CHAPTER VI

SUMMARY

6.00 Introduction

6.10 Rationale for Selecting the Present Study

6.20 Statement of the Problem

6.30 Objectives of the Study

6.40 Formulation of Hypotheses

6.50 Delimitations

6.60 Operational Definitions

6.70 Sample

6.80 The Research Design

6.90 The Instrument

6.10.0 Procedure for Data Collection

6.11.0 Statistical Treatment

6.12.0 Results

6.13.0 Suggestions for the Study
CHAPTER VI

SUMMARY

6.00 INTRODUCTION

Learning abilities in schools depend upon numerous factors. Some of them interact as facilitative factors, whereas others function as inhibitory ones. India with her ‘Unity in Diversity’ has distinctive characteristic feature that accommodates all her differential population. Scheduled Castes and Scheduled Tribes which are distinctive socio-cultural systems of the Indian societies have encountered for decades together several psycho-social consequences of deprivation. Prolonged deprivation accounts for “Cumulative Deficit phenomenon (Deutch 1965). Besides cumulative deficits, “Broomstick Effects” (Miller 1968), due to deprivation, account for serious psychological Consequences which may seriously affect the cognitive functioning, perceptual skills, concept formation as well as non-cognitive functionings, such as personality variables, motivational strength, attitude formation and interest patterns (Tripathi and Mishra 1977). Thus psychological consequences of deprivation on cognitive process and non-cognitive development have direct bearing upon the learning process of the pupils.

Scholastic Attainments, Aptitudes and Interest patterns therefore are largely governed by the nature and kind of psycho-social deprivation, which the Scheduled Caste and Scheduled Tribe of the society encounter by being Indian citizens.

Keeping in view the ‘Cumulative Deficits’ that the pupils of the Scheduled Caste and Scheduled Tribe in educational institutions encounter and the ‘Broomstick Effects’ that they have to face in their learning acquisition process, the Indian Constitution has made certain Constitutional Directives vide Articles 46, 257 and 338 with a view to making social upliftment and Educational development of the Scheduled Castes and Scheduled Tribes pupils of the Country.

The new Education Policy (1986) makes provision for the optimum growth, development and exploitation of the human potentialities by advancing through
training. As such the educational institutions of the future have to make adequate provisions for the complexity of abilities and sophistication of Individual potentialities.

Consequently scholastic attainments that the pupils of the Scheduled Caste and Scheduled Tribe of the society need to be critically examined and systematically analysed and interpreted in the light of the nature and kind of their aptitudes and interest pattern which they inherit and develop during the courses of their development period at home and in the schools.

Some of the important components of cognitive behaviour are accounted in terms of intelligence, Aptitude, perception, thinking, problem solving behaviour, reasoning ability, creativity etc. It is rational thinking by and large which determines success to a large extent. Human ability, as such is often used a compass a variety of human performances and achievements. Besides ability, inculcation and development of skills too help individuals to achieve high in certain performances. Ability as such is more associated with performances. The idea that differences in academic performance could be accounted for by differences in abilities can be concluded from a large number of studies (e.g. Srivastava 1987; Chakravarthi 1988; Dixit 1989; Devi 1990 Kaur, Panda & Nath 1992 Chung, Denney, Hustace & Rapport 2001.

Education is directly related to the development of a country. The Scheduled Castes and the Scheduled Tribes living in different parts of the country constitute about 20% of the human capital. Numerous facilities like opening of schools in habitations with a higher concentration of Scheduled Caste & Scheduled Tribe population, free education, merit scholarships, attendance scholarships, free uniforms, mid-day meals and providing coaching classes to the needy children are some interventions which aim at increasing the enrolment, retention and achievement of Scheduled Castes and Scheduled Tribes children in schools.

Most of the Scheduled Caste & Scheduled Tribe people survive below the poverty line. Scheduled castes children, because of their socio economic conditions, find it hard to be in schools. About 52% of all scheduled caste workers
are agricultural laborers, cultivators (mainly small and marginal farmers and sharecroppers), weavers etc. Unclean occupations like scavenging flagging, taming etc. are almost entirely monopolized by the Scheduled Castes. In the urban areas a large populations of the poor people like rickshaw-pullers, cart-pullers, construction labourers, Beedi workers and other unorganized non-agricultural workers belong to the SCs. This grinding poverty makes them force their children into the job market or engage them in jobs they themselves were doing. Girls in such families are usually entrusted with the work of looking after the young siblings while their parents are away at work. All these circumstances have forced their children to remain out of school.

The Scheduled Tribes children find their schools ‘alien’ places, which are radically different from their houses, and other community places. In their case there is a difference between the language spoken at home and at school. In general the Tribal people have developed apathy towards the education of their children. While the pressures of substances economy have been partly held responsible for their indifference, the perceived value of education in the context of the needs of the Scheduled Caste and Scheduled Tribe society and the incongruence between the skills and abilities nurtured among the children in their economic and cultural settings and those imparted in schools seen to be more important reasons. These reasons vary from culture to culture and region to region.

During the past few years, scholars were contemplating on the causes for poor performance of Scheduled Caste & Scheduled Tribe children in schools. The factors that are responsible are physical and socio-cultural environments (Jaiswal & Singh 1981). Motivation (Lakhera, 1986) Intellectual abilities (Lakshmi 1996), system of education (2003). Cross-sectional findings however have shown that the intelligence of Scheduled Caste and Scheduled Tribe pupil was being lower than that of Non-Tribal children. (eg. Sinha 1964; Tripathy 1986; Singh & Jaiswal 1981; Singh (1996) have argued that the low levels of parental education, occupation, income and deprivation home and neighbourhood are mainly
responsible for poor school performance of Scheduled Caste and Scheduled Tribe children.

