CHAPTER II

METHODOLOGY

The main objectives of the present study was to explore the status of education at the elementary level in Himachal Pradesh in respect of various disadvantaged groups: girls, schedule caste and scheduled tribe children. To achieve this objective it was required to select and develop suitable tools for students, teachers, and the parents of school going and drop-out children and select appropriate sample groups. The detailed description of tools and sampling is given below.

2.1 TOOLS

The following tools were developed by the investigator herself for collecting various types of data.

1. Norm-Referenced Tests
2. Interview Schedule for Teachers
3. Interview Schedule for Parents

2.1.1 Construction of Norm-Referenced Achievement Tests

One of the objective of the present study was to assess the achievement level of fifth grade primary school students. In order to achieve this objective, it was decided to construct three norm-referenced achievement tests, one for each for Hindi, Mathematics and Our Environment. The tests were based on the course content prescribed for class V in each of the three subjects. Since the purpose of these tests was to compare each individual’s score with some norm and thus differentiate the students on the basis of their performance on
these tests, all the three tests were considered essentially to be norm-referenced achievement tests and were developed following the standard procedure for such tests.

The construction and standardization of norm-referenced tests in Hindi, Mathematics and Our Environment was made on a sample of 370 class fifth grade students, selected from 45 primary schools situated in the districts of Shimla, Solan, Hamirpur and Kinnaur by giving due weightage to rural and urban areas. It may be mentioned that a sample of 370 subjects was selected to have high and low achieving groups of students with N=100. This was necessary to have 27% upper and 27% lower groups to provide contrasted groups for computing "item validity" i.e. "discrimination power" of each of the test items.

2.1.1(i) Construction of Achievement Test in ‘Hindi’ for Class V

The specific details pertaining to the construction for the achievement test in the subject of ‘Hindi’ for Class V are given below:

Planning of the Test

The planning of the test involved writing objectives in behavioural terms and defining the nature of the test.

The test was constructed on the basis of the course content prescribed by the H.P. Board of School Education for Class V. The instructional objectives for the whole course are stated as under:

At the end of the instruction in the course, the students are able to:

- Correct the spelling of given incorrect words, and recognise the correct words
- Explain the meaning of the words/phrases, idioms used in the lesson.
Preparation of the Preliminary Draft of the Test

The preliminary draft of test was prepared on the basis of the instructional objectives stated in the syllabus and accordingly items were constructed to measure each of the objectives. The preliminary draft consisted of 152 items. The weightage given to different types of items for different content areas is presented in Table 2.1.

Table 2.1
Number of Different Types of Items Included in the Preliminary Draft of the Norm-Referenced Achievement Test in ‘Hindi’ for Class V

<table>
<thead>
<tr>
<th>Content</th>
<th>Short Answer</th>
<th>Completion</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct Incorrect Words</td>
<td>40</td>
<td>–</td>
<td>40</td>
</tr>
<tr>
<td>Meaning of Words</td>
<td>23</td>
<td>–</td>
<td>23</td>
</tr>
<tr>
<td>Making Sentences</td>
<td>–</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Answer the Question from Text-Books</td>
<td>18</td>
<td>–</td>
<td>18</td>
</tr>
<tr>
<td>Complete the Sentences</td>
<td>–</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Antonyms</td>
<td>15</td>
<td>–</td>
<td>15</td>
</tr>
<tr>
<td>Change the Number</td>
<td>21</td>
<td>–</td>
<td>21</td>
</tr>
<tr>
<td>Gender</td>
<td>5</td>
<td>–</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>122</td>
<td>30</td>
<td>152</td>
</tr>
</tbody>
</table>
The content of the test was shown to subject teachers and their expert comments were taken to establish content validity of the test. It may be mentioned that content coverage was adequately ensured in the preliminary draft.

The test was evaluated on the following criteria:

(i) Difficulty Value i.e. pass proportion (p) of each item was multiplied by (1-p) to obtain the product of pq as suggested by Garrett (1989).

(ii) The value of discrimination index was computed for each item following the procedure of contrasted groups (high scorer and low scorer) obtained on the basis of total score on the test and finding out t-value for testing of significance of mean difference on each item. The item difficulty and item discrimination of all the items in preliminary draft of the language achievement test are given in the Appendix-VI.

Selection of Items

50 items were selected for the final draft of the test on the basis of the following criteria:

(i) High difficulty value i.e. .25 or near to .25.

(ii) High discrimination i.e. high scorer group should have significantly higher mean performance on the item.

Only those items were included in the final draft which met both the criteria. The item difficulty and item discrimination of selected items in the final draft are given in Table 2.2.
Table 2.2
Item Difficulty and Item Discrimination of Final
Draft of Language Achievement Test

