CHAPTER – 3

METHODOLOGY

3.0 INTRODUCTION

Research design is the plan, structure and strategy of investigation conceived so as to obtain answers to research questions and to control variance. The plan is the overall scheme or program of the research. It includes an outline of what the investigator will do from writing the hypotheses and their operational implications to the final analysis of data. Design helps the investigator obtain answers to the questions of research and also helps him to control the experimental, extraneous and error variances of the particular research problem under study.

3.1 OBJECTIVES

To study the problem “Teacher Effectiveness, Classroom Environment and Academic Achievement as determinants of attitude of students towards grading system in evaluation” the investigator has framed the following objectives

- To study the Teacher Effectiveness in determining the attitude of students towards grading system in evaluation.
- To find the effect of Classroom Environment in determining the attitude of students towards grading system in evaluation.
- To study the role of Academic Achievement in determining the attitude of students towards grading system in evaluation.
- To study the role of Gender and type of Board in determining the attitude of students towards grading system in evaluation.

3.2 HYPOTHESES

H₀₁ There will be no significant effect of Teacher Effectiveness on attitude towards grading system in the context of gender with respect to CBSE students.

H₀₂ There will be no significant effect of Teacher Effectiveness on attitude towards grading system in the context of gender with respect to CGBSE students.
$H_03$ There will be no significant effect of Classroom Environment on attitude towards grading system in the context of gender with respect to CBSE students.

$H_04$ There will be no significant effect of Classroom Environment on attitude towards grading system in the context of gender with respect to CGBSE students.

$H_05$ There will be no significant effect of Academic Achievement on attitude towards grading system in the context of gender with respect to CBSE students.

$H_06$ There will be no significant effect of Academic Achievement on attitude towards grading system in the context of gender with respect to CGBSE students.

$H_07$ There will be no significant effect of Teacher Effectiveness on attitude towards grading system in the context of CBSE and CGBSE Boards.

$H_08$ There will be no significant effect of Classroom Environment on attitude towards grading system in the context of CBSE and CGBSE Boards.

$H_09$ There will be no significant effect of Academic Achievement on attitude towards grading system in the context of CBSE and CGBSE Boards.

$H_010$ There would be no significant help of CCE in accurate evaluation of students studying in CBSE schools.

$H_011$ There would be no significant help of CCE in accurate evaluation of students studying in CGBSE schools.

$H_012$ There would be no biasness by the teachers in evaluating through CCE pattern as predicted by CBSE students.

$H_013$ There would be no biasness by the teachers in evaluating through CCE pattern as predicted by CGBSE students.

$H_014$ There would be no marked satisfaction in CBSE students when evaluated through CCE system.
\textbf{H_015} There would be no marked satisfaction in CGBSE students when evaluated through CCE system.

\textbf{H_016} There would be no significant focus of CCE on special expertise of CBSE students.

\textbf{H_017} There would be no significant focus of CCE on special expertise of CGBSE students.

\textbf{H_018} There would be no significant preference of grading system in CBSE students.

\textbf{H_019} There would be no significant preference of grading system in CGBSE students.

\subsection*{3.3 DESIGN OF THE STUDY}

Implementation of grading system or CCE pattern of evaluation to board examination is a big revolutionary decision by the former minister of education Mr Kapil Sibbal. This is because, our country has seen a lot of changes in education such as education in state list, education in central list and now in concurrent list. After independence our country was like a boiling pot with problems which includes illiteracy at its highest rate. Eradication of illiteracy is one issue and pushing the literate to higher competence levels is another issue. The latest step in this direction is CCE.

There are different opinions on CCE among the teachers, students, parents as well as administration. A lot of variation is seen in the opinions (as discussed in chapter -1) considering the above issues, the study just cannot be a quantitative study. Hence, the investigator felt to study the problem through mixed method approach. The variables that may influence the grading system such as Teacher Effectiveness, Classroom Environment, Academic Achievement were studied through quantitative study while the attitude of students towards grading system was analyzed through an opinionnaire. The study has a scope for regression analysis which was done through SPSS (16.0) version.

The opinion regarding CCE pattern was collected from students studying in CCE pattern as well as non-CCE pattern schools.
The present study has a scope for mixed method approach in analysis. The data collected was both qualitative and quantitative (discrete data). Hence, the investigator tried to analyze the data by using ANOVA test, ‘t’ test and regression analysis by SPSS (16.0 version).

![Figure 3.1 Study Design](image)

### 3.4 POPULATION

The Universe of the study consist students belong to 195 CCE pattern schools and 1870 non-CCE pattern school in Chhattisgarh.

