The research problem has been discussed in the proceeding chapters. In this chapter, the design of the study has been discussed under the following broad heads:

1. Population
2. Sample
3. Variable Involved
4. Tools used
5. Collection of data
6. Statistical Techniques used.

The choice of the research method is determined by the theory of the topic under study, resources of the investigator, objectives of the study etc. These considerations have led to the investigator to use the Expost facto research method for this study. This method is defined as "Expost facto research." It is systematic empirical inquiry in which the scientist does not have direct control of independent variables because their manifestations have already occurred or because they are inherently not manipicable. Inferences about relation among variables are made, without direct intervention, from concomitant variation of independent and dependent variable". In the present investigation all the steps and characteristics have been followed which are essential for Expost facto research method.

**THE POPULATION:**

All the VIII class students studying in urban Intermediate colleges, High School and junior high schools of BundelKhand
Region, comprising the districts of Banda, Hamirpur, Orai (Jalaun), Jhansi and Lalitpur, constitute the population of the study. The rural area institutes have not been included in the population to partial out the environmental effect. Female students have not been included in the population, because personality characteristics of females are likely to differ widely from those of males. Hence the two sexes need separate studies. Thus the results of this study will be applicable only to male population of students. The list of the urban boys Intermediate colleges, High Schools, and Junior High Schools has been given in Table 3.1.

**TABLE 3.1**

DISTRICTS-WISE LIST OF URBAN BOYS INTERMEDIATE COLLEGES, HIGH SCHOOLS AND JUNIOR HIGH SCHOOLS

<table>
<thead>
<tr>
<th>NAME OF DISTRICTS</th>
<th>NAME OF COLLEGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Banda</td>
<td>1. Government Inter College,</td>
</tr>
<tr>
<td></td>
<td>2. D.A.V. Inter College</td>
</tr>
<tr>
<td></td>
<td>3. Sri Bajrang Inter College</td>
</tr>
<tr>
<td></td>
<td>4. Islamia High School</td>
</tr>
<tr>
<td></td>
<td>5. Sarswati Vidhya Mandir</td>
</tr>
<tr>
<td>2. Hamirpur</td>
<td>1. Government Inter College</td>
</tr>
<tr>
<td></td>
<td>2. Islamia Inter College</td>
</tr>
<tr>
<td></td>
<td>3. Vidhya Mandir Inter College</td>
</tr>
<tr>
<td></td>
<td>4. Sarswati Vidhya Mandir</td>
</tr>
<tr>
<td>3. Orai (Jalaun)</td>
<td>1. Govt. Inter College, Orai</td>
</tr>
<tr>
<td></td>
<td>2. D.A.V. Inter College, Orai</td>
</tr>
</tbody>
</table>
3. S.D.I. College, Orai
4. Sri Gandhi Inter College, Orai
5. Acharya 'Narendra Deo Inter college, Orai
6. Sarvodaya high school, Orai
7. janta high school, Orai
8. R.K. junior high school, Orai
9. Sri C.G. junior high school, Orai
10. Sarswati Vidhya Mandir, Orai

4. Jhansi
1. Govt. Inter college
2. S.I. Inter college
3. Sarswati Inter college
4. L.V.M. Inter college
5. Chrishian Inter college
6. D.A.V. Inter college
7. St. John Inter college
8. Islamia higher secondary school
9. Khalsa higher secondary school
10. Sarswati vidhya Mandir

5. Lalitpur
1. Govt. Inter college
2. P.N. High school
3. Varni Jain Inter college
4. Sarswati Vidhya Mandir

Total No. of Colleges and Schools - 33
THE SAMPLE:

A sample is a small proportion of the population selected for the study. Miller\(^2\) pointed out that the essential requirement of any sample is that it is as representative as possible of the population or universe from which it has been taken. The sample was to be selected so as to match the study and help in achieving the purposes of the study.

There are thirty three (33) intermediate colleges, high schools and junior high schools (excluding the girls colleges and schools) in the urban areas of Bundel Khand Region. Since all these colleges and schools could not be included in the study, it was decided to draw a small but representative sample from the total population of scheduled and non-scheduled caste students. For the sample of present study out of thirty three (33) colleges and schools fifteen were selected randomly through the lottery system. In each institution thus selected, the intelligence test was administered on scheduled caste and non-scheduled caste students of class VIII and the scores of this test were recorded for individual students. Out of total non-scheduled caste students only those were included in the sample of the present study whose intelligence scores were matching with the intelligence scores of scheduled caste students.

Thus the total sample consisted of 15 institutions and 900 students of both castes.

VARIABLES INVOLVED:

The variables involved in the study has been explained and
<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of Institutions</th>
<th>No. of S.C. students</th>
<th>No. of non-S.C. students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Govt. Inter college, Banda</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>2.</td>
<td>S.V. Mandir, Banda</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>3.</td>
<td>G.I.C., Hamirpur</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>4.</td>
<td>I.I.C., Hamirpur</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>5.</td>
<td>S.V.M., Hamirpur</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>6.</td>
<td>G.I.C., Orai (Jalaun)</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>7.</td>
<td>S.D.I. college, Orai</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>8.</td>
<td>D.A.V.I.C., Orai</td>
<td>45</td>
<td>45</td>
</tr>
<tr>
<td>9.</td>
<td>J.H.S., Orai</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>10.</td>
<td>S.V. Mandir, Orai</td>
<td>33</td>
<td>33</td>
</tr>
<tr>
<td>11.</td>
<td>G.I.C., Jhansi</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>12.</td>
<td>S.P.I. college, Jhansi</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>13.</td>
<td>S.V. Mandir, Jhansi</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td>14.</td>
<td>G.I.C., Lalitpur</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>15.</td>
<td>S.V. Mandir, Lalitpur</td>
<td>34</td>
<td>34</td>
</tr>
</tbody>
</table>

Total No. of Students 450 450

described in the following section.