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item Difficulty</th>
<th>MH</th>
<th>ML</th>
<th>SDH</th>
<th>SDL</th>
<th>SE&lt;sub&gt;DM&lt;/sub&gt;</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>.25</td>
<td>.63</td>
<td>.35</td>
<td>.48</td>
<td>.48</td>
<td>.068</td>
<td>4.12</td>
</tr>
<tr>
<td>2.</td>
<td>.24</td>
<td>.75</td>
<td>.46</td>
<td>.43</td>
<td>.50</td>
<td>.066</td>
<td>4.39</td>
</tr>
<tr>
<td>3.</td>
<td>.25</td>
<td>.70</td>
<td>.38</td>
<td>.46</td>
<td>.48</td>
<td>.066</td>
<td>4.84</td>
</tr>
<tr>
<td>4.</td>
<td>.24</td>
<td>.61</td>
<td>.20</td>
<td>.49</td>
<td>.40</td>
<td>.063</td>
<td>6.50</td>
</tr>
<tr>
<td>5.</td>
<td>.18</td>
<td>.95</td>
<td>.60</td>
<td>.22</td>
<td>.49</td>
<td>.054</td>
<td>6.48</td>
</tr>
<tr>
<td>6.</td>
<td>.23</td>
<td>.80</td>
<td>.46</td>
<td>.60</td>
<td>.50</td>
<td>.041</td>
<td>8.29</td>
</tr>
<tr>
<td>7.</td>
<td>.22</td>
<td>.76</td>
<td>.58</td>
<td>.43</td>
<td>.49</td>
<td>.065</td>
<td>2.77</td>
</tr>
<tr>
<td>8.</td>
<td>.21</td>
<td>.90</td>
<td>.51</td>
<td>.30</td>
<td>.50</td>
<td>.056</td>
<td>6.50</td>
</tr>
<tr>
<td>9.</td>
<td>.25</td>
<td>.81</td>
<td>.18</td>
<td>.39</td>
<td>.40</td>
<td>.056</td>
<td>11.25</td>
</tr>
<tr>
<td>10.</td>
<td>.25</td>
<td>.78</td>
<td>.12</td>
<td>.41</td>
<td>.32</td>
<td>.052</td>
<td>12.69</td>
</tr>
<tr>
<td>11.</td>
<td>.23</td>
<td>.68</td>
<td>.20</td>
<td>.48</td>
<td>.40</td>
<td>.062</td>
<td>10.64</td>
</tr>
<tr>
<td>12.</td>
<td>.23</td>
<td>.71</td>
<td>.20</td>
<td>.45</td>
<td>.40</td>
<td>.060</td>
<td>11.50</td>
</tr>
<tr>
<td>13.</td>
<td>.23</td>
<td>.74</td>
<td>.30</td>
<td>.44</td>
<td>.46</td>
<td>.071</td>
<td>10.50</td>
</tr>
<tr>
<td>14.</td>
<td>.22</td>
<td>.65</td>
<td>.30</td>
<td>.48</td>
<td>.46</td>
<td>.071</td>
<td>8.85</td>
</tr>
<tr>
<td>15.</td>
<td>.25</td>
<td>.81</td>
<td>.12</td>
<td>.39</td>
<td>.32</td>
<td>.050</td>
<td>13.80</td>
</tr>
<tr>
<td>16.</td>
<td>.23</td>
<td>.72</td>
<td>.30</td>
<td>.45</td>
<td>.46</td>
<td>.064</td>
<td>10.78</td>
</tr>
<tr>
<td>17.</td>
<td>.22</td>
<td>.67</td>
<td>.20</td>
<td>.47</td>
<td>.40</td>
<td>.062</td>
<td>10.48</td>
</tr>
<tr>
<td>18.</td>
<td>.25</td>
<td>.90</td>
<td>.10</td>
<td>.30</td>
<td>.30</td>
<td>.041</td>
<td>22.25</td>
</tr>
<tr>
<td>19.</td>
<td>.25</td>
<td>.87</td>
<td>.26</td>
<td>.34</td>
<td>.44</td>
<td>.056</td>
<td>10.89</td>
</tr>
<tr>
<td>20.</td>
<td>.24</td>
<td>.73</td>
<td>.51</td>
<td>.24</td>
<td>.44</td>
<td>.071</td>
<td>9.711</td>
</tr>
<tr>
<td>21.</td>
<td>.22</td>
<td>.64</td>
<td>.31</td>
<td>.48</td>
<td>.46</td>
<td>.071</td>
<td>8.57</td>
</tr>
<tr>
<td>22.</td>
<td>.22</td>
<td>.63</td>
<td>.31</td>
<td>.48</td>
<td>.46</td>
<td>.066</td>
<td>9.09</td>
</tr>
<tr>
<td>23.</td>
<td>.24</td>
<td>.73</td>
<td>.90</td>
<td>.44</td>
<td>.30</td>
<td>.053</td>
<td>12.07</td>
</tr>
<tr>
<td>24.</td>
<td>.19</td>
<td>.47</td>
<td>.50</td>
<td>.50</td>
<td>.50</td>
<td>.071</td>
<td>5.91</td>
</tr>
<tr>
<td>25.</td>
<td>.18</td>
<td>.90</td>
<td>.62</td>
<td>.30</td>
<td>.48</td>
<td>.057</td>
<td>4.58</td>
</tr>
<tr>
<td>26.</td>
<td>.22</td>
<td>.91</td>
<td>.45</td>
<td>.29</td>
<td>.50</td>
<td>.058</td>
<td>4.91</td>
</tr>
<tr>
<td>27.</td>
<td>.21</td>
<td>.97</td>
<td>.41</td>
<td>.17</td>
<td>.49</td>
<td>.052</td>
<td>10.77</td>
</tr>
<tr>
<td>28.</td>
<td>.23</td>
<td>.91</td>
<td>.36</td>
<td>.29</td>
<td>.48</td>
<td>.056</td>
<td>9.82</td>
</tr>
<tr>
<td>29.</td>
<td>.25</td>
<td>.81</td>
<td>.22</td>
<td>.39</td>
<td>.41</td>
<td>.056</td>
<td>10.53</td>
</tr>
<tr>
<td>30.</td>
<td>.22</td>
<td>.93</td>
<td>.42</td>
<td>.25</td>
<td>.49</td>
<td>.055</td>
<td>9.27</td>
</tr>
<tr>
<td>31.</td>
<td>.22</td>
<td>.87</td>
<td>.47</td>
<td>.34</td>
<td>.50</td>
<td>.060</td>
<td>6.67</td>
</tr>
<tr>
<td>32.</td>
<td>.20</td>
<td>.46</td>
<td>.10</td>
<td>.50</td>
<td>.30</td>
<td>.058</td>
<td>6.21</td>
</tr>
<tr>
<td>33.</td>
<td>.25</td>
<td>.79</td>
<td>.26</td>
<td>.41</td>
<td>.44</td>
<td>.060</td>
<td>8.83</td>
</tr>
<tr>
<td>34.</td>
<td>.25</td>
<td>.67</td>
<td>.24</td>
<td>.47</td>
<td>.43</td>
<td>.064</td>
<td>6.72</td>
</tr>
<tr>
<td>35.</td>
<td>.35</td>
<td>.89</td>
<td>.21</td>
<td>.31</td>
<td>.41</td>
<td>.051</td>
<td>13.13</td>
</tr>
<tr>
<td>36.</td>
<td>.25</td>
<td>.83</td>
<td>.11</td>
<td>.37</td>
<td>.31</td>
<td>.048</td>
<td>15.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>37.</td>
<td>.25</td>
<td>.85</td>
<td>.19</td>
<td>.36</td>
<td>.39</td>
<td>.053</td>
<td>12.45</td>
</tr>
<tr>
<td>38.</td>
<td>.25</td>
<td>.78</td>
<td>.19</td>
<td>.41</td>
<td>.39</td>
<td>.056</td>
<td>10.53</td>
</tr>
<tr>
<td>39.</td>
<td>.25</td>
<td>.90</td>
<td>.17</td>
<td>.30</td>
<td>.37</td>
<td>.048</td>
<td>15.21</td>
</tr>
<tr>
<td>40.</td>
<td>.23</td>
<td>.97</td>
<td>.33</td>
<td>.17</td>
<td>.47</td>
<td>.050</td>
<td>12.80</td>
</tr>
<tr>
<td>41.</td>
<td>.23</td>
<td>.96</td>
<td>.30</td>
<td>.19</td>
<td>.46</td>
<td>.050</td>
<td>13.20</td>
</tr>
<tr>
<td>42.</td>
<td>.23</td>
<td>.96</td>
<td>.34</td>
<td>.19</td>
<td>.47</td>
<td>.051</td>
<td>12.16</td>
</tr>
<tr>
<td>43.</td>
<td>.25</td>
<td>.75</td>
<td>.15</td>
<td>.43</td>
<td>.36</td>
<td>.056</td>
<td>10.71</td>
</tr>
<tr>
<td>44.</td>
<td>.24</td>
<td>.89</td>
<td>.29</td>
<td>.31</td>
<td>.45</td>
<td>.055</td>
<td>10.91</td>
</tr>
<tr>
<td>45.</td>
<td>.23</td>
<td>.92</td>
<td>.33</td>
<td>.29</td>
<td>.47</td>
<td>.054</td>
<td>10.92</td>
</tr>
<tr>
<td>46.</td>
<td>.23</td>
<td>.96</td>
<td>.29</td>
<td>.19</td>
<td>.45</td>
<td>.049</td>
<td>14.28</td>
</tr>
<tr>
<td>47.</td>
<td>.23</td>
<td>.95</td>
<td>.34</td>
<td>.22</td>
<td>.47</td>
<td>.052</td>
<td>11.73</td>
</tr>
<tr>
<td>48.</td>
<td>.22</td>
<td>.87</td>
<td>.47</td>
<td>.34</td>
<td>.50</td>
<td>.060</td>
<td>6.67</td>
</tr>
<tr>
<td>49.</td>
<td>.24</td>
<td>.72</td>
<td>.15</td>
<td>.45</td>
<td>.36</td>
<td>.058</td>
<td>9.83</td>
</tr>
<tr>
<td>50.</td>
<td>.21</td>
<td>.96</td>
<td>.45</td>
<td>.19</td>
<td>.50</td>
<td>.053</td>
<td>9.62</td>
</tr>
</tbody>
</table>

**Note:** \( t \)-value equal to 1.96 or more is significant at .05 level and equal to 2.58 or more is significant at .01 level.

