

**STUDY HABITS, APTITUDE AND VOCATIONAL
INTEREST OF RESIDENTIAL AND NON-RESIDENTIAL
SCHOOL CHILDREN**

MADHU ASHOK GARAG

**DEPARTMENT OF HUMAN DEVELOPMENT AND FAMILY
STUDIES
COLLEGE OF RURAL HOME SCIENCE, DHARWAD
UNIVERSITY OF AGRICULTURAL SCIENCES,
DHARWAD – 580 005**

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**STUDY HABITS, APTITUDE AND VOCATIONAL
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SCHOOL CHILDREN**

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**By
MADHU ASHOK GARAG**

**DEPARTMENT OF HUMAN DEVELOPMENT AND FAMILY
STUDIES
COLLEGE OF RURAL HOME SCIENCE, DHARWAD
UNIVERSITY OF AGRICULTURAL SCIENCES,
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**DEPARTMENT OF HUMAN DEVELOPMENT AND
FAMILY STUDIES
COLLEGE OF RURAL HOME SCIENCE
UNIVERSITY OF AGRICULTURAL SCIENCES,
DHARWAD**

CERTIFICATE

This is to certify that the thesis entitled "STUDY HABITS, APTITUDE AND VOCATIONAL INTEREST OF RESIDENTIAL AND NON-RESIDENTIAL SCHOOL CHILDREN" submitted by Ms. MADHU ASHOK GARAG, for the degree of MASTER OF HOME SCIENCE in HUMAN DEVELOPMENT AND FAMILY STUDIES to the University of Agricultural Sciences, Dharwad is a record of research work done by her during the period of her study in this university under my guidance and the thesis has not previously formed the basis for the award of any degree, diploma, associateship, fellowship or other similar titles.

**DHARWAD
JUNE, 2015**

**(LATA PUJAR)
CHAIRMAN**

Approved by :

Chairman : _____
(LATA PUJAR)

Members : 1. _____
(NITHYASHREE D. A.)

2. _____
(MANJULA PATIL)

3. _____
(SARASWATI HUNSHAL)

4. _____
(SAROJANI KARAKANNANAVAR)

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1. INTRODUCTION

Education is bringing out the best already in human virtue. It is the process of acquiring skills, knowledge and attitudes for the upliftment and contributes meaningfully to the development of the society. Jimoh (2000) described education as the totality of the experiences made available to individuals, in formal or informal situations, to make them develop a rounded personality and to be useful to themselves and society at large. The world is becoming more competitive and quality of performance is the key factor for personal progress. Excellence particularly, in academics is considered to be an important aspect. Children are to be set to develop realistic aspiration encompassing their lives, education and prospects of the future. Thus right education and developing good study habits is the only ray of hope in awakening the child to develop cultural values, in preparing him for later career choice and to adjust normally to his environment.

Study habit is the pattern of behaviour adopted by students in the pursuit of their studies that serves as the vehicle of learning. It is the degree to which the student engages in regular acts of studying such as appropriate studying routines, note taking, keeping good notes, attentively listening in class, being organized, reviews of material and frequency of studying sessions occurring in an environment that must be conducive for the study. Study habits of students are determined through their time management ability, work methods, attitudes toward teachers and acceptance of education.

If the study habits are developed at the young age it will definitely give its fruits in the rest of the life because grown up children are already habituated to certain things and find it difficult to modify their habits and behavior. It is the proper time and age to cultivate good study habits among school going children as they are able to know what is good and bad for them. They can avoid bad habits and invite good study habits with the help of parents and teachers. According to Okereke (2006), when the environment of the home, school and society is conducive for the school children, they develop positive and healthy study habits. Thus, a lot of time and efforts of the home and schools are utilized in helping students to achieve better in their scholastic endeavours.

In a more recent meta analysis, Crede and Kuncel (2008) found that non cognitive factors like study habit, skill and study motivation, accounted for incremental variance in academic performance beyond standardized tests and previous grades. For good academic success, good study habits and attitudes are important. The study of Edoh and Alutu (2012) examined the usefulness of imbibing the study habit among students, as a means of enhancing their academic performance and said that without good study habits, a student cannot succeed. To succeed, students must be appropriately assimilate course content, digest it, reflect on it and be able to articulate that information in written and oral form. One should know how to study in smart fashion. Students who study according to the time table, regularity in preparing and learning lessons, adopting a suitable sitting posture while studying, struggling had to overcome difficulties or put in their best efforts are liked to excel others of equal intelligence only because of their superior study habits. So proper study habits, not only help in upgrading the underachievers but also check the wastage of potentialities of competent students. If the students study habits are good, they can manage effectively their studies. Hence it is necessary to know interested area and move on further.

Aptitude is defined as the, “capability of learning a task”. This depends to a large extent on some combination of the characteristics of the learner (Carroll, 1981). The aptitude is derived from the word “Aptos” which means “fitted for”. According to Warrens Dictionary, “Aptitude is a condition or set of characteristics regarded as symptomatic of an individual’s ability to acquire with training some usually specified knowledge, skill or set of responses. It is realized that general aptitude tests are powerful tool which help in screening candidates for jobs.

Differential aptitude tests are the tests through which one can compute individuals inherent ability, that having impact on one’s job selection and satisfaction. A differential aptitude test is made up of subsets each of which is designed to measure a person’s current level of skill with respect to the area tested. Such tests may be administered individually or in groups to predict future success in various career fields. Differential aptitude test covers several areas including, verbal reasoning, numerical ability, abstract reasoning, clerical speed and accuracy, mechanical reasoning, space relations, spelling, and language use.

Aptitude refers to those qualities characterizing person's ways of behaviour which serve to indicate how well he can learn to meet and solve certain specific kind of problems. These are formed through the interaction between psychological factors and the experiences the person encounters in everyday life. It represents a fund of information and skills acquired over time. Aptitude tests are used to help an individual, chose among educational and vocational options based on strengths and weakness. Thus, differential aptitude tests are designed for use in educational and vocational guidance and are used by school counsellors, personnel officers, psychologists concerned with assessing the intellectual characteristics and vocational choice of students. Thus interest of students need to be assessed, including the subject of interest, vocation of interest, work of interest and value of interest (Ekennia, 2011). No individual can perform any job well without any element of interest. Its primary purpose is to help individuals to identify vocations that would be interesting and satisfying to them. Vocational Interests play an important role in the life of an individual as these determine what one will do and how one will do it. It refers to a variety of choices which an individual makes with respect to activities in which he is engaged (Mattoo, 2013).

Vocational choice is not an easy task, yet at one time or the other, individuals are faced with the task of making choice in career, preparing for it, starting it and making progress in it. The choice point is undoubtedly the most critical stage. This is because making a wrong career decision can avoid one's happiness in life as this could result to vocational maladjustment. Inappropriate career-decision made may spell doom not only for the individual but also the entire society. In view of the above the need to equip our students with appropriate career-decision making skills becomes highly imperative. Balogun (2006) believes that accurate vocational information, seminar, career talk and workshop will promote high vocational interest. Such activities can help to improve communication skills and offer opportunities. Society and parent's emphasize effective education because it forms the main basis for career development. Thus the study habit that has the highest prestige in the eyes of the members of the group with which the child is identified has the greatest influence on the aptitude development. Such habits are the best equipment with which they can live and lead their lives with confidence.

By realizing the importance of study habits, aptitude tests and vocational interest in today's competitive world, the need was to find out the personal characteristic of students in relation to their potentials and to attain success in life of residential and non residential high school children. Thus, the following objectives are set for the purpose of the present investigation.

Objectives

1. To know the study habits, aptitude and vocational interest of residential and non residential school children.
2. To know the influence of child and familial factors on study habits, aptitude and vocational interest of residential and non residential schools.
3. To know the relationship between study habits, aptitude and vocational interest of residential and non residential school children.

2. REVIEW OF LITERATURE

A present study on study habits, aptitude and vocational interest of residential and non-residential school children. It's an essential step in any research to provide base for developing insight into the methodology and working out for interpretation of findings. Keeping in view the objectives of the study, the literature related to concepts are discussed under the following headings:

2.1 Concepts and definitions of study habits, aptitude and vocational interest

2.2 Study habits among children

2.3 Factors influencing study habits

2.4 Aptitude among children

2.5 Factors influencing aptitude

2.6 Vocational interest among children

2.7 Factors influencing vocational interest

2.8 Relation between study habits, aptitude and vocational interest of children

2.1 Concepts and definitions of study habits, aptitude and vocational interest

2.1.1 Study habits

Study habits keep the learner perfect in getting knowledge and developing attitude towards things necessary for achievement in different field of human endeavour. Thus, in order to improve academic performance of students, it seems essential to improve their study habits without which desired outcomes cannot be achieved.

Study habit is the tendency of a student to learn in a systematic and efficient way, when opportunity is given. It is also defined as the devotion of time and attention to acquire information or knowledge especially from books or in other words it's the

pursuit of academic knowledge by a detailed investigation of a subject or situation (Oxford Dictionary and Thesaurus of English Language, 2003).

Adeyemo (2005) opined that study habit is a pattern of activity that went beyond merely reading for pleasure. It is a well planned and deliberate form of consistency on the part of the student towards understanding academic subjects.

2.1.2 Aptitude

Aptitude is not a specific skill; rather it is the capacity to acquire that specific skill. If an individual has no aptitude for a particular type of work, he/she will not be skilled or proficient in that task in spite of training given to him/her. Whereas, right aptitude of a person, in any specific field, indicates his/her ability of acquiring skills in that particular field, on the basis of which a prediction may be made regarding the amount of improvement of that person in that field, which further training might effect, (Rao, 1996).

According to Good (1959), aptitude is defined as “a pronounced innate capacity for or ability in a given line of endeavor such as particular art, school subject or vocation”. Aptitude refers to an individual’s inborn potentialities or capacities which are indicative of some special abilities.

According to Toplis (1991) aptitude tests measure the innate, acquired or developed component of competency in knowledge, understanding and attitude used in doing certain kind of work at a particular level.

According to Rao (1996), aptitude is considered as “a natural talent, skill or ability, quickness in learning and understanding”. It has emphasized that an aptitude refers to the capacity of an individual to be skilled in some work receiving formal and informal training.

Carr (2004) defined aptitude as it may be physical or mental; the innate nature of aptitude is in contrast to achievement, which represents knowledge that is gained through learning.

2.1.3 Vocational interest

Vocational Interest defined as one's own pattern of preferences aptitudes, likes, dislikes, preferred in any manner, wisely or unwisely by self or by another source for given vocational area or vocation. The purpose is to help students to adjust themselves to careers/ jobs/ vocations, by making wise choices. Only by making right choice the student will be able to utilize all his potentialities to the maximum extent.

Holland's theory (1985a) postulated that vocational interests are an expression of personality which explicitly "infers the structure of personality from the clustering of vocational interest".

According to Harting *et al.* (2005) vocational development may be linked to an emerging sense of self as early as the elementary school years.

2.2 Study habits among children

Aluede and Onolemhemen (2001) studied the effect of study habit on the academic performance of secondary school students in English language. The sample of 108 senior secondary school students of Lumen Christ secondary school, Uromi, Edo state, Nigeria were selected. The multi-stage stratified sampling method was used for data collection. The findings of the study revealed that counseling students on good study habits can bring about improvement in the students' academic performance.

Aisha (2002) conducted a study on relationship of study habits with educational achievements, with the aim to determine the effect of the study habits on the achievement of students. Findings revealed that there is a significant and positive relationship between achievement of the students and the said factors like schedule of study, habit of notes taking and writing back with student's achievement.

Nandita and Tanima (2004) explored study on study habits and attitude towards studies in relation to academic achievement. Study habit inventory was used for data collection. The results revealed that, there was positive and highly significant relationship between attitude towards studies and academic achievement. There exists a positive and significant relationship between attitude and academic achievement.

There was a positive and significant relationship between study habits and attitude towards studies.

Sirohi (2004) designed study to assess study of under-achievement in relation to study habits and attitude. Study habits and attitude scale was used to assess study habits of students. The findings revealed that 98.7 per cent of the underachievers tend to possess unfavourable attitude towards teachers and needed guidance. Deficiency in school and home environment (92.5%), attitude towards education (24.6%), poor concentration (97.5%), lack of proper attitude towards examination (96.2%), faced mental conflicts (72.8%), low in self-confidence (72.8%), problems related to home assignments (72.3%) was observed. All underachievers indicated deficiency in over all study habits.

Hussain (2006) studied to know the effect of guidance services on study attitudes, study habits and academic achievement of secondary school students. Through random sampling technique 50 students studying in 9th standard were selected from government high school Karim Block, Allama Iqbal Town, Lahore. Study habits and study attitude scales was used to assess the study habits of the students. Findings revealed that guidance services are effective for the improvement of school instruction and better performance of students in their studies. Improvement in study habits resulted in enhancement of students' academic achievement. Significantly better performance of experimental group students in the subjects of physics, mathematics, biology and chemistry was observed than control group students.

Yenagi (2006) conducted a study on study habits a function, of self-perception among intellectually gifted and non-gifted students. A sample of 1020 college students was randomly selected from Hubli and Dharwad city of Karnataka state. Study habit inventory was used to assess study habits of students. The results revealed that the overall study habit was significantly differed from gifted and non- gifted groups. General habits, planning of subjects, reading and note taking habits, habits of concentration were also found to be significant among them.

Quist *et al.* (2006) in his study on study habits among secondary school students in some selected districts in central region, Ghana. The sample comprised of 500 students for the study. The results revealed that, no significant difference existed

between the study habits of male and female students and boarding and non boarding students. The study habits of students from high socioeconomic homes did not differ significantly from students from low socio economic homes. So there is need to teach study skills to senior secondary school students to cultivate good and effective study habits and equal opportunities for studying in a conducive atmosphere.

Ogunkola and Fayombo (2009) explored study on investigating the combined and relative effects of some student related variables on science achievement among secondary school students in Barbados. Through random sampling method of 300 students (143 boys and 157 girls) between the ages of 13 and 15 years were selected from rural (150) and urban (150) area. Science achievement test, interest in science scale and study habit scale were used for data collection. The results showed that the level of science achievement was not really satisfactory, there were statistically significant differences in students' science achievement based on their school location ($t = 3.803$, $P < 0.05$), interest in science ($t = -10.03$, $P < 0.05$), study habit ($t = -4.80$, $P < 0.05$) and future career choice ($t = 4.77$, $P < 0.05$), but there was no statistically significant difference in the male and female students' science achievement ($t = 0.086$, $P > 0.05$). The interest in science, future career choice, study habit and school location individually contributed significantly to science achievement. However interest in science significantly contributed to the most and school location the least.

Rana and Kausar (2011) examined study on comparison of study habits and academic performance of Pakistani British and White British students. Through stratified sampling technique, 200 science students of 10th class including equal number of Pakistani British and White British students in the age range of 14-16 years recruited from four multiethnic schools of England, UK. Survey of study habits and attitudes was used to assess students study habits and their last year academic grades were used to assess academic performance. The results revealed that although White British students had significantly better study habits than the Pakistani British but no significant difference was found in their academic performance. Country of origin and schools had significant interactive effect on study habits of students but did not have an interactive effect on academic performance of the students.

Bajwa *et al.* (2011) conducted study to determine the difference between the study habits of students from formal and non-formal systems of education in Pakistan. The sample for the study comprised of 1000 students. A forty item questionnaire was divided into seven clusters i.e. time management, class attendance and participation, general study strategies, exam preparation, goal setting & motivation, textbook reading and note taking was administered to assess study habits of students. The results revealed that, students of formal system are significantly better on time management and exam preparation. Students of non-formal system are significantly better on class attendance, general setting motivation and participation. Whereas, students of non- formal system are significantly better on text book reading. Students of formal system are significantly better on note taking. Over all students from non-formal system of education are significantly better than the students of formal system.

Darwin (2011) examined the impact of study habits, skills, and attitudes (SHSAs) on the performance of students in an introductory financial accounting college course. The sample comprised of 395 children studying in business course in Philippine university. Developed study habits questionnaire and school records were used to assess study habits of students. The results revealed that maths proficiency, English proficiency, high school accounting and academic aptitude influence accounting performance. Among the SHSA factors, only student perception of teacher effectiveness and level of effort influence accounting performance. Time spent on studying, attendance in review classes conducted in tutorial centers, motivation, and study habits have no significant effect. Upon further analysis comparing high and low performers, study habits show up to be significant as well. In particular, students who performed better are those who did more in terms of reading ahead, doing their homework, participating in class and cramming for exams.

Singh (2011) investigated academic achievement and study habits of higher secondary students. Study habits scale was used for data collection. The result found that there is significant correlation between study habits and academic achievement in higher secondary students.

Ergene (2011) examined the relationships among study habits, test anxiety, achievement, motivation, and academic success of tenth grade high school students in a

Turkish city. The sample comprised of 510 participants, 267 were females and 243 were males. Test anxiety inventory, study habits inventory and students' marks were considered as the indicator of their academic success. Significant correlations were found between the study habits and academic success level. Also positive relationship between study habits and achievement motivation level was found. No correlation was observed between achievement motivation and academic success. Test anxiety and study habits were associated positively with academic success and there was no association with achievement motivation.

Florence (2012) conducted study in yagba east local government area of Kogi state. Through random sampling method, 180 senior secondary students were selected from Kogi state, Nigeria. Self structured reading habits questionnaire was used for data collection. The results showed that, 59 per cent of the parents encourage their children to read but only 46 per cent provide the required school texts. Parents (90%) ensure children read only school texts, 89 per cent of the parents do not read; 74 per cent have no libraries at home; and only 38 per cent students borrow books from the libraries. It recommends that parents should cultivate a reading culture, read stories to their children and provide reading materials so they can develop love for reading and better study habits and skills in their life.

Majoka and Masood (2012) investigated the role of study skills in academic achievement of students: a closer focus on gender. Study habits and attitude scale was used to assess the study habits of students. The findings revealed that there was significant relationship between study habits, components of time management, skills, reading, and note taking skills with academic achievement. Students with higher academic achievements use a wide range of study skills as compared with lower academic achievement.

Ali *et al.* (2012) in their study aimed to investigate the comparison of the study habits of the students of both sectors government and private schools. Among 12 schools (6 government and 6 private) 120 students studying in 7th standard were selected from Swabi district, Pakistan. Self structured questionnaire was used for data collection. The findings revealed that, students studying in private schools had good study habits than students from public schools. The students' interest in the study is

higher in the private schools as compared to students in the public schools. However, the active concentration during the study was higher by students of the public sector schools.

Premalakshmi (2012) explored study on study habits and academic achievement of higher secondary students involving 525 students who were randomly selected from 6 schools in Salem district, Tamil Nadu. Structured study habit inventory including 32 questions with five point scale score was used to assess the study habits of students. Results revealed that, there exists significant difference in locality, type of school and class of students with respect to study habits. There was a positive and significant relationship between study habits and academic achievement of students. Aided school students were higher on involvement of studies than government school students.

Udeani (2012) worked out on relationship if any among the variables of study habits, facilitating anxiety and debilitating anxiety on achievement in secondary school science students. The sample consisted of 124 fifth year male and female students offering science subjects in a coeducational secondary school in Lagos State, Nigeria. Study habits inventory was used to assess the study habits of students. The results revealed that the students exhibited fairly adequate study habit patterns. Significant positive correlations between study habits and science achievement was observed. The relationship among study habits, facilitating anxiety and debilitating anxiety was not significant.

Bashir (2012) in his study examined study habits and academic performance among adolescents 14-19 years. Study habit inventory was used to assess the study habits of students. Findings revealed a highly significant relation among various variables of study habits and academic performance.

Oluwatimilehin and Owoyele (2012) conducted study on study habits and academic achievement in core subjects among junior secondary school students in Ondo state, Nigeria. Through random sampling method 300 junior secondary students between the age range of 12 and 16 years with an average age of 13.5 years were selected from public junior secondary schools in Ondo State, Nigeria. The study habits inventory and the junior secondary school performance test were used for data collection. The study revealed that of all the study habits' sub-scales, 'teacher

consultation' was most influential while the 'time allocation' exercise, concentration, note taking, reading and assignments were regarded as less integral to students' academic performances. Therefore, regular counselling services to train students on study skills strategies were advocated in order to boost their study habits.

Edoh and Alutu (2012) in their study on, a survey of students study habits in selected secondary schools: implication for counselling. The sample comprised of 50 students drawn from five private secondary schools in Egor local government area in Benin city. Study habit inventory was used to assess study habits of students. There is a high correlation between study habits and students academic performance. There was significant difference in the study habits of secondary school students between male and female. The differences in the study habit are attributed to the fact that students do not know how to study and those that manage to study do not adopt effective study methods. Lack of proper study habits is one of the root causes of our dwindling educational standard.

Choudhury and Das (2012) explored study on influence of arithmetical ability and study habit on the achievement in mathematics at secondary stage. Through stratified random technique, 250 boys and 250 girls of standard IX were selected from secondary school of South Kamrup district Assam. Mathematics achievement test, arithmetic ability questionnaire and study habit inventory were used for data collection. Results revealed that, study habit and achievement in mathematics are significantly related. Regular study habit group have better achievement in mathematics than irregular and moderately regular study habit group of students.

Alrefaai (2013) conducted research on, the general study habits of students in King Khalid University and their relationships with marks, gender and certain social worker factors. The sample comprised of 440 students (219 were male and 221 were female) from Saudi Arabia. The results indicate that the majority of students study in a haphazard, disorganized way and they just cram before exams. Students who attend their classes' regularly on time and participate in classroom activities were better achievers than their counterparts. Also, there is a highly significant correlation between society and peers encouragement and certain study habits, such as, punctuality and participation, effort, and preparation for examination.

Ehiozuwa and Anaso (2013) worked out on, assessment of study habits of senior secondary school science students in north west zone of Nigeria. The sample of 1,796 students who were attending the basic science subjects in 22 secondary schools from four North West states (Kaduna, Kano, Katsina and Zamfara) of Nigeria during the 2011/2012 school session were selected by means of stratified random sampling. The students' study habits were assessed by using study habit inventory and their science scores (academic performance) were obtained from their first term's school results. The significant difference was observed between private and public schools and among the students in the four states with respect to study habits.

Anwar (2013) conducted study on co relational study of academic achievement and study habits: issues and concerns. Through purposive random sampling technique 200 senior secondary school students studying in XI class were selected from Lucknow city of U.P. India. Study habit inventory was used to measure the study habits of students. The findings showed that there was significant positive relationship between study habits and academic achievement of senior secondary school students. It was also found that the academic performance of students having good and poor study habits differ significantly and good study habits result in high academic achievement.

Thiyagu (2013) aimed to find out the relationship between the study habits and academic achievement of ninth standard students. For the study through random sampling method 210 ninth standard students selected from Tiruchengode taluk. Study habit inventory used to assess the study habits of students. The findings revealed that there is significant difference found between the government and private students in their study habits. Where private students are better than the government students due to the fact that government students are involved in limited activities. But private students are actively involved in co-curricular and curricular activities and they spend more time in tuition classes. Mean scores of study habits of private schools have more than government schools. This may be due to the lack of fund given by the department of the education to the government schools for the basic amenities and lack of non-teaching staff in the government schools for the purposes of maintaining laboratory and classroom cleanliness. Also significant difference found between the day-scholar and hosteller in their achievement. In these two variables, hosteller is better than the day

scholar students. It may be due to the lack of interest given by the parents for the day-scholar students. But every day the study hours is conducted in hostels.

Chanmundeswari *et al.* (2014) in their study investigate the relationship between self-concept, study habit and academic achievement of students. Survey method was used to select a sample of 381 students at the higher secondary level. The self-concept inventory, study habits inventory and academic achievement marks were considered for study. The results showed that significant correlation between self-concept, study habit and academic achievement of students. A significant difference was found between students at the higher secondary level in state, matriculation and central board schools, pertaining to self-concept, study habit and academic achievement. Girls at the higher secondary level irrespective of the boards of education are significantly better than boys with respect to self-concept, study habit and academic achievement.

Jato *et al.* (2014) studied to know the study habits, use of school libraries and student's academic performance in selected secondary schools in government area of Ondo state. The sample comprised of 298 students who were selected from four secondary schools of Ondo State. Standardized study habits inventory was used to assess the study habits of students. Major findings of the study revealed that study habits of the students were bad and irregular use of school libraries by the students was one of the factors for poor scores in test and examination. Many students did not study outside the school, and academic performance of the students was poor in mathematics and English language.

Babatunde *et al.* (2014) carried a work on impact of note taking and study habit on academic performance among selected secondary school students in Ibadan, Oyo state, Nigeria. The sample comprised of 900 students who were selected from three local government schools in Oyo state, Nigeria. Study habit scale and students' academic performance scale were used for data collection. The result showed that students' academic performance is significantly correlated with each variable like note taking and study habit. When these pulled together have significant effects on the students' academic performance. In term of magnitude of contribution, note taking made the most significant contribution to the academic performance followed by study habit.

