CHAPTER-3

RESEARCH DESIGN AND METHODOLOGY
Chapter 3

3.0.0 RESEARCH DESIGN AND METHODOLOGY

The present study is an evaluative research of Survey type intended to study the impact of Inclusive Education (executed previously in the name of IEDC-integrated education for Disabled children). The study uses the technique of the Ex-post-Facto-design.

The design of the study adopted is as under:

\[ \text{X} \rightarrow \text{Y} \]

Where X > is the Inclusive Education programmes which has already been implemented in newly constructed Chhattisgarh State carved out from joint Madhya Pradesh on 1.11.2000

Y > the indicators for successful implementation of inclusive education, viz

* Attitudinal change among general teachers of inclusive primary schools.
* Increase in enrolment and decline in drop-out\(_5\) of disabled children.
* Modification in classroom environment, keeping special needs of disabled children.
* Disability-issues seen as an inclusive component of all activities with general school system.
* Adaptations and flexibility in curriculum-planning, teaching-methodology and evaluation.
* Functions of Resource Teachers.
* Improvement in quality teachings.
* Potential generation among master-trainers and multiplier-effects.

**3.1.0 VARIABLES INVOLVED IN THE STUDY:**

Variables are the characteristics or conditions that are manipulated, controlled or observed by the investigator. Variables involved in the present study are mentioned below.

**INDEPENDENT VARIABLES:**

The independent variable is one which is manipulated, measured and selected by the investigator for the purpose of producing observable changes in the behavioural measure.

In the present study, the independent variable is selected one and that is inclusive education programmes integrated in training programmes of primary school teachers.

**MODERATOR VARIABLES**

The moderate variables are the variables which are manipulated or selected by the investigator because they are suspected to moderate the relationship of the independent variable with the dependent variable.

The moderator variables (also called the secondary independent variables) in the present study are gender and locality of schools. Both are used on two levels:
DEPENDENT VARIABLES:

The dependent variable is one about which investigator makes a prediction. Such variables are indicators which show the impacts of independent variables.

The dependent variables in the present study are:

* Attitudes of general teachers teaching in inclusive primary schools.
* Increase in Enrolment and decline in Drop-outs of the disabled children.
* Modifications in classroom environment keeping special needs of the disabled children.
* Activities on disability-issues seen as an inclusive component in general school system.
* Adaptations and flexibility in curriculum planning, teaching methodology and evaluation.
* Functions of resource teachers.
* Performance of students improvement in quality-teaching.
* Generation of potential among master-trainers and their multiplier-effects.
3.2.0 POPULATION AND SAMPLE

Population for which generalisations are to be made and from which sample of the subjects of the present study are to be chosen, are the school authorities of inclusive education, general primary school teachers trained in inclusive education programmes, Special Research Teachers, children studying in inclusive primary schools and parents of children with special needs.

3.2.1 SAMPLE CHOSEN

In order to choose a representative sample of inclusive schools and general teachers teaching among them, principles of Quota sampling were attempted. For this purpose, a proportion based on the availability of the disabled children in the age-group of 6-14 years among all the districts of Chhattisgarh, was assigned. In a State level Survey conducted by Rajiv Gandhi Shiksha Mission (DPEP Project), Raipur to have details of disabled children of 6-14 age-group during the session 2001-2002, number of disabled children found is shown in the following Table 3.01 below:
TABLE 3.01