**Preparation of the Final Draft**

The selected 50 items were arranged in the descending order of their difficulty values in the final draft. Then the items of same type were grouped together and put separately in the test with a set of instructions to facilitate the administration of test. The final draft of the test was got cyclostyled for further use in the study. A copy of the final draft of the test is given Appendix-III. The structure of the final draft of the test showing the number of each type of items is given in Table 2.3.

**Table 2.3**

<table>
<thead>
<tr>
<th>One Word</th>
<th>Short Answers</th>
<th>Completion Type</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>8</td>
<td>1</td>
<td>50</td>
</tr>
</tbody>
</table>

**Reliability of the Test**

Test-retest-reliability was computed for the test scores. The product moment correlation between the two sets of test scores came out to be 0.79, which may be treated as quite high.
Validity of the Test

The content validity of the language achievement test was established in the preparation of preliminary draft of the test.

2.1.2 Construction of Norm-Referenced Achievement Test in Mathematics

The specific details pertaining to the construction of the norm-referenced achievement test in the subject of “Mathematics” for class V are given below:

Planning of the Test

The planning of the test involved writing objectives in behavioural terms and defining the nature of the test.

The test was constructed on the basis of the course content in Mathematics prescribed for class V. The instructional objectives for the whole course were stated as under:

At the end of the instruction in the course, the students are able to:

- Write down the number in figures and words up-to eight digits.
- Write down the place value of the Numbers upto eight digits.
- Add, subtract, multiply and divide numbers.
- Solve questions based on the addition, subtraction, multiplication, and division of metric measures of length, width, height, weight and capacity.
- Explain the concept of factor and multiple with the help of examples.
- Multiply and divide numbers with the help of actors of numbers.
- Solve questions based on HCF and Leon.
- Explain the meaning of numerator, denominator and vulgar fractions with the help of examples.
• Solve questions based on reducing the fractions to their lowest terms.
• Convert mixed numbers into improper fractions and vice-versa.
• Add, subtract, multiply and divide vulgar fractions.
• Convert fractions into other equivalent fractions having equal numerators/denominators in all cases.
• Convert Vulgar fractions into decimal numbers and vice-versa.
• Add and subtract decimal fraction with 10, 100 and 1000.

Preparation of the Preliminary Draft of the Test

The preliminary draft of the test was prepared in accordance with the table of specifications which was drawn on the basis of the instructional objectives stated earlier. The preliminary draft consisted of 99 items. The weightage given to different types of items for different content areas is presented in Table 2.4.

<table>
<thead>
<tr>
<th>Content</th>
<th>Multiple Choice</th>
<th>Completion Type</th>
<th>Short Answers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional &amp; Subtraction</td>
<td>15</td>
<td>-</td>
<td>-</td>
<td>15</td>
</tr>
<tr>
<td>Multiplication &amp; Division</td>
<td>14</td>
<td>14</td>
<td>-</td>
<td>28</td>
</tr>
<tr>
<td>Four Fundamental Results on Numbers</td>
<td>7</td>
<td>2</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Measures Length Weight, Capacity and Time</td>
<td>18</td>
<td>-</td>
<td>-</td>
<td>18</td>
</tr>
<tr>
<td>Fractions</td>
<td>10</td>
<td>2</td>
<td>-</td>
<td>12</td>
</tr>
<tr>
<td>HCF, LCM</td>
<td>9</td>
<td>4</td>
<td>-</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>73</td>
<td>22</td>
<td>4</td>
<td>99</td>
</tr>
</tbody>
</table>

The test was evaluated on the criteria of difficulty value and item discrimination. These values are given in the Appendix-VII.
Selection of Items

50 items were selected for the final draft of the test on the basis of the criteria discussed earlier. The item difficulty and item discrimination values of selected items are given in Table 2.5.