Lawrence (2014) explored study on relationship between study habits and test anxiety of higher secondary students. The sample comprised of 300 students randomly selected from 10 higher secondary schools in Tirunelveli district. Study habit scale and test anxiety scale were used to assess study habits of students. The findings revealed that the level of study habits and test anxiety of the higher secondary students were moderate. There was no significant relationship between study habits and test anxiety of higher secondary students.

Chowdhury and Ghose (2014) conducted study on effects of parenting on study habits of adolescents. The sample consisted of 620 students studying in class VII to PUC were selected from Kolkata. Parenting scale and study habit scale were used for data collection. The result showed that there is a strong relationship between sagacious parenting and good study habit. To inculcate good study habit, parents need to be realistic about their expectations from their children as well as their own principles and actions in their daily lives.

Amin and Matto (2015) worked out on influence of heavy and low television watching on study habits of secondary school students-a study. The sample comprised of 500 students drawn randomly from various government secondary and higher secondary schools of Srinagar, Jammu and Kashmir. The students were studying in grade 10th with an age range of 15-17 years. Study habits inventory was administered to assess the study habits of students. Which covers the areas such as reading habits, learning techniques, memory, time-schedule, physical conditions, examination and evaluation. The results revealed that there is significant difference between the heavy and low TV viewers on study habits. The heavy TV viewers as compared to low TV viewers are seen to plan their time well in advance ($M=7.52$, $t= 5.00$); possess higher note taking ability ($M=4.61$, $t=3.15$); whereas low TV viewers have been found higher in study habits with respect to physical conditions for study ($M=8.64$, $t= 10.5$); reading ability ($M= 10.59$, $t= 3.23$); learning motivation ($M=9.91$, $t= 4.55$); memory ($M=5.4$, $t= 9.42$); taking examination ($M=13.22$, $t= 3.32$); health (4.25 , $t= 6.1$). But gender differences do not make any variation amongst the subjects in budgeting time, physical conditions, reading ability, note taking, taking examination and health like areas of study habits.

Nisar *et al.* (2015) examined prevailing study habits at secondary schools: students' perceptions. The sample comprised of all students studying in class 10th class at public sector schools which include 1500 students from sixty schools was drawn by using multistage sampling technique from five districts of Punjab province of Pakistan. Study skills inventory was used to assess the study habits of students. It was found that students' study habits have impact on students' academic achievement at secondary school level. Gender and locality had relationship with the study habits of students.

2.3 Factors influencing study habits

2.3.1 Age

Suneetha and Mayuri (2001) designed a study to assess age and gender differences on the factors affecting high academic achievement and results revealed that significant differences was found among the four age groups (12+, 13+, 14+ and 15+) in creativity, study habits, intelligence and academic achievement.

Ossai (2012) conducted study on age and gender differences in study habits: a framework for proactive counselling against low academic achievement. The sample comprised of 289 secondary school students attending a study skill improvement therapy workshop organised by a non-governmental organisation in Nigeria. The students were in two age ranges of 12 -15 years and 16 -19 years. Total sample of 289 students, among them 178 belonged to the age range 12 -15 years with mean age of 13.5 years and 111 students were aged 16 -19 years with mean age 17.5 years. A 20-item study habits inventory was used for data collection. The results showed that study habits seem to improve with age and significant differences found in the study habits of the students on the basis of age. The mean of 16-19years (58.73) was higher than the 12-15 years (44.99), which shows study habits tend to improve with age.

Ehiozuwa and Anaso (2013) explored study on assessment of study habits of senior secondary school science students in Northwest zone of Nigeria. Total 1,796 students from 22 secondary schools in four North West states were selected through stratified random sampling method. Study habit inventory was used to assess the study habits of students. There exists significant difference between the study habits of older and younger students.

2.3.2 Gender

Reddy and Nagaraju (2001) studied to determine influence of sex and locality on study habits of X class pupils. The sample consisted of 200 students selected from four schools in rural and urban Kurnool district, Andhra Pradesh. The study habit inventory was used to assess study habits of students. Results showed that, sex has no influence on study habits. Both boys and girls have similar study habits but mean of girls (210.56) was higher than the boys (198.62). There was no interaction effect of locality and sex on the study habits of the students. Urban students have better study habits than rural students.

Suneetha and Mayuri (2001) explored study on age and gender differences on the factors affecting high academic achievement of school children. The total sample of the study comprised of 120 children of IX and X grade drawn purposively from 10 private schools of Hyderabad. Intelligence scales for Indian children, study habit inventory, multi-dimensional assessment of personality inventory were used for data collection. The results showed no significant differences among boys and girls with respect to IQ dimensions. Boys and girls differed significantly in interaction, sets and language dimensions of study inventory.

Alabi (2003) conducted study on relationship between study habits and attitudes of secondary school students toward examination malpractice in Karwar state. Through proportional random sampling method 400 students from three secondary schools in the three senatorial districts of Karwar state were selected. Study habits questionnaire and students attitude toward examination malpractice questionnaire were used for data collection. Findings revealed that, there was no significant relationship between students study habits and their attitudes towards examination malpractice. Male and Female students were significantly different in their attitudes towards examination malpractice while the two groups were not significantly different in their study habits.

Sud and Sujata (2006) carried a work on academic performance in relation to test anxiety and study habits of high school children from government senior secondary school of Himachal Pradesh. Study habits inventory was used to assess the study habits of students. The results revealed that boys were poorer in study habits than girls.

Kalia *et al.* (2009) studied to determine effects of residence and gender on the study skill of adolescents. Through random sampling method 102 adolescents of XI class were selected from urban and rural schools of Rohtak district of Haryana. They were equally divided on the basis of gender and residence. Study skill inventory was used for data collection. Results revealed that, rural adolescents were found significantly superior than urban adolescents on the skills of 'use of text book' and 'out lining'. Study skills like time management, using text book, underlining note taking, outlining and taking essay test are significantly more developed among male adolescents than female adolescents.

Nuthana (2009) carried out study to know the influence of study habits, self-concept on academic achievement of boys and girls. The sample comprised of 600 students of which 300 were drawn from rural and 300 were from urban among them 325 boys and 275 girls who were studying in VIII, IX and X standard were selected. Self concept scale and study habits inventory were used for data collection. Results revealed that significant relationship between reading on note taking habit, habits of concentration and preparation for examination had significant correlation with academic achievement. However other study habit dimensions like home environment & planning of work, planning of subjects, general habits & attitude and school environment had non-significant relation with academic achievement. Boys and girls had almost similar study habits. Dimensions of study habits showed that both group differed significantly on preparation of examination where in boys performed better than girls. Girls had significantly better reading and note taking habits compared to that of boys and had better home environment and planning of work. The boys had significantly better home environment & planning of work compared to that of girls. The other dimensions like general habits & attitudes, planning of subjects habits of concentration, school environment were found to be non significant. So boys and girls did not differ significantly on overall study habits.

Ossai (2012) in his study examined gender differences in study habits: a framework for proactive counselling against low academic achievement. The sample comprised of 151 male and 138 female secondary school students. A 20-item study habits inventory was used for data collection. The results showed significant differences in the study habits of the students on the basis of gender. Female students reported

better study habits than males. This implies that proactive counselling against poor study habits should start at the basic level of education and diligent attention should be given to male students. Target-oriented counselling techniques should be utilized to help students improve their academic achievement through better study habits.

Kurshid *et al.* (2012) explored study on relationship between study habits and academic achievement among hostel living and day scholar's university students. The sample comprised of 200 university students from Rawalpindi and Islamabad. Study habits inventory was used to assess the study habits of students. The results showed that there is a positive relationship between study habits and academic achievement. Female students possess more effective study habits and higher academic achievement than male students. Day scholars have better study habits and higher academic achievement than those of hostel living students.

Kumar and Sohi (2013) in their study assessed study habits of tenth grade students in relation to their academic achievements. Through stratified random sampling method 100 students were selected from four schools of Karnal district of Haryana. Study habit inventory was used to collect the data. The results showed that the gender of students is not likely to have any major effect on study habits and academic achievement of tenth grade students.

Rani (2013) studied the relationship between home environment and study habit of senior secondary school students. Through random sampling 100 science students studying in secondary school of Sonipat district of Haryana were selected. Study habit scale and home environment scale were used for data collection. The results revealed that a significantly positive relationship of home environment components of rejection with study habits of boys which revealed that it can be affected the study habit of boys. However, the correlation of other components of home environment is significantly negative with study habits among boys. The study also found that there was no significant difference of home environment between boys and girls studying in science stream of senior secondary school.

Ayodele and Adebisi (2013) conducted study on study habits as influence of academic performance of university undergraduates in Nigeria. The population of the study includes all faculties in the university. Study habits determinants questionnaire

was used to assess study habits of students. The study revealed that gender was found to have no significant difference on undergraduates study habit while on the other hand faculty of undergraduates had a significant difference on their study habit.

Ehiozuwa and Anaso (2013) investigated study on assessment of study habits of senior secondary school science students in northwest zone of Nigeria. Through stratified random sampling 1,796 students from 22 secondary schools in four North West states of Nigeria were selected. Study habit inventory was used to assess the study habits of students. Their exist significant difference between the study habits of male and female students.

Doris and Mosunmade (2013) explored study on study habits of undergraduate students in selected federal universities in Southwest, Nigeria. The study examined the study habits of undergraduate students in three federal universities in Nigeria with the objectives of ascertaining their study habits in relation to time management, methods of knowledge assimilation and preferred study environment. The population consisted of 2,086 respondents from eight different departments. Structured questionnaire was used for data collection. Findings revealed that 51.5 Percentage of the students spend their free period for studying and organize their studies. Note taking during lectures (55.3%) and memorization (51.2%) was also found to be the most used method for knowledge assimilation by students. With total study habits 69.4 Percentage were found to study in quiet places and while 55.6 Percentage study in the hostel rooms. It is recommended that students pay more attention to planning their study activities using time tables for study and setting of specific goals for each study session. Although memorization can aid retention, other knowledge assimilation methods like self test and summarization as they can lead to better internalization of what has been studied.

Gudaganavar and Halayannavar (2014) explored study on influence of study habits on academic performance of higher primary school students. The sample comprised of 125 boys and 125 girls who were studying in 8th classes selected from Bailhongal, Belgavi district from Karnataka state. Study habit inventory used for data collection. The results showed that, there was no association between boys and girls on study habits. Both boys and girls differed significantly on preparation for examination ($t=4.29$, $p<0.01$ level) where boys performed better than girls with mean score (18.12

and 17.19). Girls had significantly better reading and note taking habits compared to that of boys (31.15 and 34.16 respectively), and better home environment & planning of work ($t=2.05$, $p<0.05$ level). The mean scores indicated that boys had significantly better home environment & planning of work compared to that of girls (19.24 and 18.00). There was significant association between study habits and academic achievement of girls. But there was no significant difference was observed between study habits and academic achievement of boys.

Razia (2015) conducted a research to know the relationship between study habits and gender. The sample comprised of 224 students (female-110 and male-114) from Aligarh district. Study habit inventory was used for data collection. The findings revealed that females performed better in study habits than male counterparts.

2.3.3 Standard

Pazhanivel (2006) examined the study to know the impact of modular approach on achievement, study habits and attitude of students in Tamil grammar at secondary level. Through probability sampling method, 80 students were selected from class IX standard. Experimental method was adopted for the study. Qualitative and quantitative approach was used in the study. The results revealed that, control group and experimental group of IX grade students differ in their achievement in Tamil grammar and study habits. There was significant relationship between the achievement and study habits. The modular approach was effective in enhancing the academic achievement and study habits.

Kumar and Sohi (2013) conducted a study on study habits of tenth grade students in relation to their academic achievements. Through stratified random sampling method 100 students (50 from rural and 50 from urban background) were selected from four schools of Karnal district of Haryana. Study habit inventory was used to collect the data. The results showed that the gender of students is not likely to have any major effect on study habits and academic achievement of tenth grade students. It is also observed that the locality is likely to have major effect on the study habits and academic achievement of students. It was also found that there is very high and positive relationship between study habits and academic achievement of tenth grade students.

Haider and Verma (2014) explored a study on study habits of class 10th Students. The sample size consisted of 51 girls and 39 boys. To assess the study habits of class 10th students, study habit inventory was used. The results revealed that, study habits of 10th class students were appropriate. Percentage of students in appropriate study habits was found to be high in two dimensions such as: school environment (83.33%) and planning of work (66.67%).

Sandhu (2014) studied to determine academic achievement of adolescents in relation to achievement motivation and study habits. The sample comprised of 200 students of 11th class selected from government senior secondary schools of Ludhiana city. Achievement motivation scale and study habit inventory were used for data collection. The findings of the study showed significant positive relation between academic achievement and study habits of 11th class students.

2.3.4 Parents éducation

Nagaraju *et al.* (2002) conducted research to know study habits of IX class pupils in relation to certain sociological factors. The sample comprised of 460 students studying in IX class. Results revealed that fathers and mothers educational qualification have significant influence on the study habits of IX class pupils.

Abdullahi (2010) in his study randomly selected 200 senior secondary students in the age range of 15-20 years from four schools in Karwar State. Study habit inventory and socio-economic status scale were used for data collection. The results revealed that, children from literate background performed better in study habits components of time allocation, study period procedure and concentration than illiterate background parents. Of noteworthy is that the moderator variable of literate and illiterate home background differentiated students' study habits most. These significant differences may least be surprising because in illiterate home background and especially if the students are day students, the time allocation for study will be minimal as there may be no adequate home support for good study habits. The same is true for study period procedure and concentration. If the home environment is not productive for study, there can be no concentration even when the student is willing.

The study by Ekeke *et al.* (2013) comprised of 200 senior secondary students in the age range of 14-16 years randomly selected from kolo-creek development centre of Bayelsa State. Student study habit questionnaire used to assess the study habits of students. The results revealed that, majority of the students agreed that motivation from parents to read the books at home by providing reading books which influence them to develop better study habits. The independent variables like parent income, education, and living abode influence the students study habits.

2.3.5 Family income

Nagaraju *et al.* (2002) revealed that annual income, of the family has no significant influence on the study habits of IX class pupils.

Tope (2011) conducted study on the effects of study habit on the academic performance of students: a case study of some secondary schools in Ogun state. Through random sampling method 200 students were selected from five senior secondary schools in Ijebu Ode of Ogun State. Study habit and study attitude scale were used for data collection. The result showed that family background, peer group pressure, personality type of the student and the school environment all affect the reading habit of students in secondary schools.

2.3.6 Type of family

Chand (2013) explored study on study habits of secondary school students in relation to type of school and type of family. The sample comprised of 200 secondary school students from government and private schools. Study habit inventory was used to assess the study habits of students. The findings revealed that, there exists no significant difference between students belonging to nuclear and joint family on different components of study habits and total study habits. Students studying in government schools are significantly better in planning of work and planning of subjects than students studying in private schools, however private school students are significantly better than government school students on preparation for exam component of study habit.

2.3.7 Socio- economic status

Abdullahi (2010) revealed that children from higher socio-economic status students performed better in study habits components of homework and assignment, written work and concentration than lower socio-economic status students.

Razia (2015) conducted research to know the relationship of study habits with socio-economic status and gender. The sample comprised of 224 students studying in class IX from Aligarh district. Study habit inventory and socio-economic status scale were used for data collection. The results showed that significant and positive relationship exists between study habits and socio-economic status (SES) of students. High SES students had better study habits than low SES students and so also middle SES students proved better in comparison to low SES students. Male and female students differ in their SES, especially female students had higher SES than male students. Female students had better study habits than their male counterparts in all the three (high, middle and low) SES groups.

2.4 Aptitude among children

According to Dolke and Sharma (1975) the sample for the study consisted of 70 students studying in the school of architecture. The mean age of the students was 21.14 yrs. General aptitude test battery was used to assess aptitude of students. After curriculum analysis the following four aptitudes viz., general learning ability, verbal aptitude, spatial aptitude and form perception were found to be relevant with the architectural courses. General aptitude test battery was useful in predicting success of students in the school of architecture as scores on tests were associated with performance in the courses.

Chatterjee *et al.* (1978) conducted a study on higher secondary sciences achievement as related to scientific interest and aptitude. The samples comprised of 115 boys studying in 10th class in the age range of 15-17 years from Bengali medium higher secondary school. Scientific knowledge and aptitude test and non language preference record (CNPR) were used for data collection. The results revealed that considering the

score in scientific scale in CNPR along with the scientific aptitude score the prediction of the achievement in science can be significantly improved.

Schneider *et al.* (1989) studied on 576 middle-class children from 3rd, 5th and 7th graders from rural and urban schools. Tools used were a-13 item questionnaire to assess children's knowledge about soccer and verbal aptitude component of a German cognitive ability test filler. The results revealed that performance and text comprehension of groups that were equivalent on domain-specific knowledge but differed in overall aptitude. To investigate whether prior knowledge about a particular domain or overall aptitude level was more important when the task was to acquire and use new information in the domain of interest. The levels of knowledge and of overall aptitude were varied in a factorial design. Neither study detected significant differences between high aptitude and low aptitude experts, regardless of their ages. Low aptitude expert outperformed high aptitude novices on all memory and comprehension measures. Thus results indicated that domain specific knowledge can compensate for low overall aptitude on domain related cognitive tasks.

Pillai (1990) conducted study on the sample of 800 students studying in standard IX of 20 secondary schools in Kerala. Achievement test in biology and science aptitude test were used for data collection. The F value for factor science aptitude is significant at 0.01 level indicating that the pupils of three different levels of science aptitude performed differently in biology achievement test. Similarly for factor attitude towards science also the F value was significant. The study reveals that biology achievement of secondary pupils may differ according to the differences in science aptitude or attitude towards science as the present study showed no interaction effect of science aptitude and attitude towards science. It may be possible that these two variables are contributing independently on biology achievement.

In the same year Swanson (1990) examined study on children of elementary schools. Based on comprehension test of basic skills a sample of 25 high aptitude and 25 low aptitude children were selected for the study. A modified questionnaire was used to assess meta cognition in the general domain of problem solving. The important findings were that high meta cognitive individuals outperformed lower meta cognitive individuals problem solving regardless of their overall aptitude test. In fact high meta

cognitive knowledge/low aptitude children performed significantly better than low meta cognitive knowledge children with higher overall aptitude scores.

Tukiainen and Monkkonen (2002) explored study on programming aptitude testing as a prediction of learning to program. The sample comprised of 33 students of the business information degree programme at North Karelia Polytechnic. Results of scholastic aptitude tests such as logical aptitude (LOG), verbal aptitude (VERB), learning aptitude (LEARN) and results of the programming aptitude test and results of the final exam of students were used in this study. The results revealed that there were no significant correlations between the grades from scholastic aptitude and the grades from the final exams. Neither were there any significant correlations between the programming aptitude test and the mathematics grade, the finish language grade and the attributes in the scholastic aptitude test.

Sujata (2005) designed a study to assess influence of aptitude and personality profile on academic achievement of undergraduate students of UAS, Dharwad. The population for the study comprised of undergraduate students studying in I, II, III and IV years of agriculture, marketing and home science degree programme in the University of Agricultural Sciences, Dharwad. Through stratified random sampling method 160 students were selected. The aptitude scale and 16 personality factors questionnaire were used for data collection. The results revealed that verbal reasoning, numerical ability, abstract reasoning and space relations significantly influenced academic achievement of students. Most of the personality factors had a significant influence on aptitude of the students. Majority of students were in the lower range of all seven areas of aptitude.

Mankar and Chavan (2013) in their study on differential aptitude testing of youth. Through random sampling method selected 120 students enrolled in Shri Shivaji college, Akola as a sample. Differential aptitude test was administered to assess aptitude of students. The findings revealed that, few personal characteristics shown a strong contribution in some aptitude areas where as the other characteristics failed to established correlation with some aptitude areas. Therefore it can be implied that there is a strong correlation of personal characteristics and aptitude of students. Faculty wise

correlation seen very significant with verbal reasoning (0.54), numerical ability (0.40) & speed and accuracy (0.46) respectively.

2.4.1 Numerical Ability

Agarwal (1977) conducted study on purposive sample of 1073 boys and 354 girls drawn from 23 institutions representing all the educational regions of Uttar Pradesh. Verbal group test of intelligence, revised minnesota paper form board, reasoning test, science information test, science vocabulary test and numerical ability test were used for data collection. The study concludes that, the battery is effective and can safely be used for predicting success in science courses. The battery can be employed for the relation of students for science courses in Class XI those, who desire to opt for mathematics in class XI can be screened with the help of the battery of tests.

Baskaran (1991) explored study on achievement motivation, attitude towards problem-solving and achievement in mathematics of standard X students in Devakotal educational district. The researcher prepared the tool with three parts in it having achievement-motivation inventory test as the first part, attitude scale as the second part and achievement test in mathematics at standard X level as the final part. The results revealed that, there was a significant relationship between achievement-motivation and achievement in mathematics and attitude towards problem solving. There was a positive relationship between the attitude towards problem solving and achievement in mathematics. Urban and rural students did not differ in their achievement-motivation, and attitude towards mathematics.

Dzurilla *et al.* (1998) worked out on age and gender difference in problem solving ability. The sample consisted of 904 undergraduate college students. Social worker problem solving inventory was used to assess the problem solving ability. The result of study revealed that problem solving ability increase as age increases. As the age of child increases their mathematical ability also increase they become able to solve problem in a different way due to development of formal operational mental process.

Bassey *et al.* (2007) in his study aimed to know, gender difference and mathematics achievement of rural senior secondary students. The sample of the study included 2000 students out of which 1000 were male and 1000 were female. Multiple

choice mathematics achievement test used to assess the mathematical ability of children. The result revealed that there was gender difference in mathematical problem solving ability of children, it was due to difference in nurturing practices and environment provision provided by their parent to children.

Kolawole (2007) explored study to examine the gender issues and academic performance of senior secondary school students in mathematics computation task in Nigeria. The sample of the study included 500 students. Self structured questionnaire developed by researcher included fifty multiple choice questions with five options was used to assess the mathematical solving ability of children's. The result indicated that boys performed significantly better than girls in mathematics computation task. Girls in school performed better than their counterparts in mathematics computation task.

Nagraju (2006) conducted study on mathematics problems of class X residential and non-residential school students in relation to certain demographical variables. Checklist of problems faced by the students with regard to the subject and personal data sheet were used for data collection. The findings revealed that, there is a significant difference between residential and non residential school students in mathematics problems. The residential school students whose monthly family income is up to Rs. 2000 have the highest mean score on the problems of mathematics. The residential girl students have the highest mean score on mathematical problems. The residential school students from the background community have the highest mean score in mathematical problems. The distribution of mathematics achievement score of the residential and non-residential school students is very near to normal distribution.

Tella (2007) designed study to know the impact of motivation on student's academic achievement and learning outcomes in mathematics among secondary school students in Nigeria. The study included 450 high school children out of which 260 were male and 190 were female. Questionnaire developed by researcher used to assess the mathematical ability of children. The result of study showed that boys performed significantly better than girls in mathematical task.

Tuohimaa *et al.* (2008) carried out a study on the association between mathematical word problems and reading comprehension. The sample of the study included 225 children out of which 107 were girls and 118 were boys. Reading test and

word problem test was used to assess the problem solving ability of children. The result of the study showed that maternal education and paternal education level had direct impact on children mathematical problem solving skills.

Kirtika and Duhan (2009) analysed the multiple intelligence of slow learner young adolescents. Hundred children in the age groups of 12-41 years having IQ 76-89 were taken from the selected schools and were assessed for multiple intelligence. Results revealed that more than 60 per cent of young adolescents had below average intelligence in most of the aspects of multiple intelligence except in musical naturalistic and mathematical intelligence. Above 75 per cent of the adolescents were in below average category in interpersonal, linguistic and existential intelligences and only nearby 20 per cent respondents performed average on these aspects.

Uslu and Girgin (2010) worked out on the effects of residential conditions on the problem solving styleA of university students. The sample of the study included 890 students out of which 452 were females and 439 were males. Mathematical solving inventory is used to assess the mathematics problem solving ability of children. The result revealed that as the student grows older and move to higher class their mathematics solving ability also increase.

Lyons *et al.* (2011) conducted study on, numerical ordering ability mediates the relation between number-sense and arithmetic competence. The sample comprised of 54 university students. Modules used were organized into three. Module 1 included numeral-ordering, letter ordering, dot-comparison and numeral-comparison tasks (task-order was randomized across subjects). Module 2 comprised numeral-recognition (presented first) and 4 mental-arithmetic tasks (presentation order randomized across subjects). Order of modules 1 and 2 was counterbalanced. Module 3 contained the working-memory task and was completed at the end. The findings revealed that better performance on the numeral-ordering task was significantly correlated with better mental-arithmetic performance. Crucially, this relation remained significant even when controlling for ANS acuity, and performance on the numeral-comparison, letter-ordering, working-memory and numeral-recognition tasks.

Brand (2011) conducted study on problem solving ability in high school students: strategies and self-regulated learning. The sample of the study included 80

students. The survey schedule contained two sections of general information regarding the actual problem solving and meta cognitive ability. The result of the study showed that there was influence of mother's education on children's mathematical solving ability but father educational level didn't had influence on the children's mathematical ability.

