense or application part of knowledge. It is generally guessed from the way a person appears to understand a fact or a group of facts and the manner in which he or she responds to those facts.

3.4.6 Interest

Interest refers to the motivating force that impels us to attend to a person, a thing or an activity. It may be the effective experience that has been stimulated by the activity itself.

The research investigator relates interest to the learning of concepts. If the learning interest is good the results also seems to be good. Research investigator consider the term learning interest as same as the interest.

3.3.7 Gender

Boys and Girls—to test whether the biological difference between boys and girls modify the relationship between independent and dependent variable. Gender is moderate variable selected by the
researcher in order to determine whether it modifies the relationship between dependent and independent variable.

3.4.8 Social Science Text Book

The 9th standard Social Science text book of Karnataka State Syllabus was referred. The text book is of an average standard. The investigator has gone through the whole text book to get an idea for the content selection for the preparation of the experimental treatment. The text book contains enough examples, relevant experiment, required pictures and necessary important information. The unit selected for the study is Shri Krishnadevaraya.

The research investigator has selected topic from the 9th standard social science. Because in 8th standard the portions were taught by their teacher, so the repetitions do not help us to assess the effectiveness. So the new chapter was taken from the next year syllabus.

3.4.9 Government School.

The government schools are those schools which are being opened by government itself to provide basic education for each and every type of children and these school works under government policies.

3.5 OBJECTIVES OF THE STUDY

The following objectives were framed to;

1. Know the difference in the academic achievement of male and female students of slow learners.
2. Know the relationship between learning interest and academic achievement of slow learners.
3. Know the relationship between intelligence and academic achievement of slow learners.
4. Development of Computer Based Software package for teaching of higher primary School in the subject of Social Science.
5. Study the effect of Computer Based Teaching on academic achievement of slow learners.

3.6 RESEARCH HYPOTHESES:
1. There is no significant difference in the academic achievement of scores of male and female students of 8th standard.
2. There is no significant relationship between Learning interest scores and Academic achievement scores of slow learners.
3. There is no significant relationship between Intelligence scores and Academic achievement score of slow learners.
4. There is no significant difference in the pre-test and post-test scores of achievement through the conventional method of teaching of control and Experimental group
5. There is no significant difference in the effectiveness of conventional method of teaching and computer based teaching method.

FORMULATION OF THE HYPOTHESES
Keeping in view the objectives of the study, the specific hypotheses are formulated for testing:
1. There is no significant difference between pre-test and post-test academic achievement of the slow learners of higher primary school students in computer based and conventional teaching methods.
2. There is no significant difference between pre-test and post-test academic achievement of male slow learners of higher primary school students in computer based and conventional teaching methods.
3. There is no significant difference between pre-test and post-test academic achievement of the female slow learners of higher primary school students in computer based and conventional teaching methods.
4. There is no significant difference between computer based and conventional teaching methods with respect to pre-test and post-test academic achievement of the slow learners of higher primary school students.

5. There is no significant difference between computer based and conventional teaching methods with respect to pre-test and post-test academic achievement of the male slow learners of higher primary school students.

6. There is no significant difference between computer based and conventional teaching methods with respect to pre-test and post-test academic achievement of the female slow learners of higher primary school students.

7. There is no significant difference between computer based and conventional teaching methods with respect to learning interest and intelligence scores of slow learners of higher primary school students.

8. There is no significant difference between computer based and conventional teaching methods with respect to learning interest and intelligence scores of the male slow learners of higher primary school students.

9. There is no significant difference between computer based and conventional teaching methods with respect to learning interest and intelligence scores of the female slow learners of higher primary school students.

10. There is no significant difference between computer based and conventional teaching methods with respect to post-test academic achievement of the slow learners of higher primary school students with pre-test scores as covariate.

11. There is no significant difference between computer based and conventional teaching methods with respect to change scores from
pre-test to post-test academic achievement of the slow learners of higher primary school students with pre-test scores as covariate.

12. There is no significant difference between computer based and conventional teaching methods with respect to post-test academic achievement of the male slow learners of higher primary school students with pre-test scores as covariate.

13. There is no significant difference between computer based and conventional teaching methods with respect to change from pre-test to post-test academic achievement of the male slow learners of higher primary school students with pre-test scores as covariate.

14. There is no significant difference between computer based and conventional teaching methods with respect to post-test academic achievement of the female slow learners of higher primary school students with pre-test scores as covariate.

15. There is no significant difference between computer based and conventional teaching methods with respect to change from pre-test to post-test academic achievement of the female slow learners of higher primary school students with pre-test scores as covariate.