Table 2.5

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item Difficulty</th>
<th>MH</th>
<th>ML</th>
<th>SDH</th>
<th>SDL</th>
<th>SE&lt;sub&gt;DM&lt;/sub&gt;</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>.24</td>
<td>.82</td>
<td>.38</td>
<td>.38</td>
<td>.48</td>
<td>.061</td>
<td>7.21</td>
</tr>
<tr>
<td>2.</td>
<td>.18</td>
<td>.90</td>
<td>.63</td>
<td>.30</td>
<td>.48</td>
<td>.057</td>
<td>4.74</td>
</tr>
<tr>
<td>3.</td>
<td>.21</td>
<td>.88</td>
<td>.52</td>
<td>.32</td>
<td>.50</td>
<td>.059</td>
<td>6.10</td>
</tr>
<tr>
<td>4.</td>
<td>.22</td>
<td>.83</td>
<td>.50</td>
<td>.37</td>
<td>.50</td>
<td>.062</td>
<td>5.32</td>
</tr>
<tr>
<td>5.</td>
<td>.21</td>
<td>.88</td>
<td>.52</td>
<td>.32</td>
<td>.50</td>
<td>.059</td>
<td>6.10</td>
</tr>
<tr>
<td>6.</td>
<td>.16</td>
<td>.92</td>
<td>.66</td>
<td>.27</td>
<td>.47</td>
<td>.054</td>
<td>4.81</td>
</tr>
<tr>
<td>7.</td>
<td>.22</td>
<td>.81</td>
<td>.55</td>
<td>.39</td>
<td>.50</td>
<td>.063</td>
<td>4.13</td>
</tr>
<tr>
<td>8.</td>
<td>.20</td>
<td>.80</td>
<td>.63</td>
<td>.40</td>
<td>.48</td>
<td>.062</td>
<td>2.74</td>
</tr>
<tr>
<td>9.</td>
<td>.16</td>
<td>.98</td>
<td>.63</td>
<td>.15</td>
<td>.48</td>
<td>.050</td>
<td>7.00</td>
</tr>
<tr>
<td>10.</td>
<td>.23</td>
<td>.80</td>
<td>.51</td>
<td>.40</td>
<td>.50</td>
<td>.064</td>
<td>4.53</td>
</tr>
<tr>
<td>11.</td>
<td>.21</td>
<td>.93</td>
<td>.48</td>
<td>.25</td>
<td>.50</td>
<td>.056</td>
<td>8.04</td>
</tr>
<tr>
<td>12.</td>
<td>.23</td>
<td>.78</td>
<td>.49</td>
<td>.41</td>
<td>.50</td>
<td>.065</td>
<td>4.46</td>
</tr>
<tr>
<td>13.</td>
<td>.24</td>
<td>.73</td>
<td>.47</td>
<td>.44</td>
<td>.50</td>
<td>.067</td>
<td>3.88</td>
</tr>
<tr>
<td>14.</td>
<td>.24</td>
<td>.81</td>
<td>.35</td>
<td>.39</td>
<td>.48</td>
<td>.062</td>
<td>7.42</td>
</tr>
<tr>
<td>15.</td>
<td>.24</td>
<td>.81</td>
<td>.41</td>
<td>.39</td>
<td>.49</td>
<td>.063</td>
<td>6.34</td>
</tr>
<tr>
<td>16.</td>
<td>.23</td>
<td>.80</td>
<td>.48</td>
<td>.04</td>
<td>.50</td>
<td>.064</td>
<td>5.00</td>
</tr>
<tr>
<td>17.</td>
<td>.24</td>
<td>.74</td>
<td>.47</td>
<td>.46</td>
<td>.50</td>
<td>.067</td>
<td>4.03</td>
</tr>
<tr>
<td>18.</td>
<td>.25</td>
<td>.72</td>
<td>.31</td>
<td>.45</td>
<td>.46</td>
<td>.064</td>
<td>6.41</td>
</tr>
<tr>
<td>19.</td>
<td>.24</td>
<td>.65</td>
<td>.22</td>
<td>.48</td>
<td>.41</td>
<td>.063</td>
<td>6.82</td>
</tr>
<tr>
<td>20.</td>
<td>.22</td>
<td>.50</td>
<td>.50</td>
<td>.36</td>
<td>.36</td>
<td>.062</td>
<td>5.48</td>
</tr>
<tr>
<td>21.</td>
<td>.23</td>
<td>.87</td>
<td>.44</td>
<td>.34</td>
<td>.50</td>
<td>.060</td>
<td>7.17</td>
</tr>
<tr>
<td>22.</td>
<td>.25</td>
<td>.72</td>
<td>.35</td>
<td>.45</td>
<td>.48</td>
<td>.066</td>
<td>5.61</td>
</tr>
<tr>
<td>23.</td>
<td>.25</td>
<td>.78</td>
<td>.10</td>
<td>.41</td>
<td>.30</td>
<td>.05</td>
<td>13.60</td>
</tr>
<tr>
<td>24.</td>
<td>.25</td>
<td>.80</td>
<td>.17</td>
<td>.40</td>
<td>.37</td>
<td>.054</td>
<td>11.16</td>
</tr>
<tr>
<td>25.</td>
<td>.25</td>
<td>.84</td>
<td>.26</td>
<td>.37</td>
<td>.44</td>
<td>.057</td>
<td>10.17</td>
</tr>
<tr>
<td>26.</td>
<td>.23</td>
<td>.85</td>
<td>.43</td>
<td>.36</td>
<td>.49</td>
<td>.061</td>
<td>6.88</td>
</tr>
<tr>
<td>27.</td>
<td>.25</td>
<td>.71</td>
<td>.28</td>
<td>.45</td>
<td>.45</td>
<td>.064</td>
<td>6.72</td>
</tr>
<tr>
<td>28.</td>
<td>.24</td>
<td>.68</td>
<td>.19</td>
<td>.47</td>
<td>.39</td>
<td>.061</td>
<td>8.03</td>
</tr>
<tr>
<td>29.</td>
<td>.23</td>
<td>.83</td>
<td>.44</td>
<td>.37</td>
<td>.50</td>
<td>.062</td>
<td>6.29</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>.82</td>
<td>.10</td>
<td>.38</td>
<td>.30</td>
<td>.05</td>
<td>14.40</td>
</tr>
<tr>
<td>---</td>
<td>----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-------</td>
</tr>
<tr>
<td>31.</td>
<td>.25</td>
<td>.88</td>
<td>.20</td>
<td>.32</td>
<td>.40</td>
<td>.051</td>
<td>16.86</td>
</tr>
<tr>
<td>32.</td>
<td>.25</td>
<td>.86</td>
<td>.13</td>
<td>.35</td>
<td>.34</td>
<td>.049</td>
<td>14.90</td>
</tr>
<tr>
<td>33.</td>
<td>.24</td>
<td>.85</td>
<td>.20</td>
<td>.36</td>
<td>.40</td>
<td>.054</td>
<td>15.37</td>
</tr>
<tr>
<td>34.</td>
<td>.25</td>
<td>.91</td>
<td>.14</td>
<td>.29</td>
<td>.35</td>
<td>.05</td>
<td>15.40</td>
</tr>
<tr>
<td>35.</td>
<td>.25</td>
<td>.98</td>
<td>.14</td>
<td>.14</td>
<td>.35</td>
<td>.05</td>
<td>16.80</td>
</tr>
<tr>
<td>36.</td>
<td>.25</td>
<td>.96</td>
<td>.14</td>
<td>.19</td>
<td>.35</td>
<td>.040</td>
<td>20.50</td>
</tr>
<tr>
<td>37.</td>
<td>.25</td>
<td>.79</td>
<td>.12</td>
<td>.41</td>
<td>.32</td>
<td>.052</td>
<td>12.88</td>
</tr>
<tr>
<td>38.</td>
<td>.24</td>
<td>.80</td>
<td>.01</td>
<td>.40</td>
<td>.00</td>
<td>.016</td>
<td>16.45</td>
</tr>
<tr>
<td>39.</td>
<td>.23</td>
<td>.97</td>
<td>.28</td>
<td>.17</td>
<td>.45</td>
<td>.048</td>
<td>14.17</td>
</tr>
<tr>
<td>40.</td>
<td>.25</td>
<td>.83</td>
<td>.27</td>
<td>.37</td>
<td>.44</td>
<td>.057</td>
<td>9.82</td>
</tr>
<tr>
<td>41.</td>
<td>.25</td>
<td>.95</td>
<td>.13</td>
<td>.22</td>
<td>.34</td>
<td>.040</td>
<td>20.50</td>
</tr>
<tr>
<td>42.</td>
<td>.24</td>
<td>.90</td>
<td>.24</td>
<td>.30</td>
<td>.43</td>
<td>.052</td>
<td>12.69</td>
</tr>
<tr>
<td>43.</td>
<td>.25</td>
<td>.83</td>
<td>.10</td>
<td>.37</td>
<td>.30</td>
<td>.059</td>
<td>12.34</td>
</tr>
<tr>
<td>44.</td>
<td>.24</td>
<td>.76</td>
<td>.20</td>
<td>.43</td>
<td>.40</td>
<td>.059</td>
<td>12.54</td>
</tr>
<tr>
<td>45.</td>
<td>.25</td>
<td>.76</td>
<td>.17</td>
<td>.43</td>
<td>.37</td>
<td>.057</td>
<td>10.35</td>
</tr>
<tr>
<td>46.</td>
<td>.22</td>
<td>.99</td>
<td>.33</td>
<td>.099</td>
<td>.47</td>
<td>.048</td>
<td>13.75</td>
</tr>
<tr>
<td>47.</td>
<td>.24</td>
<td>.93</td>
<td>.24</td>
<td>.25</td>
<td>.43</td>
<td>.050</td>
<td>8.80</td>
</tr>
<tr>
<td>48.</td>
<td>.25</td>
<td>.79</td>
<td>.16</td>
<td>.41</td>
<td>.37</td>
<td>.055</td>
<td>11.45</td>
</tr>
<tr>
<td>49.</td>
<td>.25</td>
<td>.90</td>
<td>.22</td>
<td>.30</td>
<td>.41</td>
<td>.051</td>
<td>13.13</td>
</tr>
<tr>
<td>50.</td>
<td>.25</td>
<td>.79</td>
<td>.22</td>
<td>.41</td>
<td>.41</td>
<td>.058</td>
<td>9.83</td>
</tr>
</tbody>
</table>

**Note:** t-value equal to 1.96 or more is significant at .05 level and equal to 2.58 or more is significant at .01 level.

**Preparation of the Final Draft**

The selected 50 items were arranged in the descending order of their difficulty values for the final draft. Then the items of same type were grouped together and put separately in the test with a set of instructions to facilitate the administration and scoring of the test. The final draft of the test was got cyclostyled for further use in the study. A copy of the final draft of the test is given in Appendix-IV. The structure of the final draft of the test showing the number of each type of items is given in Table 2.6.
Table 2.6
Structure of the Final draft of the Test in Mathematics
Showing the Number of Type of Items

<table>
<thead>
<tr>
<th></th>
<th>Multiple Choice</th>
<th>Short Answer Type</th>
<th>Completion Type</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>22</td>
<td>4</td>
<td>24</td>
<td>50</td>
</tr>
</tbody>
</table>

Reliability of the Test

Test-retest-reliability was computed for the test scores following the procedures stated earlier. The product moment correlation of test scores came out to be 0.85. This value was considered to be satisfactory measure of reliability of the test.