As the study is limited to Durg district of Chhattisgarh the population would be the class XI students studying in 60 CCE pattern schools and 152 non-CCE pattern schools.

### 3.5 SAMPLE

The schools (sample) for the study was 10 schools from CCE and 12 from non-CCE were selected on random sampling in the order of their registration (as per the list of Education Department of Chhattisgarh) on the ratio of 2:5.
The XI grade students studying in CCE and non-CCE schools were 1287 (698 Boys and 589 Girls) and 2245 (1094 Boys and 1151 Girls) respectively. From the above student population the sample taken for the study is shown in the table given below.

**Table # 3.1 Showing the sample taken for the study**

<table>
<thead>
<tr>
<th>CBSE SCHOOLS</th>
<th>BOYS</th>
<th>GIRLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maitri Vidhya Niketan, Risali</td>
<td>18</td>
<td>13</td>
</tr>
<tr>
<td>Vishwadeep Higher Secondary School, Durg</td>
<td>21</td>
<td>17</td>
</tr>
<tr>
<td>Gurunanak Higher Secondary School, Sector-6</td>
<td>14</td>
<td>16</td>
</tr>
<tr>
<td>K.H. Memorial school, Kailash Nagar</td>
<td>08</td>
<td>05</td>
</tr>
<tr>
<td>Krishna Public School, Nehru Nagar</td>
<td>21</td>
<td>19</td>
</tr>
<tr>
<td>Delhi Public School, Risali</td>
<td>24</td>
<td>27</td>
</tr>
<tr>
<td>St. Xavier School, Borsi</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>Mar Baselious Vidhya Bhavan, Shanti Nagar</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>D.A.V School, Hudco</td>
<td>17</td>
<td>15</td>
</tr>
<tr>
<td>MA Sharda School, Sec-9</td>
<td>06</td>
<td>14</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>158</strong></td>
<td><strong>154</strong></td>
</tr>
</tbody>
</table>

**Table # 3.2 Showing the sample taken for the study**

<table>
<thead>
<tr>
<th>CGBSE SCHOOLS</th>
<th>BOYS</th>
<th>GIRLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bhilai Public School, Risali</td>
<td>09</td>
<td>14</td>
</tr>
<tr>
<td>Bhilai Nair Samajam, Sec-8</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>Sree Narayan Guru School, Sec-4</td>
<td>13</td>
<td>11</td>
</tr>
<tr>
<td>Saraswati Shishu Mandir, Sec-4</td>
<td>17</td>
<td>15</td>
</tr>
<tr>
<td>Khalsa Public School, Durg</td>
<td>18</td>
<td>16</td>
</tr>
<tr>
<td>Government School, Risali</td>
<td>23</td>
<td>27</td>
</tr>
<tr>
<td>Shakuntala School, Ram Nagar</td>
<td>15</td>
<td>13</td>
</tr>
<tr>
<td>Mano Vikas School, Risali</td>
<td>05</td>
<td>02</td>
</tr>
<tr>
<td>Ambedkar School, Maroda</td>
<td>07</td>
<td>03</td>
</tr>
<tr>
<td>Sharda School, Ram Nagar</td>
<td>09</td>
<td>14</td>
</tr>
<tr>
<td>Government Higher secondary School, Maroda</td>
<td>17</td>
<td>21</td>
</tr>
<tr>
<td>Government Higher secondary School, Ruabandha</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>156</strong></td>
<td><strong>162</strong></td>
</tr>
</tbody>
</table>
3.6 TOOLS OF THE STUDY

- **Teacher Effectiveness Scale**

To measure the variable, “Student Ratings of Teaching Effectiveness Scale” developed by Dr. Shashikala Deshpande (2001) published by Rupa Psychology Center was used by the investigator which has ten factors such as Socio-Emotional climate, Competence, Communication, Systematic/business like behavior, Classroom management, Clarity, Structure, Warmth, Enthusiasm, Opportunity to Learn. The tool contains 42 items measures the above ten factors. The Split-half reliability co-efficient was 0.84 which is highly significant. The cronbach alpha for the scale was .080.

- **Classroom Environment Scale**

To measure the variable, “Sharma Adolescents’ School Satisfaction Inventory [SASSI] developed by Dr. (Mrs.) Meenakshi Sharma (1991) published by National Psychological Corporation was used by the investigator which has four factors such as Students themselves, Teachers and Teaching, Curriculum and Text-books, School-plant-organization and administration etc. The inventory contains 60 statements, 15 for each of the four areas enlisted above. The Test-retest reliability co-efficient was .827 and the Split-half reliability co-efficient was .921 which is highly significant. The validity co-efficient (r) was .72.