INTELLIGENCE:

In the present study, Intelligence is defined as "The ability of the individual to adapt himself adequately to relatively new situations in life." Wechsler defined, 'Intelli-
gence, operationally is the aggregate capacity of the individual to act purposefully, to think rationally and to deal effectively with his environment\(^4\).

Since the aim of the study was to find out whether the caste differences show any significant difference in the students' concept of achievement and in their vocational aspirations, it was felt that the intelligence factor should be controlled. So, the scheduled and non-scheduled caste students were matched on the basis of intelligence. The Group Intelligence Test of Bureau of Psychology \(^1\)\(^4\), Allahabad was selected for finding out the I.Q. of the students.

**ACHIEVEMENT CONCEPT:**

In the present study the students achievement-concepts are defined as the student's attitudes towards learning. Thurstone\(^5\) has defined an attitude as the degree of positive or negative effect associated with some psychological object.

The achievement-concept in Dictionary of psychology\(^6\), means 'The general idea of a certain level of proficiency in scholastic or academic work'. In another words the achievement concept means 'The idea or meaning given to achievement which will be cue to adjustment in learning.'

The researcher has constructed his own scale for the measurement of students attitude. In this scale those statement are included that measure students attitudes toward different aspects of academic achievement or learning.
VOCATIONAL ASPIRATIONS:

By vocational aspiration is usually meant what the individual considers to be the ideal vocation for him. Trow, defined in this way, 'aspiration is quite similar to, if not identical with, a person fantasy choice.' According to crites, vocational aspiration (choice) has often been defined as 'what the individual prefers to do.'

In the present study the Questionnaire was selected to collect the necessary informations about the family backgrounds, educational an vocational aspirations of the students.

TOOLS USED:

A detailed description of the tools used in this study has been presented in the following section.

MEASUREMENT OF INTELLIGENCE:

Several factors contribute towards the formation of achievement-concept and vocational-aspirations. One of the main factors is intelligence-usually highly intelligent students aspire high and they have a value for academic achievement.

Since the aim of the study was to find out whether the caste differences show any significant defference in the students' concept of achievement and in their vocational-aspirations, it was felt that the intelligence factor should be controlled. So, the scheduled and non-scheduled caste students were matched on the basis of intelligence. The Group Intelligence Test of Bureau of Psychology 14, Allahabad was
Selected for finding out the I.Q. of the students. This test was preferred to others because it was standardized test for 14+ years of age students.

ADMINISTRATION OF GROUP INTELLIGENCE TEST OF BUREAU OF PSYCHOLOGY 14+, ALLAHABAD:

The test consists of 100 questions. It was administered upon the whole population in the sample according to the directions given in the manual. All the directions were carefully explained to the students before they were asked to begin the test. The researcher recorded the time and 45 minutes (The time limit for the test) after the test administered he asked the students to stop writing and he collected the answer sheets. All the students had answered about 70 percent of questions in the test.

SCORING OF THE TEST:

After collecting the answer-sheets, the researcher consulted the manual for scoring the test. For each correct answer the students got one score. The total scores for each students were thus calculated. He consulted the table of norms for conversion of Raw score into I.Q.

Thus the researcher found the required sample of 900 students (450 scheduled and 450 non-scheduled caste) and matched them in three divisions according to the I.Q.

MEASUREMENT OF ACHIEVEMENT-CONCEPT:

Since the researcher was unable to get a standard scale to
measure the achievement-concept of students towards learning, he
set himself to construct a scale for measuring the achievement-
concept. The achievement-concept could be measured in the same
way as attitudes are measured, for achievement-concept is
interpreted as one's attitude towards an idea about achievement.

CONSTRUCTION OF A SCALE TO MEASURE ACHIEVEMENT-CONCEPT:

There are different techniques attitude scale
collection but the most popular one's are Thurstone's and
Likert's techniques. Both the scales have established comparable
reliabilities. Construction of a Likert type scale requires
about half the time needed for constructing Thurstone's
technique (scale). This scale again is more empirical
(diagnostic), than the Thurstone's scale. Since every subject
responds to every item, the item analysis gives a picture of
relations to specific issues.

But the researcher selected the Thurstone's technique to
construct the present scale, for in Likert-technique or the
method of Summated ratings, in giving, the subjects have to use
any one of five categories 'Strongly agree, agree, undecided,
disagree and strongly disagree.' making a choice between five
degrees of agreement the researcher felt it would be too
complicated for the 14+ age group who study in Viili standard.

The baseline of the Thurstone's scale represents the whole
range of attitudes from those at one end which are most
favourable of the issue to those at the other end which are most
unfavourable. The scale shows accurately the attitude towards
the subject. It is important also, because of its wide use.