Validity of the Test

The content validity of a test was ascertained following the procedure described earlier. The table of specifications was prepared and the test was constructed strictly in accordance with the same.

2.1.3 Construction of Norm-Referenced Achievement Test in “Our Environment” for Class V

The specific details pertaining to the construction of the norm-referenced achievement test in the subject of “our environment” for class V are given below:

Planning of the Test

The test was constructed on the basis of the course content in “our environment” prescribed for class V. The instructional objectives for the whole course are stated as under:

At the end of the instruction, the students will be able to:

- How plants take water and minerals?
- Describe how plants synthesize their food?
- User of woods.
• Write down how do the plants and animals are inter dependent.
• Need of water and fertilizer for plants.
• Importance of green vegetables.
• Explain the techniques that help in preserving food.
• Explain the techniques that preserve food.
• The best source of drinking water.
• Disease that spread through water.
• Write down the method of purifying water.
• Uses of bleaching power.
• Describe desperation.
• How manure is formed.
• Define solid, state and air.
• Soil and its uses.
• Define sources of energy.
• Define force.
• How many planets are in solar system.
• State that the earth completes one revolution around the sun in 365 days and 6 hours.
• Name the forest and nearest planets of sun.
• Name the natural satellites of earth.
• Function of lungs.
• Causes of water pollution.
• Write down the total number of bones in human body.
• Name the diseases that spread through contracts, air and water.
• Explain the components of air.
• State that India is located in the south of Asia continent.
• Name the direction of three sides of India which are surrounded by water.
• Identify the position of A sea and Bay of Bengal.
• Name the neighboring state of India.
• Importance of Himalayan?
• Source of Indira Gandhi canal.
• How desert is formed.
• On which direction Indian desert is situated.
• What is seaport and name the biggest seaport of India.
• Costal line of India.
• Soil and crops.
• Which is the best soil.
• How soil erosion is prevented.
• Name biggest aerodrome of India.
• Type of plants.
• Meaning of cincture.
• Where Kanchi Ranga is situated.
• Uses of dam
• Meaning of minerals.
• Meaning of White Revolution.
• Important means of agriculture.
• Problem of population in our country.
• Where airplanes are manufactured.
• Name the means of communication.
• Name the capital of H.P.
• Name the State where camel is used.
• Which is the biggest state of India.
• Name the efforts of Raja Ram Mohan Roy.
• Name the Religious book of Sikhs.
• Name the capital of India.
It was decided that the test should be in Hindi medium and to include multiple choice, true/false, completion, matching and short answer type items.

**Preparation of the Preliminary Draft of the Test**

The preliminary draft of the test was prepared in accordance with the table of specifications which was drawn on the basis of the instructional objectives stated earlier. The preliminary draft consisted of 133 items. The weightage given to different types of items for different content areas is presented in Table 2.7.

**Table 2.7**

<table>
<thead>
<tr>
<th>Content</th>
<th>Multiple Choice</th>
<th>Short Answers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earth and the sky</td>
<td>7</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Air water and weather</td>
<td>9</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>Natural resources of the earth surface and under ground surface</td>
<td>18</td>
<td>18</td>
<td>36</td>
</tr>
<tr>
<td>Force work and energy</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Material and their properties</td>
<td>6</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Human body, nutrition and health</td>
<td>4</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>How we govern our selves</td>
<td>15</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>Study of globe</td>
<td>10</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Soil erosion and presentation</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Means of transport and communication</td>
<td>5</td>
<td>52</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>81</strong></td>
<td><strong>52</strong></td>
<td><strong>133</strong></td>
</tr>
</tbody>
</table>

The test was evaluated on the criteria of Difficulty Value and Discrimination Index as explained earlier. The item-wise difficulty value and discrimination value of the test on "our environment" are presented in Appendix-VIII.
Selection of Items