16. There is no significant interaction effect of teaching methods (Computer based teaching and Conventional teaching), sex (male and females) and learning interest (low and high) on pretest academic achievement scores of the slow learners of higher primary school students.

17. There is no significant interaction effect of teaching methods (Computer based teaching and Conventional teaching), sex (male and females) and intelligence (low and high) on pretest academic achievement scores of the slow learners of higher primary school students.
18. There is no significant interaction effect of teaching methods (Computer based teaching and Conventional teaching), learning interest (low and high) and intelligence (low and high) on pre-test academic achievement scores of the slow learners of higher primary school students.

19. There is no significant interaction effect of teaching methods (Computer based teaching and Conventional teaching), sex (male and females) and learning interest (low and high) on post-test academic achievement scores of the slow learners of higher primary school students.

20. There is no significant interaction effect of teaching methods (Computer based teaching and Conventional teaching), sex (male and females) and intelligence (low and high) on post-test academic achievement scores of the slow learners of higher primary school students.

21. There is no significant interaction effect of teaching methods (Computer based teaching and Conventional teaching), learning interest (low and high) and intelligence (low and high) on post-test academic achievement scores of the slow learners of higher primary school students.

22. There is no significant interaction effect of teaching methods (Computer based teaching and Conventional teaching), sex (male and females) and learning interest (low and high) on the changing scores of academic achievement from pre-test to post-test of the slow learners of higher primary school students.

23. There is no significant interaction effect of teaching methods (Computer based teaching and Conventional teaching), sex (male and females) and intelligence (low and high) on the changing scores
of academic achievement from pre-test to post-test of the slow learners of higher primary school students.

24. There is no significant interaction effect of teaching methods (Computer based teaching and Conventional teaching), learning interest (low and high) and intelligence (low and high) on the changing scores of academic achievement from pre-test to post-test of the slow learners of higher primary school students.

25. There is no significant relationship between pre-test and post-test academic achievement and learning interest scores of the slow learners of higher primary school students as whole.

26. There is no significant relationship between pre-test and post-test academic achievement and learning interest scores of the slow learners of higher primary school students of Computer based teaching and Conventional teaching methods.

27. There is no significant relationship between pre-test and post-test academic achievement and learning interest scores of the male and the female slow learners of higher primary school students.

28. There is no significant relationship between pre-test and post-test academic achievement and intelligence scores of the slow learners of higher primary school students as a whole.

29. There is no significant relationship between pre-test and post-test academic achievement and intelligence scores of the slow learners of higher primary school students of Computer based teaching and Conventional teaching methods.

30. There is no significant relationship between pre-test and post-test academic achievement and intelligence scores of the male and the female slow learners of higher primary school students.
31. There is no significant relationship between learning interest and intelligence scores of the slow learners of higher primary school students as a whole.

32. There is no significant relationship between learning interest and intelligence scores of the slow learners of higher primary school students in Computer based teaching method and Conventional method of teaching.
3.7. **DESIGN OF THE STUDY**

The present study comprises of experimental type of research

![Research Design Diagram](image-url)
3.8 POPULATION OF THE STUDY

Population for the study comprised of 8th standard students studying in Government Co-education Kannada Medium Higher Primary Schools situated in Vijayapur Districts of Karnataka State.

3.9 SAMPLE OF THE STUDY.

With the help of purposive random sampling technique 80 students were selected from the 8th standard

From each school 10 students were selected out of which, 5 were male and 5 female.
3.10. SHOWING LIST OF THE SCHOOL SELECTED:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of the School</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Government Kannada Boys Higher Primary School No-1, Vijayapur.</td>
</tr>
<tr>
<td>5.</td>
<td>Government Kannada Boys School No-51,(B Sec) Bhutanal Tanda, Vijayapur.</td>
</tr>
<tr>
<td>6.</td>
<td>Government Kannada Boys Higher Primary School, Toravi,</td>
</tr>
<tr>
<td>7.</td>
<td>Government Kannada Girl’s Higher Primary School, Toravi,</td>
</tr>
<tr>
<td>8.</td>
<td>Government Kannada Boys Higher Primary School, Jalageri.</td>
</tr>
</tbody>
</table>

3.11. TOOLS USED IN THE STUDY:

3.11.1 Standard Progressive Matrices (SPM)

Raven’s Progressive Matrices are culture fair and culture free intelligence developed by Dr. John C. Raven in 1936. It has three versions, standard progressive matrices, advanced progressive matrices and coloured progressive matrices. Among these three the investigator has used standard progressive matrices, which was useful for secondary school students. The standard progressive matrices had 60 problems divided into five sets of 12 items each. In each set the first problem is as nearly as possibly self-evident, the problems which follow become progressively more difficult. In each problem some meaningless figures are presented. The subject has to observe it keenly and see the relation between them, according to the relation the correct figure should be matched. This Scale is not for any particular age and anybody.
The test – retest reliability of the test varies from 0.83 to 0.93 for different age groups. Validity coefficient reported in studies with English and non-English speaking children and adolescents generally range up to +0.70. The content validity of SPM for different test items, correlations ranged from 0.2-0.8.