TABLE SHOWING NUMBER OF DISABLED CHILDREN OF 6-14 AGE-GROUP IN DIFFERENT DISTRICTS OF CHHATTISGARH

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of District</th>
<th>Category of Disability</th>
<th>Total</th>
<th>Grand Total</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Blind</td>
<td>Hearing Impairment &amp; Deaf</td>
<td>Physically Disabled</td>
<td>Mentally Retarded</td>
</tr>
<tr>
<td>1.</td>
<td>Baster</td>
<td>299</td>
<td>279</td>
<td>856</td>
<td>206</td>
</tr>
<tr>
<td>2.</td>
<td>Bilaspur</td>
<td>338</td>
<td>809</td>
<td>2612</td>
<td>567</td>
</tr>
<tr>
<td>3.</td>
<td>Dantewada</td>
<td>105</td>
<td>384</td>
<td>625</td>
<td>162</td>
</tr>
<tr>
<td>4.</td>
<td>Dhamtari</td>
<td>71</td>
<td>237</td>
<td>655</td>
<td>200</td>
</tr>
<tr>
<td>5.</td>
<td>Durg</td>
<td>271</td>
<td>549</td>
<td>3</td>
<td>573</td>
</tr>
<tr>
<td>6.</td>
<td>Janjir-Champa</td>
<td>239</td>
<td>470</td>
<td>2037</td>
<td>270</td>
</tr>
<tr>
<td>7.</td>
<td>Jashpur Nagar</td>
<td>115</td>
<td>260</td>
<td>426</td>
<td>95</td>
</tr>
<tr>
<td>8.</td>
<td>Kanker</td>
<td>191</td>
<td>156</td>
<td>414</td>
<td>200</td>
</tr>
<tr>
<td>9.</td>
<td>Kawardha</td>
<td>106</td>
<td>304</td>
<td>1482</td>
<td>158</td>
</tr>
<tr>
<td>10.</td>
<td>Korba</td>
<td>147</td>
<td>122</td>
<td>713</td>
<td>345</td>
</tr>
<tr>
<td>11.</td>
<td>Korea</td>
<td>138</td>
<td>134</td>
<td>289</td>
<td>81</td>
</tr>
<tr>
<td>12.</td>
<td>Mahasamund</td>
<td>185</td>
<td>413</td>
<td>1090</td>
<td>210</td>
</tr>
<tr>
<td>13.</td>
<td>Raigarh</td>
<td>362</td>
<td>429</td>
<td>1221</td>
<td>284</td>
</tr>
<tr>
<td>14.</td>
<td>Raipur</td>
<td>498</td>
<td>984</td>
<td>4160</td>
<td>930</td>
</tr>
<tr>
<td>15.</td>
<td>Rajnandgaon</td>
<td>96</td>
<td>369</td>
<td>1217</td>
<td>277</td>
</tr>
<tr>
<td>16.</td>
<td>Sarguja</td>
<td>235</td>
<td>351</td>
<td>921</td>
<td>179</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>3396</td>
<td>6250</td>
<td>22291</td>
<td>4756</td>
</tr>
<tr>
<td>Percent</td>
<td></td>
<td>9%</td>
<td>17%</td>
<td>61%</td>
<td>13%</td>
</tr>
</tbody>
</table>
Some of the abstracts taken from the above table show that number of disabled children of age-group 6-14 years in Chhattisgarh is 36693 in which 60 percent disabled children are boys and 40 percent are girls. Raipur, Durg, Bilaspur and Janjgir-Champa districts have more disabled children and Korea, Jashpurnagar, Kanker, Dhamtari and Dantewada have less number of disabled children in the state.

Following the principle of Quota Sampling, very similar to Proportionate Stratified Sampling, inclusive primary schools from each district of the state were selected. Proportion of their selection in each district was the percentage of disabled children in that district. Details are given in the following Table 3.02 below.
### TABLE 3.02
SAMPLE SHOWING NUMBER OF INCLUSIVE PRIMARY SCHOOLS AND GENERAL TEACHERS

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of District</th>
<th>%age of Disabled Children (Percentage Proportion)</th>
<th>No. of Schools chosen from the district</th>
<th>Number of Teachers included in the sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Male</td>
</tr>
<tr>
<td>1.</td>
<td>Bastar</td>
<td>4</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>Bilaspur</td>
<td>12</td>
<td>12</td>
<td>23</td>
</tr>
<tr>
<td>3.</td>
<td>Dantewada</td>
<td>3</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>Dhamtari</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>5.</td>
<td>Durg</td>
<td>14</td>
<td>14</td>
<td>22</td>
</tr>
<tr>
<td>6.</td>
<td>Janjgir-Champa</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>7.</td>
<td>Jashpurnagar</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>8.</td>
<td>Kanker</td>
<td>3</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>9.</td>
<td>Kawardha</td>
<td>6</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>10.</td>
<td>Korba</td>
<td>4</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11.</td>
<td>Korea</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>12.</td>
<td>Mahasamund</td>
<td>5</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>13.</td>
<td>Raigarh</td>
<td>6</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>14.</td>
<td>Raipur</td>
<td>18</td>
<td>18</td>
<td>22</td>
</tr>
<tr>
<td>15.</td>
<td>Rajnandgaon</td>
<td>5</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>16.</td>
<td>Sarguja</td>
<td>5</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
<td><strong>123</strong></td>
</tr>
</tbody>
</table>
NOTE :-
1. As shown in the above table, responses from teachers of Dantewada district of Bastar division were not received.
2. Responses of teachers from Kanker district were also not received. District Education Officer of Kanker district, when contacted, reported that Kanker district has no inclusive schools.
3. In a sample of respondents shown in above Table, number of teachers from urban areas is 65 and number of teachers from rural areas is 137.