All the studies have shown that the level of achievement of Scheduled Caste and Scheduled Tribes children have been much lower as compared to those of other children attending the same school. Even the interventions planned for them have not been able to bring up the level of their achievement as is shown in a study conducted by Seshadri C and Ramamani (1995). The researcher found that the nature of proportion of variations of Scheduled Castes children's home, text-book language and the teacher's language affects children's linguistic achievement.

Rath, K.B and Saxena R.R. (1995) focused on the difference between SC/ST and Non SC/ST students in terms of Mathematics and language achievements and identified the pupil and school level factors contributing to this difference. They found that Scheduled Castes and Scheduled Tribes students scored lower than Non-Scheduled Castes and Non-Scheduled Tribes students in both the subjects. Fathers education contributes towards improving achievement of SC/ST students. In mathematics the achievement gap does not vary significantly across schools, but it does in language, both in Karnataka and Kerala. It was also found that testing and feedback provided by the teacher tend to reduce the gap between the achievement of Scheduled Castes & Scheduled Tribes and Non-Scheduled Castes & Non-Scheduled Tribes students in language.

DPEP studies conducted by the NCERT to study the effects of various variables and interventions on the achievement of tribal children also show similar results. Ambasht N.K. and Rath K.B. (1995) suggested to understand the effects of home background factors such as parental attitude, Parent's education, the language spoken at home and economic condition of the family on the Scheduled Tribes child's achievement as well as factors like school timings, medium of instruction, tribal and Non-Tribal teachers, merit scholarships aims at increasing the level of achievement of tribal children. Reddy, V.Eswara (1995) for improving the achievement of tribal children need systematic follow up to ascertain their impact on learning achievements.
**Achievement** signifies accomplishment or gain or a performance carried out successfully by an individual or group on the completion of a task whether it be academic, manual, personal or social. This achievement means all those behavioural changes which take place in the individual as a result of learning experience of various kinds. Academic or scholastic attainment means the attained level at which the student is functioning in school tasks such as English, Maths, Science as measured by school marks.

**Aptitudes:** In many sphere of every day life we come across individuals who excel over others. Under similar conditions in acquiring certain knowledge or skills and prove more suitable and efficient than their peers in certain specific fields. Such persons are said to possess certain specific abilities or aptitudes in addition to intellectual abilities or intelligence which help them to achieve success in some specific occupations or activities. Therefore aptitude may be described as a special ability or specific capacity distinct from the general intellectual ability which helps an individual to acquire the required degree of proficiency or achievement in a specific field.

**Interests** play important role in directing and controlling human behaviour. It is the interests which are responsible for the persistent and consistent behaviour of an individual. They are dynamic system of human personality in action. Interests are of great significance in education as all educational activities are based upon interests. They are helpful in maintaining discipline and order in the class. If the teacher knows the interests of the students at different age levels he can make his teaching more effective, interesting and enduring. The efforts of the teachers will be useless until he motivates the students in arousing their interests.

Interest is conceptualized as the liking or disliking of an individual to objects or things. As such an Individual’s aptitudes and abilities ordinarily are not so highly specific that he can be given guidance solely on the basis of aptitude tests. Motivation influenced by ones interest, values and preferences in addition to aptitudes & abilities can determine the selection of a course of study or an occupation. Interest motivates an individual to scholastic attainments whereas the
mental ability actualizes the individual to develop his academic talent and skillful performances. Thus aptitude and interest both promote the scholastic attainments in which intelligence place a prominent role.

Menon (1972), Gupta (1977), Shrivastava (1980), Vora (1982), & Joshi (1983) found that there is a positive and significant relationship between interest and academic achievement. Tara(1980), Kamalesh (1981), & Joshi (1983) found that high achieving boys show high interest in artistic area, whereas their girl counterparts show high interest in scientific areas. Bose, Chatterjee, Mukeherjee (1970) & Jain (1984) regarding stream of study found that science students show highest degree of interests in medical and sports areas. Numerous researches in Social Anthropology and Sociology have contributed significantly and highlighted some of the very important aspects of their lives. However these studies primarily suffer from methodology sophistication and content penetration.

The present study aims at exploring and investigating some of the significant psychological dimensions of the Scheduled Caste and Scheduled Tribes of Raipur District in Chhattisgarh region. It is hoped that the study would unfold some of the significant psychological frontiers of knowledge, which may be contributing in the progress of the Scheduled Caste, which may be inhibitory in the upliftment of the Scheduled Tribes pupils.

6.10 RATIONALE FOR SELECTING THE PRESENT STUDY

At the time of reviewing the findings of the past researches related to the variables of the present study it was remarked that the flow of researches on significant psych-educational constructs is rather too insignificant scattered and insufficient. Hardly any studies were taken on the Interest pattern and Aptitudes, traits and talents of Scheduled Castes and Scheduled Tribes communities which occupy a significant position in national reconstruction and developmental programmes. In the light of the importance attached to the Scheduled Castes and Scheduled Tribes pupils from the point of view of national reconstruction, it is crucial to study psycho educational aspects of the Scheduled Castes and Scheduled Tribes.
Keeping in view these considerations the investigator decided to extend the nature and kind of Scientific aptitude specially on the seven components of DAT and SAT (Differential and Scientific Aptitudes) and Interest of the Scheduled Caste and Scheduled Tribe pupils of the same Locale i.e. Raipur District of Chhattisgarh region.

This study is not only new, novel and unexplored but it is very relevant from the point of view of the development of SC & ST in particular and the national reconstruction in general.

6.20 STATEMENT OF THE PROBLEM

The problem under study is as follows:

“A study of the Scholastic Attainments as a Function of Aptitudes and Interest Patterns of the Pupils of Scheduled Caste and Scheduled Tribes in Chhattisgarh”

6.30 OBJECTIVES OF THE STUDY:

The present study has been designed with the following objectives.

- To study the effect of Aptitudes and Interest patterns on Scholastic Attainments of pupils of Scheduled Castes and Scheduled Tribes of the society.

- To study the nature and the kind of the Aptitudes, the Interest patterns and the level of Scholastic attainments of pupils of Scheduled Caste and Scheduled Tribes.