Omolade *et al.* (2011) in his article entitled reflective effects of parent's occupation, qualification and academic motivation of parents on student's achievement in senior secondary school mathematics in Ogun state. The sample of the study included 1400 students. Student mathematics achievement test used to assess the numerical ability of children. General information questionnaire used to collect the information regarding, parents qualification, parents occupation, academic motivation. Result of the study revealed that parent's occupation has significant effect on numerical ability of children.

Castillo *et al.* (2011) conducted study on association between parental educational/occupational levels and cognitive performance in Spanish adolescents. The sample for the study included 2162 adolescents out of which 1016 were male and 1146 were female. Self structure questionnaire developed by researcher used to know the parental occupation and educational level of parents and aptitude test used to assess the cognitive performance of children. Result of the study showed that parents occupational level significantly influence the numerical ability of children.

Fatoke *et al.* (2013) studied the effects of problem-solving instructional strategy and numerical ability on students' learning outcomes. A pre-test, post-test, control group and quasi experimental design was adopted for the study. The sample comprised of 210 chemistry students which includes 109 males and 101 females selected from six schools of Ekiti state, Nigeria. The experiment was carried out on four groups of students. The chemistry achievement test and numerical ability test was administered on each of the four groups. Students' in experimental groups 1, 2 and 3 were exposed to treatment (problem-solving approach) while the control group was taught using the conventional lecture method. The findings revealed that problem-solving instructional strategy as well as students' numerical ability improves performance in chemistry.

Also, male and female students' of high and low ability levels do not differ in performance in chemistry at group levels. Students with high numerical ability performed better than their low numerical ability counterparts across the four groups in chemistry and also showed convincingly that the problem- solving approach proved to be a more effective and reliable method of teaching than the conventional lecture method.

Ayodele (2014) investigated the extent to which teacher-instructional time, student-engaged time and student numerical ability can predict achievement in senior secondary school chemistry. Through random sampling method 90 senior secondary school students were drawn from six senior secondary schools. Numerical ability test, chemistry achievement test and stalling's model of time-on-task were the instruments used to collect data for the study. The result showed that teacher instructional time, student-engaged time and numerical ability when taken together accounted for 63.9 Percentage of the total variance. Also, student numerical ability and student engaged time contributed significantly to the prediction. Hence, it was concluded that it is not the length of instructional time that results in learning, but rather, the time the students themselves are engaged in learning activities.

2.4.2 Language usage

Kanak (2008) explored a study on language creativity of central and state board school students. The sample consist 123 students (62 males & 61 females) of class X of eight English medium schools of Bhilai city. Language creativity test was used for data collection. It has been found that there is no significant difference in language creativity of students studying in C.B.S.E. and C.G. Board. It has been found that the type of school environment has no effect on the language creativity.

Chand *et al.* (2009) studied to determine socio-demographic correlation of language achievement. The sample comprised of 861 sixth grade students selected from 34 schools spread over four district's of Himachal Pradesh. Self structured and standardised Personal data sheet and language achievement test were used to collect the relevant data. The result showed that paternal and maternal education and occupation, family income and family support in educational matter plays a facilitative role in

language achievement of secondary school students. The non-existent gender and cast differentials in language achievement points towards equality in language achievement, though moderate level. Urban conditions are more conducive in language achievement of elementary students.

Mankar and Chavan (2013) revealed that, fathers education ($r=0.25$) and mothers education ($r=0.21$) established a reasonable correlation with language sentence ability of their children.

2.4.3 Space Relations

Kali and Orion (1996) assessed spatial abilities of high-school students in the perception of geologic structures. The sample consisted of 114 students among them 44 males and 70 females who were randomly selected out of eight 10th-grade (age 16) classes, in a comprehensive Israeli high school. A geologic spatial ability test (GeoSAT) was developed and used for the current study. An analysis of students' incorrect answers revealed two types of answers: non penetrative answers, which were based on external exposures of the structure; and penetrative answers, which indicated attempts at representing internal properties of the structure. Students who tended to give penetrative incorrect answers performed significantly higher than students who tended to give non penetrative incorrect answers. The reasoning of students for these types of answers, as determined by interviews, supported the initial assumption that these answers were given by students with different levels of ability mentally to penetrate the image of a structure, which was named visual penetration ability (VPA). The interview findings indicated that the VPA is one of two complementary factors needed to solve the problems of GeoSAT; the other factor is the ability to perceive the spatial configuration of the structure. The performance of males was significantly higher than that of females, suggesting that males have a higher VPA than females.

2.5 Factors influencing aptitude

2.5.1 Gender

Gallagher and Lisi (1994) conducted study on participants who were junior and seniors from one public and three private high schools in central New Jersey. The

sample consisted of 25 male and 22 female students who scored at or above 670 on recent scientific aptitude test- mathematics. The problem set which consisted of 27 items from 5 different forms of the scientific aptitude test- mathematics was used for data collection. The findings revealed that gender differences on scientific aptitude test- mathematics problems among high ability students in which female students outperformed male students on conventional problems and male students outperformed female students on unconventional problems.

Sujata (2005) designed to study influence of aptitude and personality profile on academic achievement of undergraduate students of UAS, Dharwad. The population for the study comprised of undergraduate students studying in I, II, III and IV years of agriculture, marketing and home science degree programme in the University of Agricultural Sciences, Dharwad. Through stratified random sampling method 160 students were selected. The aptitude scale and 16 personality factors questionnaire were used for data collection. The results revealed that majority of students were in the lower range of all seven areas of aptitude. Home Science students were significantly higher in verbal reasoning and mechanical reasoning, while girl students of agriculture were significantly higher in numerical ability, abstract reasoning, clerical speed and accuracy and language. Young students were more enthusiastic and better in numerical ability than older students, while older students were better in clerical speed and accuracy. Later borns were more mature than first borns. Students from small families were brighter than large families. Students of nuclear than joint families were more mature and significantly better in space relation.

Olatoye and Aderogba (2011) explored to study on performance of senior secondary school science students in aptitude test: the role of student verbal and numerical abilities. Through random sampling technique 200 students comprising of 100 male and 100 female selected from the Ijebu area of Ogun state, Nigeria. The average age of students is 16.5 years. The instruments used were developed by the researchers they are numerical ability test, verbal ability test and general aptitude test. The results revealed that, numerical and verbal abilities combined together to account for 38.8% of the total variance in student performance in the aptitude test. The

percentage is significant. There was no significant difference between male and female students' performance in verbal ability, numerical ability and general aptitude tests.

Yeli and Dafedar (2013) examined learning achievement in science of secondary school students in relation to their scholastic aptitude. Through stratified random sampling technique 800 students studying in 9th standard were selected. Achievement test in science and scientific aptitude test used to assess the aptitude of students. The result showed that the secondary school students with high scholastic aptitude had higher learning achievement scores. The urban secondary school students had significantly higher scholastic aptitude scores as compared to rural students. The English medium secondary school students had significant higher scholastic aptitude scores as compared to Kannada medium students. The boy and girl students of secondary schools of Karnataka have similar scholastic aptitude scores. The students of unaided secondary schools of Karnataka have higher scholastic aptitude scores as compared to students of aided and government secondary schools of Karnataka.

2.6 Vocational interest among children

Pradhan (2002) in his study assessed vocational aspiration of 699 students studying in first year of arts, commerce and science stream. Vocational classificatory schedule was used to assess vocational aspirations of students. The results revealed that factors which affect significantly the vocational aspirations are economic status, parent's educational qualification, parent's occupation, caste and gender. While residence of (urban/rural) students does not affect the vocational aspirations of students.

Dhillon and Kaur (2005) examined career maturity of 500 high school students studying in public and government schools and the results revealed that students of public schools possess a higher career maturity attitude and vocational choice competence than government school students. It also indicated that the environment of the schools plays a significant role in the development of vocational choice.

Azubuikwe (2011) explored study on influential factors affecting the attitude of students towards vocational/technical subjects in secondary schools in south eastern Nigeria. The sample comprised of 100 students offering vocational subjects in senior

secondary schools in Abia state were selected. Structured questionnaires were used for the data collection. Findings revealed that, parent socio-economic status could make student develop a negative attitude towards the study of vocational subjects. It was observed that those children the parents are educated would not want to study vocational subjects. Gender was one of the factors that influence the study of vocational subjects. Even when a boy would want to study vocational subjects like agriculture, arts, he would still not want to study home economics. Other factors that influence the attitude of subjects towards the study of vocational subjects are interest, shortage of teachers and instructions, absence/shortage of guidance and counsellors in secondary schools. Since vocational education is the development of skills, knowledge, abilities and behaviour necessary for entry into or advancement in a specific occupation, students should be properly integrated to acquire the basic knowledge of vocational/technical subjects.

Otta and Williams (2012) assessed self concept and vocational interest among secondary school adolescents. Through purposive random sampling, 799 students were selected from Ohafia education zone of Abia state. Vocational interest inventory was used to assess the vocational interest of adolescents. The results of study revealed that, adolescents with high vocational interest turned towards scientific, literacy, reformatory, computational and social worker services as interest areas, where as low vocational interest adolescents showed interest towards outdoor activities –mechanical, musical and artistic areas as vocational interest.

Desetty *et al.* (2012) investigated vocational interest of urban adolescents and their selected personal background variables. The sample comprised of 300 students studying in x, xi and xii who were in the age range of 16-18 years were selected from schools and colleges in Marathwada region of Maharashtra state. Vocational interest record was used to assess the vocational interest of students. The findings showed that, irrespective of their personal background gender and ordinal position, majority of urban adolescents were assessed to have low level interest in the perspective related to literacy (73%), accountancy (80%), artisans and technician (86%), agriculture (78%),

reformatory (73%), social worker (80%) and consumer services and production (87%) vocational areas followed by average and high level interests on the same areas.

2.7 Factors influencing vocational interest

2.7.1 Gender

Thompson *et al.* (2004) worked out on a large cross-sectional sample of respondents who were examined for differences in the realistic, investigative, artistic, social worker, enterprising and conventional themes based on age and gender. The research version of the strong interest inventory assessment was administered using internet administrations to over 25,000 male and female respondents. The ratio of females to males in the total data collection was about two to one. The results revealed that, there were gender differences for all of the realistic, investigative, artistic, social worker, enterprising and conventional themes. Not surprisingly, these differences were consistent with past research, with males having slightly higher means on the realistic, investigative, enterprising, and conventional themes. Female respondents reported higher levels of interest on the artistic and social worker themes. Across the entire age range, the size of these differences was generally small, with the largest and most consistent difference occurring for the realistic theme.

Nandwana and Asawa (2007) conducted study on vocational interest of high and low creative adolescents. The sample comprised of 240 adolescents, out of which 120 were boys and 120 were girls in the age range of 14-18 years from Udaipur city, Rajasthan. The study concluded that both high creative boys and girls had more focussed vocational interest as compared to their low counterparts. They were more expressive and self actualized.

Edwards and Quinter (2011) investigated influencing factors for students vocational choices. The sample consisted of 332 students who were selected from four secondary school students in Kisumu municipality, Kenya. Structured questionnaire and interview schedules were used for data collection. The findings revealed that availability of advancement opportunities and learning experiences are the most influential factors affecting vocational choices among students. While males reported learning experiences and career flexibility as the most influential factors, females

however reported availability of advancement opportunity and opportunity to apply skills as the most influential factors. However, no variance was reported for persons influencing career choice by gender.

Onder (2012) aimed to study extend research distinguishing affective interest from enjoyment to the context of vocational preferences. Also to determine whether incorporating affective interest items into an enjoyment-based vocational interest measure would improve its criterion-related validity for academic major choice and satisfaction. The sample comprised of 423 students (282 females and 141 males) with an average age of 18.98 years university undergraduates. Students completed online survey items rating vocational activities on various dimensions, including enjoyment and interest, and indicated their academic majors and major satisfaction. The results showed that regarding the discriminant validity of enjoyment and interest in vocational activities were mixed. Affective interest did not have incremental criterion-related validity for academic major choice and satisfaction. These findings and the study's limitations suggest the need for further research on the potential role of affective interest in vocational interest measurement.

Desetty *et al.* (2012) revealed that, there was significant difference between boys and girls in choosing vocational areas. Significantly more number of girls was found to have high interest in jobs related to administration area and low level interest in social worker and artisans and technician areas. Whereas, higher percentage of boys had average level of interest in scientific area and low interest in consumer services and production areas.

Otta and Williams (2012) revealed that there was no significant difference between the male and female in their vocational interest.

Yadav and Yadav (2012) conducted a study on a comparative study of educational and vocational interests of boys and girls of IX class in 'Gurukul'. Through random sampling method 100 boys and girls were selected from IX Class in the age range of 15+ years. Educational interest record and vocational interest record were used for data collection. The results revealed that significant difference has been established in educational & vocational interests of boys and girls. On comparing mean, both the sexes are having educational interests record maximum in fine arts and minimum in

agriculture where as in vocational interest record maximum in administration and minimum in artisans and technician fields.

Begum (2013) examined to know the vocational interests of secondary school students in relation to their achievement motivation. A sample of 50 boys and 50 girls of secondary schools were selected for the study. Achievement motivation test and vocational interest record were used to collect the data. The findings revealed that there was no significant difference in the achievement motivation between male and female secondary school students but there was significant difference in the vocational interests of male and female secondary school students. There was significant relationship between achievement motivation and vocational interests of secondary school students.

Gautam *et al.* (2013) explored study on gender dimensions of vocational interest amongst school children in tribal areas: A study of Kinnaur district of Himachal Pradesh. Through random sampling method 100 students studying in 10th standard were selected from Kinnaur district of Himachal Pradesh. Vocational interest record was used to assess vocational interest of children. The results showed significant for the vocational interest of tribal boys and girls for agriculture, administration and consumer services and production activities.

Baruah (2013) conducted study to assess the vocational interest between boys and girls of 10th grade students. The study comprised of 50 out of which 25 boys and 25 girls were selected from Assam (India). Vocational interest record was used to assess vocational interest of students. The results revealed that, students choose vocational areas as per their interest. It was also found that, in many cases interest between boys and girls are similar. Both boys and girls shown above average interest in administration areas. Boys shown average interest in administration, accountancy, artistic and social worker area. Whereas girls in administration, artistic and agriculture. Boys shown least interest in consumer services and production and girls in literacy areas. The significant difference found in accountancy and consumer services and production interest of boys and girls. In remaining areas like literacy, scientific, administration, artisans and technician, artistic, agriculture, reformatory and social worker no significant difference found between boys and girls.

Mattoo (2013) explored study on career choices of secondary students with special reference to gender, type of stream and parental education. The sample comprised of 200 students out of which 100 boys and 100 girls were randomly selected from 12 secondary schools of district Srinagar within the age range of 16 plus. Results revealed that, the order of their vocational choice in preferential sequence in male subjects is found to be medical (20%), scientific (19%), technical (13%), sports (13%), literary (8%), outdoor (8%), crafts (7%), house hold (5%), agriculture (4%) and fine arts (3%). However, in case of females the order of vocational preferences is reflected as, medical (23%), scientific (15%), sports (11%), literary (10%), technical (9%), crafts (8%), house hold (8), fine arts (7%), outdoor (6%) and agriculture (3%). The medical choice seems to be dominant in both the genders followed by scientific choice. Least preference seems towards fine arts by male subjects and agriculture by females. Thus boys are inclined towards technical ($M=32.22$) and outdoor interests ($M = 33.23$) than girls. However, girls are reported to be higher in fine arts ($M= 26.17$), crafts ($M=29.31$), sports ($M= 24.68$) and consumer servicers and production interest ($M= 19.56$) areas. Gender differences could not be established between boys and girls on literary, scientific, medical, and agriculture interests. It can be inferred that both the groups of students have inclination towards these areas to an equal extend.

Singh (2014) studied to know the vocational interest of high school students. Through random sampling method 100 students of 9th and 10th class were selected from Jawahar Navodaya Vidyalaya, Devrala, distt. Bhiwani, Haryana. Vocational interest record was used to assess the vocational interest of students. The results revealed that mean score of the girls was more than the mean score of the boys. The girls were slightly more interested in literary, accountancy, artisans and technician, artistic, social worker and consumer servicers and production fields. Whereas boys were interested in vocations such as scientific, administration, agriculture and Reformative fields.

Monika *et al.* (2014) worked out on a study of vocational interest of male and female sports students of university. The sample comprised of 50 students of department of physical education of Chaudhary Devi Lal University, Sirsa, out of which 25 were boys and 25 were girls in the age range of 20-25 years. Vocational interest record used to assess the vocational interest of students. The findings revealed that, the students of department of physical education differ significantly in inter-vocational

interests. These findings showed that with the spread of educational opportunities and the explosion of knowledge almost all the students are aware of the present development in the field of physical education. This awareness has helped them in bringing the gap among various students with regard to the vocational choices. The female students have poor vocational interests; the cause might be such that the female students are not equally exposed to the educational opportunities like male gain.

Kentli (2014) explored the fifth grade elementary school student's vocational aspiration and the factors affecting it. The sample consisted of 115 students (48 boys and 57 girls) who were selected from 20 elementary public schools. Structured face-to-face interviews were conducted. The findings showed that engineering, medical doctor and school teachers were the most frequently mentioned three vocations to which students aspired. Boys were found to aspire to traditionally-masculine occupations; girls aspired to traditionally-female occupations. On the other hand, vocational guidance activities were the least influential factor, which was not a surprise given that approximately 90% of the students indicated absence of vocational guidance activities.

Lal (2014) in his article entitled career maturity in relation to level of aspiration in adolescents. The study included total 120 students out of which 60 boys and 60 girls were selected from rural and urban areas. Vocational attitude maturity scale and level of aspiration measure were used to assess the aspiration of students. The results revealed that 15 per cent of boys have high vocational aspiration, high vocational understanding and independence in vocational choices they are decisive and have sense of altruism. They do not believe in chance factor in vocational choices. Whereas 16.67 per cent of boys have low vocational choice, lack of vocational understanding, lack of independence and are influenced by money in job choices. They indicated passivity and job preference changes frequently. With respect to girls 8.33 per cent girls had high vocational aspirations, high vocational understanding and independence in vocational choices; they are decisive, believe in altruism and are not influenced by money in job choice. 18.34 per cent of girls had low vocational aspiration, indecisiveness in vocation choice, lack of vocational understanding, lack of independence, they show passivity and are influenced by money in job choice.

2.7.2 Age

Thompson *et al.* (2004) conducted study on exploring age and gender differences in vocational interests. Large cross-sectional samples of 25,000 male and female respondents in the age range of 13 to 59 years were selected. The research version of the strong interest inventory assessment was administered using internet administrations. The results revealed that, effects of age and age by gender interactions were significant, but very small. A linear trend across age categories with level of interest generally increasing with age was found. Specifically the trend analyses for all of the interest dimensions show that there is general linear trend for all of the realistic, investigative, artistic, social worker, enterprising and conventional dimensions, with interest in general increasing with age, across both genders.

2.7.3 Parental Education

Mattoo (2013) revealed that parental education could not make any significant difference in some of the career choices like, fine arts, literary, scientific, medical, outdoor, sports and consumer services and production. However, agriculture, and technical choices are seen to be higher among the children of professionals.

Kentli (2014) findings showed that parents seemed to be the most influential factor on students' vocational aspiration, followed by the favorite academic subject and social worker environment.

2.7.4 Socio economic status

Edoh and Alutu (2011) in their study examined the effect of socio-economic status on vocation choices. The study assessed super's theory on occupation and career and the series of proposition as well as Holland's personality and career pattern. From total of 10 schools through random sampling 100 senior secondary students selected from Edo State. Structured questionnaire was used to assess the value they placed on education as regards their vocations and aspirations. The results showed there was significant difference in educational values and aspirations of students from different socio-economic status groups. Socio-economic status has much influence on student's value of education and vocational preferences. The students from high and middle

socio-economic status groups preferred to continue and aspire higher for high yielding jobs than those of the low socio-economic status who do not wish to continue their education due to ignorance and finance.

Jamabo (2014) investigated influence of parental socio-economic variables on adolescents' vocational aspiration. A stratified random sampling was used to select four schools from Nigeria and a sample of two hundred students (100 male, 100 female) were selected. Vocational interest inventory was used for data collection. The findings revealed that parental socioeconomic status has strong influence on adolescents' vocational aspiration. Adolescents' vocational aspiration is not necessarily influenced by their parental level of education. Adolescents' are well disposed to their parents' vocation.

Zeshan *et al.* (2014) explored a study on vocational interest of adolescents in relation to the socio-economic status. The sample of 200 school students studying in 12th class (100 boys and 100 girls) from Sangrur district were selected. Vocational interest record and socio economic status scale were used for data collection. The findings revealed that no significant difference between the vocational interest and socio economic status of male and female, rural and urban adolescents. Among rural and urban adolescents indicate the significant difference on the dimensions of administrations, accountancy, artisans and technician, artistic and agriculture areas.

2.8 Relation between study habits, aptitude and vocational interest of children

Joseph (2012) explored a study on psycho-academic variables and mathematics achievement of 9th grade students in Nigeria. Through random sampling method, 853 students studying in 9th standard (407 males and 446 females) were selected from 20 secondary schools in Akwa Ibom state, Nigeria. The 40-item mathematics standardised test and a psycho-academic questionnaire constructed with five variables were used for data collection. The results revealed that students' study habits and attitude toward school were significant in contributing to numerical ability of students. The other three variables, test anxiety, test wiseness and attitude towards numerical ability were not statistically significant at the individual level.

Choudhury and Das (2012) investigated study on influence of geometrical ability and study habit on the achievement in mathematics at secondary stage. Through random sampling method 250 boys and 250 girls studying in 9th standard were selected from secondary school of South Kamrup district, Assam. Mathematics achievement test, geometrical ability questionnaire and study habit inventory were used for data collection. The results revealed that, relationship among the achievement in mathematics was most closely related with geometrical ability and study habit. Analysis of data indicated that there was no significant difference on the achievement in mathematics of the students in case of medium and sex for different sub categories. Boys have better achievement in mathematics than girls. Boys are high on geometrical ability compared with girls. High geometrical ability group have the better achievement in mathematics than lower and high group of pupils. Regular study habit group have the better achievement in mathematics than irregular and moderately regular group of pupils. The regression equation thus obtained shows that geometrical ability and study habit contributes 20.33 Percentage and 35.91 Percentage respectively to the achievement in mathematics.

Dabir and Pandit (1998) conducted a study on vocational aspirations and aptitudes among the school going youth. The sample comprised of 1080 students studying in 9th, 10th, and 11th selected from schools in and around Nagpur city. Tools used were occupational aspiration scale and differential aptitude test. The results of study did not show that aptitudes have positive association with vocational aspirations of the school going youth.

3. METHODOLOGY

The study on “Study habits, aptitude and vocational interest of residential and non residential school children” was undertaken during the year 2014-2015 in Dharwad district of Karnataka state. The material and methods used to carry out the study are presented under the following subheadings.

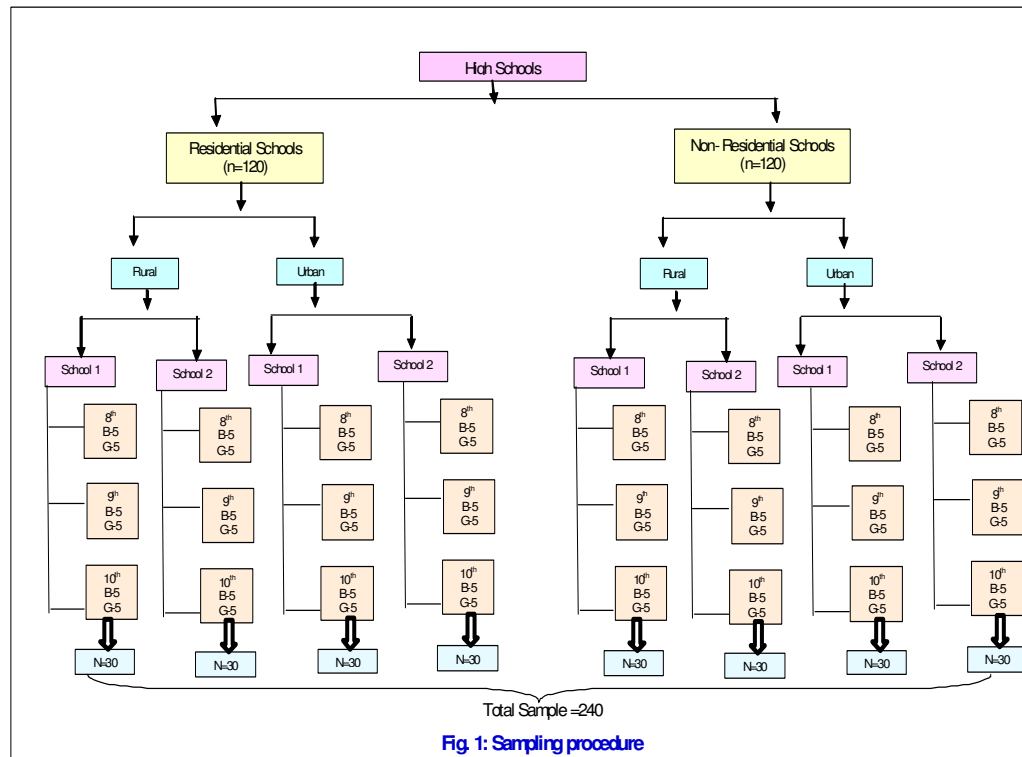
- 3.1 Research design
- 3.2 Population and sample selection
- 3.3 Variables considered for the study
- 3.4 Tools used for data collection
- 3.5 Data collection procedure
- 3.6 Statistical analysis
- 3.7 Operational Definitions

3.1 Research Design

The study aimed to know the study habits, aptitude and vocational interest of children from residential and non residential high schools and also the factors that influence study habits, aptitude and vocational interest of children through correlation design. Further, differential design was used to compare the study habits, aptitude and vocational interest of students from residential and non residential high schools.