3.3.0 RESEARCH INSTRUMENTS

The present evaluative study of effectiveness of Inclusive Education in Chhattisgarh is almost a new attempt and research tools are not available for the purpose. Hence, the researcher herself prepared research instruments for the present study. For the construction of data-gathering tools, she has reviewed several monitoring feedback information used by different states of the country in their respective IED blocks. She also consulted resource persons, master-trainers and experts working in the field. She incorporated their suggestions in preparing the tools and their items. Some important sources consulted are worthmentioning:


5. INCLUSIVE EDUCATION: Orientation Package for Teacher Educators : (Anita Julka, NCERT, 2003)

6. Terms of References for State Level Resources Organisations (West Bengal, DPEP, 2003)

7. Developing Guidelines Programmes for Pre-service and In-service Teacher Training in Inclusive Education (Dr. Lalitha Pratap, Consultant (IE) Karnataka, 2003)


In the construction of research instruments for the present study, all necessary steps of test construction i.e. planning, writing of items, tryout of the test, establishment of reliability, validity of final test, etc. were followed. Research instruments prepared for the present study are as under:

1. Questionnaire (in two parts) for General Teachers of Inclusive schools.
   Part-A : Information about inclusive schools.
   Part-B : Attitude Scale for general teachers teaching in inclusive primary schools.

2. Check-list for special Resource Teachers.

3. Check-List for Teachers of inclusive schools.
All instruments are described below:

1. Questionnaire for General Teachers of Inclusive Primary Schools.

* A questionnaire for general teachers of inclusive schools consisting of two parts-part A and part B was prepared. Part A includes well framed questions pertaining to the information about inclusive schools. Part B is named as "An Attitude Scale Measuring Attitudes of General Teachers of Inclusive Schools towards Inclusive Education". Both parts are described below:

**PART A**

**Information about Inclusive Schools:**

This is a questionnaire gathering information about inclusive primary schools based on monitoring feedback. Some terms of this questionnaire are selected from school based monitoring feedback information used for collecting data from IED blocks of DPEP states. In this way, they carry sufficient reliability and validity. Content coverages of this questionnaire are locality of the inclusive schools, information regarding enrolment of disabled children, modification in classroom arrangement keeping special needs of SEN children, active participation of SEN children in co-curricular activities in schools, community participation and community awareness about inclusive schools. In all 10 items on above-mentioned themes are included in this questionnaire. They are given in part A of questionnaire meant for general teachers of inclusive schools.
PART-B

An Attitude Scale Measuring Attitudes of General Teachers towards Inclusive Education.

This scale forms part B of the questionnaire for general teachers of inclusive schools. The scale is of Likert-type and has been developed as per guidelines given by Edwards (1957). In the development of the method of attitude scale construction, both favourable and unfavourable statements are included. Weightages given to each type of response are as follows:

<table>
<thead>
<tr>
<th>Nature of Response</th>
<th>For Favourable Statements</th>
<th>For Un-favourable Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Marks</td>
<td>Marks</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Agree</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Undecided</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Disagree</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>0</td>
<td>4</td>
</tr>
</tbody>
</table>

In the preparation of this Scale, table of specifications is given below. Initially 36 statements were included in the scale.
**TABLE 3.03**

**SPECIFICATIONS OF ATTITUDE SCALE**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Specifications (sub-areas)</th>
<th>No. of Positive Statements</th>
<th>No. of Negative Statements</th>
<th>Total Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Inclusion :Concept,</td>
<td>1,7</td>
<td>29</td>
<td>03</td>
</tr>
<tr>
<td></td>
<td>Meaning, Aims and Uses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>• Administration Support</td>
<td>9,16,20,30,35</td>
<td>5,8,15,25,27</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>• Community Support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Support and Assistance by</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Educational Authorities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>• Curriculum Adaptations</td>
<td>2,11,17,22,24</td>
<td>10,13,19,18</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>• Classroom teaching</td>
<td>26, 28</td>
<td>21, 36</td>
<td></td>
</tr>
<tr>
<td></td>
<td>and techniques</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Co-curricular Activities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Evaluation in Inclusive</td>
<td>32,12,33</td>
<td>6,31,23</td>
<td>06</td>
</tr>
<tr>
<td></td>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Creation of positive social</td>
<td>4,14</td>
<td>3,34</td>
<td>04</td>
</tr>
<tr>
<td></td>
<td>environment in the class</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total statements</td>
<td>19</td>
<td>17</td>
<td>36</td>
</tr>
</tbody>
</table>

In this scale, 36 statements were administered to a group of general teachers of inclusive schools who responded to each item by indicating which of the given five alternatives they agree with. Every responded item was scored with different weights and a total score for each responding teachers was found by adding the weights earned by him on each item.
3.1.1 ITEM ANALYSIS -

Selection of items in the present scale was done through the procedure of item analysis. Edwards (1957) has suggested the setting of two extreme groups-high and low-on the basis of the total score and finding out the significance of the difference between the means of two groups by the 't' test. To form such criterion groups, the 25 percent of the subjects with the highest total scores and also the 25 percent of the subjects with the lowest total scores were chosen. In evaluating the responses of the high and low groups to the individual statements, ratio 't' was calculated.