The students can do it at their own speed without interruption. A person’s total score provides an index of the students’ intellectual capacity.

**PROCEDURE OF CONDUCTING SPM TEST ON THE STUDENTS:**

Pencils and record form are distributes the students who, are asked to fill their particulars about themselves on the record form. When they filled the personal information the test books were given out. They were asked not to open the books until everyone was ready. A small demonstration was given to students about solving the example.

The investigator strictly supervised and did not allow any students to copy others. One hour was given for completion of the test. The students comfortably solved the problems and returned their record form. The investigator collected all the record forms evaluated, and scored. Based on the students’ score on standard progressive matrices they were classified into different categories as per the guidelines below.

- Grade I or “Intellectually Superior” if his scores lied at or above the 95\(^{th}\) percentile for people of his age.
- Grade II or “Definitely above the average in intellectual capacity when score lies above the 75\(^{th}\) percentile and below 95\(^{th}\) percentile. II+,
- when score lies at or above the 90\(^{th}\) percentile.
- Grade III or “Intellectually average” when score lies between the 25\(^{th}\) and 75\(^{th}\) percentiles.
III+, when score is greater than the median or 50th percentile.

III-, when score is less than the median,

- Grade IV, “Definitely below average in intellectual capacity”
  When score lies at or below the 25th percentile,
  IV-, when score lies at or below the 10th percentile.

- Grade V or “Intellectually defective”, when score lies at or below the 5th percentile.

The SPM test was distributed to 40 students to each class. The investigator selected those students who were “Below average intellectual capacity” and whose scores fell under grade IV, as analyzed from SPM scores.

3.11.2 LEARNING INTEREST TOOL

The research investigator has constructed the tool to test the interest of the children. The research investigator has framed the questioner consisting of 64 items. The following components are included in the questioner, items related 1) learning interest, (2) School Environment (3) Education of Parents (4) Poverty.

110 items were framed out of them 64 items were selected. To test the validity of the questioner, the questioner was given to the experts for verification by their direction too easy and too difficulty items were removed. Their by the content validity was determined. The item consists of both positive and negative items. Each item carry one mark for Yes (√) similarly negative mark carry Zero marks (x). The duration of the test is of 2 hour.

After constructing the questioner the pilot study was done on a sample of 20 students of slow learners. The reliability of the test also found by split half method and it was found to be 0.96.
PROCEDURE OF CONDUCTING LEARNING INTEREST TEST ON THE STUDENTS

At the experimental period a researcher has conducted the pre-test, and post-test to the slow learners of experimental group and control group. The researcher supervised and did not allow any students to copy others. 2 hour was given for completion of the test. The students comfortably solve the paper, and returns there papers. The researcher collected all the paper evaluated, and scored.

3.12 DEVELOPMENT OF COMPUTER BASED TEACHING PACKAGE

The major objective of the study was to develop computer based software package in the social science subject of 8th standard. In the development of computer based package, the guidelines given by the NCERT have been followed, by the researcher. In social science, one unit from history, Shri Krishndeeveraya unit was selected for the purpose of this study. The above unit was divided into eight conceptual sub-units. Each sub-unit constituted the subject content for development of one computer based software package.

After developing the package the researcher visited different school for implementing packages. For each school the researcher visited one week for conducting conventional method and one week for experimental method of by taking 45 minutes for each class. Totally the researcher has taken 45 days of classes respectively.

The above provisions enable the students to make self study with the help of the computer based software package. The software packages thus developed were then subjected to individual and group try outs and necessary correction, modification, refinements etc. Were made in the software package. Both the try outs ensured better refinement and perfection of software package. The agreement of views of experts was
collected for knowing the content validity lessons. The reliability value cannot be found to the software packages of teaching or learning.

During 45 days the students were taught through computer based teaching technique. This technique was implemented for teaching the social science subject. The related lesson was divided in to 8 units. These units are taught by using picturization (Audio – Video). The separate software package was prepared which will be displayed during the presentation.