COLLECTION OF STATEMENTS:

To construct the scale, it was necessary to have a number of statements. Statements can be collected from different types of individuals. For getting a variety of opinions about achievement-concept, the researcher prepared a form in which the teachers, lecturers, professors, principals and M.A. students of different institutions were requested to write five brief and meaningful statements which expressed achievement-concept favourable, unfavourable, or neutral, (The form is given in Appendix No. 1.)

The researcher realised that the list of statements should not be too long as the students would feel tired and bored with a lengthy scale. So 32 statements were selected from 59 statements which were received. In making the initial list of statements several practical criteria were applied in editing the statements. Some of the important criteria were that-

1. There should not be duplicating statement.

2. The statements should as possible, so as not to fatigue the subjects who were asked to read the whole test.

3. Since the statements were to be given to students, They were to be constructed in simple language, indicating a definite and clear idea of achievement-concept.

4. Double barrelled statements were to be avoided, except possibly as examples of neutrality when better neutral
statements do not seem to be readily available

5. Every statement should be such that acceptance or rejection of it did indicate something regarding the reader's attitude towards the question in issue.

The list of 32 statements expressed from most ideal achievement-concept to the least ideal feeling towards learning. The statements were jumbled up and there was no particular order in which the statements are given in the list. The statements were in Hindi, the English Translation of it is as follows:

THE LIST OF STATEMENTS:

1. I have always tried to get good marks.
2. Poor examination results do not affect me at all.
3. To secure good division in the examination is my main motto.
4. It is only the children of rich families who can do well in education.
5. I do not worry, if I fail to get the teacher's praise for my work.
6. Poor examination results always encourage me to study better.
7. I believe that hard and sincere work can bring good results.
8. Only well educated persons are respected in our society.
9. Only first class students get good professions.
10. Students who obtain good marks are inspired for higher achievement.
11. When I secure poor marks, it makes me feel unhappy.
12. To have a good business and trade is much better than higher education.
13. I do not bother to get very good marks in the examination.
14. Securing high position in the class is of no use.
15. I prefer co-curricular-activities to studies.
16. Good pupils do not criticize the marking by the teachers.
17. Teachers like smart students.
18. It is only the children of educated parents who can do well in school.
19. The school atmosphere does not suit me.
20. Motivation and encouragement lead to the creation of interest in studies.
21. Many subjects that we study in school are of no use to me.
22. In school, we are learning always.
23. Lives of greatmen remind us to follow their foot-steps.
24. Higher education is not a criterion for a good job.
25. Poor achievers usually, lose all interest in studies.
26. Good division in examination open the door for a happy life.
27. If, I have good education, I will do well in life.
28. Regular success in any sphere of life encourages me.
29. Examinations do not really test the ability of the students.
30. There is no justice in examination.
31. Low attainments make the students hostile towards school authorities and good achievers.
32. Since I will not be going for higher studies, I do not give much importance to studies.

SCORES FOR THE STATEMENTS:

Each concept had to have a score value. The value had to
be fixed taking into account the view of many judges. Thurstone selected about 300 judges for rating 130 statements into eleven piles, but here as the time was short and the list consisted of only 32 statements, the researcher selected 100 judges only for the present task. The judges were lecturers, professors and principals of colleges, and some students of M.Ed., B.Ed. and M.A. classes. Each judge was given a sheet of instructions, the 32 statements, each statement on a separate slip and seven index envelops, each labelled, A - most favourable, B - Favourable; C - Rather favourable, D - Neutral, E - Rather unfavourable, F - unfavourable, G - Most unfavourable. They were requested to categorize those statements in seven points to represent an evenly graduated series of least achievement-concept. "It may be observed that the psychological continuum from least to most favourable is regarded as continuous with the psychological continuum from the least to the most unfavourable and the neutral interval is a zero point." This has been illustrated in figure 3.1.

FIGURE

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most Favourable</td>
<td>Neutral</td>
<td>Most Unfavourable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

They were also instructed that in sorting the statements, they should not express their own views about the achievement concept, and they should sort out the statements according to what they fell the statements implied. The judges were given the following instructions:
1. The 32 slips contain statements regarding achievement-concept. The statements range from the most ideal achievement-concept to the least favourable achievement-concept.

2. You are given seven envelops with letters on them A, B, C, D, E, F and G. In envelop 'A' please put those statements which express most ideal achievement-concept towards learning. In envelop 'D' put those statements which express neutral achievement-concept, and in envelop 'G' put those statement which express least ideal achievement-concept of an individual. From position 'A' to 'G' represents a continuum from the most ideal to the least ideal. Therefore, the remaining envelops according to the degree of appreciation and depreciation expressed in the statements.