3.2 Population and Sample selection

The population for the study comprised of children studying in 8th, 9th and 10th standard from residential and non residential government schools situated in Dharwad taluk of Karnataka state (Fig. 1). At the time of survey there were 17 government high schools in Dharwad taluk, among them, 5 were residential and 12 were non residential schools. The government schools were Kannada medium, co-educational and single sex schools situated within 15-20 km from Dharwad city. It was decided to select fifty per



cent of the schools on the basis of popularity and strength of students attending the school. The criteria considered for the study includes children studying in state syllabus and Kannada language as mother tongue were included in the study. For the present study four residential and four non-residential schools were selected. Two Murarji Desai residential schools were selected from rural area and two government hostels were selected from urban areas. Out of four non-residential schools two were from rural and two were from urban area were selected. From each school 10 children (Both 5-boys and 5-girls) were randomly selected from 8th, 9th and 10th standards. Thus a sample of 30 children from each school totally comprised of 240 children. Out of 240 children 120 were residential and 120 were non-residential children.

3.3 Variables considered for the study

The independent variables selected for the study were child factors (age, gender, ordinal position and standard) and familial factors (family type, parent's education, parent's occupation, family income and socioeconomic status). The dependent variables were study habits, aptitude and vocational interest.

3.4 Tools used for data collection

The tools employed for the study are enumerated below

1. Test of study habits developed by Mathur (2002)
2. Differential aptitude test developed by Bennet *et al.* (1993)
3. Vocational interest record developed by Kulshrestha. (2011)
4. Self structured schedule to collect general information.
5. Socio-economic status scale developed by Aggrawal *et al.* (2005)

3.4.1 Study habit inventory

Test of study habits scale by Mathur (2002) was used to assess the study habits of school children. The scale consists of 60 items. Each right answer was given a score of 'one' and wrong answer 'zero' score. The raw scores are converted in to percentiles

by using standard norms. Thus maximum score of 75 and minimum of 8 could be obtained on this scale. Higher the score better the study habits (Enclosed in Appendix III). The summated score categorised as follows

Category	Score Range
Good	53-75
Satisfactory	31-52
Poor	8-30

3.4.2 Differential aptitude test

The differential aptitude inventory developed by Bennett *et al.* (1993) was used to assess the aptitude of school children (Enclosed in Appendix IV). The tool consists of seven subtests. The details of items and time required for each component is as follows,

Sl. No	Components	What it does/measures	Total Items	Time required
1	Verbal reasoning	This measures general cognitive ability in positions requiring higher order thinking skills.	50	30 minutes
2	Numerical ability	This tests the understanding of numerical relationships and facility in handling numerical concepts.	40	30 minutes
3	Abstract reasoning	This is a nonverbal measure of the ability to perceive relationships in abstract figure patterns.	50	25 minutes
4	Mechanical reasoning	This measures the ability to understand basic mechanical principles of machinery, tools and motion.	68	30 minutes
5	Space relations	This measures the ability to visualize a three-dimensional object from a two-dimensional pattern, and how this object would look if rotated.	40	30 minutes
6	Clerical speed and accuracy Part I Part II	This measures how quickly and accurately you can compare and mark written lists.	100 100	3 minutes 3 minutes
7	Language usage Part I spelling Part II sentences	Language usage measures the ability to detect errors in grammar, punctuation, and capitalization.	100 50	10 minutes 25 minutes

The scoring procedure is described below,

Sl. No	Components	Max. Score	Formula	Hand keys	Notes
1	Verbal reasoning	50	R	Rights only	One mark for each item number
2	Numerical ability	40	R-1/4 W	Rights & Wrongs	One mark for each item number
3	Abstract Reasoning	50	R-1/4 W	Rights & Wrongs	One mark for each item number
4	Mechanical reasoning	68	R-1/2 W	Rights & Wrongs	One mark for each item number
5	Space Relations	100	R-W	Rights & Wrongs	Multiple marks are permitted for each item number
6	Clerical speed and accuracy	100	R	Rights only	One mark for each item number
7	Language usage			Rights & Wrongs	Multiple marks are permitted for each item number
	Part I spelling	100	R-W		
	Part II sentences	95	R-W		

Based on the above procedure the total raw scores are calculated and are converted in to per centiles by using standard age norms for boys and girls separately. Based on per centile scores the aptitude of children were categorized as follows,

Category	Score Range
High	50-99
Low	1-45

For general scholastic aptitude index the sum of scores on verbal reasoning (VR) + on numerical ability (NA) and (VR+NA) gives a composite score which is transferred in to the percentile rank, which gives an index of general scholastic aptitude or index of mental ability.

3.4.3 Vocational interest record

Vocational interest record developed by Kulshrestha (2011) was used with slight modification to assess the vocational interest of school children. The checklist consisted of 10 vocational areas viz., literary, scientific, administration, accountancy, artisans and technician, artistic, agriculture, reformative, social worker and consumer servicers and production. In each of these areas 12 options were given and students have to put tick mark for their area of liking. The maximum possible score is 12 and the minimum is zero (Enclosed in Appendix V). Based on total scores on all the ten different vocational areas, the students are categorized as below;

Category	Score
High	9-12
Average	5-8
Low	0-4

3.4.4 General information

A self structured schedule was used to collect the background information regarding the child's age, gender, ordinal position, standard and family type (Enclosed in Appendix I).

a) Age

The age of the children were categorised as 13, 14 and 15 years.

b) Gender

The children were grouped as boys and girls.

c) Ordinal Position

On the basis of the birth order of the child, they were classified as first born, middle born and last born.

d) Family type

On the basis of family type they were categorized as below:

- i. Nuclear family - Family with only parents and their children.
- ii. Joint family - Family with more than one couple and their children.

3.4.5 Socio-economic status scale

The socio economic status of the family was assessed by using socioeconomic scale developed by Aggarwal *et al* (2005). The scale consists of 22 statements which assess education, occupation, monthly per capita income from all sources, family possessions, number of children, number of earning members in family, education of children, domestic servants in home, possession of agricultural land and non-agricultural land along with animals and social worker status of the family (Enclosed in Appendix II).

a) Education of parents

Education of parents (father or mother) was categorized in to eight categories based on the method prescribed by Aggrawal *et al* (2005) scale as follows:

Category	Score
Illiterate	0
Just illiterate but not schooling	1
<primary but attended school for at least one year	2
Primary pass but <10	3
10th class pass but <Graduation	4
Graduation	5
Post graduation(non-technical incl. Ph.D)	6
Professional qualification with technical degree or diploma (e.g. Doctor, Eng, CA, MBA)	7

b) Occupation of parents

Occupations of parents (father or mother) were classified on the basis of the method prescribed by Aggrawal *et al.* (2005) as follows and was scored accordingly.

Category	Score
Unemployment	0
Self employment with income <5000 (laborer , housewife)	1
Self employed with income >5000(shops, petty business)	2
Service at shops transport ,own cultivation of land	3
Service in private sector or independent business(employing 2- 20 persons)	4
Service in central/state/public undertaking(owner of a company employing>20 person)	5

c) Family income

Income of the family was determined by considering monthly income.Family income was classified on the basis of the method given by Aggrawal *et al.* (2005) scale as follows:

Family income (Rs. per month)	Score
> 50000	7
20000 - 49999	6
10000 - 19999	5
5000 - 9999	4
2500 - 4999	3
1000 - 2499	2
<1000	1

d) Socio economic status

Socio economic status of family was classified in to six categories according to socio economic status scale developed by Aggarwal *et al.* (2005).

Socio economic classification	Score
Upper High	>76
High	61 – 75
Upper middle	46 -60
Lower middle	31 – 45
Poor	16 – 30
Very poor	<15

3.5 Data collection procedure

The permission from the Block Education Officer was taken to carry out the research work in the selected urban and rural area of Dharwad taluk. Prior to data collection permission of the principals/hostel warden was taken from the residential and non residential schools to carry out research work. Further the concerned class teacher was approached and explained about the purpose of the study to collect information from children studying in 8th, 9th and 10th standards.

Children were randomly selected from each class and were shifted from regular class rooms to another separate room provided by the school authorities to establish rapport with subjects. The background information was collected from the children with the help of a structured general information schedule. Then study habit questionnaire and vocational interest record questionnaire was self administered one at a time. The children were instructed to give the responses. About one hour was required for the students to complete the study habit questionnaire and about fifteen minutes was required by each child to complete the vocational interest record questionnaire.

Only for 80 children studying in 10th class the aptitude test was administered as they will be going to select their choice of interest field for higher studies after the completion of SSLC. Out of 80 students, 20 were residential and 20 were non-residential from rural area and 20 were residential and 20 were non-residential from urban area. The class teachers were requested to spare these children for about two and half hours during the morning hours for administering the aptitude tests for about three days. Students were made to sit comfortably and provided the assessment material. The materials were self administered to the students who were selected randomly from 10th standard. The necessary instructions were given to the students before filling the questionnaires. The examples given in the test booklet were duly illustrated. Before starting the test all doubts of students were clarified. In the aptitude test, children has to complete seven tests, so they were administered with four tests during first visit and in second visit another three tests were given. In order to avoid mental fatigue and boredom, with the gap of 10-15 minutes tests were administered in the following order with the given timings.

Aptitude dimensions	Total time allotted
Abstract reasoning	25 minutes
Numerical ability	30 minutes
Clerical speed and accuracy	
Part I	3 minutes
Part II	3 minutes
Verbal reasoning	30 minutes
Mechanical reasoning	30 minutes
Language Usage	
Part I – Spelling	10 minutes
Part II – Sentences	25 minutes
Space relations	30 minutes

It totally took four and half hours to administer aptitude test and one hour fifteen min to administer study habits and vocational interest record. Four days were spent on each selected school to collect information regarding study habits, aptitude and vocational interest of students. It took totally 35 visits to collect the information. The filled questionnaires were collected after checking for complete information.



Plate 1: Researcher collecting the information from the students

3.6 Statistical analysis

The collected data was analyzed by using the following statistical test:

- a. Frequency and Percentage will be calculated to know the level of study habits, aptitude and vocational interest of residential and non residential school children.
- b. 't' test was used to compare between residential and non residential school children's study habits, aptitude and vocational interest of school children with the help of following formula.

$$t' = \frac{|\bar{X}_1 - \bar{X}_2|}{\sqrt{Sp^2 (1/n_1 + 1/n_2)}}$$

Where,

$$Sp^2 = \frac{\{(n_1-1) S_1^2 + (n_2-1) S_2^2\}}{(n_1 + n_2 - 2)}$$

Where, $\bar{X}_1$ = Mean of the first group

$\bar{X}_2$ = Mean of the second group

n_1 = No. of observations in the first group

n_2 = No. of observations in the second group

S_1^2 = Variance of first group

S_2^2 = Variance of second group

Sp^2 = Pooled variance of two groups

- c. Karl Pearson's Product Moment correlation coefficient was used to study the degree of relationship between child, familial characteristics and study habits, aptitude and vocational interest of school children by using the formula.

$$r = \frac{n \sum xy - \sum x \sum y}{\sqrt{\{n \sum x^2 - (\sum x)^2\} \{n \sum y^2 - (\sum y)^2\}}}$$

Where, r = simple correlation coefficient

x = Independent variable

y = Dependent variable

Σx = Sum of 'x' values

Σy = Sum of 'y' values

Σx^2 = Sum of squares of 'x' values

Σy^2 = Sum of squares of 'y' values

Σxy = Sum of product of 'xy' values

n = Number of pairs of observations

- d. Modified Chi-Square: a non parametric test of independence was applied to determine the association between dependent and independent variables, wherever the frequency were less than five using the formula by Lawal and Upton (1984). Test of independence was applied to determine the association between dependent and independent variables using the formula.

$$\text{Modified at } \chi^2 = \left\{ 1 - \frac{1}{n} \left(1 - d^{-\frac{1}{2}} \right) \right\} \times \chi^2_{d,0.05} \quad 5\% \text{ level}$$

Where,

$\chi^2_{d,0.05}$ = table χ^2 value at 'd' degrees of freedom for 5% level of significance.

n = sample size.

- e. One way i.e. 2 factor Analysis of variance (ANOVA) techniques were used to compare the means of group independent variables with the dependent variables.

3.7 Operational definitions

Operational definitions of certain terms frequently used in the study are explained below.

Study habits

Study habit is the pattern of behaviour adopted by students in the pursuit of their studies. It is the degree to which the student engages in regular acts of studying that are characterized by appropriate studying routines. It was measured by using study habits and attitudes scale by Mathur (2002) with 60 items which was administered on school children.

Aptitude test

Aptitude measure the innate or acquired or developed component of competency in knowledge, understanding and attitude of individual. It was assessed by using Bennet *et al.* scale (1993) which includes different dimensions such as verbal reasoning, numerical ability, abstract reasoning, mechanical reasoning, space relations, clerical speed and accuracy, and language usage with varying number of items administered on school children.

Vocational interest

One's own pattern of preferences aptitudes, likes & dislikes, preferred in any manner, wisely or unwisely by self or by another source for a given vocational area of interest. It was measured by using vocational interest record by Kulshrestha (2011) which consists of 120 items.

Residential school children

Children those who studying in state syllabus education system and staying at hostel were considered to be residential school children.

Non-residential school children

The children staying with family members, studying in state syllabus and attending schools for particular period of time were considered to be non-residential school children.

4. RESULTS

The results of the study entitled “Study habits, aptitude and vocational interest of residential and non-residential school children” are presented under the following sub headings.

- 4.1 Characteristics of the sample selected for the study
- 4.2 Percentage distribution of residential and non residential school children by study habits
- 4.3 Factors influencing study habits of residential and non-residential school children.
- 4.4 Aptitude of residential and non-residential school children.
- 4.5 Relation between child and familial characteristics and aptitude of residential and non-residential school children.
- 4.6 Vocational interest of residential and non-residential school children.
- 4.7 Factors influencing vocational interest of residential and non-residential school children.
- 4.8 Relation between child and familial characteristics and vocational interest of residential and non- residential school children.
- 4.9 Inter relationship between study habits, aptitude and vocational interest.

4.1 Characteristics of the sample selected for the study

The Table 1 indicates the characteristics of the sample selected for the study. Among residential school children, 57.5 per cent were in the age group of 14 years followed by 15 years of age (29.2%) and 13 years of age (13.3%). In non-residential school children, 45 per cent were in the age group of 15 years, 37.5 per cent in the age group of 14 years and 17.5 per cent belonged to 13 years of age. Regarding ordinal position, among residential school children 41.7 per cent were first born, 32.5 per cent were middle born and 25.8 per cent were last born. Among non-residential

school children 36.7 per cent were first born and equal Percentage (31.7%) of school children belonged to middle born and last born.

In case of familial characteristics, 50.8 per cent of children belonged to joint family and 49.2 per cent were from nuclear family among residential schools. Whereas, among non-residential school children 60 per cent were belonged to nuclear family and 40 per cent were from joint families. With regard to family size of residential and non-residential school children indicated that, majority of them belonged to medium family size (55% and 45.8%) followed by small family (27.5% and 35%) and large family (17.5% and 19.2%) respectively. With respect to caste, in residential 41.7 per cent children belonged to backward caste followed by scheduled caste (27.5%), scheduled tribes (26.7%) and forward caste (4.2%). Among non-residential, 44.2 per cent children belonged to scheduled tribes, followed by scheduled caste (30%), backward caste (22.5%) and very least Percentage in forward caste (3.3%).

With respect to father's education in case of residential school children, 32.5 per cent of father's were illiterate, followed by education 10th class pass but less than graduation (25%), graduation (21.7%), primary pass but less than 10th class (10%), post graduation (7.5%), less than primary but attended school for at least one year (2.5 %) and only few (0.8 %) had professional qualification with technical degree or diploma. About mother's education, majority of them (33.3%) were illiterate, followed by primary pass but less than 10th class (30.8%), 10th class pass but less than graduation (20.8%), few completed graduation (8.3%), less than primary but attended school for at least one year (5.8%) and only 0.8 per cent were just literate but no schooling.

With regard to father's education in non-residential school children, 32.5 per cent of father's were illiterate followed by primary pass but less than 10th (26.7%), 10th class pass but less than graduation (24.2%), less than primary but attended school for at least one year (14.2%) and graduation (2.5%). None of the father's belonged to just literate but no schooling, post graduation and professional qualification with technical degrees or diplomas of education category. About mother's education, 41.7 per cent had primary pass but less than 10th class, followed by illiterate (27.5%), less than primary but attended school for at least one year (18.3%), 10th class pass but less than graduation (10%) and only 2.5 per cent of mothers were completed their graduation.

With respect to father's occupation among residential school children, 49.2 per cent had service at shop, home, own cultivation followed by services in central/state/public sector (28.3%) and services in private sector/business (8.3%) respectively. Only few 3.3 per cent self employed with income less than five thousand and 2.5 per cent self employed with income more than five thousand. Regarding mother's occupation, 55 per cent were unemployed followed by service at shop, home, own cultivation (34.2%), services in central/state/public sector (5%) and less per cent involve services in private sector/business (3.3%). Least per cent self employed with income less than five thousand (2.5%). None of mother's belonged to self employed with income more than five thousand.

With regard to father's occupation among non-residential school children, 65 per cent had service at shop, home, own cultivation followed by services in private sector/business (10.8%), self employed with income more than five thousand (9.2%), self employed with income less than five thousand (6.7%) unemployment (5.8%) and less per cent involve services in central/state/public (2.5%). About mother's occupation, 50.8 per cent were unemployed, followed by services at shop, home, own cultivation (35%), self employed with income less than five thousand (8.3%), self employed with income more than five thousand (3.3%), services in private sector/business (1.7%) and only 0.8 per cent with services in central/state/public.

Among residential school children regarding family income, 36.7 per cent had an income range between Rs 5000-9999, followed by Rs. 10000-19999 (25%), Rs.2500-4999 (23.3%), Rs.20000-49999 (10%) and Rs.1000-2499 (4.2%). Only 0.8 per cent had income less than Rs. 1000. About non-residential school children, 42.5 per cent had an income range between Rs.2500-4999, followed by Rs. 5000-9999 (38.3%), Rs. 10000-19999 (13.3%) and only 5.8 per cent had income of 1000- 2499. None of them fell under income of Rs, <1000 and >5000. With respect to socio economic status, for residential school children, more than half of them were lower middle class (54.2%), followed by upper middle class (32.5%), high category (9.2%) and upper high category (2.5%). Only 1.7 per cent fell under poor category of socio economic status. None of the family belonged to very poor socio economic status. Among non-residential school children, almost 72.5 per cent were in lower middle category, followed by upper middle

Table 1. Characteristics of the sample selected for the study

N = 240

Factors	Category	Residential	Non-residential	Total
		n (%)	n (%)	n (%)
Child characteristics				
Age (yrs)	13 years	16 (13.3)	21 (17.5)	37 (15.4)
	14 years	69 (57.5)	45 (37.5)	114 (47.5)
	15 years	35 (29.2)	54 (45.0)	89 (37.1)
Ordinal Position	First Born	50 (41.7)	44 (36.7)	94 (39.2)
	Middle Born	39 (32.5)	38 (31.7)	77 (32.1)
	Last Born	31 (25.8)	38 (31.7)	69 (28.8)
Familial characteristics				
Family Type	Nuclear	59 (49.2)	72 (60.0)	131 (54.6)
	Joint	61 (50.8)	48 (40.0)	109 (45.4)
Family Size	Small	33 (27.5)	42 (35.0)	75 (31.2)
	Medium	66 (55.0)	55 (45.8)	121 (50.4)
	Large	21 (17.5)	23 (19.2)	44 (18.3)
Caste	Forward	5 (4.2)	4 (3.3)	9 (3.8)
	Backward	50 (41.7)	27 (22.5)	77 (32.1)
	SC	33 (27.5)	36 (30.0)	69 (28.8)
	ST	32 (26.7)	53 (44.2)	85 (35.4)

Figures in the parenthesis indicate percentage

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Category	Residential		Non-Residential		Total	
	Father	Mother	Father	Mother	Father	Mother
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Parent's Education						
Illiterate	39 (32.5)	40 (33.3)	39 (32.5)	33 (27.5)	78 (32.5)	73 (30.4)
Just literate but no schooling	-	1 (0.8)	-	-	-	1 (0.4)
<Primary but attended school for at least one year	3 (2.5)	7 (5.8)	17 (14.2)	22 (18.3)	20 (8.3)	29 (12.1)
Primary pass but <10 th	12 (10.0)	37 (30.8)	32 (26.7)	50 (41.7)	44 (18.3)	87 (36.2)
10 th class pass but < graduation	30 (25.0)	25 (20.8)	29 (24.2)	12 (10.0)	59 (24.6)	37 (15.4)
Graduation	26 (21.7)	10 (8.3)	3 (2.5)	3 (2.5)	29 (12.1)	13 (5.4)
Post graduation	9 (7.5)	-	-	-	9 (3.8)	-
Professional qualification with technical degrees or diplomas	1 (0.8)	-	-	-	1 (0.4)	-
Parent's Occupation	Father	Mother	Father	Mother	Father	Mother
	Frequency	Frequency	Frequency	Frequency	Frequency	Frequency
Unemployment	10 (8.3)	66 (55.0)	7 (5.8)	61 (50.8)	17 (7.1)	127 (52.9)
self employed with income <5000	4 (3.3)	3 (2.5)	8 (6.7)	10 (8.3)	12 (5.0)	13 (5.4)
Self employed with income >5000	3 (2.5)	-	11 (9.2)	4 (3.3)	14 (5.8)	4 (1.7)
Service at shops, home, own cultivation	59 (49.2)	41 (34.2)	78 (65.0)	42 (35.0)	137 (57.1)	83 (34.6)
Service in private sector/ business	10 (8.3)	4 (3.3)	13 (10.8)	2 (1.7)	23 (9.6)	6 (2.5)
Service in central/ state/public undertaken	34 (28.3)	6 (5.0)	3 (2.5)	1 (0.8)	37 (15.4)	7 (2.9)

Figures in the parenthesis indicate percentage

Contd...

		Residential	Non-Residential	Total
	Category (Rs/-)	n (%)	n (%)	n (%)
Family Income	<1000	1 (0.8)	-	1 (0.4)
	1000-2499	5 (4.2)	7 (5.8)	12 (5.0)
	2500-4999	28 (23.3)	51 (42.5)	79 (32.9)
	5000-9999	44 (36.7)	46 (38.3)	90 (37.5)
	10000-19999	30 (25.0)	16 (13.3)	46 (19.2)
	20000-49999	12 (10.0)	-	12 (5.0)
	>50000	-	-	-
Socio Economic Status	Upper High	3 (2.5)	-	3 (1.2)
	High	11 (9.2)	-	11 (4.6)
	Upper Middle	39 (32.5)	30 (25.0)	69 (28.8)
	Lower Middle	65 (54.2)	87 (72.5)	152 (63.3)
	Poor	2 (1.7)	3 (2.5)	5 (2.1)
	Very Poor	-	-	-

Figures in the parenthesis indicate percentage

category (25%) and poor (2.5%) category. None of the family belonged to very poor, high and upper high socio economic status.

4.2 Percentage distribution of residential and non residential school children by study habits

An examination of Table 2 and Fig. 2 reveals the percentage distribution of residential and non residential school children by study habits. It is clear from the table that, among residential school 68.3 per cent children had good study habits and 31.7 per cent had average. None of the children belonged to poor category of study habits. With regard to non-residential school children, more than half of them had good study habits (55%), followed by average (43.3%) and poor study habits (2%). The comparison of mean scores also revealed that there was significant difference between residential and non-residential school children with regard to study habits (2.68 and 2.53 respectively) and 't' value of 2.31 was found to be significant at 0.05 level.

4.3 Factors influencing study habits of residential and non-residential school children

4.3.1 Study habits of residential and non-residential school children by age

Table 3 and Fig. 3 shows the study habits of residential and non residential school children by age. Among residential school children, majority of children in the age group of 13 years showed good study habits (81.25%) and average (18.75%) respectively. In case of 14 years, 66.67 per cent and 33.33 per cent had good and average study habits respectively. With regard to 15 years, 65.71 per cent showed good and average (34.29%) study habits respectively. None of children in all age group belonged to poor category of study habits. As per mean scores, 15 years children scored higher on study habits (2.81) than 14 and 13 years children (2.67 and 2.66) respectively. However, modified chi-square showed no-significant association (1.43).