50 items were selected for the final draft of the test on the basis of the criteria discussed earlier. The item difficulty and item discrimination of selected items in final draft of test are given in Table 2.8.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item Difficulty</th>
<th>MH</th>
<th>ML</th>
<th>SDH</th>
<th>SDL</th>
<th>SE_{DM}</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>0.19</td>
<td>0.94</td>
<td>0.54</td>
<td>0.24</td>
<td>0.49</td>
<td>0.054</td>
<td>7.41</td>
</tr>
<tr>
<td>2.</td>
<td>0.23</td>
<td>0.76</td>
<td>0.54</td>
<td>0.43</td>
<td>0.50</td>
<td>0.066</td>
<td>3.33</td>
</tr>
<tr>
<td>3.</td>
<td>0.21</td>
<td>0.86</td>
<td>0.53</td>
<td>0.35</td>
<td>0.50</td>
<td>0.061</td>
<td>5.90</td>
</tr>
<tr>
<td>4.</td>
<td>0.24</td>
<td>0.72</td>
<td>0.45</td>
<td>0.45</td>
<td>0.50</td>
<td>0.067</td>
<td>4.03</td>
</tr>
<tr>
<td>5.</td>
<td>0.25</td>
<td>0.62</td>
<td>0.33</td>
<td>0.49</td>
<td>0.49</td>
<td>0.069</td>
<td>3.48</td>
</tr>
<tr>
<td>6.</td>
<td>0.24</td>
<td>0.91</td>
<td>0.25</td>
<td>0.29</td>
<td>0.61</td>
<td>0.067</td>
<td>9.85</td>
</tr>
<tr>
<td>7.</td>
<td>0.20</td>
<td>0.95</td>
<td>0.49</td>
<td>0.22</td>
<td>0.50</td>
<td>0.055</td>
<td>8.36</td>
</tr>
<tr>
<td>8.</td>
<td>0.25</td>
<td>0.82</td>
<td>0.13</td>
<td>0.38</td>
<td>0.34</td>
<td>0.051</td>
<td>13.53</td>
</tr>
<tr>
<td>9.</td>
<td>0.15</td>
<td>0.96</td>
<td>0.69</td>
<td>0.19</td>
<td>0.46</td>
<td>0.05</td>
<td>5.40</td>
</tr>
<tr>
<td>10.</td>
<td>0.22</td>
<td>0.92</td>
<td>0.45</td>
<td>0.27</td>
<td>0.50</td>
<td>0.057</td>
<td>8.24</td>
</tr>
<tr>
<td>11.</td>
<td>0.25</td>
<td>0.79</td>
<td>0.25</td>
<td>0.40</td>
<td>0.43</td>
<td>0.059</td>
<td>9.15</td>
</tr>
<tr>
<td>12.</td>
<td>0.25</td>
<td>0.61</td>
<td>0.45</td>
<td>0.49</td>
<td>0.50</td>
<td>0.070</td>
<td>2.28</td>
</tr>
<tr>
<td>13.</td>
<td>0.25</td>
<td>0.81</td>
<td>0.22</td>
<td>0.39</td>
<td>0.41</td>
<td>0.056</td>
<td>10.53</td>
</tr>
<tr>
<td>14.</td>
<td>0.20</td>
<td>0.93</td>
<td>0.51</td>
<td>0.25</td>
<td>0.50</td>
<td>0.056</td>
<td>9.64</td>
</tr>
<tr>
<td>15.</td>
<td>0.18</td>
<td>0.94</td>
<td>0.60</td>
<td>0.24</td>
<td>0.49</td>
<td>0.054</td>
<td>6.29</td>
</tr>
<tr>
<td>16.</td>
<td>0.16</td>
<td>0.90</td>
<td>0.55</td>
<td>0.30</td>
<td>0.50</td>
<td>0.058</td>
<td>7.75</td>
</tr>
<tr>
<td>17.</td>
<td>0.23</td>
<td>0.90</td>
<td>0.35</td>
<td>0.30</td>
<td>0.48</td>
<td>0.057</td>
<td>9.64</td>
</tr>
<tr>
<td>18.</td>
<td>0.25</td>
<td>0.78</td>
<td>0.35</td>
<td>0.41</td>
<td>0.48</td>
<td>0.063</td>
<td>6.82</td>
</tr>
<tr>
<td>19.</td>
<td>0.16</td>
<td>0.97</td>
<td>0.64</td>
<td>0.17</td>
<td>0.48</td>
<td>0.051</td>
<td>6.47</td>
</tr>
<tr>
<td>20.</td>
<td>0.16</td>
<td>0.93</td>
<td>0.67</td>
<td>0.25</td>
<td>0.47</td>
<td>0.053</td>
<td>4.90</td>
</tr>
<tr>
<td>21.</td>
<td>0.21</td>
<td>0.89</td>
<td>0.51</td>
<td>0.31</td>
<td>0.50</td>
<td>0.059</td>
<td>6.44</td>
</tr>
<tr>
<td>22.</td>
<td>0.23</td>
<td>0.92</td>
<td>0.34</td>
<td>0.27</td>
<td>0.47</td>
<td>0.054</td>
<td>10.74</td>
</tr>
<tr>
<td>23.</td>
<td>0.17</td>
<td>0.95</td>
<td>0.61</td>
<td>0.22</td>
<td>0.49</td>
<td>0.054</td>
<td>6.29</td>
</tr>
<tr>
<td>24.</td>
<td>0.18</td>
<td>0.95</td>
<td>0.59</td>
<td>0.22</td>
<td>0.49</td>
<td>0.054</td>
<td>6.66</td>
</tr>
<tr>
<td>25.</td>
<td>0.19</td>
<td>0.95</td>
<td>0.55</td>
<td>0.22</td>
<td>0.50</td>
<td>0.055</td>
<td>7.27</td>
</tr>
<tr>
<td>26.</td>
<td>0.19</td>
<td>0.92</td>
<td>0.57</td>
<td>0.27</td>
<td>0.49</td>
<td>0.056</td>
<td>6.25</td>
</tr>
<tr>
<td>27.</td>
<td>0.25</td>
<td>0.72</td>
<td>0.32</td>
<td>0.45</td>
<td>0.47</td>
<td>0.056</td>
<td>6.15</td>
</tr>
<tr>
<td>28.</td>
<td>0.25</td>
<td>0.77</td>
<td>0.16</td>
<td>0.42</td>
<td>0.37</td>
<td>0.056</td>
<td>10.89</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>29.</td>
<td>.23</td>
<td>.97</td>
<td>.33</td>
<td>.17</td>
<td>.47</td>
<td>.050</td>
<td>12.80</td>
</tr>
<tr>
<td>30.</td>
<td>.23</td>
<td>.74</td>
<td>.56</td>
<td>.44</td>
<td>.50</td>
<td>.067</td>
<td>3.73</td>
</tr>
<tr>
<td>31.</td>
<td>.24</td>
<td>.89</td>
<td>.26</td>
<td>.31</td>
<td>.44</td>
<td>.051</td>
<td>13.52</td>
</tr>
<tr>
<td>32.</td>
<td>.25</td>
<td>.70</td>
<td>.27</td>
<td>.46</td>
<td>.44</td>
<td>.064</td>
<td>6.72</td>
</tr>
<tr>
<td>33.</td>
<td>.18</td>
<td>.76</td>
<td>.14</td>
<td>.43</td>
<td>.35</td>
<td>.055</td>
<td>3.88</td>
</tr>
<tr>
<td>34.</td>
<td>.25</td>
<td>.73</td>
<td>.18</td>
<td>.44</td>
<td>.38</td>
<td>.058</td>
<td>9.48</td>
</tr>
<tr>
<td>35.</td>
<td>.25</td>
<td>.91</td>
<td>.20</td>
<td>.29</td>
<td>.40</td>
<td>.049</td>
<td>14.48</td>
</tr>
<tr>
<td>36.</td>
<td>.25</td>
<td>.79</td>
<td>.26</td>
<td>.41</td>
<td>.44</td>
<td>.060</td>
<td>8.83</td>
</tr>
<tr>
<td>37.</td>
<td>.25</td>
<td>.79</td>
<td>.14</td>
<td>.41</td>
<td>.35</td>
<td>.054</td>
<td>12.03</td>
</tr>
<tr>
<td>38.</td>
<td>.24</td>
<td>.75</td>
<td>.40</td>
<td>.43</td>
<td>.49</td>
<td>.065</td>
<td>5.38</td>
</tr>
<tr>
<td>39.</td>
<td>.25</td>
<td>.84</td>
<td>.27</td>
<td>.37</td>
<td>.44</td>
<td>.057</td>
<td>10.00</td>
</tr>
<tr>
<td>40.</td>
<td>.25</td>
<td>.76</td>
<td>.17</td>
<td>.43</td>
<td>.37</td>
<td>.057</td>
<td>11.40</td>
</tr>
<tr>
<td>41.</td>
<td>.24</td>
<td>.89</td>
<td>.28</td>
<td>.31</td>
<td>.45</td>
<td>.055</td>
<td>10.90</td>
</tr>
<tr>
<td>42.</td>
<td>.23</td>
<td>.87</td>
<td>.28</td>
<td>.34</td>
<td>.45</td>
<td>.056</td>
<td>7.50</td>
</tr>
<tr>
<td>43.</td>
<td>.25</td>
<td>.74</td>
<td>.35</td>
<td>.44</td>
<td>.48</td>
<td>.065</td>
<td>6.00</td>
</tr>
<tr>
<td>44.</td>
<td>.16</td>
<td>.94</td>
<td>.24</td>
<td>.64</td>
<td>.48</td>
<td>.054</td>
<td>5.53</td>
</tr>
<tr>
<td>45.</td>
<td>.23</td>
<td>.87</td>
<td>.43</td>
<td>.34</td>
<td>.49</td>
<td>.060</td>
<td>7.33</td>
</tr>
<tr>
<td>46.</td>
<td>.23</td>
<td>.88</td>
<td>.42</td>
<td>.32</td>
<td>.49</td>
<td>.058</td>
<td>7.93</td>
</tr>
<tr>
<td>47.</td>
<td>.24</td>
<td>.62</td>
<td>.21</td>
<td>.48</td>
<td>.41</td>
<td>.063</td>
<td>6.51</td>
</tr>
<tr>
<td>48.</td>
<td>.24</td>
<td>.65</td>
<td>.18</td>
<td>.48</td>
<td>.38</td>
<td>.061</td>
<td>7.70</td>
</tr>
<tr>
<td>49.</td>
<td>.25</td>
<td>.83</td>
<td>.21</td>
<td>.37</td>
<td>.41</td>
<td>.055</td>
<td>11.27</td>
</tr>
<tr>
<td>50.</td>
<td>.20</td>
<td>.89</td>
<td>.56</td>
<td>.32</td>
<td>.50</td>
<td>.059</td>
<td>5.59</td>
</tr>
</tbody>
</table>

**Note:** \( t \)-value equal to 1.96 or more is significant at .05 level and equal to 2.58 or more is significant at .01 level.