3. To facilitate the sorting procedures, it will be useful, if you select the slips at random.

4. Your view of achievement concept should not influence the classification.

5. Please, do not try to get the same number in each envelope. They are not evenly distributed.

6. Please, write your name, qualifications and designation on the space provided on the envelope.

The total number of judges approached and the total number who returned their envelops are tabulated below:
<table>
<thead>
<tr>
<th>NAME</th>
<th>TOTAL</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NO. APPROACH</td>
<td>NO. RETURN</td>
</tr>
<tr>
<td>1. Principals of Post-graduate College</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>2. Lecturers of P.G. College, Atarra (Banda)</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>4. Lecturers of Kalpi Degree College</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>5. Lecturers of D.V.(P.G.) College Orai</td>
<td>15</td>
<td>14</td>
</tr>
<tr>
<td>6. Lecturers of S.G.D.C., Orai</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>7. Lecturers of Govt. D.C., Jhansi</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>8. Lecturers of B.K.D.C., Jhansi</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>9. Lecturers of Mauranipur Degree college (Jhansi)</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>10. B.Ed. Students D.V.C., Orai</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>11. B.Ed. Students S.G.D.C., Orai</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>12. M.A. Students D.V.C., Orai</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>13. B.A. Students D.V.C., Orai</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>14. M.Ed. Students Atarra (P.G.) College, Atarra (Banda)</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>62</td>
</tr>
</tbody>
</table>

The researcher contacted all the judges personally. The researcher also tried his best to make class to each of the judges what is expected of him/her in this matter. But as the researcher did not have the opportunity to observe each person
at work, it is possible that some judges may have failed to understand the experiment or failed to read the mimeographed instructions. Carefully enough to understand just what was wanted of them. Hence the objective criterion given by Thurstone to discard the views of those who did their work in a perfunctory manner was followed. In the words of Thurstone⁹, "As a criterion for eliminating individual subjects we adopted the rule that any subject place 30 or more of the 130 statements in one of the eleven piles was excluded". But here as the number of statements was less, any who placed 10 statements, two times more than the average (5) in one envelope was eliminated. In this way from the entire group of 62 judges, who participated in sorting, 12 envelops returned were removed from the final tabulation.

CALCULATION OF SCALE AND Q-VALUES:

It is essential to assign a scale value to each of the statement, as that value indicates the degree of most favourable to most unfavourable statements were calculated graphically and statistically.

The researcher tabulated the statements returned by the 50 judges (in their respective envelops). The following table shows how the values of statements were found out.

In the table three rows are used for each statement. The first gives the frequency with which the statement was placed in each of 7 categories. The second gives these frequencies as proportions. The proportions are obtained by dividing each
frequency by N, the total number of judges. The third row gives the cumulative proportions, that is, the proportion of judgements in a given categories plus the sum of all of the proportions below that category.

**TABLE 3.4**

**SUMMARY TABLE FOR JUDGEMENTS OBTAINED BY THE METHOD OF EQUAL APPEARING INTERVALS**

<table>
<thead>
<tr>
<th>STATEMENT NO.</th>
<th>SORTING CATEGORIES</th>
<th>Scale value</th>
<th>Q-value value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>1. f</td>
<td>29</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>p</td>
<td>.58</td>
<td>.24</td>
<td>.12</td>
</tr>
<tr>
<td>cp</td>
<td>.58</td>
<td>.82</td>
<td>.94</td>
</tr>
<tr>
<td>10 f</td>
<td>22</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>p</td>
<td>.44</td>
<td>.32</td>
<td>.16</td>
</tr>
<tr>
<td>cp</td>
<td>.44</td>
<td>.76</td>
<td>.92</td>
</tr>
<tr>
<td>31. f</td>
<td>0</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>p</td>
<td>.00</td>
<td>.12</td>
<td>.18</td>
</tr>
<tr>
<td>cp</td>
<td>.00</td>
<td>.12</td>
<td>.30</td>
</tr>
</tbody>
</table>

The scale value of a statement is the 50th percentile or the median position assigned by the judges to the statement. The following formula was applied for computing the scale value.
GRAPH NO-1

STATEMENT NO-1

I HAVE ALWAYS TRIED TO GET GOOD MARKS

ACHIEVEMENT CONCEPT SCALE

SCALE VALUE - 44  Q VALUE - 286
Scale Value = \text{Median} = L + \left\{ \frac{N/2-F}{fm} \right\} \times i \quad \text{Where}

L = \text{The lower limit of the interval in which the median lies.}

N = \text{The total number of frequencies}

F = \text{The total number of frequencies below the interval in which the median lies.}

fm = \text{The number of frequencies in the interval, in which the median lies.}

i = \text{The size of class interval.}

From this tabulation, the data were assembled into table no. 3.5 (given in the next page) which is a summary of the sorting of 32 students by 50 judges. The first column of the table gives the code number of the statements by which they may be easily identified. Next two columns indicate the 'Scale Value' and 'Q-value' which is the measure of the ambiguity of each statement. The remaining columns give the accumulation proportions for each statement.