Package validation cannot be done only the subject to be taught through package was assessed by the subject experts and content validity was found and concurrent validity was also found to be 0.67. As it is a software package print cannot be produced. The necessary care was taken in the development of the package.

Everyday two classes were handled by implementing the software package which was prepared on the basis of computer based teaching.

3.13. ACHIEVEMENT TEST (PRE AND POST TEST)

The researcher selected 9th standard Social Science subject in Karnataka State syllabus.

Unit - Shri Krishna Devaraya

Sub Units-

1) Introduction/Origin of Vijayanagar Samraj
2) Tulu Santati
3) Victory of Shri Krishnadecvaray(I)
4) Victory of Shri Krishnadecvaray(II)
5) Personality of Shri Krishnadecvaray
6) Administration of Shri Krishnadecvaray
7) Administration Method of Shri Krishnadecvaray
Construction Of Achievement Test

The research investigator constructed an achievement test based on the selected topics for each. The types of questions used in the test were of Multiple Choice, Short and Essay type of answer in order to assess the effectiveness of the modes of teaching.

The item analysis was made by the research investigator. In the beginning 35 questions were framed, when it was given for valuation to experts only 25 questions were remained. For this 25 questions tool the reliability and validity was found. Content validity was found by given the questioner to the expert and reliability was found by the test-retest method and it was found to be 0.78.

In the construction of achievement of achievement test the research investigator has found index of item difficulty by applying the formula.

\[
D = \frac{N_H + N_L}{N_T} \times 100
\]

Where \(D\) = Difficulty index
- \(N_H\) = Number is high group answering the item correctly.
- \(N_L\) = Number is Low group answering the item correctly.
- \(N_T\) = Total number of pupils who answered that item.

Index of discrimination was also found by the researcher. It’s determined by using the formula.

\[
d = \frac{N_H - N_L}{N} \times 100
\]

Where \(d\) = discrimination index
- \(N_H\) = Number is high group answering the item correctly.
- \(N_L\) = Number is low group answering the item correctly.
N = Total number item is high or low group

As per the Ebel(1965) suggestion item are selected on the basis of index of discrimination.

**Educational Objectives Of the Content**

Table: 3.13.1 Showing Specification of objectives of Achievement test.

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Objectives</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Knowledge</td>
<td>The Pupils-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. Recalls</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Recognizes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Repeats</td>
</tr>
<tr>
<td>2.</td>
<td>Understanding</td>
<td>The Pupils-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. Gives examples and illustration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Defines</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Detects the errors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Rectifies the errors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Observe the relationship</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6. Explains</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7. Classifies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8. Compares and contrasts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9. Finds similarities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10. Discriminates</td>
</tr>
<tr>
<td>3.</td>
<td>Application</td>
<td>The Pupils-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. Analyses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Verifies the results</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Interpret</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Gives reasons</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Establishes the relation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6. Finds cause and effect relationship</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7. Suggests appropriate procedures</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8. Selects appropriate tools</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9. Draws inferences</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10. Accepts the mistakes without any hesitation</td>
</tr>
</tbody>
</table>
An important step while preparing the achievement test was to know the aims and objectives of instructions of the particular subject chosen. A test, constructed must match teaching objectives of the course. Different researchers list various objectives of teaching any subjects in general and social science in particular. But, researcher restricted to four categories of objectives from the cognitive and conative or psychomotor domain. These objectives include knowledge, understanding, application and skill as specified by NCERT.

The specification of each objective are reported in table -3.13.1s

**Preparation of blue print**

The researcher prepared the blue print before constructing the achievement test.

**Table: 3.13.2 Showing Content Weightage/Weightage to sub Units**

<table>
<thead>
<tr>
<th>SI No.</th>
<th>Content</th>
<th>Marks</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Origin of Vijayanagar Samraz</td>
<td>8</td>
<td>32%</td>
</tr>
<tr>
<td>2)</td>
<td>Tulu Santati</td>
<td>3</td>
<td>12%</td>
</tr>
<tr>
<td>3)</td>
<td>Victory of Shri Krishnadevaray</td>
<td>5</td>
<td>20%</td>
</tr>
<tr>
<td>4)</td>
<td>Victory of Shri Krishnadevaray</td>
<td>2</td>
<td>8%</td>
</tr>
<tr>
<td>5)</td>
<td>Personality of Shri Krishnadevaray</td>
<td>1</td>
<td>4%</td>
</tr>
<tr>
<td>6)</td>
<td>Administration of Shri Krishnadevaray</td>
<td>5</td>
<td>20%</td>
</tr>
<tr>
<td>7)</td>
<td>Administration Method of Shri</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sl. No.</td>
<td>Type of Objectives</td>
<td>Marks</td>
<td>Percentage</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------</td>
<td>-------</td>
<td>------------</td>
</tr>
<tr>
<td>1.</td>
<td>Knowledge</td>
<td>5</td>
<td>20%</td>
</tr>
<tr>
<td>2.</td>
<td>Understanding</td>
<td>10</td>
<td>40%</td>
</tr>
<tr>
<td>3.</td>
<td>Application</td>
<td>5</td>
<td>20%</td>
</tr>
<tr>
<td>4.</td>
<td>Skill</td>
<td>5</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>25</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