**Preparation of the Final Draft**

The selected 50 items were arranged in the descending order of their difficulty values in the final draft. Then the items of same type were grouped together and put separately in the test with a set of instructions to facilitate the administration and scoring of the test. The final draft of the test was got cyclostyled for further use in the study. A copy of the final draft of the test is given in Appendix-V. The structure of the final draft of the test showing the number of each type of items is given in Table 2.9.
Table 2.9
The Structure of the Final Draft of the Test in Our Environment Showing the Number of Each Type of Items

<table>
<thead>
<tr>
<th>Multiple Choice</th>
<th>True/False</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>18</td>
<td>50</td>
</tr>
</tbody>
</table>

Reliability of the Test

Test-retest-reliability was computed for the test scores following the procedures stated earlier. The product moment correlation between the two sets of test scores came out to be 0.82. This value was considered to be a satisfactory measure of reliability of the test.

Validity of the Test

The content validity of the test was ascertained following the table of specifications strictly in accordance with syllabus, thus ensuring a high degree of content validity.

2.2 DEVELOPMENT OF INTERVIEW SCHEDULES

Keeping in view the feasibility of the interview schedule for gathering information pertaining to the present study, it was decided to develop two schedules, one for school teachers and other for parents. While preparing these schedules the researcher gave the consideration to their content, language and structure. Efforts were made that the objectives of the study may be achieved by putting specific questions so as to provide necessary data for each of the objectives set for the study. The contents of the schedules were developed in such a way so as to motivate the respondents to provide the required information. This was made possible through courteous and carefully constructed
covering note which was to be explained to the respondents in the beginning of the interview. The covering note also ensured the respondents that the information will be kept confidential. An attempt was made to construct items of the schedule as short as possible though comprehensive and clear enough for securing all the essential information. Each question was written in unambiguous terms so as to deal with a single idea. Questions were presented in such an order that the information from general to specific nature was sought. Annoying and embarrassing questions were avoided. Efforts were made to make these items attractive in appearance. Some of the items of both the schedules were open ended so as to give maximum freedom to the respondents.

2.2.1 Structure of the Interview Schedule for School Teachers

The interview schedule for school teachers is divided into 5 parts. The brief description of each part is given as under:

(i) Personal Information of the Teachers

This part of the schedule seeks information about name, age, marital status, local residents or outsider, distance of school from residence, difficulties due to long distance of schools from the residence of teachers, and various other problems.

(ii) Information Regarding Profession

This part of the schedule seeks information about academic and professional qualifications, nature of the job, whether temporary or permanent, difficulties due to temporary job, his salary, how long he/she is serving on the present post, stay in the present school, whether interested in transfer and why.
(iii) **Interest in Teaching Profession**

This part of the schedule includes questions regarding the interest of teacher in his/her profession, which language and method he/she uses in teaching, how much time is taken to prepare the lesson and views on enrolment of schedule caste, schedule tribe and girls.

(iv) **Factors Helpful in Increasing the Enrolment of children at Elementary Stage**

This part of the schedule seeks information about the factors which were helpful in increasing the enrolment of children at elementary level. It is comprised of 8 items. In certain items the respondents were asked to respond in ‘Yes’ or ‘No’ and in certain other items they were asked to specify reasons for their agreement and disagreement.

(v) **Factors Which Create Hindrances in the Promotion of Primary Education**

This part of the schedule seeks information about the factor which are helpful for the promotion of growth of primary education. Further the respondents were asked whether they are satisfied or not from the steps taken by H.P. Government for the growth and development of primary education.

2.2.2 **Interview Schedule for Parents**

To collect the relevant information from the parents of elementary school students, an interview schedule was prepared. The item of the schedule was constructed in such a way that they could seek the necessary information from the parents by providing opportunity for a free conservation with the respondents. The main aim was to seek information from the respondents about their family,
education of children, factors that were helpful in increasing the enrolment of children at elementary level and the factors which prevent them from sending their children to schools. The items of the scheduled were open as well as closed type. In certain items they were required to respondent in 'yes' or 'no' and in certain other items they were free to give response as they desired.

The schedule comprised of four parts. The brief description of each part is given as under:

(i) **General Information About the Family**

It includes the information about the occupation income, members of family educational level of parents, number of children.

(ii) **Information About the Education of the Children**

It seeks information about the number of children in the age group of 6-11 years, number of school going children, aim of providing education of, number of children who dropped out from school, etc.

(iii) **Factors Helpful in Increasing the Enrolment of Children**

This part of the schedule includes the items relating to information about the school and its location, interest of children and parents in education, help by the government in the form of mid-day meal, scholarships and other facilities.

(iv) **Factors Which Prevent Parents in Sending Their Children to Elementary Schools**

It includes the attitude of parents towards the education of their children, difficulty due to schedule tribe, schedule caste and other backward classes and fairness of school and difficulties due to teachers, medium of instruction and difficulty in learning the subjects.
Reliability and Validity of the Schedules

The reliability and content validity of the interview schedules was established by a pilot study conducted on 10 teachers and 10 parents to check the correctness and consistency in response pattern. Also, these schedules were shown to language experts and some faculty members of university to suggest or comment on language aspect and content coverage of the issues pertaining to education of children.

2.3 SAMPLING

The universe of the study comprises of all 12 districts of Himachal Pradesh. Since it was not possible to visit all the schools, it was decided to opt for sampling. The procedure adopted for sampling is explained as under:

2.3.1 Selection of Districts and Schools

The sample for the present study was selected on the basis percentage literacy rate of 12 district (on the basis of composite index of total male/female literacy rates of 1971, 1981, 1991 and 2001 census). The state of Himachal Pradesh consists of 12 districts of which Kinnaur and Lahaul and Spiti are totally tribal and rural. The district of Chamba has two tribal blocks i.e. Pangi and Bharmaur. The level of educational development of Himachal Pradesh in terms of literacy varies from district to district. The district-wise literacy profile of the state is given in Table 2.10.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Persons</td>
<td>Male</td>
<td>Female</td>
<td>Persons</td>
</tr>
<tr>
<td>Hamirpur</td>
<td>39.40</td>
<td>51.05</td>
<td>28.92</td>
<td>52.70</td>
</tr>
<tr>
<td>Una</td>
<td>38.83</td>
<td>50.20</td>
<td>27.57</td>
<td>50.05</td>
</tr>
<tr>
<td>Kangra</td>
<td>36.48</td>
<td>47.44</td>
<td>25.61</td>
<td>49.12</td>
</tr>
<tr>
<td>Bilaspur</td>
<td>32.87</td>
<td>44.64</td>
<td>21.02</td>
<td>44.69</td>
</tr>
<tr>
<td>Shimla</td>
<td>33.49</td>
<td>44.70</td>
<td>20.49</td>
<td>42.74</td>
</tr>
<tr>
<td>Mandi</td>
<td>30.70</td>
<td>43.73</td>
<td>17.17</td>
<td>40.21</td>
</tr>
<tr>
<td>Solan</td>
<td>29.37</td>
<td>40.31</td>
<td>17.38</td>
<td>41.07</td>
</tr>
<tr>
<td>Simaur</td>
<td>24.39</td>
<td>34.00</td>
<td>12.88</td>
<td>31.78</td>
</tr>
<tr>
<td>Lahaul &amp; Spiti</td>
<td>27.15</td>
<td>41.68</td>
<td>9.39</td>
<td>31.35</td>
</tr>
<tr>
<td>Kullu</td>
<td>24.38</td>
<td>36.65</td>
<td>11.04</td>
<td>33.82</td>
</tr>
<tr>
<td>Chamba</td>
<td>18.90</td>
<td>28.11</td>
<td>9.17</td>
<td>26.45</td>
</tr>
<tr>
<td>Kinnaur</td>
<td>27.70</td>
<td>43.09</td>
<td>10.35</td>
<td>36.84</td>
</tr>
<tr>
<td>Himachal Pradesh</td>
<td>31.96</td>
<td>43.19</td>
<td>20.23</td>
<td>42.48</td>
</tr>
<tr>
<td>Range</td>
<td>Min</td>
<td>Max</td>
<td>R</td>
<td>Min</td>
</tr>
<tr>
<td>Total</td>
<td>18.90</td>
<td>39.40</td>
<td>20.50</td>
<td>26.45</td>
</tr>
<tr>
<td>Male</td>
<td>28.11</td>
<td>51.05</td>
<td>22.94</td>
<td>38.49</td>
</tr>
<tr>
<td>Female</td>
<td>9.17</td>
<td>28.92</td>
<td>19.75</td>
<td>13.59</td>
</tr>
</tbody>
</table>