A sample calculation of 't' for item no. 1 is given in Table 3.4 below:

**TABLE 3.04**

THE CALCULATION OF 't' FOR EVALUATING THE DIFFERENCE IN THE MEAN RESPONSE TO ATTITUDE STATEMENT NO. 1 BY A HIGH GROUP AND A LOW GROUP.

<table>
<thead>
<tr>
<th>Response Categories</th>
<th>Low Group</th>
<th>High Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>x</td>
<td>f</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>4</td>
<td>19</td>
</tr>
<tr>
<td>Agree</td>
<td>3</td>
<td>05</td>
</tr>
<tr>
<td>Uncertain</td>
<td>2</td>
<td>01</td>
</tr>
<tr>
<td>Disagree</td>
<td>1</td>
<td>00</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>0</td>
<td>00</td>
</tr>
<tr>
<td>Sums</td>
<td>25</td>
<td>93</td>
</tr>
</tbody>
</table>

Nₗ, ΣXₗ, ΣX²ₗ, Nₘ, ΣXₘ, ΣX²ₘ
Calculated value \( t = 1.23 \) is less than 1.75 indicating that the average response of the high and low groups to a statement does not differ significantly. Hence, this item is likely to be rejected. Edwards (1957, p. 153).

Similar calculations, were done for all 36 items of the scale. The value of 't' which is a measure of the extents to which a given statement differentiates between the high and low groups is given in Table 3.05 below:
### TABLE 3.05
ITEM ANALYSIS DATA

<table>
<thead>
<tr>
<th>Item No. in Initial Form</th>
<th>Value of 't'</th>
<th>Interpretation</th>
<th>Item Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.23</td>
<td>&lt; 1.75</td>
<td>Rejected</td>
</tr>
<tr>
<td>2</td>
<td>3.14</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>3</td>
<td>4.69</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>4</td>
<td>4.00</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>5</td>
<td>5.29</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>6</td>
<td>4.48</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>7</td>
<td>2.20</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>8</td>
<td>4.75</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>9</td>
<td>0.94</td>
<td>&lt; 1.75</td>
<td>Rejected</td>
</tr>
<tr>
<td>10</td>
<td>5.29</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>11</td>
<td>2.40</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>12</td>
<td>0.75</td>
<td>&lt; 1.75</td>
<td>Rejected</td>
</tr>
<tr>
<td>13</td>
<td>7.38</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>14</td>
<td>1.17</td>
<td>&lt; 1.75</td>
<td>Rejected</td>
</tr>
<tr>
<td>15</td>
<td>2.60</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>16</td>
<td>2.82</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>17</td>
<td>5.73</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>18</td>
<td>2.06</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>19</td>
<td>6.62</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>20</td>
<td>2.06</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>21</td>
<td>1.45</td>
<td>&lt; 1.75</td>
<td>Rejected</td>
</tr>
<tr>
<td>22</td>
<td>3.76</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>23</td>
<td>0.82</td>
<td>&lt; 1.75</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

*On next page*
<table>
<thead>
<tr>
<th>Item No. in Initial Form</th>
<th>Value of 't'</th>
<th>Interpretation</th>
<th>Item Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>2.15</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>25</td>
<td>0.00</td>
<td>&lt; 1.75</td>
<td>Rejected</td>
</tr>
<tr>
<td>26</td>
<td>4.20</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>27</td>
<td>0.90</td>
<td>&lt; 1.75</td>
<td>Rejected</td>
</tr>
<tr>
<td>28</td>
<td>3.00</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>29</td>
<td>2.70</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>30</td>
<td>1.41</td>
<td>&lt; 1.75</td>
<td>Rejected</td>
</tr>
<tr>
<td>31</td>
<td>5.48</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>32</td>
<td>5.20</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>33</td>
<td>1.40</td>
<td>&lt; 1.75</td>
<td>Rejected</td>
</tr>
<tr>
<td>34</td>
<td>7.30</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
<tr>
<td>35</td>
<td>1.26</td>
<td>&lt; 1.75</td>
<td>Rejected</td>
</tr>
<tr>
<td>36</td>
<td>4.50</td>
<td>&gt; 1.75</td>
<td>Retained</td>
</tr>
</tbody>
</table>