- To estimate the relationship that exist among the Scholastic attainments in various school subjects namely Languages, Social Science, Science and Mathematics with Aptitudes Interest Patterns of the pupils of Scheduled Castes and Scheduled Tribes.

- To study the nature and kind of inhibitory factors that affect adversely the Scholastic Attainment of target pupils.
6.40 FORMULATION OF HYPOTHESES

From the point of view of the nature and statistical treatment, the hypothesis formulated in the present study, have been grouped in three heading.

PART – I : CORRELATIONAL HYPOTHESES

$H_1(C)$ “Scholastic Achievement would be significantly and positively correlated with various types of Aptitudes (DAT & SAT)”.

$H_2(C)$ “Scholastic Attainments in (a) Languages (b) Social Science (c) Mathematics and (d) Science would be significantly as well as positively correlated with Interest Patterns”

$H_3(C)$ “The total scores on Scholastic Attainments would be significantly and positively correlated with DAT and Scientific Aptitudes as well as Interest Patterns”.

PART – II : INTERACTIONAL HYPOTHESIS

[A] Interactional Effect on Scholastic Attainment:

$H_4(I)$: “The relative effect of caste would be significantly higher on Scholastic Attainments in comparison to the effects of Sex and Locale, whereas the effect of Locale would be relatively, observed as the lowest one but significant”.

[B] Interactional Effect on Aptitude Scores:

$H_5(I)$: “The scores on various Aptitudes would be most significantly interacted by Caste and would show least effect by Locale, whereas Sex would indicate relatively and moderately significant effect on various Aptitudes”.

[C] Interactional Effect on Interest

$H_6(I)$: The Interest pattern would be significantly governed by the Sex differences, whereas it would have least effect of Locale”

In other words the sex differences would have significantly a predominant effect as Interest patterns regardless of caste differences, whereas Locale would
have rather no significant effect on Interest differentials. As such, the effect of Caste on Interest patterns would be least.

PART III: DIFFERENTIAL HYPOTHESIS:

[A] SEX DIFFERENCES: BOYS / GIRLS

\(H_7(D)\) (1) The Scholastic Attainments of the boys and girls would show significant difference in all the four major school subjects, namely Languages, Social Sciences, Science and Mathematics.

\(H_7(D)\) (2) There would be significant sex difference in the scores on various Aptitudes indicating boys excelling girls in all Aptitude counts.

\(H_7(D)\) (3) The Interest patterns of the boys would be significantly different from those of the girls.

[B] LOCALE DIFFERENCES: RURAL / URBAN

\(H_8(D)\) (1) The scores on Scholastic Achievements of the rural pupils would be significantly inferior to those belonging to urban pupil. However Rural boys would score on all counts significantly higher than Urban boys but the scores of the rural girls would be significantly inferior to the urban girls.

\(H_8(D)\) (2) The Scores on various Aptitude Tests by rural pupils would be significantly inferior to those belonging to urban pupil. However Rural boys would score on all counts significantly higher than Urban boys but the scores of the rural girls would be significantly inferior to the urban girls.

\(H_8(D)\) (3) The Interest pattern of the rural pupils would be significantly inferior to those belonging to urban pupil. However Rural boys would score on all counts significantly higher than Urban boys but the scores of the rural girls would be significantly inferior to the urban girls.

[C] INTERCASTE DIFFERENCES: (SC vs ST)

\(H_9(D)\) (1) The scores obtained on various school subjects of Scheduled Castes would be significantly higher than those by Scheduled Tribe pupils.
H(2) There would be significant difference in the scores on various Aptitudes indicating Scheduled Castes would be significantly higher than those by Scheduled Tribe Pupils.

H(3) The Interest patterns of Scheduled castes would be significantly higher than those by Scheduled Tribe Pupils.

6.50 DELIMITATIONS

The present study has been delimited by the following considerations.

• It is the study of the pupils of the Scheduled Caste and the Scheduled Tribes of Chhattisgarh.

• The study is confined to Scheduled Castes and Scheduled Tribe pupils of Raipur District, Chhattisgarh.

• The study is concentrated to the pupils studying in Class IX alone. Both boys and girls are taken for the study.

• The sample was delimited to the pupils of age ranging between 14 and 15 years.

• Only four dependent variables namely, scholastic attainments, Differential Aptitude Test (DAT), Scientific Aptitude Test (SAT) and Interest pattern would be included.

• The study as such is primarily a correlational one but has been extended to Differential and Interactional analysis too.

6.60 OPERATIONAL DEFINITIONS

1. Scientific Aptitude): SAT

Scientific Aptitude has been operationally defined in the present study as ‘the total score obtained by a subject on the test of scientific aptitude prepared by Sinha and Sinha measuring seven dimensions’.
2. **Differential Aptitudes : DAT**

Differential Aptitudes have been operationally defined as 'the total score obtained by a subject on the test of Differential Aptitude under the Indian conditions by J.M. Ojha measuring seven dimensions.

3. **Interests Patterns**

Interests have been operationally defined as ‘the total score obtained by the subject on the test of Interests standardized by Chatterji's Non-Language Preference Record. It deals with ten dimensions of Interest patterns.

**6.70 SAMPLE**

The study is concentrated to the Scheduled Caste & Scheduled Tribe pupils studying in Class 9th of the schools of Raipur division of Chhattisgarh region. Each school located in Rural as well as Urban setting within the territorial jurisdiction were systematically catalogued alphabetically. Employing Random Sampling Technique, out of 36 schools, 6 schools were selected from Urban Area and an equal number of schools were selected from Rural Area. A systematically Random Quota Sampling Technique was employed for selecting sample pupils form grade 9th of Govt. Private and Municipal Schools. Thus a total of 520 pupils of Scheduled Caste & Scheduled Tribe of both the sexes were selected i.e. 290 from Rural and 230 from Urban area.