In order to illustrate this procedure, a few graphs are reproduced and they show different type of statements of achievement-concept. In the graphs, the scale values are indicated by a small vertical arrow-head. Graph No. 1 shows the accumulative proportions of the statement No. 1. The statement reads as follows:

'I have always tried to get good marks'
<table>
<thead>
<tr>
<th>S.No.</th>
<th>Scale</th>
<th>Q-value</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1.32</td>
<td>1.27</td>
<td>.58</td>
<td>.82</td>
<td>.94</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>2.</td>
<td>6.50</td>
<td>2.40</td>
<td>.00</td>
<td>.00</td>
<td>0.10</td>
<td>2.24</td>
<td>.34</td>
<td>.50</td>
<td>1.00</td>
</tr>
<tr>
<td>3.</td>
<td>2.16</td>
<td>1.42</td>
<td>.30</td>
<td>.60</td>
<td>.78</td>
<td>.92</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>4.</td>
<td>6.50</td>
<td>2.42</td>
<td>.00</td>
<td>.00</td>
<td>.12</td>
<td>.26</td>
<td>.36</td>
<td>.50</td>
<td>1.00</td>
</tr>
<tr>
<td>5.</td>
<td>3.91</td>
<td>2.36</td>
<td>.04</td>
<td>.20</td>
<td>.40</td>
<td>.64</td>
<td>.82</td>
<td>.94</td>
<td>1.00</td>
</tr>
<tr>
<td>6.</td>
<td>2.13</td>
<td>2.16</td>
<td>.36</td>
<td>.58</td>
<td>.78</td>
<td>.84</td>
<td>.94</td>
<td>.98</td>
<td>1.00</td>
</tr>
<tr>
<td>7.</td>
<td>1.33</td>
<td>1.34</td>
<td>.60</td>
<td>.80</td>
<td>.90</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>8.</td>
<td>3.45</td>
<td>2.33</td>
<td>.10</td>
<td>.24</td>
<td>.64</td>
<td>.72</td>
<td>.84</td>
<td>.88</td>
<td>1.00</td>
</tr>
<tr>
<td>9.</td>
<td>3.59</td>
<td>2.46</td>
<td>.02</td>
<td>.26</td>
<td>.48</td>
<td>.70</td>
<td>.82</td>
<td>.88</td>
<td>1.00</td>
</tr>
<tr>
<td>10.</td>
<td>1.68</td>
<td>1.40</td>
<td>.44</td>
<td>.76</td>
<td>.92</td>
<td>.98</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>11.</td>
<td>3.33</td>
<td>2.41</td>
<td>.08</td>
<td>.30</td>
<td>.54</td>
<td>.72</td>
<td>.88</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>12.</td>
<td>6.50</td>
<td>2.19</td>
<td>.00</td>
<td>.00</td>
<td>.20</td>
<td>.36</td>
<td>.40</td>
<td>.50</td>
<td>1.00</td>
</tr>
<tr>
<td>13.</td>
<td>5.05</td>
<td>2.26</td>
<td>.00</td>
<td>.00</td>
<td>.16</td>
<td>.38</td>
<td>.60</td>
<td>.84</td>
<td>1.00</td>
</tr>
<tr>
<td>14.</td>
<td>5.92</td>
<td>2.75</td>
<td>.00</td>
<td>.00</td>
<td>.12</td>
<td>.32</td>
<td>.44</td>
<td>.58</td>
<td>1.00</td>
</tr>
<tr>
<td>15.</td>
<td>3.10</td>
<td>2.72</td>
<td>.16</td>
<td>.38</td>
<td>.58</td>
<td>.74</td>
<td>.82</td>
<td>.96</td>
<td>1.00</td>
</tr>
<tr>
<td>16.</td>
<td>3.34</td>
<td>2.84</td>
<td>.14</td>
<td>.28</td>
<td>.54</td>
<td>.70</td>
<td>.78</td>
<td>.86</td>
<td>1.00</td>
</tr>
<tr>
<td>17.</td>
<td>2.16</td>
<td>2.67</td>
<td>.30</td>
<td>.60</td>
<td>.72</td>
<td>.78</td>
<td>.88</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>18.</td>
<td>6.50</td>
<td>2.96</td>
<td>.00</td>
<td>.00</td>
<td>.12</td>
<td>.36</td>
<td>.48</td>
<td>.50</td>
<td>1.00</td>
</tr>
<tr>
<td>19.</td>
<td>5.50</td>
<td>2.79</td>
<td>.02</td>
<td>.010</td>
<td>.18</td>
<td>.40</td>
<td>.50</td>
<td>.72</td>
<td>1.00</td>
</tr>
<tr>
<td>20.</td>
<td>1.36</td>
<td>1.01</td>
<td>.58</td>
<td>.96</td>
<td>.98</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>21.</td>
<td>6.05</td>
<td>2.4</td>
<td>.00</td>
<td>.00</td>
<td>.04</td>
<td>.24</td>
<td>.40</td>
<td>.58</td>
<td>1.00</td>
</tr>
<tr>
<td>22.</td>
<td>1.77</td>
<td>1.35</td>
<td>.40</td>
<td>.76</td>
<td>.88</td>
<td>.94</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>23.</td>
<td>1.91</td>
<td>2.06</td>
<td>.40</td>
<td>.64</td>
<td>.80</td>
<td>.96</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>24.</td>
<td>3.9</td>
<td>2.13</td>
<td>.00</td>
<td>.24</td>
<td>.38</td>
<td>.68</td>
<td>.80</td>
<td>.94</td>
<td>1.00</td>
</tr>
<tr>
<td>25.</td>
<td>4.05</td>
<td>1.95</td>
<td>.04</td>
<td>.20</td>
<td>.30</td>
<td>.66</td>
<td>.86</td>
<td>.92</td>
<td>1.00</td>
</tr>
<tr>
<td>26.</td>
<td>1.8</td>
<td>1.91</td>
<td>.42</td>
<td>.68</td>
<td>.82</td>
<td>.88</td>
<td>.96</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>27.</td>
<td>1.5</td>
<td>2.62</td>
<td>.50</td>
<td>.66</td>
<td>.74</td>
<td>.82</td>
<td>.86</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>28.</td>
<td>1.42</td>
<td>1.49</td>
<td>.54</td>
<td>.76</td>
<td>.88</td>
<td>.92</td>
<td>.96</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>29.</td>
<td>3.33</td>
<td>2.79</td>
<td>.10</td>
<td>.40</td>
<td>.52</td>
<td>.68</td>
<td>.92</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>30.</td>
<td>3.10</td>
<td>2.84</td>
<td>.14</td>
<td>.38</td>
<td>.58</td>
<td>.76</td>
<td>.82</td>
<td>.92</td>
<td>1.00</td>
</tr>
<tr>
<td>31.</td>
<td>4.4</td>
<td>2.86</td>
<td>.00</td>
<td>.12</td>
<td>.32</td>
<td>.52</td>
<td>.68</td>
<td>.80</td>
<td>1.00</td>
</tr>
<tr>
<td>32.</td>
<td>6.16</td>
<td>2.38</td>
<td>.00</td>
<td>.02</td>
<td>.14</td>
<td>.26</td>
<td>.38</td>
<td>.56</td>
<td>1.00</td>
</tr>
</tbody>
</table>
This graph shows that practically all of the judges classified this statement within 1st four points, most favourable towards achievement-concept. The curve graph No.1. Crosses the 50 percentage level at the interpolated scale value of 1.32 which assigned as the scale value for this statement. On the either side of the arrow-head (scale-value) is a small vertical line. These two vertical lines indicate first and third quartile points (\( Q_1 \) and \( Q_3 \)) for the curve. In graph No. 1 the two vertical marks are located at scale values of .93 and 2.2 respectively. The separation between these two marks (1.27) is a measure of the ambiguity of the statement, which is known as the 'Q'-value of the statement. The 'Q'-value of this particular statement is comparatively low, hence it is clear that there is little ambiguity about the statement.