As we see in above Table 3.05, 11 out of 36 statements are rejected because their 't' values are less than 1.75. But statement no. 21 (t = 1.45), 30 (t = 1.41) and 33 (t = 1.40) have their 't' values very near to 1.75. These statements were modified and retained.
Edwards (1957, Pp.154-155) suggested that the statements can be selected by finding the 't' value for each statement and then arranging the statements in rank order according to their 't' values. As per these suggestions, 28 statements with the largest 't' values were arranged in their rank order and were included in the final form of attitude scale. Rank order of the statements according to their 't' values in the final form of the scale is given below in Table 3.07:

**TABLE 3.06**
MODIFIED STATEMENTS OF ATTITUDE SCALE

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Statement in Initial Form</th>
<th>Statement in Modified Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>नक्षत्र के प्रत्येक बच्चे के पूर्व ज्ञान एवं अनुभव का पता लगाना कठिन कार्य है</td>
<td>नक्षत्र के प्रत्येक बच्चे के पूर्व ज्ञान एवं अनुभव का पता अध्यापक नहीं लगाता।</td>
</tr>
<tr>
<td>30</td>
<td>समावेशी कक्षा के सफल अध्यापन में विकल्पगतावार सहायक शिक्षण सामग्री उपलब्ध कराना कारगर कदम है।</td>
<td>समावेशी कक्षा में विकल्पगतावार आवश्यक सहायक शिक्षण सामग्री का उपयोग कर अध्यापन करना चाहिए।</td>
</tr>
<tr>
<td>33</td>
<td>समावेशी कक्षा में प्रत्येक निश्चित बच्चे की कमजोरी का निदानकर उसके लिये विशेष उपचारात्मक अध्यापन लाभादायक होगा</td>
<td>समावेशी कक्षा में प्रत्येक निश्चित बच्चे की कमजोरी का निदान करके उसके लिये विशेष उपचारात्मक अध्यापन आवश्यक है।</td>
</tr>
</tbody>
</table>
TABLE 3.07
RANK ORDER AND 't' VALUES OF THE STATEMENTS IN THE FINAL FORM OF ATTITUDE SCALE

<table>
<thead>
<tr>
<th>Statement Number</th>
<th>'t' Value</th>
<th>Form of Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Positive</td>
</tr>
<tr>
<td>1</td>
<td>7.38</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>7.30</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>6.62</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>5.73</td>
<td>P</td>
</tr>
<tr>
<td>5</td>
<td>5.48</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>5.29</td>
<td>-</td>
</tr>
<tr>
<td>7</td>
<td>5.29</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>5.20</td>
<td>P</td>
</tr>
<tr>
<td>9</td>
<td>4.75</td>
<td>-</td>
</tr>
<tr>
<td>10</td>
<td>4.69</td>
<td>-</td>
</tr>
<tr>
<td>11</td>
<td>4.50</td>
<td>-</td>
</tr>
<tr>
<td>12</td>
<td>4.48</td>
<td>-</td>
</tr>
<tr>
<td>13</td>
<td>4.20</td>
<td>P</td>
</tr>
<tr>
<td>14</td>
<td>4.00</td>
<td>P</td>
</tr>
<tr>
<td>15</td>
<td>3.76</td>
<td>P</td>
</tr>
<tr>
<td>16</td>
<td>3.14</td>
<td>P</td>
</tr>
<tr>
<td>17</td>
<td>3.00</td>
<td>P</td>
</tr>
<tr>
<td>18</td>
<td>2.82</td>
<td>P</td>
</tr>
<tr>
<td>19</td>
<td>2.70</td>
<td>-</td>
</tr>
<tr>
<td>20</td>
<td>2.60</td>
<td>-</td>
</tr>
<tr>
<td>21</td>
<td>2.40</td>
<td>P</td>
</tr>
<tr>
<td>22</td>
<td>2.20</td>
<td>P</td>
</tr>
<tr>
<td>23</td>
<td>2.15</td>
<td>P</td>
</tr>
<tr>
<td>24</td>
<td>2.06</td>
<td>-</td>
</tr>
<tr>
<td>25</td>
<td>2.06</td>
<td>P</td>
</tr>
<tr>
<td>26</td>
<td>1.78</td>
<td>P</td>
</tr>
<tr>
<td>27</td>
<td>1.78</td>
<td>-</td>
</tr>
<tr>
<td>28</td>
<td>1.78</td>
<td>P</td>
</tr>
<tr>
<td>Total Statements</td>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>
3.3.2 RELIABILITY OF THE ATTITUDE SCALE

Reliability is generally defined as the degree of consistency between two measures of the same thing. The operational definition given by Ebel (1972) reads as under:

"The reliability coefficient for a set of scores from a group of examinees is the coefficient of correlation between that set of scores and another set of scores on an equivalent test obtained independently from the members of the same group."