**6.80 THE RESEARCH DESIGN HAS BEEN EXPLAINED AS UNDER**

**INDEPENDENT VARIABLES**

i. **Variation in Social Groups (2)**
   - Scheduled Caste
   - Scheduled Tribes

ii. **Sex (2)**
   - Male
   - Female
iii. **Locale (2)**
- Rural
- Urban

iv. **Grade (1)**
- IX Class

**DEPENDENT VARIABLES**

i. **Scholastic Attainments (4)**
- Language - English
  - Hindi
- Science
- Social Science
- Maths

ii. **Aptitudes**

a. **Composite Differential Aptitudes and its seven components. (DAT)**
- Space relations (SR)
- Numerical Ability (NA)
- Verbal Reasoning (VR)
- Mechanical Reasoning (MR)
- Abstract Reasoning (AR)
- Language Usage – Spelling (LU – sp)
  - Grammar (LU – gr)
- Clerical Speed and Accuracy (CSA)
- Composite Differential Aptitudes (Comp. DAT)

**Composite Scientific Aptitudes and its seven components (SAT)**
- Experimental Bent (EB)
- Detection of inconsistencies or illogical conclusions (DI/IC)
- Ability to deduce conclusions from the data provided (ADC)
- Accuracy of interpretation (AI)
- Ability to Reason and solve problems (ARSP)
- Caution and Thoroughness (CT)
- Accuracy of observation (AO)

iii. **Interest Patterns.**
- Fine Arts
- Literary Work
- Science
- Medical
- Agricultural
- Technical
- Craft
- Outdoor
- Sports
- Household

The instrument measuring the dependent variables were administered over the subjects in accordance with the testing programmes scheduled as under:

<table>
<thead>
<tr>
<th>Sequence of test</th>
<th>Name of Test</th>
<th>Testing</th>
<th>Instruments administration</th>
<th>No.of. Items</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Differential Aptitude Test (DAT)</td>
<td>Differential Aptitudes of Scheduled Castes and Scheduled Tribe pupils of Class IX</td>
<td>Differential Aptitude test standardized by J.M. Ojha</td>
<td>60</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>* Space relation</td>
<td></td>
<td></td>
<td>40</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>* Numerical ability</td>
<td></td>
<td></td>
<td>50</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>* Verbal Reasoning</td>
<td></td>
<td></td>
<td>68</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>* Mechanical Reasoning</td>
<td></td>
<td></td>
<td>50</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>* Abstract Reasoning</td>
<td></td>
<td></td>
<td>100</td>
<td>08</td>
</tr>
<tr>
<td></td>
<td>* Language Usage – Spelling - Grammar</td>
<td></td>
<td></td>
<td>60</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>* Clerical – Speed - Accuracy</td>
<td></td>
<td></td>
<td>100</td>
<td>03</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100</td>
<td>03</td>
</tr>
<tr>
<td>Sequence of test</td>
<td>Name of Test</td>
<td>Testing</td>
<td>Instruments administration</td>
<td>No.of. Items</td>
<td>Duration</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------</td>
<td>---------</td>
<td>---------------------------</td>
<td>--------------</td>
<td>----------</td>
</tr>
<tr>
<td>2</td>
<td>Scientific Aptitude test (SAT)</td>
<td>Testing the Scientific aptitudes of Scheduled Castes and Scheduled Tribe pupils of class IX</td>
<td>Scientific Aptitude test standardized by A.K.P. Sinha and L.N.K. Sinha</td>
<td>5</td>
<td>No time limit</td>
</tr>
</tbody>
</table>

* Experimental bent (EB)    
* Detection of inconsistencies or illogical conclusion (DI/IC)    
* Ability to Deduce conclusion from the data provided (ADC)    
* Accuracy of Interpretation (AI)    
* Ability to Reason and solve the problem (ARSP)    
* Caution and Thoroughness (CT)    
* Accuracy of observation (AO)    
* Composite scientific aptitude (SAT) |

<table>
<thead>
<tr>
<th>Sequence of test</th>
<th>Name of Test</th>
<th>Testing</th>
<th>Instruments administration</th>
<th>No.of. Items</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Interest Pattern</td>
<td>Interests of Scheduled Castes and Scheduled Tribe pupils of Class IX</td>
<td>Chatterjee's Non-Verbal Preferences Record Form 962</td>
<td>150</td>
<td>No time limit</td>
</tr>
<tr>
<td>i</td>
<td>Fine Arts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii</td>
<td>Literary Work</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii</td>
<td>Science</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv</td>
<td>Medical</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>v</td>
<td>Agriculture</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vi</td>
<td>Technical</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vii</td>
<td>Craft</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>viii</td>
<td>Outdoor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ix</td>
<td>Sports</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>x</td>
<td>Household</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The present study has been approached from three angles as shown below:

<table>
<thead>
<tr>
<th>Formulation of hypotheses</th>
<th>Independent variables</th>
<th>Dependent Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Correlational hypotheses</td>
<td>Inter correlation between Dependent variables (Pearsons product Moment coefficient of correlation)</td>
<td>*Scholastic Attainment (4 subjects)</td>
</tr>
<tr>
<td>( H_1(C) ) to ( H_3(C) )</td>
<td></td>
<td>*Aptitudes</td>
</tr>
<tr>
<td>* Scholastic Attainment (4 subjects)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Interactional Hypothesis</td>
<td>Separate ANOVA for each of the dependent variables with a) Caste (2) SC &amp; ST * APTITUDES b) Sex (2) Boys &amp; Girls c) Locale (2) Rural &amp; Urban</td>
<td>*Scholastic Attainment (4)</td>
</tr>
<tr>
<td>( H_4(I) ) to ( H_6(I) )</td>
<td></td>
<td>*Aptitudes</td>
</tr>
<tr>
<td>*DAT (7 comp.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*AT (7 comp.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Interest (10 comp.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Differential Hypothesis</td>
<td>Difference in Scholastic attainments Aptitudes and Interest pattern with respect to a) Sex Difference (Boys / Girls) b) Locale Difference (Rural / Urban) c) Inter Caste Differences (SC / ST)</td>
<td>*Scholastic attainments (4)</td>
</tr>
<tr>
<td>( H_7(D) ) (1) to ( H_9(D) ) (3)</td>
<td></td>
<td>*Aptitudes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*DAT (7 comp.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*SAT (7 comp.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*Interest pattern (10 comp.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**6.10.0 PROCEDURE FOR DATA COLLECTION**

Standardised Instruments and procedure given in the Manual of Norms have been used for collecting data. All tests were administered over the same subjects in different sessions and the instruments were operated under identical conditions.