**Table: 3.13.3 Showing Objectives Weightage**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Type of Question</th>
<th>Marks</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Multiple Choice</td>
<td>15</td>
<td>60%</td>
</tr>
<tr>
<td>2.</td>
<td>Short Answer</td>
<td>5</td>
<td>20%</td>
</tr>
<tr>
<td>3.</td>
<td>Essay Type</td>
<td>5</td>
<td>20%</td>
</tr>
</tbody>
</table>

**Table: 3.13.4 Showing Question wise Weightage**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Content</th>
<th>Knowledge</th>
<th>Understanding</th>
<th>Application</th>
<th>Skill</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>(2)2</td>
<td>(2)2</td>
<td>(1)1</td>
<td>(3)3</td>
<td>-</td>
<td>7</td>
</tr>
<tr>
<td>2.</td>
<td>(1)1</td>
<td>(2)2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>3.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>4.</td>
<td>(1)1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>5.</td>
<td>-</td>
<td>-</td>
<td>(1)1</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>

**Table: 3.13.5 Showing Blue Print of the Achievement Test**
3.13.6 First Stage – Before the treatment

The first stage started with identification of the slow learners, selection of content and conduct of pre-tests. The details are given below.

a) Dividing the content

Shri Krishna Devaraya unit was lengthy, so it was divided into 8 sub units and programmes were prepared for each unit.

b) Administration of pre-test

The 8th standard students involved in the study were given pre-test (achievement test) on unit chosen to know the level of understanding. This test is consisting of 25 marks and was administered for a period of 1 hour duration.

3.13.7 Second Stage – During the treatment

Once preliminary arrangements were made, the researcher to teach their groups in respective method.

3.13.8 Third Stage – After the treatment

After completion of treatments researcher administer a post – test. This test also had 21 items and was conducted for 1 hour duration

3.14. METHOD OF DATA COLLECTION

For the collection of data the Researcher has gone to different schools by taking the permission of B.E.O of districts and Head Master of the school. In the school researcher as a administered the test or the study
sample by giving brief instruction regarding how to answer the test. The researcher has given 2 hour of time for the completion of the tool.

To test the intelligence of the slow learners the standardize tool of RPM was administered and collected the information. The performance score of the first semester was considered to know their level of learning.

3.15. STATISTICAL TECHNIQUES USED IN THE STUDY

The data thus obtained were analyzed by using appropriate statistical techniques as, descriptive statistics,(Mean, Standard Deviation) and differential analysis including paired ‘t’ test, unpaired ‘t’-test, analysis of covariance, three way ANOVA with interaction design and correlation analysis using SPSS 21.0 statistical software.

3.16. LIMITATIONS OF THE STUDY

1. The present study is restricted to students of slow learners of the 8th standard Higher Primary Government School.

2. The problem is being studied specially to the Social Science Subject only.

3. The sample consists of only 80 slow learners selected on the basis of teachers’ observation and interactions were not subjected to any intelligence test. They were administered only Standard Progressive Matrices test which was found to be adequate to identify the slow learners.

4. For all the selected subjects, only one unit each were included for the study.

5. The experiment was conducted for a period of 45 working days @ 45 minutes per day.

6. As for computer based teaching, each student could not be provided with separate computer and they had to use the available, three computers on turn basis.
7. The computer based software package used in the study was also developed by making use of the technical expertise available at district level.

CONCLUSION

This chapter has explained the detailed picture of the methodology used in the study. The population and sample of the study were elucidated. The design of the study and mechanism in which groups were formed also discussed which was followed by procedure of selection of slow students, researcher’s expectations from different groups, variables involved in the study. The tools of study were described and development and validation of important tools of the study were also been discussed in detail. Finally the data gathering procedure and statistical techniques employed for analysis of data in the study were described. This chapter attempts to cover all aspect of the methodology adopted in the study. The subsequent chapter analysis and interprets the data obtained in tabular and graphic form.