The Q-value was also determined statistically. The following formula was applied for computing 'Q'-value.

\[
'Q' = \text{The measure of ambiguity} = Q_3 - Q_1
\]

\[
Q_3 = L + \left\{ \frac{3/4 \, N-F}{fp} \right\} x i
\]

Where

\( L \) = Lower limit of the class interval in which the 75th percentile lies.

\( F \) = The total frequencies below the class interval, in which the percentile lies.

\( fp \) = The frequencies in the interval, in which the 75th percentile lies.

\( N \) = Total frequencies.

\( i \) = Size of the class interval
GRAPH NO.-II

STATEMENT NO.-10

STUDENTS WHO OBTAINED GOOD MARKS
ARE INSPIRED FOR HIGHER ACHIEVEMENT

SCALE VALUE-1.68, Q VALUE-1.40
"MANY SUBJECT THAT WE STUDY IN SCHOOL ARE OF NO USE TO ME,"

GRAPH NO-III
STATEMENT NO-21

ACCEUMULATIVE PROPORTIONS

ACHIEVEMENT CONCEPT SCALE

SCALE VALUE - 6.21, Q VALUE - 2.4
\[ Q_1 = L + \left\{ \frac{N/4 - F}{fp} \right\} x i \]

Where

L = Exact lower limit of class interval, containing the 25th percentile.

F = Sum of all frequencies below 'L'

fp = Frequency of the interval containing the 25th percentile.

N = Total frequencies.

i = Size of the class interval.

If a statement is very ambiguous, the different judges will place it over a wide range on the scale and the 'Q'-value will be correspondingly high. But, if the statement is concise and uniform in the meaning which it conveys to all the readers, then they will place it at approximately the same position on the scale and the 'Q'-value will then be correspondingly low.

In graph No. II a similar graph is drawn for statement No. 10.

'Students who obtain good marks, are inspired for higher achievement.'

This statement is a favourable achievement-concept. The scale value and 'Q'-value of this statement are 1.68 and 1.40 respectively.

In graph III, the statement No. 21.

'Many subjects that we study in schools are of no use'. has 6.05
GRAPH NO IV
STATEMENT NO 21
LOW ATTAINMENTS MAKE THE STUDENTS HOSTILE TOWARDS SCHOOL AUTHORITIES & GOOD ACHIEVERS

![Graph]

SCALE VALUE 44 Q VALUE 2.86
as scale value with a 'Q'-value of 2.4. This graph shows that about 4% of the judges consider the statement as favourable, 20% think it to be neutral and rest consider it as unfavourable.

In graph no. IV, represents statement no. 31 - 'Low attainments make the students hostile towards school authorities and good achievers.'

The scale value and 'Q'-value of this statement are 4.4 and 2.86 respectively. This statement is ambiguous. Its scale value 4.4 is not reliable. Statistically it is a neutral statement which is judged to be neutral by the great majority of the judges.

. After computing the above two measures, all those statements which yield high 'Q'-value in comparison to other statements were discarded. The range of 'Q'-value in the present scale is from 1.01 to 2.86. Therefore, the researcher discarded all those statements, the 'Q'-values of which were near about 2.86. Two statements no. 30 and 31 were deleted from the final statement. It is essential that scale values of the statements, to be included in the final scale be equally spaced along the achievement-concept continuum. But as the statement yielding low 'Q'-values and high scale values were not available the number statement come out to be more at the favourable side in the present achievement-concept scale.