Data were collected collectively in a small convenient groups of about 25 to 30 students. Responses obtained on various instruments were scored in accordance with the scoring system given in the Manual of the Norms. The responses were then analysed and processed in accordance with the hypothesis formulated. Data were statistically treated in terms of appropriate statistics as per requirements of the hypothesis.
6.11.0 STATISTICAL TREATMENT

The present study deals with the following hypothesis and the statistical treatments go in accordance with the nature and kind of data which are largely determined by the kind of hypotheses as given below.

<table>
<thead>
<tr>
<th>Kind of Hypotheses</th>
<th>Statistical Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>i) Correlation hypotheses</td>
<td>Pearson’s Product Moment Coefficient of Correlation.</td>
</tr>
<tr>
<td>H₁(C) to H₃(C)</td>
<td></td>
</tr>
<tr>
<td>ii) Interactional hypotheses</td>
<td>ANOVA</td>
</tr>
<tr>
<td>H₄(I) to H₆(I)</td>
<td></td>
</tr>
<tr>
<td>iii) Differential hypotheses</td>
<td>Mean, Standard Deviation (SD) ‘t’ Value</td>
</tr>
<tr>
<td>H₇(D)(1) to H₉(D)(3)</td>
<td></td>
</tr>
</tbody>
</table>

6.12.0 RESULTS

The following conclusions were drawn from different hypotheses

PART-I : CORRELATIONAL STUDIES

Inter relationship between Scholastic Attainment and differential aptitudes (DAT) and Scientific Aptitudes (SAT)

I. A significant and positive relationship beyond 0.01 level exists between scholastic attainment in English, Hindi, Maths, Science, Social Science, composite scholastic attainment and components of DAT i.e. AR, NA, VR, LU-gr and composite DAT of S.C. and S.T. pupils.

- Moderate relationship exists between SR, CSA, LU-sp and scholastic attainment.

- There exists no relationship between scholastic attainment and Mechanical Reasoning (MR).
II. A significant and negative correlation exists between scholastic attainment and components of SAT i.e. DI/IC and composite scientific aptitude of SC & ST pupils.

- No relationship was found between scholastic attainment and ADC, AI respectively.
- Negative & Moderate relationship were found between scholastic attainment and EB, ARSP, and CT.
- Similarly positive and significant relationship were found between scholastic attainment and Accuracy of Observation (AO) in Hindi, Maths, Science and composite Scholastic Attainment.

III. Positive and highly significant relationship exists amongst Scheduled Caste pupils between scholastic achievement in English, Hindi, Maths, Science, Social Science, Composite Scholastic Achievement and AR, SP, NA, LU-gr, composite DAT as components of DAT.

- Positive and moderately significant relationship between scholastic achievement and SR, VR, LU-sp as components of SAT was found amongst the Scheduled Caste students.
- Similarly negative but significant relationship between scholastic achievement and MR were found amongst Scheduled Caste students in all subjects, except Science.

IV. A negative and significant relationship exists between Scholastic Achievement (except Hindi) and EB, DI/IC, composite SAT as components of SAT among scheduled caste pupils.

- No relationship exists between Scholastic Achievement in English, Hindi, Maths, Science, Social Science, composite Scholastic Attainment and Components of SAT i.e. ADC, AI, ARSP, CT and AO.
V. A highly significant and positive relationship beyond 0.01 level exists between Scholastic Attainment in English, Hindi, Maths, Science, Social Science Composite Scholastic Attainment and Components of DAT i.e. AR, VR and composite DAT amongst Scheduled Tribe pupils.

- A highly significant relationship exist between Scholastic Achievement in English, Maths, Science, Composite Scholastic Attainment and Numerical Ability (NA).

- Similarly insignificant relationship exist between Scholastic Attainment and Mechanical Reasoning, Language Usage (spelling), amongst ST pupils.

- No relationship exists between Scholastic Attainment and SR and CSA.

VI. A significant and negative relationship exists between Scholastic Attainment and Composite SAT whereas negative and moderate relationship exists in EB, ARSP & AO amongst Scheduled Tribe pupils.

- No relationship exists between Scholastic Attainment and DIIIC, ADC, AI and CT amongst ST pupils.

VII. Interest Patterns

- A significant positive relationship has been found between Scholastic Attainment in English and Medical, Agri., Technical, craft and Household.

- A significant positive relationship has been observed between Scholastic Attainment in Hindi and Literacy, Medical, Agriculture, Technical, Craft, Outdoor and Household.

- A significant positive relationship has been found between Scholastic Attainment in Maths and Fine Arts, Literacy, Scientific, Medical,
Agriculture, Technical, Craft, Household & moderate Correlation between Maths and outdoor.

- A significant positive relationship has been estimated between Scholastic Attainment in Science and Fine Arts, Agriculture, Technical, Craft, Outdoor and Household and moderate Correlation between Science and Literacy.

- A significant and positive relationship has been estimated between Scholastic Attainment in “Social Science and Fine Arts, Medical, Agriculture, Technical, Craft and Household whereas Social Science and Literacy shows moderate and significant relationship.