**Table 2.10**

Literacy Profile of Total Population of Himachal Pradesh (1971-2001)
It is evident from Table 2.10 that majority of districts of Himachal Pradesh, namely Bilaspur, Hamirpur, Kangra, Mandi, Shimla, Solan, Una have the literacy rate which is more than the total literacy rate of H.P. or equal to the total literacy rate of H.P. over the period 1971-2001. Furthermore it is evident from the table that the female literacy rate of these districts is more than 65 per cent, which is nearly equal to the total female literacy rate in H.P. The rate of male literacy in these districts is more than 75 per cent, which is above the male literacy rate in H.P. It is evident from the above-mentioned data that these districts constitute a cluster and remained at the average or high levels of literacy attainment over the period 1971-2002, and hence are educationally advanced.

Furthermore, it is also evident from Table 2.10 that the districts of Chamba, Kinnaur, Kullu, Lahaul and Spiti and Sirmour have the literacy rate which is below the total literacy rate of H.P. The female literacy rate in these districts is 60 per cent which remains far below the state female literacy rate. The literacy rate of Kinnaur for 2001 census is 75.27 per cent, but the trend of literacy attainment shows that it remains in the same cluster to be considered as a educationally backward. Thus two clusters of districts, either educationally advanced or backward constituted the sampling frame for selection of districts for the present study. Since it was not possible to cover all the districts, it was decided to select two districts from each of the two clusters of “educationally advanced” and “educationally backward” districts on random basis. The randomly selected districts from educationally advanced and educationally backward districts as presented in Table 2.11.
Table 2.11
Selection of Districts

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Cluster</th>
<th>Selected Districts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Educationally Advanced Districts</td>
</tr>
<tr>
<td>1.</td>
<td>Bilaspur</td>
<td>–</td>
</tr>
<tr>
<td>2.</td>
<td>Hamirpur</td>
<td>Hamirpur</td>
</tr>
<tr>
<td>3.</td>
<td>Kangra</td>
<td>–</td>
</tr>
<tr>
<td>4.</td>
<td>Mandi</td>
<td>Mandi</td>
</tr>
<tr>
<td>5.</td>
<td>Shimla</td>
<td>–</td>
</tr>
<tr>
<td>6.</td>
<td>Solan</td>
<td>–</td>
</tr>
<tr>
<td>7.</td>
<td>Una</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Educationally Backward Districts</td>
</tr>
<tr>
<td>1.</td>
<td>Chamba</td>
<td>–</td>
</tr>
<tr>
<td>2.</td>
<td>Kinnaur</td>
<td>Kinnaur</td>
</tr>
<tr>
<td>3.</td>
<td>Kullu</td>
<td>–</td>
</tr>
<tr>
<td>4.</td>
<td>Lahaul &amp; Spiti</td>
<td>–</td>
</tr>
<tr>
<td>5.</td>
<td>Sirmaur</td>
<td>Sirmaur</td>
</tr>
</tbody>
</table>

2.3.2 Selection of Teachers and Students

From each selected district, one educationally advanced block and educationally backward block was selected randomly. From each of these 8 educationally blocks (one each belonging to educationally advanced and educationally backward blocks from the four districts), 4 to 6 schools were randomly selected. Since these schools are scattered all over the districts, it was also thought worthwhile to include all the teachers teaching in these schools.
Further, the student strength varies from school to school and hence it was decided to include all the class V students if strength is less than 10 or equal to 10. In case of class with strength being more than 10, it was decided to randomly select only 10 students from the class. The school-wise and district-wise distribution of the selected teachers and students is given in the following Table 2.12.

Table 2.12
School-wise Sampling Distribution of Teachers and Students Selected from Educationally Advanced and Educationally Backward Districts of Himachal Pradesh

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Name of School</th>
<th>No. of Teachers</th>
<th>No. of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>G.P.S. Kalpa-1</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>2.</td>
<td>G.P.S. Kalpa-2</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>3.</td>
<td>G.P.S. Kothi</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>4.</td>
<td>G.P.S. Pangi</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>5.</td>
<td>G.P.S. Peo</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>6.</td>
<td>G.P.S. Barang</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>7.</td>
<td>G.P.S. Yuva Rangi</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>8.</td>
<td>G.P.S. Pooh</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>9.</td>
<td>G.P.S. Lavarang</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>10.</td>
<td>G.P.S. Kanam</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>11.</td>
<td>G.P.S. Sonam</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>12.</td>
<td>G.P.S. Nakko</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>13.</td>
<td>G.P.S. Dublin</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>14.</td>
<td>G.P.S. Chango</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>15.</td>
<td>G.P.S. Shallie-1</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>16.</td>
<td>G.P.S. Shallie-2</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>17.</td>
<td>G.P.S. Gwalie</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>18.</td>
<td>G.P.S. Malal</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>19.</td>
<td>G.P.S. Draral</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>20.</td>
<td>G.P.S. Manal Kuffer</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>21.</td>
<td>G.P.S. Nahan Cantt</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>22.</td>
<td>G.P.S. Model School</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>23.</td>
<td>G.P.S. Boys Nahan</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>24.</td>
<td>G.P.S. Girls Nahan</td>
<td>5</td>
<td>8</td>
</tr>
</tbody>
</table>
2.3.3 Selection of Parents

Parents of school going students were selected following non-prohibits (convenient) sampling. This was preferred since it was not feasible to contact the parents of selected students. Hence, those parents were contacted who were easily accessible at the time of school survey. A sample of 180 parents was obtained. Of these, 60 parents were from educationally advanced districts and 60 from educationally backward districts of the general category. Further 30 parents of scheduled castes from educationally advanced districts and 30 from educationally backward districts were included in the sample. Further, a sample of 66 parents of drop-out children was selected using
the same procedure as was used in case parents of school going students.

2.4 DATA COLLECTION

The field work in the present study was completed by visiting the selected schools personally by the investigator. The norm-referenced achievement tests were administered on the selected students in the following order:

1. Language Achievement Test
2. Mathematics Achievement Test
3. Environmental Studies Achievement Test

A time limit of 30 minutes for each test was adhered to and a gap of 15 minutes was kept in the administration of three achievement tests. The achievement tests were scored subject-wise.

After test administrations, the school teachers were interviewed one by one to seek their views and perceptions as per the interview schedule.

Then parents of some of the students were contacted in the village/city in their homes to elicit their views and perceptions with regard to education of their children.