With regard to non-residential school children, 13 years of age showed average (52.38%) and good study habits (47.62%). None of children belonged to poor category. Children in the age group of 14 years, 53.33 per cent showed good study habits, followed by average (42.22 %) and poor (4.45%) category of study habits respectively.

Table 2: Percentage distribution of residential and non residential school children by study habits

N=240

Type of School	Study Habits			Mean (S.D)	t- value
	Poor	Average	Good		
Residential	-	38 (31.7)	82 (68.3)	2.68 (0.46)	2.31*
Non Residential	2 (1.7)	52 (43.3)	66 (55.0)	2.53 (0.53)	
Total	2 (0.8)	90 (37.5)	148 (61.7)	2.61 (0.50)	

Figures in the parenthesis indicate percentage, *Significant at 0.05 level

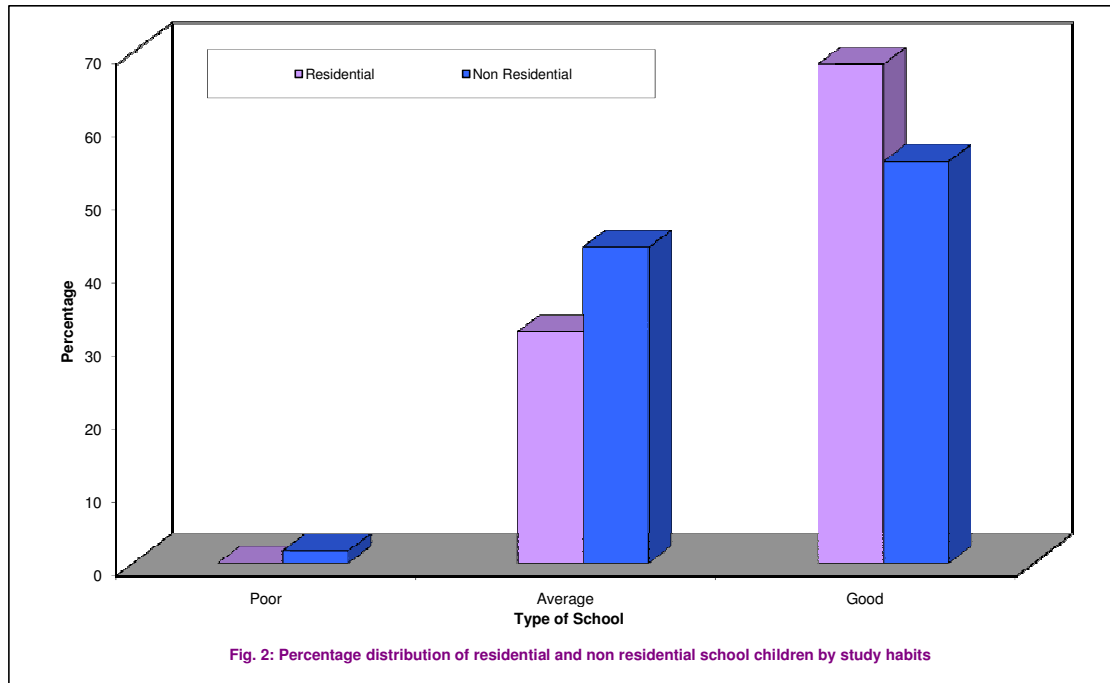
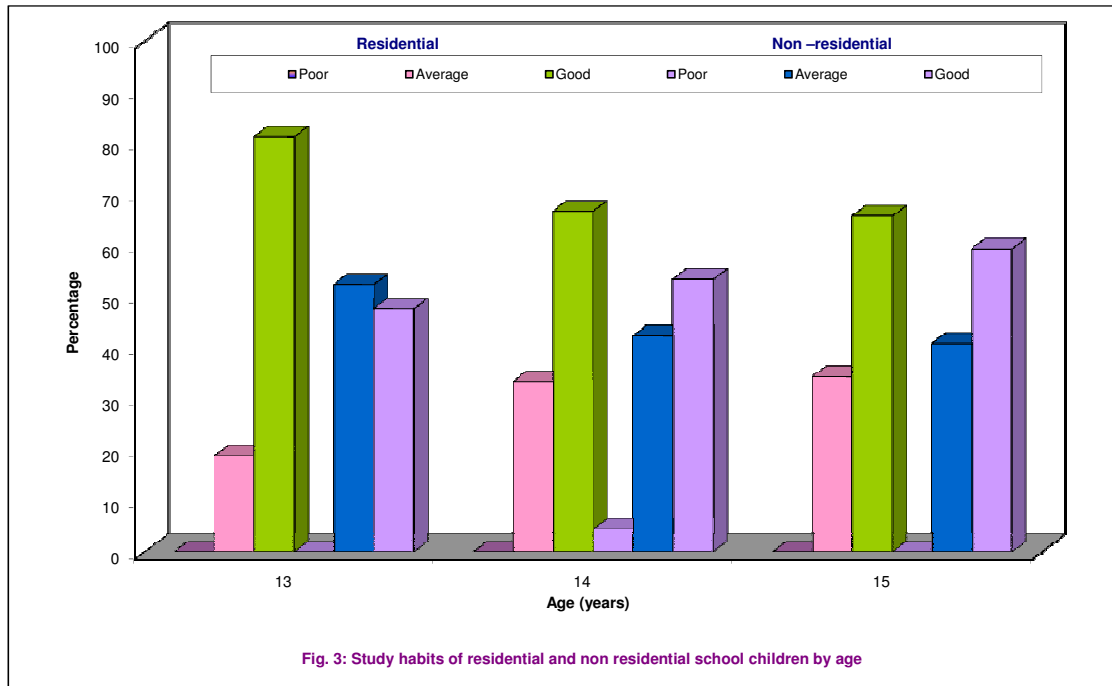


Table 3: Study habits of residential and non residential school children by age

N=240

Age (years)	Residential (n=120)				Mean (S.D)	Non –residential (n=120)				Mean (S.D)
	Poor	Average	Good	Total		Poor	Average	Good	Total	
13	-	3 (18.75)	13 (81.25)	16 (100)	2.66 (0.48)	-	11 (52.38)	10 (47.62)	21 (100)	2.48 (0.51)
14	-	23 (33.33)	46 (66.67)	69 (100)	2.67 (0.47)	2 (4.45)	19 (42.22)	24 (53.33)	45 (100)	2.49 (0.58)
15	-	12 (34.29)	23 (65.71)	35 (100)	2.81 (0.40)	-	22 (40.74)	32 (59.26)	54 (100)	2.59 (0.49)
Modified χ^2	1.43 ^{NS}					4.23 ^{NS}				
F-value	0.95 ^{NS}									
	SEM=0.04									

Figures in the parenthesis indicate percentage, NS-Non Significant



Among 15 years of children, 59.26 per cent showed good study habits and 40.74 per cent had average study habits and none of the children had poor study habits in all age groups. With respect to mean scores, 15 years children scored high on study habits (2.59) compared to 13 and 14 years (2.48 and 2.49) respectively. The modified chi-square showed no-significant association (4.23) between age and study habits. The F value 0.95 showed no significant difference between age and study habits of both residential and non-residential children.

4.3.2 Study habits of residential and non residential school children by gender

An appraisal of Table 4 and Fig. 4 reveals that, 68.33 per cent and 31.67 per cent of boys among residential school showed good and average study habits respectively. Whereas, same trend was observed in girls, 70 per cent and 30 per cent showed good and average study habits. No children fell in the category of poor study habits. The comparison of mean scores indicated that, females scored higher (2.70) on study habits than male children (2.68). However there was no significant association between age and study habits.

With respect to non-residential school children, 50 per cent of boys showed average study habits, followed by good (48.33%). Only few were had poor (1.67%) study habits. Among female children (61.66%) showed good study habits followed by average (36.67%) and poor (1.66%) respectively. As per mean scores, females scored higher (2.60) than male children (2.46). However, the modified chi-square (2.20) indicated no significant association between age and study habits of non-residential school children. The F value 1.06 also showed no significant difference between gender and study habits of residential and non-residential children.

4.3. Study habits of residential and non residential school children by standard

Table 5 shows the Study habits of residential and non residential school children by standard. In case of residential school children majority of 8th standard children showed good study habits (65%) and 35 per cent had average study habits. Among 9th standard 67.5 per cent and 32.5 per cent showed good and average study habits respectively. Regarding 10th standard showed good and average study habits (75% and 25%) respectively. Where in all three groups none belonged to poor category of study

Table 4: Study habits of residential and non residential school children by gender

N=240

Gender	Residential (n=120)				Mean (S.D)	Non –residential (n=120)				Mean (S.D)
	Poor	Average	Good	Total		Poor	Average	Good	Total	
Boys	-	19 (31.67)	41 (68.33)	60 (100)	2.68 (0.46)	1 (1.67)	30 (50.0)	29 (48.33)	60 (100.0)	2.46 (0.53)
Girls	-	18 (30.0)	42 (70.0)	60 (100)	2.70 (0.46)	1 (1.67)	22 (36.67)	37 (61.66)	60 (100.0)	2.60 (0.52)
Modified χ^2	0.03 ^{NS}					2.20 ^{NS}				
F-value	1.06 ^{NS}									
	SEM= 0.03									

Figures in the parenthesis indicate percentage, NS-Non Significant

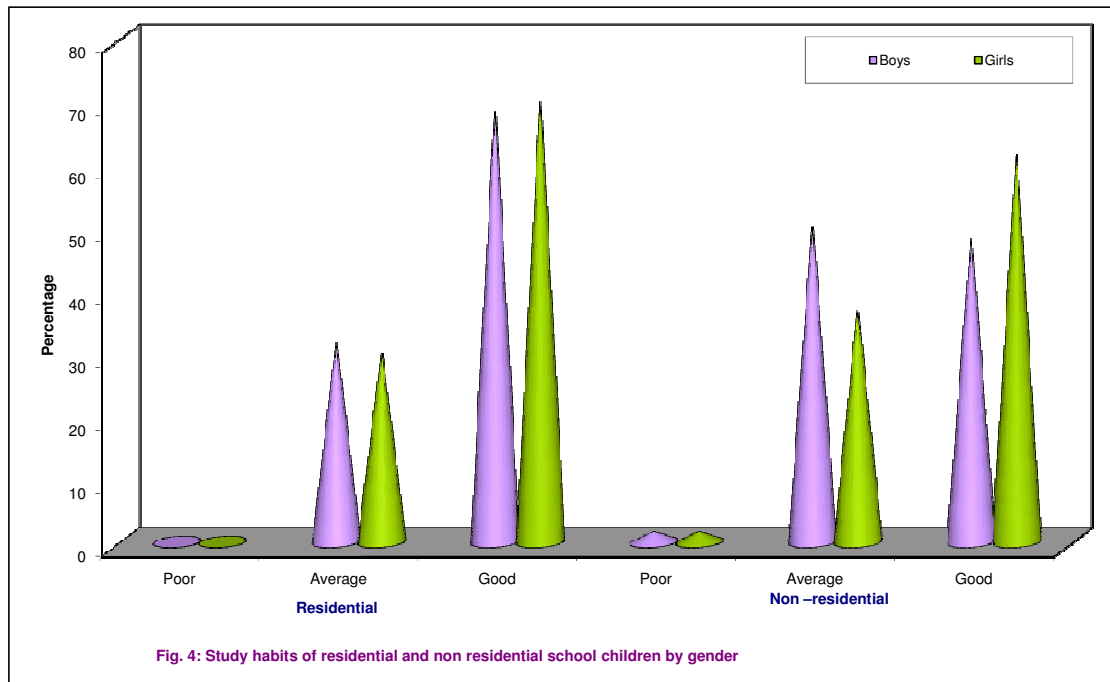


Table 5: Study habits of residential and non residential school children by standard

N = 240

Standard	Residential (n=120)				Mean (S.D)	Non –residential (n=120)				Mean (S.D)
	Poor	Average	Good	Total		Poor	Average	Good	Total	
8 th	-	14 (35.0)	26 (65.0)	40 (100.0)	2.65 (0.48)	1 (2.5)	20 (50.0)	19 (47.5)	40 (100.0)	2.45 (0.55)
9 th	-	13 (32.5)	27 (67.5)	40 (100.0)	2.67 (0.47)	1 (2.5)	16 (40.0)	23 (57.5)	40 (100.0)	2.55 (0.55)
10 th	-	10 (25.0)	30 (75.0)	40 (100.0)	2.72 (0.45)	-	16 (40.0)	24 (60.0)	40 (100.0)	2.66 (0.47)
Modified χ^2	1.01 ^{NS}					2.25 ^{NS}				
F-value	0.14 ^{NS}									
	SEM=0.05									

Figures in the parenthesis indicate percentage, NS-Non Significant

habits. On the comparison of mean scores 10th standard scored higher (2.72) on study habits than 9th and 8th standard children. The modified chi-square showed no-significant association (1.01) between standard and study habits of children.

With regard to non-residential school children, 50 per cent of 8th standard children belonged to average category of study habits, followed by good study habits (47.5%) and only few per cent (2.5%) fell under poor category of study habits. In case of 9th standard 57.5 per cent showed good study habits, followed by average and poor (40% and 2.5%) study habits respectively. Further on comparison of mean scores 10th standard children scored higher on study habits (2.60) than 9th and 8th standard children (2.55 and 2.45 respectively). However, modified chi-square analysis showed no-significant association (2.25). Among residential and non-residential children not significant F value 0.14 was found between standard and study habits.

4.3.4 Study habits of residential and non residential school children by ordinal position

Table 6 shows, study habits of residential and non-residential school children with respect to ordinal position. It is clear from the table that among residential school children those who are first born showed good (62%) and average (38%) study habits respectively. Children who are middle born had good (71.80%) and average (28.20%) study habits respectively. Those who are last born showed good (74.20%) and average (25.80%) study habits respectively. None of them belonged to poor category of study habits. With comparison of mean scores last born scored higher (2.74) on study habits than middle and first born children (2.72 and 2.62) respectively. Significant association was not found between ordinal position and study habits on residential children as indicated by modified chi-square value 1.63.

As far as the study habits of non-residential school children are concerned, 70.45 per cent of the first born fell under good and 29.55 per cent in average category of study habits. No children in poor category of study habits. Middle born children, showed average (56.75%) followed by good (43.25%) and poor (2.70%) study habits respectively. For the last born, 51.35 per cent, 48.65 per cent and 2.70 per cent fell under good, average and poor category of study habits respectively. With respect to mean scores, first born children scored better on study habits (2.70) than middle and last

Table 6: Study habits of residential and non residential school children by ordinal position

N = 240

Ordinal Position	Residential (n=120)				Mean (S.D)	Non-residential (n=120)				Mean (S.D)
	Poor	Average	Good	Total		Poor	Average	Good	Total	
First Born	-	19 (38.0)	31 (62.0)	50 (100.0)	2.62 (0.49)	-	13 (29.55)	31 (70.45)	44 (100.0)	2.39 (0.54)
Middle Born	-	11 (28.20)	28 (71.80)	39 (100.0)	2.72 (0.45)	1 (2.70)	21 (56.75)	16 (43.25)	37 (100.0)	2.47 (0.56)
Last Born	-	8 (25.80)	23 (74.20)	31 (100.0)	2.74 (0.44)	1 (2.70)	18 (48.65)	19 (51.35)	37 (100.0)	2.70 (0.46)
Modified χ^2	1.63 ^{NS}					7.71 ^{NS}				
F-value	4.29*									
	CD=0.18 SEM=0.05									

Figures in the parenthesis indicate percentage, *Significant at 0.05 level , NS-Non Significant

born (2.39 and 2.47). The modified chi-square analysis showed no significant association (7.71) between study habits and ordinal position. However, the F-value of 4.29 indicated significant difference between ordinal position and study habits of residential and non-residential children.

4.3.5 Study habits of residential and non residential school children by family type

It can be observed from the Table 7 that, among residential school children both nuclear and joint family had showed good (71.19% and 65.57%) and average (28.81% and 34.43%) study habits respectively. None of them fell under poor category. As per mean scores children from nuclear families scored high on study habits (2.71) than joint families (2.65). The modified chi-square analysis showed not significant (0.43) results.

Among non-residential school children from nuclear and joint families had good study habits (52.78% and 58.33%), followed by average (45.83% and 39.58%) and poor (1.39% and 2.09%) respectively. Based on comparison of mean scores values indicated that children from joint families scored high (2.56) on study habits than nuclear families (2.51). The modified chi-square (0.50) showed no significant association. The F-value 0.63 showed no significant difference between family type and study habits of residential and non-residential children.

4.3.6 Influence of parent's education on study habits of residential and non residential school children

A closer look at Table 8 revealed the association between parent education and study habits of residential and non residential school children. Among residential school children, whose fathers were illiterate, had good (61.53%) and average (38.47%) study habits. Among the children whose fathers completed only primary education, had good (73.33%) and average (26.67%) study habits. Children whose father's education was SSLC and PUC had good (56.67%) and average (43.33%) study habits. An examination of children whose father's education belonged to graduation and above, (83.33% and 16.67%) had showed good and average study habits. None of the children belonged to poor category. As per mean scores children whose fathers had completed graduation and above scored high on study habits (2.83) than illiterate, primary education and SSLC and PUC (2.62, 2.73 and 2.57) respectively. The modified chi-square (6.63)

Table 7: Study habits of residential and non residential school children by family type

N = 240

Family Type	Residential (n=120)				Mean (S.D)	Non –residential (n=120)				Mean (S.D)
	Poor	Average	Good	Total		Poor	Average	Good	Total	
Nuclear	-	17 (28.81)	42 (71.19)	59 (100)	2.71 (0.45)	1 (1.39)	33 (45.83)	38 (52.78)	72 (100)	2.51 (0.53)
Joint	-	21 (34.43)	40 (65.57)	61 (100)	2.65 (0.47)	1 (2.09)	19 (39.58)	28 (58.33)	48 (100)	2.56 (0.54)
Modified χ^2	0.43 ^{NS}					0.50 ^{NS}				
F-value	0.63 ^{NS}									
	SEM=0.42									

Figures in the parenthesis indicate percentage, NS-Non Significant

Table 8: Association between parent's education and study habits of residential and non-residential school children

N = 240

Father's Education	Residential (n=120)					Non-residential (n=120)				
	Poor	Average	Good	Total	Mean (S.D)	Poor	Average	Good	Total	Mean (S.D)
Illiterate	-	15 (38.47)	24 (61.53)	39 (100)	2.62 (0.49)	1 (2.56)	19 (48.72)	19 (48.72)	39 (100)	2.46 (0.55)
Primary Education	-	4 (26.67)	11 (73.33)	15 (100)	2.73 (0.46)	-	24 (48.98)	25 (51.02)	49 (100)	2.51 (0.50)
SSLC & PUC	-	13 (43.33)	17 (56.67)	30 (100)	2.57 (0.50)	1 (3.45)	9 (31.03)	19 (65.52)	29 (100)	2.62 (0.56)
Graduation & above	-	6 (16.67)	30 (83.33)	36 (100)	2.83 (0.37)	-	-	3 (100)	3 (100)	3.00 (0.00)
Modified χ^2	6.63 ^{NS}					6.65 ^{NS}				
F-value	1.04 ^{NS}									
	SEM=0.07									
Mother's Education										
Illiterate	-	16 (40.0)	24 (60.0)	40 (100)	2.60 (0.50)	1 (3.03)	15 (45.45)	17 (51.52)	33 (100)	2.48 (0.56)
Primary Education	-	16 (35.56)	29 (64.44)	45 (100)	2.64 (0.48)	1 (1.39)	28 (38.89)	43 (59.72)	72 (100)	2.58 (0.52)
SSLC & PUC	-	4 (16.0)	21 (84.0)	25 (100)	2.84 (0.37)	-	8 (66.67)	4 (33.33)	12 (100)	2.33 (0.49)
Graduation & above	-	2 (20.0)	8 (80.0)	10 (100)	2.80 (0.42)	-	1 (33.33)	2 (66.67)	3 (100)	2.66 (0.58)
Modified χ^2	5.063 ^{NS}					4.05 ^{NS}				
F-value	1.69 ^{NS}									
	SEM=0.05									

Figures in the parenthesis indicate percentage *Significant at 0.05 level , NS-Non Significant

revealed that there was no-significant association between father's education and study habits of children.

Among non-residential school children, whose fathers were illiterate, equal per cent (48.72%) of children showed good and average study habits. Children whose father's education was primary education, had good (51.20%) and average (48.98%) study habits. Among the children whose father had SSLC and PUC education, had showed good study habits (65.52%) followed by average (31.03%) and poor (3.45%) respectively. While only three children of father's who completed graduation and above, showed good (100%) study habits. Based on mean scores children whose fathers had completed graduation and above scored high on study habits (3.00) than illiterate, primary education and SSLC and PUC (2.46, 2.51 and 2.62) respectively. The chi-square value 6.65 found to be not significant. The F value 1.04 also showed there was no significant difference between father's education and study habits of residential and non-residential children.

Among residential school, children whose mothers were illiterate had good (60%) and average (40%) study habits. The children of mothers with primary education showed good (64.44%) and average (35.56%) study habits. An examination of children whose mothers had education of SSLC and PUC, 84 per cent and 16 per cent showed good and average study habits. While only three children of whose mother's completed education of graduation and above showed good (80%) and average (20%) study habits. Further on mean scores of children whose mothers had completed SSLC and PUC scored high on study habits (2.84) than illiterate, primary education and graduation and above (2.60, 2.64 and 2.80) respectively. However, chi-square value 5.06 was not significant.

When examined non-residential school children, among the children who had illiterate mothers, showed good study habits (51.52%) followed by average (45.45%) and poor (3.03%) respectively. For those whose mothers completed primary education, showed good (59.72%) study habits, followed by average (38.89%) and only 1.39 per cent had poor study habits. For SSLC and PUC it was observed, 66.67 per cent had average and 33.33 per cent had good study habits. While for graduation and above, 66.67 per cent and 33.33 per cent showed good and average study habits. With respect

mean scores of children whose mothers had completed graduation and above scored high on study habits (2.66) than illiterate, primary education and SSLC and PUC (2.48, 2.58 and 2.33) respectively. The modified chi-square value 4.05 revealed no significant association. The F value 1.69 did not reveal significant difference between mother education and study habits of residential and non-residential children.

4.3.7 Influence of parent's occupation on study habits of residential and non residential school children

Content in the Table 9 depicts the association between parent education and study habits of residential and non residential school children. Among the residential school, children whose fathers were unemployed, 70 per cent of children had good study habits and average (30%) study habits. Children whose father's were self employed showed average (57.15%) and good (42.85%) study habits. Father's who were involved in service at shops/homes/ transport/ own cultivation/independent business 63.77 per cent of children had good and 36.23 per cent showed average study habits. Father's who had service in central/state/ public, 82.35 per cent of children showed good and 17.65 per cent showed average study habit. As per mean scores children of whose fathers involved in service in central/state/public scored high on study habits (2.82) than unemployed, self employed, services at shops/homes/transport/own cultivation/independent business (2.70, 2.42 and 2.63) respectively. The modified chi-square did not reveal any significant association between father's occupation and study habits of children (5.86).

With regard to non-residential school children, fathers who were unemployed, majority of children 71.43 per cent showed good and average (28.57%) study habits. For the children whose father was self employed, 52.17 per cent and 47.83 per cent fell under good and average study habits respectively. Among the children whose father was in shops/homes/transport/own cultivation/independent business, around 49.15 per cent fell in average category and 47.46 per cent showed good study habits. While 3.39 per cent showed poor study habits. For those whose father was in central/state/public sector, 66.67 per cent, 33.33 per cent showed average and good study habits respectively. Based on mean scores children of whose fathers were unemployed scored high on study habits (2.85) than self employed, services at shops/homes/transport/own cultivation/

independent business and central/state/public (2.54, 2.51 and 2.33) respectively. However, modified chi-square had no significant association between father's occupation and study habits of children (7.39). Among residential and non-residential children the F value 1.29 showed no significant difference between father occupation and study habits.

With regard to mother's occupation among residential school, children whose mothers were unemployed, 73.13 per cent, 26.87 per cent showed good and average study habits. Only three children of whose mother were self-employed, had good (100%) study habits. Among the mothers who had services in shops/ homes/ transport/ own cultivation/independent business, around 54.55 per cent had good study habits and 45.45 per cent and average study habits. Mothers of children who had services in central/state/ public, total 100 per cent showed good study habits. Based on mean scores children of whose mothers involved in service in central/state/public and self employed scored high on study habits (3.00) than unemployed, and services at shops/ homes/ transport/own-cultivation/independent business (2.73 and 2.55) respectively. The modified chi-square analysis didn't show any significant association (8.75).