- A significant positive relationship has been estimated between Composite Scholastic Attainment and Fine Arts, Literacy, Medical, Agriculture, Technical, Craft and Household whereas moderately significant positive relationship between Social Science and Scientific.

- Insignificant positive relationship was found between Scholastic Attainment in English and Fine Arts, Literacy, Scientific, Hindi and Fine Arts and Sports, Science and Scientific, Social Science and Outdoor, Sports, Composite Scholastic Attainment and Fine Arts, Outdoor and Sports.

- A negative insignificant relationship has been found between Scholastic Attainment in: English and Sports, Hindi and Sports, Fine Arts, Science and Sports

VIII. Positive and highly significant relationship exist between scholastic attainment and interest in Craft & Household amongst SC pupils

- Highly positive and significant relationship between scholastic attainment and technical in all the subjects except in Hindi.

- Significant and positive correlation exist between SA in Science, Social Science and Comp. SA and Agriculture. SA in Maths, Social Science and Comp. SA and Medical.
• Moderate relationship exist between Social Science and Finearts, Literacy and Outdoor, Composite SA and Literacy and Outdoor. It shows no correlation with other dimension of Interest Pattern.

IX. Highly significant and positive correlation exist between scholastic attainment in Hindi, Maths, Science, Social Science and Comp. DAT & Fine Arts, Literary amongst ST pupils.

• A highly significant and positive relationship exist between SA and Interest in Medical, Technical, Craft and Outdoor.

• Moderate correlation exist between SA in English, Maths, Social Science, Comp. SA and Household.

PART- II : INTERACTIONAL STUDIES :

(A) Interactional Effect on Scholastic Attainment:

• The main effects of caste on Scholastic Attainment was found moderately significant whereas Locale in Scholastic Attainment have been found highly significant but no effect have been found on Sex.

• The Interactional effect of (Caste & Sex) on scholastic attainment has been found highly significant, whereas the Interactional effect of (Caste, Sex & Locale) on scholastic attainment have been found moderately significant.

• The Interactional effect of (Caste & Locale) and (Sex & Locale) have been found to be insignificant.

(B) Interactional Effect on Aptitude Score:

• The main effect of Caste and Locale on differential aptitude have been found to be highly significant whereas of Sex was found to be insignificant.

• The Interactional effect of (Caste & Sex), (Caste & Locale) and (Caste & Sex & Locale) all have been found to be insignificant.
• The main effects of Caste on Scientific Aptitude have been found to be highly significant whereas the main effect of Sex and Locale on Scientific Aptitude have been found to be insignificant.

• The Interactional effect of (Caste & Sex) and (Sex & Locale) on SAT have been found to be highly significant whereas the Interactional effect of (Caste & Locale) and (Caste & Sex & Locale) have been found to be insignificant.

(C) Interactional Effect on Interest Patterns:

• The main effect of caste and sex on Interest Patterns have been found to be highly significant. But the main effect of Locale was found to be Moderately Significant.

• The Interactional effect of Caste and Sex, Caste and Locale & Sex and Locale have been found to be insignificant.

• Similarly the Interactional effect of Sex, Caste and Locale have been found to be insignificant.

PART - III: DIFFERENTIAL STUDIES:

A. Sex Differences:

1. Intra Social Group and Inter Sex differences:

i. Boys are superior to girls with respect to scholastic attainment in Maths (t = 3.27) and Social Science (t = 5.07)

ii. S.C. Boys have scored significantly higher than SC girls in English (t=3.83), Hindi (t=2.82), Science (t=3.15) and composite scholastic attainment (t=2.43).

iii. ST Boys have scored significantly higher than ST Girls in English (t=4.87), Hindi (t=3.59), Maths (t=4.94), Science (t = 4.57), Social Science (t=6.56) and composite scholastic attainment (t=5.48) respectively.
iv. Girls excel boys in EB (t = 6.39), ARSP (t = 3.31) & CT (t=4.33) whereas boys excel girls in DI/IC (t = 4.36).

v. There exists a significant difference between SC Boys and SC Girls in the dimension of Scientific Aptitudes i.e. EB (t=3.74), DI/IC (t =2.81), ADC (t = 2.45), AI (t = 5.48), CT (t = 2.71), AO (t=3.93) and composite SAT (t =3.17) but shows no difference in ARSP dimension of SAT (t = 1.58).

vi. There exists a significant difference between ST boys and ST girls in EB (t = 3.75), DI/IC (t = 3.50), AI (t = 6.89), ARSP (t =3.81), CT (t=4.04) and composite SAT (t = 5.60) but shows no difference in ADC (t =1.33) and AO (t = 1.34).

vii. Boys exceed the girls in MR (t = 4.15), AR (t = 4.32) and LU-gr (t= 4.32) while girls exceed boys in CSA (t = 1.13).

viii There exists a significant difference in the differential aptitude of SC boys and SC girls in AR (t = 3.41), SR (t=3.87), NA (t=3.36), MR (t = 5.37), LU-sp (t =5.28) but shows no significant difference between SC boys and SC girls in SR (t = 1.75) VR (t=0.559) Lu-gr (t = 0.185) and composite DAT (t = 1.24).

ix. The ST boys and ST girls shows significant difference in CSA (t=2.90), NA (t = 2.64), VR (t = 4.38), MR (t = 6.36) LU-gr (t=3.93) but shows no significant difference in SR (t=0.784) LU-sp (t=0.572) and composite DAT (t=1.38) respectively.

x. SC & ST pupils differ significantly from each other with respect to Interest Patterns in Scientific, Medical & Technical.

xi. SC boys and girls differ significantly from each other with respect to Interest Patterns.

xii. ST boys and girls differ significantly from each other with respect to Interest Patterns except interest in Sports and House hold.
2. **Inter Social Group and Intra Sex Differential:**

xiii. The ST boys exceed the SC boys in their scholastic attainment in English \(t=4.54\), Hindi \(t=5.7\), Science \(t=4.97\), Social Science \(t=5.89\) and composite Scholastic Attainment \(t=5.09\).

xiv. The SC girls exceed ST girls in English \(t=4.08\), Hindi \(t=3.68\), Maths \(t=3.35\), Science \(t=2.68\), and composite Scholastic Attainment \(t=2.81\).

xv. SC boys exceed the ST boys in AI \(t=4.95\), ARSP \(t=2.56\), CT \(t=3.37\) and composite SAT \(t=2.56\).