- **Academic Achievement**

To measure academic achievement of XI students the Xth board result has taken in to consideration.

- **Attitude towards grading system**

To measure attitude towards grading system, the investigator has structured five open-ended questions to collect the opinion of the students towards grading system. The questions are as follows.
Q1. Do you think grading system is helpful in accurate evaluation of students?

Q2. Do you think teachers can grade students un-biased?

Q3. Are you satisfied with the grade given to you by your teachers?

Q4. Do you think that you are graded well in the area of your expertise such as sports / co-curricular activities?

Q5. Do you prefer grading system instead of the old evaluation system?

3.7 STATISTICAL ANALYSIS

A mixed method approach adopted to analyze the quantitative and qualitative data. Two board system three quantitatively measured variables along with gender provided a scope for Regression analysis through which ‘F’ value, R square change and ‘t’ were calculated.

3.8 OPERATIONAL DEFINITIONS OF KEY TERMS

The following are the operational definitions of the key terms used in the study.

- **TEACHER EFFECTIVENESS:**

  According to Harry Wong, there are three main characteristics of effective teachers.

  - Has positive expectations for student success.
  - Excels at classroom management.
  - Designs lessons for mastery.

  Effective Teachers always handle their class very efficiently. They always have positive attitude towards their students they always trust that their students are capable of the tasks set before them. Effective teachers set procedures to handle their daily tasks. They work in proper planning way because they know that students can achieve their goals if given in proper way and they believe that lack of procedures can lead to indiscipline and various management problems. They have depth knowledge on the content of their subject and they know what their students need to
learn. Effective Teachers always teach their students, not the subject. In this context Teacher effectiveness was considered taking in to the ten dimensions Socio-Emotional climate, Competency, Communication, Business like behavior, Classroom management, Clarity, Structure, Warmth, Enthusiasm, Opportunity to learn.

- **CLASSROOM ENVIRONMENT:**

“A learning environment is a combination of social and physical qualities that create the classroom experience. It includes classroom management procedures, as well as the way the space is organized, furnished and maintained”.

Teaching-Learning process takes place within a web of social relationships were teachers and pupil interact both formally and informally. Classroom environment includes the physical setting, the social contexts created by the psychological environment, various instructional components related to teacher characteristics and their behaviors. Teachers who are able to develop positive classroom environment are in turn more respected by their students, and their students believe that these also hold higher learning expectations. In the present context classroom environment was considered by the following sources or the conditions surrounding these areas Students themselves, Teachers and teaching, Curriculum and text-books, School-plant- organization and administration

- **ACADEMIC ACHIEVEMENT**

“Academic achievement is the outcome of education – the extent to which a student, teacher or institutions has achieved their educational goals”.

Academic Achievement means the scholastic achievement of the students of a particular content based evaluation and result. This usually is shown through percentage or grade. In this context academic achievement was calculated on their previous academic achievement.

- **ATTITUDE TOWARDS GRADING SYSTEM**

Grading system or the CCE pattern of evaluation is a newly inducted evaluation system which measures the overall performance of the students that includes scholastic as well as non-scholastic performances it can also be called formative as well as summative evaluation.
Attitude towards grading system means the students inclination towards the evaluation system they are presently measured under. In this context, attitude of students towards grading system was measured on both CBSE and CGBSE students.

- **BOARD OF EDUCATION**

  “An elected or appointed body at the local or state level that supervises a given system or systems”. In the present context the researcher has selected two boards of education i.e., Central Board of Secondary Education (CBSE) & Chhattisgarh board of Secondary Education (CGBSE).

- **CCE**

  Continuous and Comprehensive Evaluation (CCE) is an evaluation system in which continuous stands for assessment of a student throughout the year in formal or informal way by using different techniques of evaluation. Comprehensive means assessment of all round development of a child’s personality which includes his knowledge about a subject and his participation in other activities also. In this context attitude of XI students towards grading and traditional marking system was measured.

- **GENDER**

  Boys and girls were considered to be the gender categories.

**3.9 DELIMITATIONS OF THE STUDY**

- Only two Board systems were taken for the present study.
- Only schools belong to Durg district were taken for the study.
- Only students’ opinion was taken for the analysis on attitude towards grading system.
- The Gender factor consist only Boys and Girls.
- Only students studying in XI grade were taken for the study.