In case of non-residential school, among children whose mothers were unemployed, 52.45 per cent, 47.55 per cent had showed good and average study habits. For children whose mother was self-employed, equal Percentage (50%) of children were in good and average study habits. Among children of mothers who had service in shops/homes/transport/own cultivation/independent business, showed good (59%) followed by average (36.36%) and poor (4.54%) study habits. While only one child showed good (100%) study habits whose mother's had services in central/state/public. With respect to mean scores children of whose mothers involved in service in central/state/public scored high on study habits (3.00) than the children of other categories. The modified chi-square analysis showed no significant association (5.41). The F value as shown in the table was not significant ($F=1.22$) between occupation of mother and study habits of residential and non-residential children.

Table 9: Association between parent's occupation and study habits of residential and non-residential school children

N = 240

Father's Occupation	Residential (n=120)					Non-residential (n=120)				
	Poor	Average	Good	Total	Mean (S.D)	Poor	Average	Good	Total	Mean (S.D)
Unemployment	-	3 (30.0)	7 (70.0)	10 (100)	2.70 (0.48)	-	10 (28.57)	25 (71.43)	35 (100)	2.85 (0.38)
Self-employment	-	4 (57.15)	3 (42.85)	7 (100)	2.42 (0.53)	-	11 (47.83)	12 (52.17)	23 (100)	2.54 (0.51)
Services at shops, transport, own cultivation of land/independent business	-	25 (36.23)	44 (63.77)	69 (100)	2.63 (0.48)	2 (3.39)	29 (49.15)	28 (47.46)	59 (100)	2.51 (0.55)
Services in central/state/public	-	6 (17.65)	28 (82.35)	34 (100)	2.82 (0.39)	-	2 (66.67)	1 (33.33)	3 (100)	2.33 (0.58)
Modified χ^2	5.86 ^{NS}					7.39 ^{NS}				
F-value	1.29 ^{NS}									
	SEM= 0.04									
Mother's Occupation										
Unemployment	-	18 (26.87)	49 (73.13)	67 (100)	2.73 (0.45)	-	29 (47.55)	32 (52.45)	61 (100)	2.52 (0.50)
Self-employment	-	-	3 (100)	3 (100)	3.00 (.00)	-	7 (50.0)	7 (50.0)	14 (100)	2.50 (0.52)
Services at shops, transport, own cultivation of land/independent business	-	20 (45.45)	24 (54.55)	44 (100)	2.55 (0.50)	2 (4.54)	16 (36.36)	26 (59.00)	44 (100)	2.55 (0.59)
Services in central/state/public	-	-	6 (100)	6 (100)	3.00 (.00)	-	-	1 (100)	1 (100)	3.00 (.00)
Modified χ^2	8.75 ^{NS}					5.41 ^{NS}				
F-value	1.22 ^{NS}									
	SEM=0.06									

Figures in the parenthesis indicate percentage, NS-Non Significant

4.3.8 Study habits of residential and non-residential school children by family income

Table 10 depicts study habits of residential and non residential children by family income. As can be observed in residential school children, among those with family income of > 5000, 5000-9,999, 10,000-19,000 and >20,000 showed good (58.82, 75, 76.67 and 50%) and followed by average category (41.18, 25, 23.33 and 50%) of study habits. None of them fell under poor category. With respect to mean scores family income with 10,000-19,000 scored higher on study habits (2.77) than family income with of 5000-9,999, > 5000 and >20,000 (2.75, 2.59 and 2.50) respectively. However, modified chi-square revealed not significant association (5.15).

Similarly among non-residential school children, those with the family income of >5000 and 10,000-19,000 showed good (55.18% and 43.75%), followed by average (43.10% and 50%) and only few fell under poor category (1.72% and 6.25%) of study habits. For the family income with 5000-9999 showed good (58.70%) and followed by average (41.30%) study habits. None fell under poor category. With family income of >20,000 none of children fell under all the categories. As per mean scores family income with 5000-9,999 scored higher on study habits (2.59) than family income with > 5000 and 10,000-19,000 (2.53 and 2.37) respectively. The chi-square analysis showed not-significant association (3.47). The F value 1.60 was not significant between family income and study habits of residential and non-residential children.

4.3.9 Study habits of residential and non-residential school children by socio economic status

A perusal of Table 11 indicates the influence of socio-economic status on study habits. It is clear from the table that among residential school, only two children were in low socio economic status and they showed good study habits. None fell under average and poor category of study habits. Majority of Children from the medium and high socio-economic status showed good (67.30% and 71.43%) and average (32.70% and 28.57%) study habits respectively. No one belonged to poor category of study habits. Based on mean scores low socio-economic status scored high on study habits (3.00) than medium and high socio-economic status (2.67 and 2.7) respectively. However,

Table 10: Study habits of residential and non-residential schoolchildren by family income

N = 240

Family Income	Residential (n=120)				Mean (S.D)	Non –residential (n=120)				Mean (S.D)
	Poor	Average	Good	Total		Poor	Average	Good	Total	
>5,000	-	14 (41.18)	20 (58.82)	34 (100)	2.59 (0.50)	1 (1.72)	25 (43.10)	32 (55.18)	58 (100)	2.53 (0.54)
5,000-9,999	-	11 (25.0)	33 (75.0)	44 (100.0)	2.75 (0.44)	-	19 (41.30)	27 (58.70)	46 (100)	2.59 (0.50)
10,000-19,000	-	7 (23.33)	23 (76.67)	30 (100)	2.77 (0.43)	1 (6.25)	8 (50.0)	7 (43.75)	16 (100)	2.37 (0.62)
>20,000	-	6 (50.0)	6 (50.0)	12 (100)	2.50 (0.52)	-	-	-	-	-
Modified χ^2	5.15 ^{NS}					3.47 ^{NS}				
F-value	1.605 ^{NS}									
	SEM=0.05									

Figures in the parenthesis indicate percentage, NS-Non Significant

Table 11: Study habits of residential and non residential school children by socio economic status

N = 240

Socio economic status	Residential (n=120)				Mean (S.D)	Non –residential (n=120)				Mean (S.D)
	Poor	Average	Good	Total		Poor	Average	Good	Total	
Low	-	-	2 (100)	2 (100)	3.00 (0.00)	-	1 (33.33)	2 (66.67)	3 (100)	2.67 (0.57)
Medium	-	34 (32.70)	70 (67.30)	104 (100)	2.67 (0.47)	2 (1.71)	51 (43.59)	64 (54.70)	117 (100)	2.53 (0.53)
High	-	4 (28.57)	10 (71.43)	14 (100)	2.71 (0.46)	-	-	-	-	-
Modified χ^2	1.03 ^{NS}					0.19 ^{NS}				
F-value	0.16 ^{NS}									
	SEM= 0.01									

Figures in the parenthesis indicate percentage, NS-Non Significant

modified chi-square indicated non-significant association (1.03) between SES and study habits.

As far as the study habits of non-residential school children, majority of the children belonged to medium socio-economic status and among them 54.70 per cent were showed good study habits followed by average study habits (43.59%). Only 3 children were in low socio-economic status group, where in two of them were showed good study habits and one average study habits. None of them fell under high socio-economic status group. With respect to mean scores low socio-economic status scored high on study habits (2.67) than medium socio-economic status (2.53). The chi-square analyses showed no significant association (1.03). The F value 0.16 also showed there is no significant difference between socio economic status and study habits of residential and non-residential children.

4.4 Aptitude of residential and non-residential school children

Content of the Table 12a and Fig. 5 depicts the Percentage distribution by level of children on abstract reasoning, in case of type of school about 62.5 per cent of students fell in high category and 37.5 per cent were in low category in residential schools. With regard to non residential school children most (92.5%) of children fell in low category and only 7.5 per cent of children had high abstract reasoning ability. There was no significant association between residential and non residential school children. However, significant difference was found between residential and non residential schools. As per mean residential school (57.85) children had better abstract reasoning ability when compared with non residential (20.27) school children. With respect to gender 57.5 per cent of boys and 72.5 per cent of girls had showed low abstract reasoning ability, where as 42.5 per cent of boys and 27.5 per cent of girls showed high level of abstract reasoning. There was no significant association as well as no significant difference between boys and girls.

In case of mechanical reasoning dimension (Table 12b and Fig. 6), 97.5 per cent and 2.5 per cent of residential school children showed low and high mechanical reasoning ability. Whereas 100 per cent of non-residential school children showed low mechanical reasoning ability. The comparison of mean scores revealed significant

Table 12a: Percentage distribution of children by level of abstract reasoning

N=80

Level of abstract reasoning						
Variables	Category	Low	High	Mean (SD)	t-value	Modified χ^2
Type of school	Residential	15 (37.5)	25 (62.5)	57.85 (31.75)	6.22**	0.02 ^{NS}
	Non-residential	37 (92.5)	3 (7.5)	20.27 (21.21)		
Gender	Boys	23 (57.5)	17 (42.5)	45.43 (32.98)	1.75 ^{NS}	2.77 ^{NS}
	Girls	29 (72.5)	11 (27.5)	32.70 (31.80)		

Figures in the parenthesis indicate percentage, **Significant at 0.01 level, NS-Non Significant

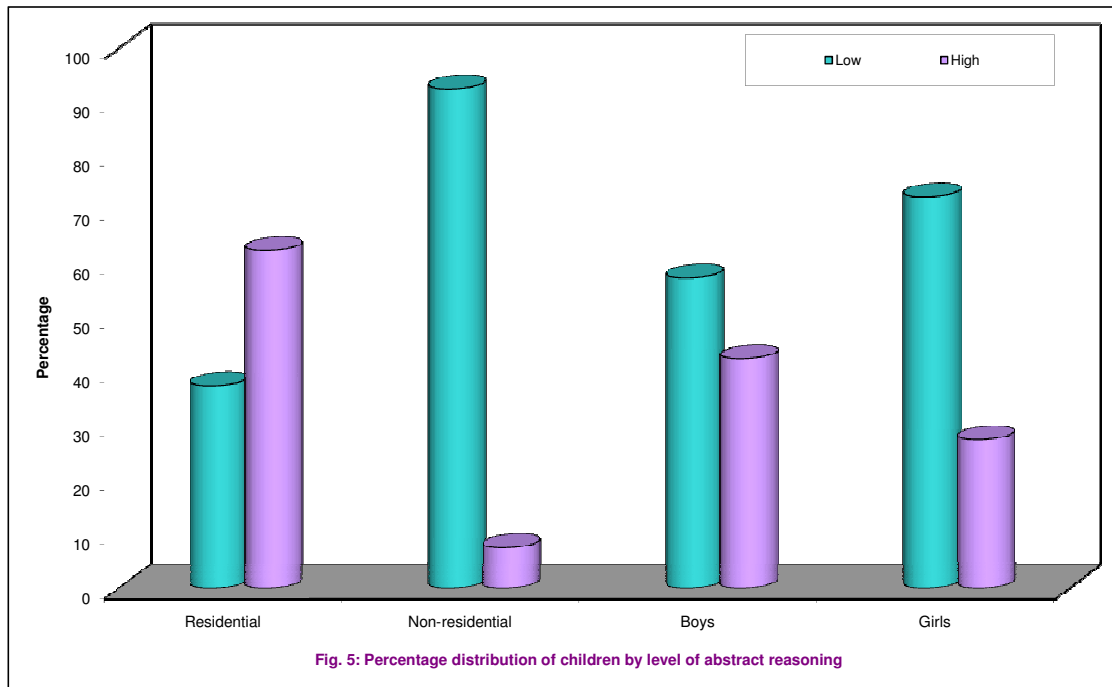
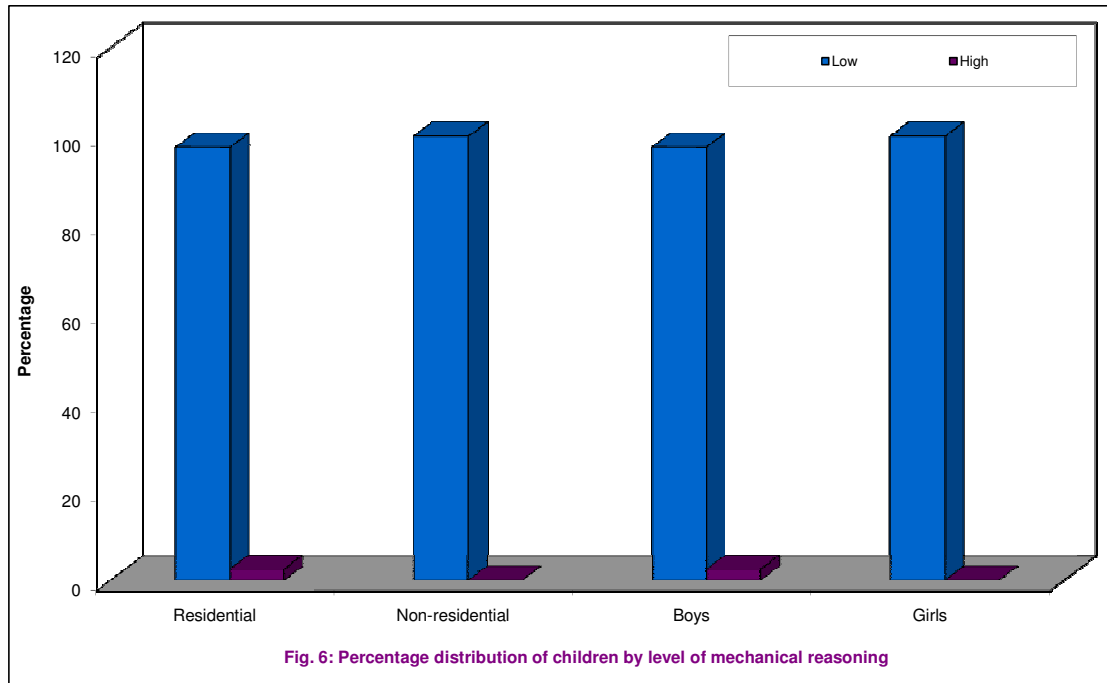


Table 12b: Percentage distribution of children by level of mechanical reasoning

N=80

Level of mechanical reasoning					
Variables	Category	Low	High	Mean (SD)	t-value
Type of school	Residential	39 (97.5)	1 (2.5)	15.00 (12.20)	3.23*
	Non-residential	40 (100)	-	7.82 (6.86)	
Gender	Boys	39 (97.5)	1 (2.5)	14.23 (11.94)	2.47*
	Girls	40 (100)	-	8.60 (7.98)	

Figures in the parenthesis indicate percentage, *Significant at 0.05 level



difference on mechanical reasoning (15.00 and 7.82 respectively) in which residential mean score is higher than the non-residential school mean score. The t value of 3.23 was significant at 1 per cent level. With respect to gender, 97.5 per cent and 2.5 per cent of boys showed low and high mechanical reasoning ability, whereas 100 per cent of girls showed low mechanical reasoning respectively. Significant difference exists between boys and girls with t value of 2.47. The comparison of mean scores revealed that boys and girls differed significantly on mechanical reasoning (14.23 and 8.60 respectively) with girls mean score higher than the boys mean score.

Table 12c and Fig. 7 depicts the distribution of children by level of verbal reasoning. In case of type of school, 95 per cent and 5 per cent of residential school children showed low and high ability of verbal reasoning respectively. Whereas, 100 per cent of non-residential school children showed low verbal reasoning ability. There was highly significant difference was observed between the mean score of residential (15.23) and non-residential schools (4.80). The t value of 4.20 was significant at 5 per cent level. In case of gender, 100 per cent of boys showed low ability in verbal reasoning. Among girls 95 per cent and 5 per cent showed low and high verbal reasoning ability respectively. The t value of 0.28 showed no significant difference between boys and girls on verbal reasoning ability.

Similarly for numerical ability (Table 12d and Fig. 8), in case of residential school type, majority of children showed low (80%) and 20 per cent high level of numerical ability. Among non-residential school children, 100 per cent had low numerical ability. However t value of 3.08 showed significant difference between both the schools. As per mean scores, residential (24.97) performed better than non-residential (4.90) schools. With regard to gender, boys 67.5 per cent and 32.5 per cent showed low and high numerical ability respectively. Where in girls showed low (90%) and high (10%) numerical ability. However, modified chi-square (0.37) showed no association as well as t value of 1.01 showed not significant difference between boys and girls.

The percentage distribution by level of children on space relation ability was tabulated in Table 12e and Fig. 9. Pointed out that majority of both the residential and non-residential school children showed low (87.5 and 80%) and high (12.5% and 20%)

Table 12d: Percentage distribution of children by level of numerical ability

N=80

Level of numerical ability						
Variables	Category	Low	High	Mean (SD)	t-value	Modified χ^2
Type of school	Residential	32 (80.00)	8 (20.00)	24.97 (25.88)	4.61**	-
	Non-residential	40 (100)	-	4.90 (9.38)		
Gender	Boys	27 (67.5)	13 (32.5)	17.40 (26.28)	1.01 ^{NS}	0.37 ^{NS}
	Girls	36 (90)	4 (10)	12.47 (16.17)		

Figures in the parenthesis indicate percentage, **Significant at 0.01 level, NS-Non Significant

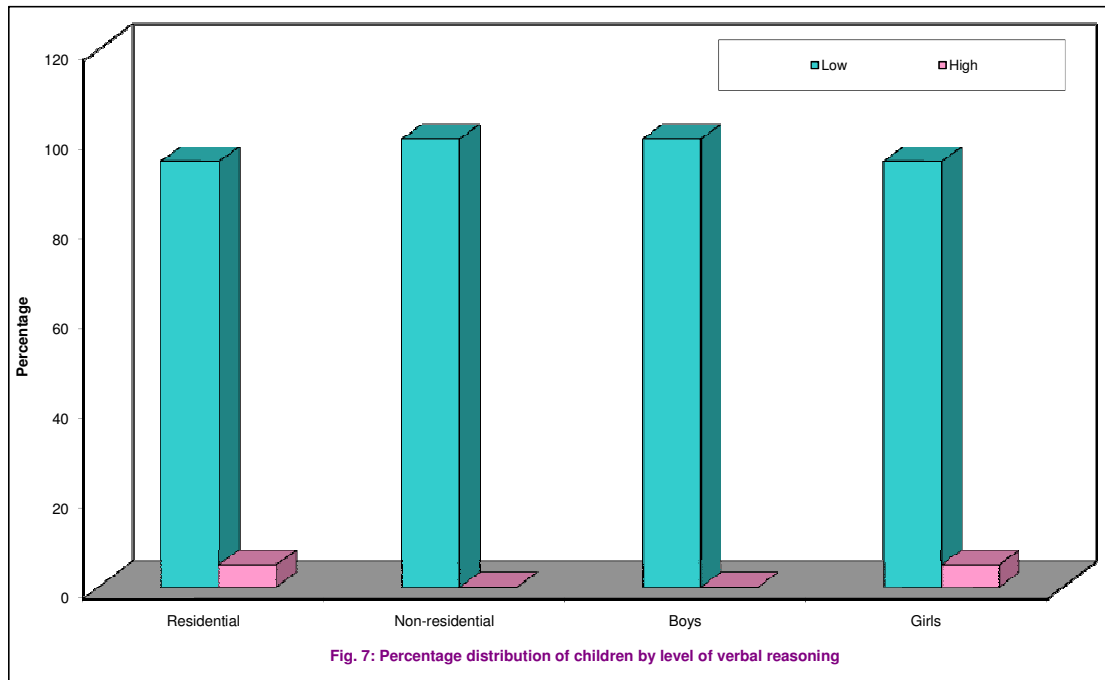


Table 12c: Percentage distribution of children by level of verbal reasoning

N=80

Level of verbal reasoning					
Variables	Category	Low	High	Mean (SD)	t-value
Type of school	Residential	38 (95)	2 (5)	15.23 (14.95)	4.20**
	Non-residential	40 (100)	-	4.80 (5.23)	
Gender	Boys	40 (100)	-	9.67 (9.54)	0.28 ^{NS}
	Girls	38 (95)	2 (5)	10.45 (14.71)	

Figures in the parenthesis indicate percentage, **Significant at 0.01 level, NS-Non Significant

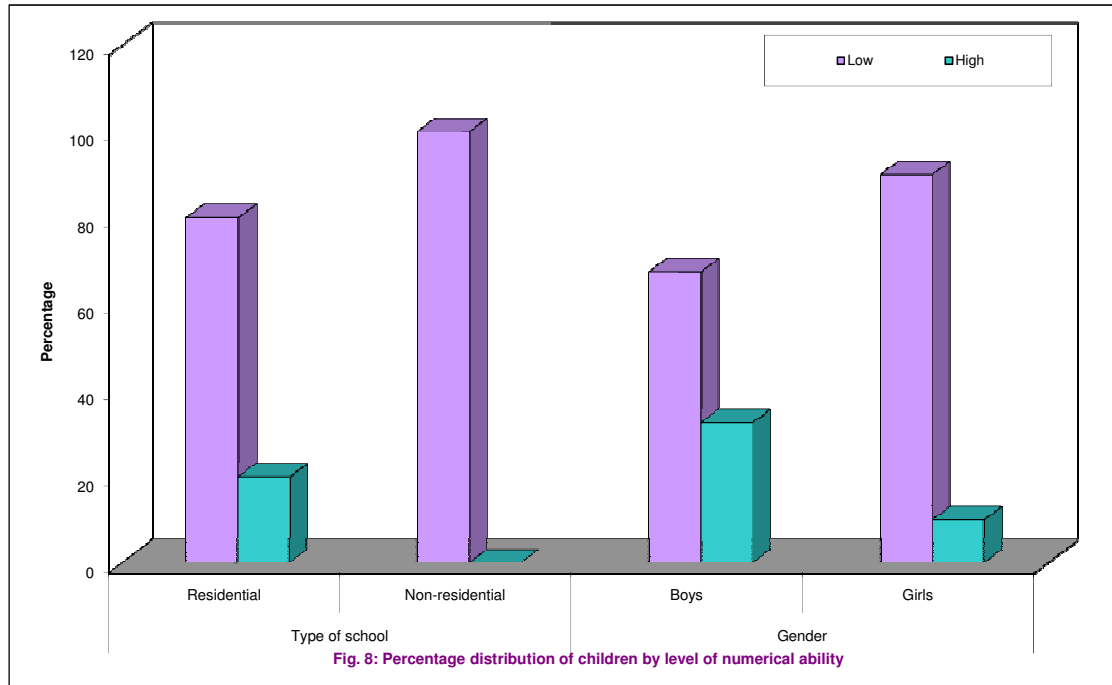
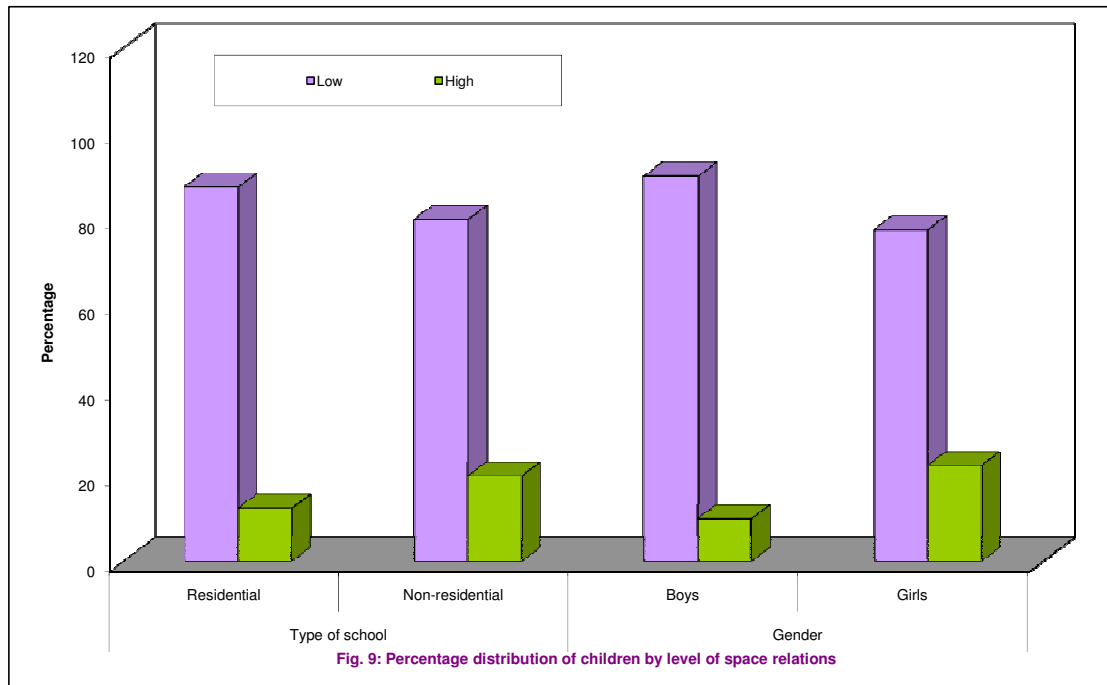


Table 12e: Percentage distribution of children by level of space relations

N=80

Level of space relations						
Variables	Category	Low	High	Mean (SD)	t-value	Modified χ^2
Type of school	Residential	35 (87.5)	5 (12.5)	27.50 (23.84)	0.95 ^{NS}	1.42 ^{NS}
	Non-residential	32 (80)	8 (20)	14.22 (38.93)		
Gender	Boys	36 (90)	4 (10)	16.70 (31.28)	1.13 ^{NS}	0.01 ^{NS}
	Girls	31 (77.5)	9 (22.5)	25.02 (34.05)		

Figures in the parenthesis indicate percentage, NS-Non Significant



space relation ability. The modified chi square (1.42) found to be not significant. The t value of 0.95 showed not significant difference between both the schools. On comparison of mean scores, non-residential scored high (1.40) than residential school (1.25). With respect to gender, boys had low (90%) and high (10%) space relation ability. Among girls had low (77.5%) and high (22.5%) ability of space relation. The space relation ability between boys and girls was not significantly associated as indicated by the chi square value 0.01. The t value of 1.13 was found to be not significant between boys and girls. However, the mean scores of girls (25.02) were higher than mean score of boys (16.70) on space relation.