- There exists no significant difference between SC and ST boys in EB \(t=1.16\), ADC \(t=1.00\), DI/IC \(t=1.90\).

xvi. The ST girls exceed the SC girls in DI/IC \(t=2.09\), ADC \(t=2.75\), AI \(t=7.26\) and composite SAT \(t=5.60\), whereas the SC girls exceed ST girls in CT \(t=2.40\) and AO \(t=4.13\).

- There exists no significant difference between SC and ST girls in EB \(t=0.092\) and ARSP \(t=0.238\)

xvii The SC boys exceed ST boys in their differential aptitude in CSA \(t=15.03\), Lu-gr \(t=5.67\) and composite DAT \(t=4.62\) whereas ST boys exceed SC boys in VR \(t=2.00\), LU-sp \(t=2.51\).

- But there exists no significant difference between SC and ST boys in their differential aptitude in AR \(t=0.786\), SR \(t=0.113\), NA \(t=1.51\), MR \(t=0.06\) respectively.

xviii. The SC girls exceed ST girls in CSA \(t=20.35\), MR \(t=1.97\) and composite DAT \(t=5.36\) whereas ST girls exceed SC girls in SR \(t=2.33\), NA \(t=8.19\).

- But there exists no significant difference between SC and ST girls in AR \(t=1.68\), LU-gr \(t=1.05\), LU-sp \(t=1.88\).
xix. There exists no significant difference between SC and ST boys in Scientific ($t=4.71$), Medical ($t=2.29$), Agriculture ($t=2.35$), Technical ($t=2.09$) and Sports ($t=2.09$) as well as SC & ST girls with respect to Interest Patterns in Technical ($t=2.44$).

(B) **LOCALE WISE DIFFERENTIAL**:

xx. The Urban pupils are superior to the Rural pupils with respect to scholastic attainments.

xxi. The Scheduled Caste Urban students are superior to the Scheduled Caste Rural students with respect to Scholastic attainment in English ($t=5.13$), Hindi ($t=4.76$), Maths ($t=2.25$), Science ($t=2.76$), Social Science ($t=4.87$) and composite scholastic attainment ($t=3.88$).

xxii. The Scheduled Tribe Urban students are superior to the Scheduled Tribe Rural students with respect to Scholastic attainment in English ($t=3.96$), Hindi ($t=3.94$), Maths ($t=3.44$), Science ($t=3.04$), Social Science ($t=2.10$) and composite scholastic attainments ($t=3.71$).

xxiii. The Urban boys are superior to the Rural boys with respect to Scholastic attainment in English ($t=3.98$), Hindi ($t=6.06$), Maths ($t=3.93$), Science ($t=4.34$), Social Science ($t=6.13$) and composite scholastic attainment ($t=6.09$).

xxiv The Urban Girls are superior to the Rural Girls with respect to scholastic attainment in English ($t=5.17$), Hindi ($t=7.17$), Maths ($t=4.31$), Science ($t=5.70$), Social Science ($t=3.46$) and composite scholastic attainment ($t=4.11$).

xxv. The Urban pupil are superior to the Rural pupil with respect to Scientific Aptitude in EB ($t = 2.69$) whereas Rural Pupil are superior to the Urban Pupil with respect to SAT in DI/IC ($t = 2.87$).
& AI (t = 3.11); whereas they do not differ significantly with the rest of the dimensions of SAT.

xxvi. The SC Rural pupils are superior to SC Urban pupils with respect to DI/IC (t = 3.60) and CT (t = 2.96) whereas SC Rural and Urban pupils do not differ significantly from each other with respect to the rest of the dimensions of SAT.

xxvii. The ST Rural pupils are superior to ST Urban pupils with respect to AI (t = 4.27), whereas ST Rural and Urban pupils do not differ significantly from each other with respect to the rest of the dimension of SAT.

xxviii. The SC & ST Urban boys are superior to the SC & ST Rural boys with respect to the dimension of SAT in EB (t = 4.67), AI (t=3.77), CT (t=11.28), AO (t=19.15), whereas the SC & ST Rural boys are superior to the SC & ST Urban boys with respect to ADC (t= 4.63), ARSP (t=6.39), composite SAT (t=17.87) as dimension of Scientific Aptitudes but DI/IC shows no significance.

xxix. The SC & ST Urban girls are superior to the SC & ST Rural girls with respect to the dimension of SAT in EB (t =7.56), AI (t=6.01), CT (t =13.14) and AO (t = 14.30) whereas the SC&ST Rural girls are superior to the SC&ST Urban girls in DI/IC (t = 9.11), ARSP (t=9.55) and composite SAT (t=32.09) but ADC shows no significant difference.

xxx. The Urban pupils are superior to the Rural pupils in most of the tests except in MR & LU-sp & LU-gr.

xxxii Scheduled Caste Urban Pupils are superior to Scheduled Caste Rural Pupils with respect to LU-sp (t = 2.48) and composite DAT (t=2.09) as dimension of differential aptitudes. But do not differ significantly from each other with respect to AR, SR, CSA, NA, VR, MR, LU-gr as dimension of DAT.
xxxii Scheduled Tribe Urban pupils are superior to Scheduled Tribe Rural pupils with respect to the dimension of DAT in AR (t = 3.15), VR (t = 4.92) and composite DAT (t = 3.48) whereas ST Urban and Rural pupils do not differ significantly with respect to SR, CSA, NA, MR, LU-gr & LU-sp as dimensions of DAT.