THE ACHIEVEMENT-CONCEPT SCALE:

Thus the 30 selected statements remained in the final scale for measuring the achievement-concept of the students.
For administering purpose 30 selected statements were mixed at random and then the list of the statements was printed which is given in the appendix no. 2.

On the front page of the scale students were asked to write their name, class, name of the school.

In the middle of the page a question was given and they were asked to write the answer in their own words. The question was in Hindi. The English translation of it was 'How do you feel about school learning'?

Instructions were given below the question on the same page, they were requested to read through the statements on page (3) and mark (√) against those statements, they agreed with. They were also instructed to leave all those statements, they did not agree with.

It is expected that every statement will endorse several opinions with a certain range of scale. Hence, for scoring process the researcher assigned the scale-value to each of the statement that a student has endorsed and then calculated their arithmetic mean and found the range of their achievement-concept.

This scale values represented by the 30 statements in the final list are shown in the graph no. V, the purpose of which is to show that the 30 statements represent a most favourable or most even graduate series of scale value.

The first point of the scale represents a most favourable achievement-concept, the fourth point-a neutral achievement-
concept and the seventh point as the most unfavourable to learning. Thus the points from one to three represent the range of different degrees of favourable achievement-concept, leading on to the fourth a neutral achievement-concept and point from fourth to seventh different degrees of unfavourable achievement-concepts. Thus all those students who scored low scores in achievement-concept scale have favourable achievement-concept, and all those who scored high scores have unfavourable achievement-concepts the same. The range of 900 students of scheduled and non-scheduled caste in the achievement-concept scale is from favourable to neutral - 2.06 to 4.00.

VALIDITY OF THE SCALE:

A good test must be a valid test and the validity of a test depends on the efficiency with which it measures what it purpose to measure. The construction of achievement-concept scale will be considered valid only when it succeeds in measuring the student's concept of achievement.

The validity of the present achievement-concept-scale was determined by self rating method. Thurstone, in his book 'Measurement of Attitude' on the title page inserted a graphic rating scale. This scale consisted merely of a horizontal line across the page on thurstone asked the subject to indicate by a tick (/) where he estimated his own attitude to be. At one end of this line was printed the phrase, "Strongly favourable to church", at the middle of the line was printed the word 'Neutral' and at the other end of the line there was the phrase 'Strongly against the church.'
Since the researcher felt that it will be difficult for
the students of 14+ of years to understand this technique used
by Thurstone in expressing their achievement-concept, he gave a
question on the title page to know their achievement-concept.
The researcher rated the answers of the one question on a seven
points scale, and gave the appropriate score, keeping in view
the degree of favourable or unfavourable expressed by their
answers. The correlation between the scores of the answer of the
single title question and achievement-concept statement, was
calculated which come to 0.638 (Table of correlation is given in
appendix no. 5).

Thurstone in his book "Measurement of Attitude" found the
validity of his attitude scale 0.67 which is fairly satisfactory
according to Thurstone. According to Thurstone's scale the
validity of the present achievement-concept scale which was
constructed by the researcher, can also be called satisfactory
because it was found to be 0.638 which is significant even at
0.01 level.

RELIABILITY OF THE TEST:

One of the important characteristics of any measuring
instrument is, with what reliability it measures. A requisite
objective. According to Anastasi, "The reliability of a test
refers to the consistency of scores obtained by the same
individuals on different occasions or with different sets of
equivalent items." A test score is called reliable when we
have reasons for believing the score to be stable and trust
worthy. Stability and trustworthiness depend upon the degree to
which the score is an index of 'true ability' is free of chance error. The reliability of a test implies accuracy, trustworthiness and consistency.

There are four methods in common use for computing the reliability co-efficient of correlation of a test, which are as follows:

(a) Equivalent form Reliability
(b) Split-half Reliability
(c) Inter Item Consistency Method
(d) Test Retest Reliability.

Here the researcher applied test-retest method for measuring the reliability of the present scale. In order to test the reliability of the present scale the same achievement-concept scale was administered on 200 students of scheduled and non-scheduled caste of D.A.V. Inter College Orai, Sri Gandhi Inter College, Orai, after 20 days of administering the scale the first time. The correlation between the two scores obtained by them at two occasions was calculated which came to be 0.762 (Table of correlation is given in Appendix no. 6).

Thurstone in his book 'Measurement of Attitude', found the reliability of the attitude scale constructed to measure the attitude of individuals towards church, was 0.848.

Similarly Lindquist in his book 'Educational Measurement', has given the value of reliability 0.5, as satisfactory in psychological testing. On the basis of above evidences, it maybe
said that the present achievement-concept-scale which was constructed by researcher was reliable as its reliability was 0.762.

MEASUREMENT OF EDUCATIONAL AND VOCATIONAL ASPIRATIONS:

In conducting the present study there was the problem of selecting the appropriate tool to collect the necessary informations about the family backgrounds educational and vocational aspirations of the students. The informations may be gathered by questionnaire and personal interview. Both are powerful tools for social, educational and vocational researches.