Table 12f, Fig. 10 and 11 depicts the percentage distribution of children by level of linguistic ability. With respect to the dimension of clerical speed and accuracy, both residential and non-residential school children showed high (90% and 87.5%) and low (10% and 12.5%) clerical speed and accuracy respectively. Neither modified chi square (5.75) nor the t value (0.29) was not found to be significant. In case of gender, both boys and girls showed high (90% and 87.5%) and low (10% and 12.5%) clerical speed and accuracy. The t value of 1.65 was not significant. The modified chi-square analysis showed no significant association (0.63).

With regard to spelling, among both residential and non-residential school children, majority showed low (97.5% and 97.5%) and high (2.5% and 2.5%) in spelling ability. Neither modified chi square (0.02) nor the t value 1.02 was found to be significant. Similarly, with respect to gender, among boys 95 per cent indicated low and only 5 per cent with high spelling ability. Total 100 per cent of girls had low spelling ability. With respect to mean scores, girls scored high on spelling (7.75) than boys (2.92). The t value of 0.86 was not significant.

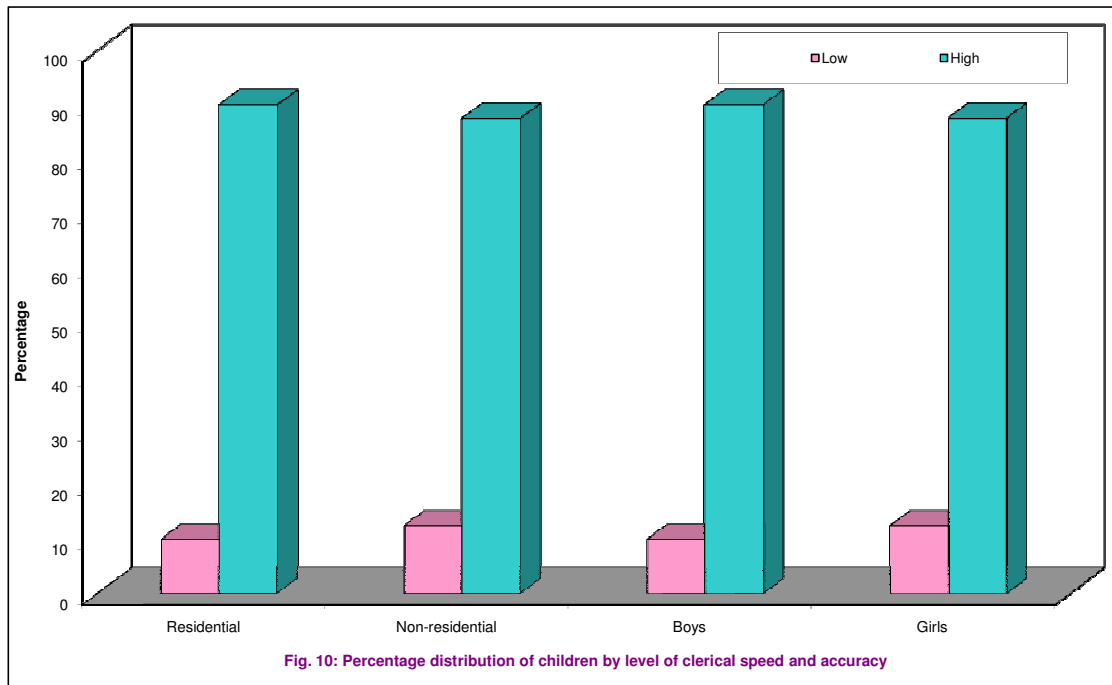
With respect to dimension of sentences, majority of residential school children (100%) and non residential school children (95 %) showed low sentences ability. Only 5 per cent of non-residential showed high sentences ability. The comparison of mean scores revealed that residential and non-residential schools differed significantly on sentences (-4.05 and -29.15 respectively). The t value of 3.45 was significant at 5 per cent level. On the other hand with respect to gender, both boys and girls showed low (97.5% and 97.5%) ability and high (2.5% and 2.5%) sentences ability. The sentences

Table 12f: Percentage distribution of children by level of linguistic ability

N=80

Level of clerical speed and accuracy						
Variables	Category	Low	High	Mean (SD)	t-value	Modified χ^2
Type of school	Residential	4 (10)	36 (90)	84.65 (21.21)	0.29 ^{NS}	5.75 ^{NS}
	Non-residential	5 (12.5)	35 (87.5)	83.10 (25.39)		
Gender	Boys	4 (10)	36 (90)	88.12 (19.66)	1.65 ^{NS}	0.63 ^{NS}
	Girls	5 (12.5)	35 (87.5)	79.62 (25.93)		
Level of spelling						
Type of school	Residential	39 (97.5)	1 (2.5)	-2.5 (23.86)	1.02 ^{NS}	0.02 ^{NS}
	Non-residential	39 (97.5)	1 (2.5)	-8.17 (25.76)		
Gender	Boys	38 (95)	2 (5)	2.92 (31.01)	0.86 ^{NS}	-
	Girls	40 (100)	-	7.75 (16.60)		
Level of sentences						
Type of school	Residential	40 (100)	-	-4.05 (25.26)	3.45**	-
	Non-residential	38 (95)	2 (5)	-29.15 (38.44)		
Gender	Boys	39 (97.5)	1 (2.5)	11.35 (31.55)	1.36 ^{NS}	0.02 ^{NS}
	Girls	39 (97.5)	1 (2.5)	21.85 (37.24)		

Figures in the parenthesis indicate percentage, **Significant at 0.01 level, NS-Non Significant



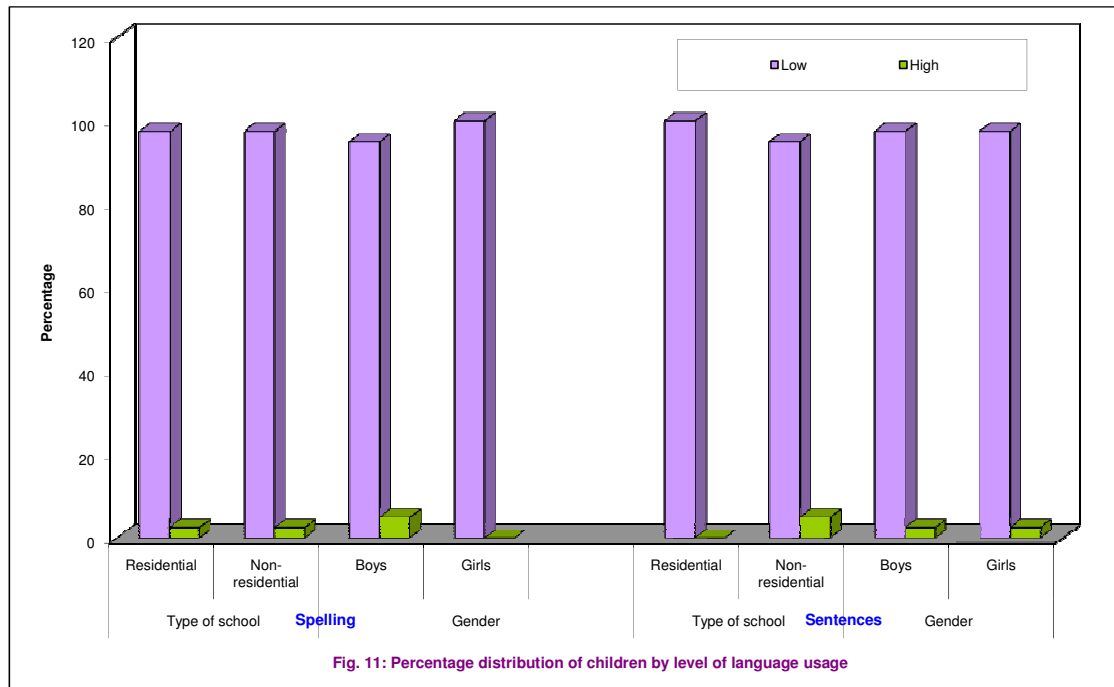
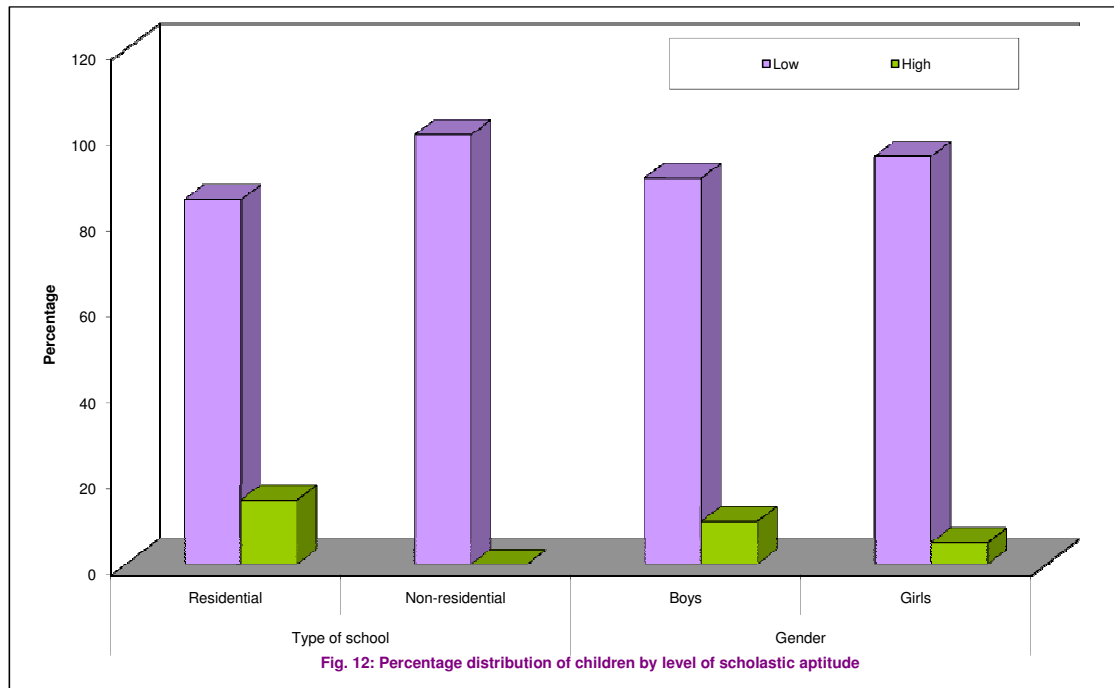


Table 12g: Percentage distribution of children by level of scholastic aptitude

N=80

Level of scholastic aptitude						
Variables	Category	Low	High	Mean (SD)	t-value	Modified χ^2
Type of school	Residential	34 (85)	6 (15)	25.60 (19.53)	6.02*	-
	Non-residential	40 (100)	-	6.30 (5.38)		
Gender	Boys	36 (90)	4 (10)	16.47 (19.0)	0.21 ^{NS}	3.74 ^{NS}
	Girls	38 (95)	2 (5)	15.42 (15.49)		

Figures in the parenthesis indicate percentage, *Significant at 0.05 level, NS-Non Significant



ability between boys and girls was not significantly associated as indicated by the chi- square value 0.02. The t value of 1.36 was not significant.

With regard to scholastic aptitude (Table 12g and Fig.12), in case of type of school about 85 per cent of students fell in low category and 15per cent were in high category in residential schools. With regard to non residential school children, 100 per cent of children fell in low category of scholastic ability. There was significant difference found between residential and non residential schools. As per mean scores residential school children (25.60) had better scholastic aptitude ability as compared to non residential (6.30) school children. With respect to gender 90 per cent of boys and 95 per cent of girls had showed low scholastic ability, whereas 10 per cent of boys and 5 per cent of girls showed high level of scholastic ability. There was no significant association (3.74) as well as no significant difference exists between boys and girls with t value of 0.21.

4.5 Relation between child and familial characteristics and aptitude of school children

The Table 13 shows the coefficient of correlation between child and familial characteristics and aptitude of school children. Ordinal position of the children was positively and significantly related with numerical ability. Education of father was positively and significantly related with numerical ability and scholastic aptitude. Whereas father's occupation was positively and significantly related with abstract reasoning, numerical ability and scholastic aptitude. Family income was positively and significantly related with numerical ability. Socio economic status was positively and significantly related with abstract reasoning, numerical ability and scholastic aptitude.

4.6 Vocational interest of residential and non-residential school children

4.6.1 Percentage distribution of residential and non-residential school children by vocational interest

The percentage distribution of residential and non-residential school children by vocational interest presented in Table 14. There are ten areas viz. literary, scientific,

Table 13: Coefficient of correlation between child and familial characteristics and aptitude of school children

Independent variables	Aptitude dimensions								
	Abstract reasoning	Mechanical reasoning	Verbal reasoning	Numerical ability	Clerical speed & accuracy	Spelling	Sentences	Space relations	Scholastic aptitude
Age	-0.19	0.03	0.05	-0.18	-0.13	0.05	0.05	0.14	0.09
Ordinal Position	0.01	0.02	-0.16	0.22*	0.07	0.02	-0.06	0.07	0.10
Father Education	0.40**	0.07	0.03	0.29*	0.05	-0.03	0.03	0.03	0.25*
Mother Education	0.20	0.00	0.09	0.21	0.03	0.00	-0.08	0.03	0.18
Father Occupation	0.26*	0.14	0.02	0.42**	0.04	-0.04	0.02	0.14	0.31*
Mother Occupation	-0.13	-0.08	0.03	-0.11	0.15	0.11	0.03	0.20	0.06
Family Income	0.20	-0.10	0.03	0.29*	0.05	-0.02	0.03	0.03	0.11
Socio-Economic Status	0.24*	-0.03	-0.046	0.23**	0.04	0.04	-0.04	-0.12	0.22*

*Significant at 0.05 level, ** Significant at 0.01 level

administration, accountancy, artisans and technician, artistic, agriculture, reformatory, social worker and consumer services and production.

In case of residential school children 66.67 per cent, 30.83 per cent and 2.5 per cent fell under low, average and high level of literary respectively. Whereas, among non-residential school children 46.7 per cent, 38.3 per cent and 15 per cent fell under average, low and high category of literary respectively. The t value of 5.11 was significant at 1 per cent where the mean of the residential school children (1.35) was higher than the mean of non-residential school children (1.76).

With regard to scientific, among residential school children 49.2 per cent, 38.3 per cent and 12.5 per cent fell under low, average and high category. For the non-residential school children, 36.7 per cent, 35 per cent and 28.3 per cent were in average, high and low category respectively. Further highly significant difference exist between mean scores of residential and non-residential school children, where in mean scores of non-residential children (1.93) was higher than residential school children.

In case of administration, among residential school children, 72.5 per cent were in low followed by average (15.8%) and high (11.7) category. For non-residential school children, 44.2 per cent showed average followed by low (40.8%) and high (15%) respectively. The t value 3.89 showed significant difference between two schools, where mean of non-residential school children (1.74) was higher than the mean of residential school children (1.39).

Regarding accountancy, in case of residential school children, 82.5 per cent were in low category followed by average (17.5 %) but none of them fell under high category. Among non-residential school children, 66.7 per cent, 26.7 per cent and 6.6 per cent showed low, average and high category respectively. The t value 3.41 was also a significant at 1 per cent level where the mean of residential school children (1.17) significantly lower than the mean of non-residential school children (1.40).

For artisans and technician, 80.8 per cent, 15.9 per cent and 3.3 per cent of residential school children were in low, average and high category. Among non-residential school children, 60.8 per cent, 25.9 per cent and 13.3 per cent were observed in low, average and high category respectively. However there was significant

difference was observed between two groups, where t value 3.76 was found to be highly significant. As per mean scores residential school children (1.22) significantly lower than the mean of non-residential school children (1.52).

With respect to artistic, among residential school children, 52.5 per cent were in low category followed by average (30 %) and 17.5 per cent in high category. Whereas in case of non-residential school children, 39.2 per cent, 37.5 per cent and 23.3 per cent were in low, average and high category respectively. There was no significant difference between mean of residential school children (1.65) and mean of non-residential school children (1.84) on artistic category. The t value 1.92 was not significant.

In case of agriculture, both the schools showed similar trend of vocational interest. In case of residential school children, 65 per cent, 30.8 per cent and 4.2 per cent fell under low, average and high category respectively. About non-residential school children, 50.8 per cent, 30 per cent and 19.2 per cent showed low, average and high category respectively. The t value of 3.31 was significant at 1 per cent where the mean of the non-residential school children (1.63) was higher than the mean of residential school children (1.39).

With regard to reformative, majority 83.3 per cent residential school children fell under low followed by 16.7 per cent average category. None fell under high category. Whereas, among non-residential school children, 54.2 per cent, 31.6 per cent and 14.2 per cent fell under the low, average and high category respectively. The t value 5.80 was also a significant at 1 per cent where the mean of residential school children (1.16) significantly lower than the mean of non-residential school children (1.60).

For social worker, among residential school children 60 per cent, 33.3 per cent and 6.7 per cent fell under low, average and high category respectively. Similarly for non-residential school children 46.7 per cent, 38.3 per cent and 15 per cent fell under low, average and high category respectively. Significant difference exists between mean scores of residential school and non-residential school children with t value of 2.49.

With respect to consumer servicers and production majority 83.3 per cent fell under the low category while 12.5 per cent and 4.2 per cent of residential school

Table 14: Percentage distribution of residential and non-residential school children by vocational interest

N = 240

Variables	Residential (n=120)				Non- residential (n=120)				Modified χ^2	t- value
	Low	Average	High	Mean (SD)	Low	Average	High	Mean (SD)		
Literary	80 (66.67)	37 (30.83)	3 (2.5)	1.35 (0.53)	46 (38.3)	56 (46.7)	18 (15.0)	1.76 (0.69)	0.77	5.11**
Scientific	59 (49.2)	46 (38.3)	15 (12.5)	1.63 (0.69)	42 (35.0)	44 (36.7)	34 (28.3)	1.93 (0.79)	6.52	3.10**
Administration	87 (72.5)	19 (15.8)	14 (11.7)	1.39 (0.68)	49 (40.8)	53 (44.2)	18 (15.0)	1.74 (0.70)	2.64	3.89**
Accountancy	99 (82.5)	21 (17.5)	-	1.17 (0.38)	80 (66.7)	32 (26.7)	8 (6.6)	1.40 (0.61)	3.03	3.41**
Artisans and technicians	97 (80.8)	19 (15.9)	4 (3.3)	1.22 (0.49)	73 (60.8)	31 (25.9)	16 (13.3)	1.52 (0.72)	1.31	3.76**
Artistic	63 (52.5)	36 (30.0)	21 (17.5)	1.65 (0.76)	47 (39.2)	45 (37.5)	28 (23.3)	1.84 (0.77)	4.23	1.92
Agriculture	78 (65.0)	37 (30.8)	5 (4.2)	1.39 (0.56)	61 (50.8)	36 (30.0)	23 (19.2)	1.63 (0.77)	6.12	3.31**
Reformative	100 (83.3)	20 (16.7)	-	1.16 (0.37)	65 (54.2)	38 (31.6)	17 (14.2)	1.60 (0.72)	0.17	5.80**
Social worker	72 (60.0)	40 (33.3)	8 (6.7)	1.46 (0.62)	56 (46.7)	46 (38.3)	18 (15.0)	1.68 (0.72)	5.57	2.49*
Consumer servicers and production	100 (83.3)	15 (12.5)	5 (4.2)	1.20 (0.50)	66 (55.0)	33 (27.5)	21 (17.5)	1.62 (0.76)	1.27	4.98**

Figures in the parenthesis indicate percentage, *Significant at 0.05 level, **Significant at 0.01 level, NS-Non Significant

children fell under average and high category. Among non-residential school children 55 per cent, 27.5 per cent and 17.5 per cent fell under low, average and high category respectively. However there was significant difference was observed between two groups, where t value 4.98 was found to be highly significant. As per mean scores residential school children (1.20) significantly lower than the mean of non-residential school children (1.62).

However no significant association was found between residential and non-residential school children in any of vocational areas.

4.6.2 Percentage distribution of vocational interest of residential school children by gender

The percentage distribution of residential school children by vocational interest presented in Table 15.

In case of literary, majority 65 per cent, 33.33 per cent and 1.67 per cent of boys fell under low, average and high category of interest. Among girls 68.33 per cent, 28.33 per cent and 3.33 per cent fell under low, average and high category respectively. The t value 0.17 was not significant.

For scientific, among boys 46.7 per cent, 43.3 per cent and 10 per cent fell under low, average and high category. Whereas for girls 51.7 per cent, 33.3 per cent and 15 per cent were in low, average and high category respectively. As per mean scores both boys (1.63) and girls (1.63) were similar on scientific ability. Thus, no significant difference exists between scientific area and gender.

In case of administration, 60 per cent of boys fell in low, 25 per cent were in average and 15 per cent in high category respectively. For girls 85 per cent, 8.3 per cent and 6.7 per cent were had low, high and average category of administration interest. The t value of 2.57 was significant at 1 per cent level where the mean of the boys (1.55) was significantly higher than the mean of the girls (1.23).

With respect to accountancy area of vocational interest, 76.7 per cent and 23.3 per cent of boys had low and average level of interest. Among girls 88.3 per cent and 11.7 per cent fell under low and average category of interest. It is important to note that

none of the boys and girls fell under high category of accountancy area of vocational interest. There was also no significant difference between the means of the boys (1.23) and girls (1.11) on accountancy area. The t value of 1.68 showed no significant difference between gender.

Regarding artisans and technician, in case of boys, 76.7 per cent were in low category followed by average (16.6 %) and high (6.7%) respectively. Whereas girls showed low (85%) and average (15%) interest in artisans and technician area. The t value 1.68 was not significant however the mean of boys (1.23) higher than the mean of girls (1.11).

For artistic, among boys 55 per cent, 23.3 per cent and 21.7 per cent fell under low, average and high category. In case of girls 50 per cent, 36.7 per cent and 13.3 per cent were in low, average and high category respectively. The t value of 0.23 showed no significant difference between them indicating that both boys and girls had similar interest in artistic area of vocational interest.

In case of agriculture, boys showed low (56.7%), average (36.6%) and high (6.7%) category respectively. Whereas 73.3 per cent, 25 per cent and 1.7 per cent of girls were in low, high and average category of interest in agriculture. The t value of 2.11 was significant at 5 per cent where the mean of the boys (1.50) was significantly higher than the mean of the girls (1.28).

With respect to reformative area 78.3 per cent of boys and 88.3 per cent of girls indicated low level of interest followed by 21.7 per cent of boys and 11.7 per cent of girls had average level of vocational interest respectively. However, no one fell under high category among both boys and girls. The t value 1.47 was not significant however the mean of boys (1.21) higher than the mean of girls (1.11).

Regarding social worker area of vocational interest, 51.7 per cent of boys and 68.3 per cent of girls showed low level of interest followed by 41.6 per cent of boys and 25 per cent of girls had average level of interest respectively. 6.7 per cent of both boys and girls showed high level of interest in social worker area of vocational interest. The t value 1.47 was not significant however the mean of boys (1.55) higher than the mean of girls (1.47).