xxxiii Scheduled Caste boys excelled Scheduled Caste girls in AR (t =3.47), SR (t = 3.93), NA (t=3.46) and MR (t=5.39) respectively; whereas Scheduled Caste girls excelled Scheduled Caste boys in LU-sp (t =5.29).

xxxiv Scheduled Tribe boys excelled Scheduled Caste girls in AR (t =3.48), VR (t=3.22), MR(t =7.10); whereas Scheduled Tribe girls excelled Scheduled Tribe boys in CSA (t=3.54) NA (t=3.74) and LU-gr (4.28) respectively.

xxxv The Urban boys are superior to the Rural boys with respect to Interest Patterns in Fine arts (t = 2.37) and craft (t = 3.71) but Rural and Urban boys do not differ significantly from each other with respect to the other dimension of the Interest Patterns.

xxxvi The Urban girls are superior to the Rural girls with respect to Interest Pattern in Fine Arts (t = 2.10), Sports (t=2.31) but do not differ significantly from each other with respect to the other dimension of Interest Patterns.

xxxvii. It does not show any significant different between Rural & Urban pupil with respect to Interest Patterns.

xxxviii. The Scheduled Tribe Pupils are superior to Scheduled caste pupils with respect to Social Science (t = 2.54), whereas SC pupils are highly superior to ST pupils with respect to composite scholastic attainment (t = 4.63). But there exists no Inter Caste Differences with respect to scholastic attainments in other school subjects.
xxxix SC Girls are superior to SC boys with respect to scholastic attainment in English (t=3.83), Hindi (t = 2.82), Science (t=3.15) & Composite Scholastic Attainment (t= 2.48) whereas there exists no significant difference between SC boys & girls with respect to Maths & Social Science.

xxxx ST boys are superior to ST girls with respect to Scholastic Attainment in all the subjects namely English, Hindi, Science, Social Science & Maths.

xxxxi. The Scheduled Cast pupils are superior to the ST with respect to CSA (t = 24.40) and LU-gr (t = 2.05), whereas ST pupils are superior to SC pupils with respect to SR (t = 2.07), NA (t = 5.79) & Composite Differential Aptitude (t = 3.08) respectively. But there is no caste difference with respect to AR, VR, MR & LU-sp as dimension of DAT.

xxxxii. SC boys are superior to SC girls with respect to DAT in AR (t=3.41), NA (t =3.36), MR (t = 5.37) & LU-sp (t=5.28).

xxxxiii. ST boys are superior to ST girls with respect to AR (t = 4.71), VR (t = 4.38), MR (t = 6.36), whereas ST girls are superior to ST boys with respect to NA (t = 2.84) and LU-gr (t = 3.93).

xxxxiv. The SC pupils are highly superior to ST pupils with respect to CT (t = 4.33), whereas ST pupils are superior to SC pupils with respect to DI/IC (t = 2.73) and composite SAT (t = 2.24) as components of Scientific Aptitude. But doesn’t shows any Inter Caste difference in EB, ADC, AI, ARSP and AO as components of SAT.

xxxxv. SC boys are superior to the SC girls with respect to DI/IC (t=2.81), AI (t = 5.45), and ADC (t = 2.45), whereas SC girls are superior to SC boys with respect to EB (t =3.74), CT (t = 2.74) and AO (t = 3.93), & Composite SAT (t =3.21).
xxxvi Scheduled Tribe boys are superior to Scheduled Tribe girls with respect to DI/IC (t = 3.45); whereas Scheduled Tribe girls are superior to Scheduled Tribe boys with respect to EB (t = 3.75) AI (t=6.89) ARSP (t=3.81), CT (t= 4.40) & Composite SAT (t=5.71) respectively. But there exists no significant difference between ST boys and Girls with respect to ADC & AO.

xxxvii. There is Inter caste difference (SC & ST) with respect to Interest patterns in its ten components except household.

6.13.0 SUGGESTIONS FOR FURTHER STUDY

On the strength of the findings obtained in the present study, the following suggestions are offered with a view to bring a behavioural modification in the SC & ST pupils so that they may enhance their educational standard and thereby raise their status of life and prove themselves as successful citizens of this developing democratic nation.

- Ample & timely opportunities should be made available to the SC&ST pupil for their fullest growth of their aptitudes and interests. Efforts should be made to translate them in reality oriented job conditions.

- Attempts should be made to induce encouragement, ego strength and reality oriented behaviour patterns among the SC & ST pupils so that they may inculcate such values by which significant aptitudes could be acquired and the inhibitory values like fear complex, inferiority complex, low achievement motivation and no risk taking attitudes should be gradually removed.

- The Government, Private welfare associations and all the Socio-Cultural Agencies should recognize the peculiar potentialities and abilities, talents and tendencies, interests and capacities, traits and temperament as well as learning abilities and disabilities of the SC & ST pupil and should make provisions for gainful employments in which their peculiar endowments
could be exploited to the optimum for their social advancement and national development.

- It is true that the SC & ST pupil are relatively backward in their scholastic performances and hence developed an interest for adapting culture bound vocational interest. In view of the fact that there are numerous Social, Economic, Cultural and Religious barriers and strong psychological blocks in their way to educational development, Social upliftment, Cultural refinement & Vocational superiority which have been interacting for considerable of period as retarders and inhibitors. It is suggested that effective “Compensational Educational Programmes” as well as “Rehabilitation Socio-Educational Programmes” should be organised by the government for their proper educational growth.

- It is essential that effective measures should be undertaken by social workers and government agencies to inculcate in them a drive for effective achievement motivation so that they may develop a feeling for competitive life, rather than a feeling for getting unqualified rewards and deriving satisfaction out of it.

- Self realization is perhaps the best type of corrective measures, so all efforts by different interested Agencies must be directed to promote and inculcate in the SC and ST pupil a feeling of realization of their present status and develop a sense of sensitivity for their immediate Social problems and the contribution that they can extend to different fields of life.