Since the informations required for this study were more of a quantitative nature. It was felt that the interview technique was more time consuming and uneconomical, so the questionnaire was selected for the present study.

CONSTRUCTION OF THE QUESTIONNAIRE FOR EDUCATIONAL AND VOCATIONAL ASPIRATIONS:

The researcher first made a thorough study of the questionnaire technique while framing the questions he took care that all these should be such as to provide the most reliable and valid information. The researcher took particular care about the language of the questions. The questions were framed in ordinary spoken Hindi. The researcher also observed that none of these questions was outside the ability of the respondents to answer as the questions were centred around their own ambitions and activities. Embarrassing, and double barrelled questions were avoided.
Best\textsuperscript{12}, observes that "Filling out lengthy questionnaire takes a great deal of time and efforts a favour that few senders have any right to expect from the strongers. The favourable reaction is intensified when the questionnaire is long, the subject trivial in importance, the items vaguely worded and from poorly organised." The researcher took this hint and framed a short questionnaire consisting of 29 questions only. Good and Matt\textsuperscript{13}, also point out that every item in a questionnaire ideally constitutes a hypothesis, or part of a hypothesis in itself. Hence, care was taken to make each question directly or indirectly to the main objective - 'The Vocational Aspirations.'

TRY OUT OF THE QUESTIONNAIRE:

To know whether all the questions were to the point and could help to acquire the desired information, the questionnaire was tried out on 100 students of Janta High School Orai, D.A.V. Inter College, Orai and S.D. Inter College, Orai District Jalaun.

After analysing the pretest result necessary changes were incorporated and the questionnaire was finalised.

FINAL QUESTIONNAIRE:

The questionnaire consisted of questions on the education and vocation of the parents, educational and vocational aspirations of the students and their leisure time activities.

ADMINISTRATION OF THE QUESTIONNAIRE:

The questionnaire was printed neatly. The questionnaire was administered personally by the researcher. The researcher
explained all the instructions to the students before requesting the student to answer the questionnaire. They were asked to write the answer freely, frankly and to the point. No time limit was enforced but they were asked not to waste time. When the students had answered the questions the researcher collected the questionnaire.

ANALYSIS OF THE QUESTIONNAIRE:

Responses from each student were noted on a chart prepared for the analysis of the questionnaire. The chart gave a picture of the vocational aspirations of each student under study. Since the study was to analyse whether there was any difference between the vocational aspirations of the scheduled and non-scheduled caste students, it was necessary to arrange the vocations on a hierarchical scale. For there are some professions which have higher status in society than the others. To ascertain the status of the different vocations mentioned by the students, the researcher sought the help of the lecturers of Urdu (Post-graduate) college, Orai. The researcher prepared a form consisting of all the vocations mentioned by the students, requested the lecturers to rate the given professions in the order of importance i.e. on a hierarchical order keeping in mind the status of the professions.

The researcher contacted personally all the lecturers, professors and tried his best to make it clear to each of them, what is expected of him/her in this matter.

The researcher tabulated the forms returned by the
lecturers and added the values of each vocation given by the 
lecturers and calculated the mean of each vocation's value. Thus 
each vocation was ascribed in position on a hierarchical scale 
as:

1. Doctor
2. Engineer
3. Defence Service
4. Professor
5. I.A.S.
6. I.P.S.
7. Advocate
8. C.A.
9. M.B.A.
10. Teacher
11. Businessman
12. Railway Service
13. L.I.C./Bank Service
14. M.L.A.
15. Photographer
16. Sub Inspector of Police
17. Wireless Officer
18. Electrician

STATISTICAL TECHNIQUES USED:

First purpose of this study was to find out the 
relationship between achievement-concept and vocational-
aspiration of scheduled and non-scheduled caste students. The 
scores obtained on achievement-concept scale and vocational
frequency distribution (Appendix 74). From frequency distribution tables it was observed that frequency distributions were approximately normal. Hence, to find the relationship between achievement-concept and vocational aspiration, the researcher applied Karl Pearson’s or Product Moment Method for calculating the formula is given below:

\[
\text{Co-efficient of correlation } (r) = \frac{\sum \sum fx \cdot fy - (\sum fx)(\sum fy)}{\sqrt{(\sum \sum fx^2 - (\sum fx)^2)(\sum \sum fy^2 - (\sum fy)^2)}}
\]

Another purpose of this study was to compare the vocational aspiration of scheduled caste and non-scheduled caste students. Mean scores and standard deviations of each group for vocational-aspiration were calculated. Frequency distribution for both the groups were approximately normal. Hence the comparison between the vocational aspiration of two groups were made on the basis of t-test. The following formula has been used for calculating 't' value.

\[
t = \frac{\text{Difference between means}}{\text{Standard error of the difference}}
\]

\[
t = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}
\]

Where,

- \( M_1 \) = Mean of S.C. Students.
- \( M_2 \) = Mean of Non S.C. Students.
- \( \sigma_1 \) = S.D. of S.C. Students.
- \( \sigma_2 \) = S.D. of Non S.C. Students.
\[ N_1 = \text{Total Number of S.C. Students} \]
\[ N_2 = \text{Total Number of Non S.C. Students.} \]

Degree of freedom were calculated as follows:

\[ df = N_1 + N_2 - 2. \]
REFERENCES