In the present study, the repeated administration of the test and the construction of the parallel form of attitude scale were not feasible because repeated administration at the second time may change the attitudes of teachers. Hence, the split-half method was preferred to calculate the reliability coefficient. For the purpose, the scores on old-numbered items and that on even-numbered items were obtained and a correlation table between these two scores was prepared to calculate the correlation coefficient. This gave the measure of reliability of the test as the coefficient of internal consistency. Result is given below:

<table>
<thead>
<tr>
<th>Self-Correlation of the half test = 0.59</th>
</tr>
</thead>
<tbody>
<tr>
<td>(The Odd-numbered items and the even numbered items)</td>
</tr>
<tr>
<td>i.e. reliability coefficient of the half test = 0.59</td>
</tr>
</tbody>
</table>

In order to estimate the self correlation of the whole test, according to Garrett (1957, p. 339), the Spearman-Brown Prophecy formula has been used,
\[ r_{11} = \frac{2 \cdot rh}{1 + rh} \]

Where \( r_{11} \) = reliability coefficient of the whole test
\( rh \) = reliability coefficient of the half test.

Thus, \( r_{11} = \frac{2 \times 0.59}{1 - 0.59} = 0.74 \)

Hence, the reliability coefficient of the whole test was found \( r_{11} = 0.74 \)

### 3.3.3 THE INDEX OF RELIABILITY

As suggested by Garrett (1957, p. 349), the correlation between a set of obtained scores and their corresponding true counterparts is given by the formula
\[ r_{1o} = \sqrt{r_{11}} \]

Where, \( r_{1o} \) = the correlation of obtained and true scores
\( r_{11} \) = the reliability coefficient of the test

On calculation, we have

the index of reliability \( r_{1o} = \sqrt{0.74} = 0.86 \)

In this way, we find that 0.86 is the highest correlation which this scale is capable of yielding in its present form. This gives a very satisfactory result that the present attitude scale measures dependability of test scores up to the 86 percent extent by showing how well obtained scores agree with their theoretically true values.
3.3.4 THE VALIDITY OF THE ATTITUDE SCALE -

Validity of a test is represented by the degree to which the test measures with what it purports to measure. As per recommendations of the American Psychological Association (1966), three types of validity be used in educational and psychological measurement. These are: Content validity

- Criterion related validity, and
- Construct Validity.

The general meaning of these types of validity is, according to Sali (1982), indicated in the following Table 3.08 below:

**TABLE 3.08**

**SPECIFICATIONS OF DIFFERENT TYPES OF VALIDITY**

<table>
<thead>
<tr>
<th>Type of validity</th>
<th>Meaning</th>
<th>Procedure</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content Validity</td>
<td>How well the test measure the subject matter content and behaviours under consideration</td>
<td>compare test content to the universe of contents and behaviours to be measured</td>
<td>this type of validity is calculated for this scale</td>
</tr>
<tr>
<td>Criterion-related Validity</td>
<td>How well test performance predicts future performance or estimates current performance on same valued measure other than the test itself</td>
<td>Compare test score with another measure of performance obtained at later date or with another performance obtained concurrently.</td>
<td>--</td>
</tr>
<tr>
<td>Construct Validity</td>
<td>How test performance can be described psychologically</td>
<td>Experimentally determine what factors influence scores on test.</td>
<td>--</td>
</tr>
</tbody>
</table>
In the present study, we are not interested in the prediction and hence no question of establishing predictive validity. Also, inclusive education being a new subject, to secure an appropriate external criterion to establish concurrent validity, is very difficult. Hence, emphasis has been given to establish content validity of the test in the present study.

In order to have an assurance of content validity in the present attitude scale, the following steps were followed in its construction.

* The major topics of subject-matter, content of inclusive education and the attitudes of general teachers of inclusive schools in terms of their behavioural changes were separately listed. Both positive and negative statements were framed and expert comments regarding their suitability, objectivity and language were asked.

* Literature prepared by NCERT, New Delhi on the inclusive education was also consulted.

* Very sound responses on all the statements of the attitude scale have been found. In this way content validity of the scale is very much assured.

Also according to Lewis (1973, p. 191) the content validity of the test can be completely determined by its index of reliability and the index of reliability has already been found to be 0.86. This gives very high positive assurance about the content validity of attitude scale.
3.4.0 CHECK-LIST FOR SPECIAL RESOURCE TEACHERS

In order to meet global as well as national commitment of Education for All children, the UNICEF assisted Project Integrated Education for the Disabled (PIED) was designed. Its aim was to strengthen implementation of the scheme of Integrated Education of Disabled Children (IEDC) sponsored by the MHRD within the framework and goals of National policy on Education, 1986. In the last quarter of 1987, The PIED was launched in Masturi block of Bilaspur district of Chhattisgarh State (the then Madhya Pradesh State). The major consideration of this PIED was the development of educational services for the disabled as an integral part of general education system. Keeping the manpower development for the implementation of the PIED in view, under the project from 1988 to 1994, nearly nine thousand general teachers were oriented under five-days' training (level I training) programme. About six hundred teachers were given six-weeks' intensive training (Level II training) and two hundred teachers received one year multigcategory training (MCT) (level III training). Such training programmes of level I, II and III, were organised in all the 10 Project States of India under PIED. (Azad, 1996, p.36)

Fortunately 19 teachers of Bilaspur district have undergone such training programmes of Level I, level II and Level III and are known as Special Resource Teachers. They are still working in the field and play a very significant role in the implementation of inclusive education in Chhattisgarh in general
and in Bilaspur district in particular. They work as an effective liaison among general teachers, school authorities, parents and community.

In order to evaluate their working and services rendered as an effective liaison among general teachers, school headmaster/manager, guardian and community-members, a check-list was prepared on the following activities:

- To call meeting to discuss inclusive education-issues.
- To prepare Individualised Education Plan (IEP) for the personal records of every handicapped child.
- To organise parent-teachers conferences.
- To initiate the availability of resources, and
- Any other initiatives

(check-list given in appendix II)

3.4.1 RELIABILITY AND VALIDITY OF CHECK-LIST

As these activities are directly related with the workings of special resource teachers of inclusive education, reliability and validity of the check-list are very much obvious.

3.5.0 CHECK LIST FOR GENERAL TEACHERS OF INCLUSIVE SCHOOLS

General teachers teaching in inclusive schools are expected to develop some skills and competencies among them in order to make inclusion of SEN children a success. In the Orientation Package for Teachers Educators-Inclusive
Education prepared by the Department of Education of Groups with special needs-NCERT, New Delhi, Chadha (2003) in module 5 has given some competency areas and required skills of teachers to develop among them those competencies.

In the present study, these competencies and skills are taken to prepare a checklist for general teachers of inclusive schools in order to evaluate their performances in actual classroom-teachings. English Version of the Check-List is given below:

<table>
<thead>
<tr>
<th>Teaching Competency Areas</th>
<th>Required Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristics of a Good Teacher</td>
<td>Using those activities, which will make goals clear to each student.</td>
</tr>
<tr>
<td></td>
<td>Allocation of sufficient time and instruction according to the learning needs of the students.</td>
</tr>
<tr>
<td></td>
<td>To know the progress of students through frequent monitoring and checking</td>
</tr>
<tr>
<td></td>
<td>To have positive attitude and be fair, firm, warm, responsive and patience listener of the students and to establish a rapport with the students</td>
</tr>
<tr>
<td></td>
<td>any other work......</td>
</tr>
<tr>
<td>Teaching Competency Areas</td>
<td>Required Skills</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Classroom Management            | ➡️ To accept good classroom management as a base for inclusive education  
                                | ➡️ To promote participatory learning  
                                | ➡️ To learn techniques to reduce undesired behaviour in the children or classroom  
                                | ➡️ To encourage children to have warm interaction and friendship and to prevent discrimination between disabled and not disabled  
                                | ➡️ Any other work.....                                                             |
| Curriculum Modifications        | ➡️ To use reading medium for visually impaired  
                                | ➡️ To use lip-leading or sign language for the hearing impaired  
                                | ➡️ To have frequent presentations for slow learners  
                                | ➡️ To teach by dividing larger units into smaller units  
<pre><code>                            | ➡️ To adapt curriculum according to the needs of disabled children without effecting adversely the educational process of other children . |
</code></pre>
<table>
<thead>
<tr>
<th>Teaching Competency Areas</th>
<th>Required Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>For curriculum adaptation, to use the techniques of peer tutoring</td>
<td>Cooperative Teaching learning</td>
</tr>
<tr>
<td>Classroom Practices</td>
<td>To be attentive for keeping the learning needs of both disabled and not disabled children</td>
</tr>
<tr>
<td>Knowledge of Behavioural Management Techniques</td>
<td>To learn to manage disruptive behaviour of all the students with or without disabilities</td>
</tr>
<tr>
<td></td>
<td>Feedback</td>
</tr>
<tr>
<td>Teaching Competency Areas</td>
<td>Required Skills</td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------</td>
</tr>
</tbody>
</table>
| Understanding how Learning occurs | → To understand the learning capacities of the students  
   → To provide proper opportunities of learning by understanding the strength and errors of the students  
   → To recognize each child's speciality and learning-style.  
   → Any other work........ |
| Individual Pace of Learning | → To understand each child's style of learning and pace of learning  
   → To understand the individual difference  
   → To use a language that a child is familiar with  
   → To consider cultural /social background of the student  
   → Any other work |
| Use of Instructional Strategies | → To adopt strategies suitable to reach every child  
   → To use modern techniques in teaching  
   → To teach the children by linking their learning situation with real life.  
   → Any other work .......... |
<p>| Creating a Positive Learning Environment | → To promote positive relationships, cooperation and purposeful learning in the classroom |</p>
<table>
<thead>
<tr>
<th>Teaching Competency Areas</th>
<th>Required Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>➔ To create a positive /joyful learning situation.</td>
</tr>
<tr>
<td></td>
<td>➔ To create a learning situation free from fear but full of curiosity</td>
</tr>
<tr>
<td></td>
<td>➔ To provide opportunities to the students to discover their own potential</td>
</tr>
<tr>
<td></td>
<td>➔ Any other work...........</td>
</tr>
<tr>
<td>Use of Assessment Techniques</td>
<td>➔ To prepare individualized educational plan (IEP) for each child and to maintain their personal records</td>
</tr>
<tr>
<td></td>
<td>➔ To assess every child's progress on day to day basis.</td>
</tr>
<tr>
<td></td>
<td>➔ To adapt their teaching-methodology to enhance pupil's achievement</td>
</tr>
<tr>
<td></td>
<td>➔ To make aware children with their progress</td>
</tr>
<tr>
<td></td>
<td>➔ Any other work......</td>
</tr>
<tr>
<td>Networking with parents, Colleagues and community</td>
<td>➔ To be attentive about all aspects of a child's well being (cognitive, emotional, social and physical)</td>
</tr>
<tr>
<td></td>
<td>➔ To consult about well-being of children with their parents and colleagues as well.</td>
</tr>
<tr>
<td>Teaching Competency Areas</td>
<td>Required Skills</td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td></td>
<td>→ To have regular interaction with the parents and exchange with them information about the child's learning environment at home and his/her ability in the classroom</td>
</tr>
<tr>
<td></td>
<td>→ To present themselves as an advocate of the students in the community</td>
</tr>
<tr>
<td></td>
<td>→ Any other work ......</td>
</tr>
<tr>
<td>Multiple Intelligence</td>
<td>→ To understand that the 3R's—reading, writing and Arithmetic are not the only barometer of a child's accomplishments</td>
</tr>
<tr>
<td></td>
<td>→ To encourage special talents of every student.</td>
</tr>
<tr>
<td></td>
<td>→ To create positive attitudes among the students by identifying their qualities, desires and strengths.</td>
</tr>
<tr>
<td></td>
<td>→ Any other work......</td>
</tr>
<tr>
<td>Individualised Educational Plan (IEP)</td>
<td>→ To maintain a record of every student and prepare a plan for attaining specified goals by each student within a specified period of time</td>
</tr>
<tr>
<td></td>
<td>→ To guide the child on various aspects of development so that the prescribed goals can be achieved.</td>
</tr>
<tr>
<td></td>
<td>→ Any other work .........</td>
</tr>
</tbody>
</table>
3.5.1 RELIABILITY AND VALIDITY OF CHECK-LIST

Competency areas and required skills given in above check-list are approved by a group of experts under the guidance of NCERT, New Delhi. They are well thought and are based on sound literature. Check-list is very much reliable and has content-validity as a tool of research.

3.6.0 PREPARATION OF A WORK-SCHEDULE CHART

A work-schedule chart giving indications of time- allocation for completing different activities like pre-planning, planning phase, Implementation phase, Analysis phase and Writing Research Report phase was prepared. With full details, this chart is given in Fig.2 below:
WORK SCHEDULE
(Indicating time allocation for completing different activities of the study)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-Planning Phase</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Review of related literature on inclusive education like survey reports, progress reports regarding IED.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Consultations with experts and NGOs.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Selection of Topic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Preparation of Research Synopsiss for registration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Planning Phase</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Determine sample</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Prepare Design instrument</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Collection of items and Try out stage.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Pretesting of instruments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Item Analysis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Revision of instruments and its final form</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Implementation Phase</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Administration of instruments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Collection of Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Evaluation and Scoring</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Tabulation of data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Analysis Phase</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Analysis of Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Rough Draft of Research report</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reporting Phase</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Thesis Typing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Submission of Summary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Submission of Thesis</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FIG. 2: CHART INDICATING TIME ALLOCATION FOR COMPLETING DIFFERENT ACTIVITIES OF THE STUDY