Table 15: Percentage distribution of residential school children by vocational interest

N = 120

Variables	Residential (n=120)									
	Boys (n= 60)				Girls (n=60)				Modified χ^2	t- value
	Low	Average	High	Mean (SD)	Low	Average	High	Mean (SD)		
Literary	39 (65)	20 (33.33)	1 (1.67)	1.36 (0.51)	41 (68.33)	17 (28.33)	2 (3.33)	1.35 (0.54)	1.77	0.17
Scientific	28 (46.7)	26 (43.3)	6 (10)	1.63 (0.73)	31 (51.7)	20 (33.3)	9 (15)	1.63 (0.73)	1.30	0.00
Administration	36 (60.00)	15 (25.00)	9 (15)	1.55 (0.74)	51 (85)	4 (6.7)	5 (8.3)	1.23 (0.59)	4.96	2.57*
Accountancy	46 (76.7)	14 (23.3)	-	1.23 (0.42)	53 (88.3)	7 (11.7)	-	1.11 (0.32)	0.36	1.68
Artisans and technicians	46 (76.7)	10 (16.6)	4 (6.7)	1.30 (0.59)	51 (85)	9 (15)	-	1.15 (0.36)	3.22	1.67
Artistic	33 (55.00)	14 (23.3)	13 (21.7)	1.66 (0.81)	30 (50)	22 (36.7)	8 (13.3)	1.63 (0.71)	3.78	0.23
Agriculture	34 (56.7)	22 (36.6)	4 (6.7)	1.50 (0.62)	44 (73.3)	15 (25)	1 (1.7)	1.28 (0.49)	4.45	2.11*
Reformative	47 (78.3)	13 (21.7)	-	1.21 (0.41)	53 (88.3)	7 (11.7)	-	1.11 (0.32)	0.25	1.47
Social worker	31 (51.7)	25 (41.6)	4 (6.7)	1.55 (0.62)	41 (68.3)	15 (25)	4 (6.7)	1.38 (0.61)	3.21	1.47
Consumer servicers and production	60 (100)	-	-	1.00 (0.00)	40 (66.7)	15 (25)	5 (8.3)	1.41 (0.64)	-	5.00**

Figures in the parenthesis indicate percentage, *Significant at 0.05 level, **Significant at 0.01 level, NS-Non Significant

For consumer services and production, among boys 100 per cent fell under low category. None were in average and high category whereas in case of girls, 66.7 per cent, 25 per cent and 8.3 per cent were in low, average and high category respectively. There was significant difference between the means of the boys (1.00) and girls (1.41) on artistic area of vocational interest with t value 5.00.

There was no significant association was found between boys and girls in any of vocational areas.

4.6.3 Distribution of vocational interest of non-residential school children by gender

The percentage distribution of non-residential school children by vocational interest presented in Table 16.

In case of literary, among boys (53.3%) showed average interest followed by low (31.7%) and high (15%) respectively. About girls' majority showed low (45%) interest followed by average (40%) and high (15%) respectively. The t value 1.05 was not significant however the mean of boys (1.83) higher than the mean of girls (1.70).

With respect to scientific, among boys 43.3 per cent showed average interest followed by high (30%) and low (26.7%) respectively. In case of girls 43.3 per cent, 30 per cent and 26.7 per cent were in low, average and high category respectively. The t value 1.38 was not significant however the mean of boys (2.03) was higher than the mean of girls (1.83).

For administration, boys showed average (43.3%), low (35%) and high (21.7%) category respectively. Among girls 46.7 per cent, 45 per cent and 8.3 per cent were in low, average and high category of interest in administration area. The t value of 1.96 was significant at 5 per cent level where the mean of the boys (1.86) was significantly higher than the mean of the girls (1.61).

With regard to accountancy area of vocational interest, among boys 50 per cent showed low interest followed by average (40%) and high (10%) category respectively. In case of girls, 88.3 per cent had low interest followed by average (13.3%) and high (3.3%) respectively. There was significant difference between the means of the boys

(1.60) and girls (1.20) on accountancy area with t value of 3.76 which indicated that boys had more interest in accountancy area of vocational interest as compared to girls.

Regarding artisans and technician area of vocational interest, boys showed low (48.3%), average (26.7%) and high (25%) category respectively. For girls 73.3 per cent, 25 per cent and 1.7 per cent were in low, average and high category. The t value of 3.88 was highly significant at 1 per cent where the mean of the boys (1.76) was significantly higher than the mean of the girls (1.28).

With respect to artistic area, 35 per cent, 33.3 per cent and 31.7 per cent of boys had average, followed by low and high category of interest respectively. Among girls 45 per cent, 40 per cent and 15 per cent fell under low, average and high category respectively of artistic interest. Significant difference between boys and girls with respect to artistic area of vocational interest with mean values of 1.98 and 1.70 respectively, which was indicated by t value of 2.02.

For agriculture, in case of boys, 36.7 per cent were in average category followed by low (33.3 %) and high (30%) respectively. Whereas girls showed low (68.3%) followed by average (23.3%) and high (8.3%) category of vocational interest respectively. The t value 4.27 was highly significant at 1 per cent level where the mean of boys (1.96) higher than the mean of girls (1.40).

Similarly for reformative area of vocational interest, among boys 48.3 per cent fell under low category followed by average (31.7%) and high (20%) respectively. For girls 60 per cent, 31.7 per cent and 8.3 per cent were in low, average and high category respectively. No significant difference was observed between boys and girls with respect to reformative area of vocational interest which indicating that both boys and girls had similar interest. The t value of 1.77 was not significant however mean of boys (1.71) was higher than girls (1.48).

With respect to social worker, among boys 55 per cent, 25 per cent and 20 per cent were in average followed by low and high category of interest respectively. Among girls 68.3 per cent, 21.7 per cent and 10 per cent fell under low, average and high category of interest in social worker area of vocational interest. There was highly

Table 16: Percentage distribution of non-residential school children by vocational interest

N = 120

Variables	Non-residential (n=120)									
	Boys (n= 60)				Girls (n=60)				Modified χ^2	t- value
	Low	Average	High	Mean (SD)	Low	Average	High	Mean (SD)		
Literary	19 (31.7)	32 (53.3)	9 (15.0)	1.83 (0.66)	27 (45.00)	24 (40.0)	9 (15.0)	1.70 (0.72)	4.48	1.05
Scientific	16 (26.7)	26 (43.3)	18 (30.0)	2.03 (0.75)	26 (43.3)	18 (30.0)	16 (26.7)	1.83 (0.82)	5.70	1.38
Administration	21 (35.0)	26 (43.3)	13 (21.7)	1.86 (0.74)	28 (46.7)	27 (45.0)	5 (8.3)	1.61 (0.64)	1.73	1.96*
Accountancy	30 (50.0)	24 (40.0)	6 (10.0)	1.60 (0.66)	50 (83.3)	8 (13.3)	2 (3.3)	1.20 (0.48)	3.66	3.76**
Artisans and technicians	29 (48.3)	16 (26.7)	15 (25.0)	1.76 (0.83)	44 (73.3)	15 (25.0)	1 (1.7)	1.28 (0.49)	3.16	3.88**
Artistic	20 (33.3)	21 (35.0)	19 (31.7)	1.98 (0.81)	27 (45.0)	24 (40.0)	9 (15.0)	1.70 (0.72)	0.79	2.02*
Agriculture	20 (33.3)	22 (36.7)	18 (30.0)	1.96 (0.80)	41 (68.3)	14 (23.3)	5 (8.3)	1.40 (0.64)	6.54	4.27**
Reformative	29 (48.3)	19 (31.7)	12 (20.0)	1.71 (0.78)	36 (60.0)	19 (31.7)	5 (8.3)	1.48 (0.65)	1.37	1.77
Social worker	15 (25.0)	33 (55.0)	12 (20.0)	1.95 (0.67)	41 (68.3)	13 (21.7)	6 (10.0)	1.41 (0.67)	5.17	4.34**
Consumer services and production	28 (46.7)	19 (31.7)	13 (21.7)	1.75 (0.79)	38 (63.3)	14 (23.3)	8 (13.3)	1.50 (0.72)	0.94	1.80

Figures in the parenthesis indicate percentage, *Significant at 0.05 level, **Significant at 0.01 level, NS-Non Significant

significant difference between the means of the boys (1.95) and girls (1.41) on social worker ability with t value of 4.34.

Regarding consumer services and production, in case of boys, 46.7 per cent were in low category of interest followed by average (31.7%) and high (21.7%) respectively. Whereas girls showed low (63.3%) followed by average (23.3%) and high (13.3%) level of interest in consumer services and production area respectively. The t value 1.80 was not significant however the mean of boys (1.75) higher than the mean of girls (1.50).

However there was no significant association found between boys and girls with regard to different dimensions of vocational areas.

4.6.4 Preference of vocational interest among residential and non residential school children

A perusal of table 17 depicts the preference of vocational interest of residential and non-residential school children. It is clear from the table that among residential school children, majority had main preference for artistic followed by second preference as scientific, third preference as social worker and least preference with reformatory. However, among non-residential school, majority of children had main preference for scientific, followed by second preference as artistic, third preference literary and least preference with the accountancy.

4.7 Factors influencing vocational interest of residential and non-residential school children

4.7.1 Vocational interest of residential and non-residential school children by age

Table 18 and Fig. 13 revealed the vocational interest of residential and non residential children by age. Among residential school children majority of children in the age of 13 years showed low level interest (87.5%), followed by average (12.5%) and none of them fell under high category of vocational interest. In case of 14 years, highest percentage (79.71%) had low interest, followed by average (20.29%) and none belongs to high category of vocational interest. With regard to 15 years majority of children

Table 17: Preference of vocational interest among residential and non residential school children

N=240

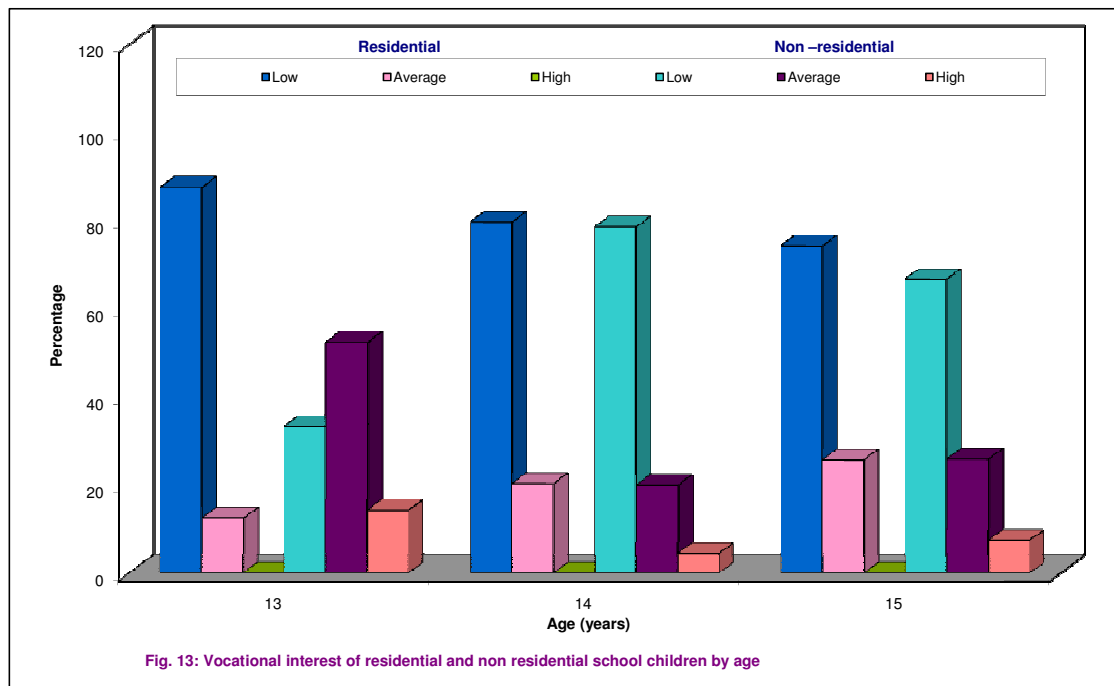
Preference of children	Areas of vocational interest	
	Residential school children	Non-residential children
Main preference	Artistic	Scientific
Second preference	Scientific	Artistic
Third preference	Social worker	Literary
Least Preference	Reformative	Accountancy

Table 18: Vocational interest of residential and non residential school children by age

N = 240

Age (Years)	Residential (n=120)				Mean (S.D)	Non –residential (n=120)				Mean (S.D)
	Low	Average	High	Total		Low	Average	High	Total	
13	14 (87.5)	2 (12.5)	-	16 (100)	1.12 (0.34)	7 (33.33)	11 (52.39)	3 (14.28)	21 (100)	1.28 (0.54)
14	55 (79.71)	14 (20.29)	-	69 (100)	1.20 (0.40)	34 (78.56)	9 (20.0)	2 (4.44)	45 (100)	1.40 (0.63)
15	26 (74.28)	9 (25.72)	-	35 (100)	1.25 (0.44)	36 (66.67)	14 (25.92)	4 (7.41)	54 (100)	1.80 (0.67)
Modified χ^2	1.19 ^{NS}					11.42*				
F-value	4.70*									
	CD=0.90 SEM=0.01									

Figures in the parenthesis indicate percentage, *Significant at 0.05 level, NS-Non Significant



showed low interest (74.28%), followed by average (25.72%) and none of them fell under high level of vocational interest. As per mean scores 15 years scored higher on vocational interest (1.25) than 14 and 13 years children (1.20 and 1.12) respectively. However modified chi-square showed no significant association (1.19).

With regard to non-residential school children, in the age of 13 years, majority showed average level (52.39%), followed by low (33.33%) and high (14.28%) high level of vocational interest respectively. Children in the age of 14 years, 78.56 per cent showed low interest, followed by average (20%) and high (4.44%) level of vocational interest. Among 15 years of children, 66.67 per cent showed low interest, followed by average (25.92%) and high (7.41%) level of vocational interest. With respect to mean scores 15 years scored high on vocational interest (1.80) than 13 and 14 years (1.28 and 1.40) respectively. The modified chi-square analysis showed significant association (11.42) at 1 per cent level. The F value as shown in the table was significant ($F=4.70$) between age and vocational interest of residential and non-residential children.

4.7.2 Vocational interest of residential and non-residential school children by gender

An appraisal of Table 19 and Fig. 14 revealed that 76.67 per cent and 23.33 per cent of boys among residential school children showed low and average vocational interest. Whereas same trend was observed in girls that is 81.67 per cent and 18.33 per cent showed low and average vocational interest. None had high level of vocational interest. On the comparison of mean scores boys scored higher on vocational interest (1.50) than female children (1.20). However, modified chi-square showed no significant association (0.45).

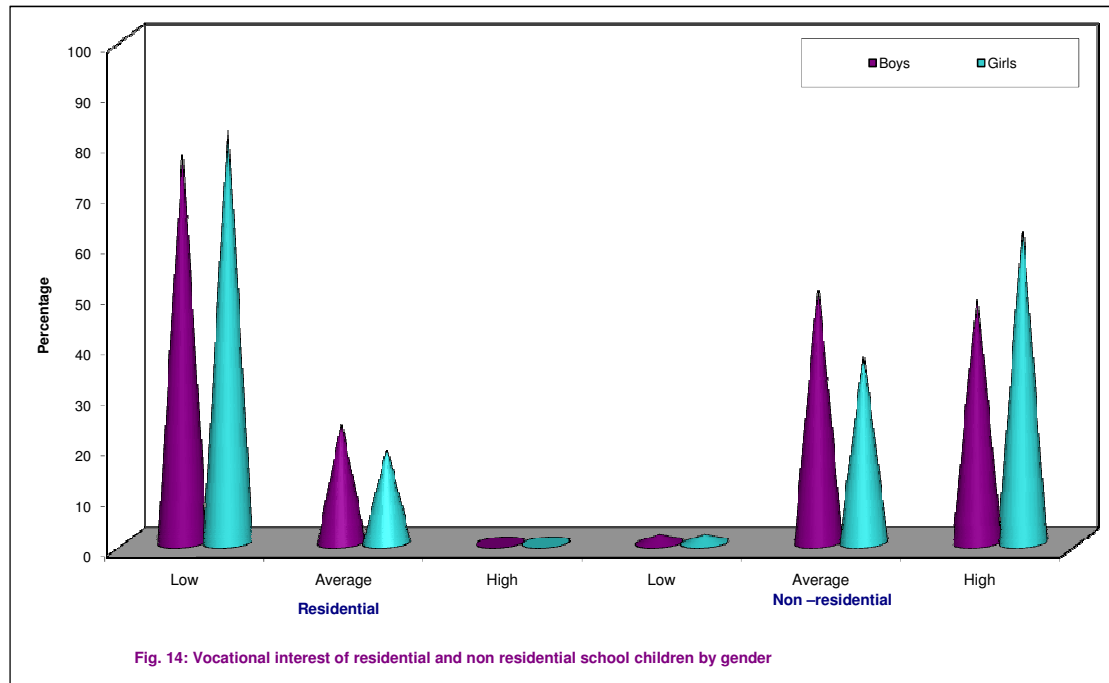
With respect to non-residential school children, 50 per cent of boys showed average interest, followed by high (48.33%) and low (1.67%). Among girls 61.7 per cent showed high interest followed by average (36.66%) and low (1.67%) vocational interest respectively. As per mean scores, girls scored higher (2.53) than male children (1.50) on vocational interest. However, the modified chi-square (2.20) indicated no significant association between gender and vocational interest of non-residential school children. The F value 2.55 showed no significant difference between gender and vocational interest of residential and non-residential children.

Table 19: Vocational interest of residential and non residential school children by gender

N = 240

Gender	Residential (n=120)				Mean (S.D)	Non –residential (n=120)				Mean (S.D)
	Low	Average	High	Total		Low	Average	High	Total	
Boys	46 (76.67)	14 (23.33)	-	60 (100)	1.50 (0.50)	1 (1.67)	30 (50.0)	29 (48.33)	60 (100)	1.50 (0.50)
Girls	49 (81.67)	11 (18.33)	-	60 (100)	1.20 (0.40)	1 (1.67)	22 (36.66)	37 (61.67)	60 (100)	2.53 (0.53)
Modified χ^2	0.45 ^{NS}					2.20 ^{NS}				
F-value	2.55 ^{NS}									
	SEM=0.32									

Figures in the parenthesis indicate percentage, NS-Non Significant



4.7.3 Vocational interest of residential and non-residential school children by standard

Table 20 depicts vocational interest of residential and non residential children by standard. In case of residential school children majority of 8th, 9th and 10th standard showed low vocational interest (87.5, 77.5 and 72.5%) and average (12.5%, 22.5% and 27.5%) vocational interest respectively. Where, none showed high level of vocational interest in all three groups. On the comparison of mean scores 10th standard scored higher on vocational interest (1.27) than 9th and 8th standard children (1.22 and 1.12) respectively. The modified chi-square showed not-significant association (2.82) between standard and study habits.

Among non-residential school children higher percentage of 8th, 9th and 10th standard showed low vocational interest (60%, 70% and 62.5%) followed by average (32.5, 25 and 27.5%) and high (7.5%, 5% and 10%) interest respectively. Further on comparison of mean scores, 10th standard scored higher on vocational interest (1.48) than 9th and 8th standard children (1.35 and 1.47) respectively. However modified chi-square analysis showed no significant association (1.41). Further F value 0.92 showed no significant difference between residential and non-residential schools, standard with vocational interest.

4.7.4 Vocational interest of residential and non-residential school children by ordinal position

Content in Table 21 depicts vocational interest of residential and non-residential school children with respect to ordinal position. It is clear from the table that among residential school children those who are first born showed low (80%) and average (20%) level of vocational interest. Children who are middle born had low (82.05%) and average (17.95%) level of vocational interest. Those who are last born showed low (74.20%) and average (25.80%) level of vocational interest. None of them belonged to poor category of vocational interest. As per mean scores last born scored higher (1.25) on vocational interest than middle and first born children (1.17 and 1.20) respectively. Significant association was not found between ordinal position and vocational interest on residential children as indicated by modified chi-square value 0.68.

Table 20: Vocational interest of residential and non residential school children by standard

N = 240

Standard	Residential (n=120)				Mean (S.D)	Non-residential (n=120)				Mean (S.D)
	Low	Average	High	Total		Low	Average	High	Total	
8 th	35 (87.5)	5 (12.5)	-	40 (100)	1.12 (0.33)	24 (60.0)	13 (32.5)	3 (7.5)	40 (100)	1.47 (0.64)
9 th	31 (77.5)	9 (22.5)	-	40 (100)	1.22 (0.42)	28 (70.0)	10 (25.0)	2 (5.0)	40 (100)	1.35 (0.57)
10 th	29 (72.5)	11 (27.5)	-	40 (100)	1.27 (0.45)	25 (62.5)	11 (27.5)	4 (10.0)	40 (100)	1.48 (0.67)
Modified χ^2	2.82 ^{NS}					1.41 ^{NS}				
F-value	0.92 ^{NS}									
	SEM=0.05									

Figures in the parenthesis indicate percentage, NS-Non Significant

Table 21: Vocational interest of residential and non residential school children by ordinal position

N = 240

Ordinal Position	Residential (n=120)				Mean (S.D)	Non-residential (n=120)				Mean (S.D)
	Low	Average	High	Total		Low	Average	High	Total	
First born	40 (80.0)	10 (20.0)	-	50 (100)	1.20 (0.40)	28 (63.64)	13 (29.54)	3 (6.82)	44 (100)	1.43 (0.62)
Middle born	32 (82.05)	7 (17.95)	-	39 (100)	1.17 (0.38)	25 (65.79)	10 (26.32)	3 (7.89)	38 (100)	1.42 (0.64)
Last born	23 (74.20)	8 (25.80)	-	31 (100)	1.25 (0.44)	24 (63.16)	11 (28.95)	3 (7.89)	38 (100)	1.44 (0.65)
Modified χ^2	0.68 ^{NS}					0.14 ^{NS}				
F-value	0.04 ^{NS}									
	SEM=0.05									

Figures in the parenthesis indicate percentage, NS-Non Significant

As far as the vocational interest of non-residential school children are concerned, 63.64 per cent, 29.54 per cent and 6.82 per cent of the first born fell under low, average and high category of vocational interest. Among middle born (65.78%) had showed low followed by average (26.32%) and high (7.89%) level of vocational interest respectively. For the last born, 63.16 per cent indicated low followed by average (28.95%) and high (7.89%) vocational interest respectively. With respect to mean scores last born children scored better on vocational interest (2.70) than middle and first born (1.42 and 1.43). The modified chi-square analysis showed no significant association (0.14) between vocational interest and ordinal position. The F-value 0.04 indicated no significant difference between ordinal position and vocational interest of residential and non-residential children.

4.7.5 Vocational interest of residential and non-residential school children by family type

It can be observed from the Table 22 that among residential school children in case of vocational interest both nuclear and joint family had showed low (72.89% and 85.24%) and average (27.11% and 14.76%) vocational interest respectively. None of them fell under high category of vocational interest. As per mean scores children from nuclear families had high on vocational interest (1.50) than joint families (1.20). The modified chi-square analysis showed not significant (2.78) result.

Whereas among non-residential school children from nuclear and joint families had low vocational interest (58.33 and 72.92%), followed by average (33.33 and 20.83%) and high (8.33 and 6.25%) respectively. Based on comparison of mean scores values indicated that children from joint families had high (1.43) on vocational interest than children from nuclear families (1.40). The modified chi-square (0.50) showed no association between family type and vocational interest of children. The F-value 0.09 showed no significant difference between family type and vocational interest of residential and non-residential children.

Table 22: Vocational interest of residential and non residential school children by family type

N = 240

Family Type	Residential (n=120)				Mean (S.D)	Non-residential (n=120)				Mean (S.D)
	Low	Average	High	Total		Low	Average	High	Total	
Nuclear	43 (72.89)	16 (27.11)	-	59 (100)	1.50 (0.502)	42 (58.33)	24 (33.33)	6 (8.33)	72 (100)	1.40 (0.491)
Joint	52 (85.24)	9 (14.76)	-	61 (100)	1.20 (0.407)	35 (72.92)	10 (20.83)	3 (6.25)	48 (100)	1.43 (0.631)
Modified χ^2	2.78 ^{NS}					2.70 ^{NS}				
F-value	0.09 ^{NS}									
	SEM= 0.03									

Figures in the parenthesis indicate percentage, NS-Non Significant

4.7.6 Influence of parent's education on vocational interest of residential and non residential school children

A closer look at Table 23 revealed the association between parent's education and vocational interest of residential and non residential school children. Among residential school children, whose fathers were illiterate, had low (89.74%) and average (10.26%) vocational interest. Among the children whose fathers completed only primary education, had low (80%) and average (20%) vocational interest. Children whose father's education was SSLC and PUC had low (86.67%) and average (13.33%) vocational interest. An examination of children whose father's education belonged to graduation and above, (61.11% and 38.89%) had showed low and average vocational interest. None of the children belonged to high category of vocational interest. As per mean scores children whose fathers had completed graduation and above had high on vocational interest (1.39) than illiterate, primary education and SSLC and PUC (1.10, 1.20 and 1.13) respectively. The chi-square revealed that there was significant association (10.79) between father's education and vocational interest of residential children.

Among non-residential school children, whose fathers were illiterate, 64.10 per cent, 23.08 per cent and 12.82 per cent of children showed low, average and high vocational interest respectively. Children whose father's education was primary education, had low (69.39%) followed by average (28.57%) and high (2.04%) vocational interest respectively. Among the children whose father had SSLC and PUC education, had showed low interest (55.18%) followed by average (34.48%) and high (10.34%) respectively. While children whose father's education was graduation and above, had low and average level of vocational interest (66.67% and 33.33%).None belonged to high level of vocational interest. Based on mean scores children whose fathers had SSLC and PUC showed high on study habits (3.00) than illiterate, primary education and graduation and above (1.48, 1.32 and 1.55) respectively. The chi-square value 5.32 found to be not significant. The F value 1.24 also showed there was no significant difference between father education and vocational interest of residential and non-residential children.

Among residential school, children whose mothers were illiterate had low (87.5%) and average (12.5%) level of vocational interest. The children of mothers with primary education showed low (84.44%) and average (15.56%) vocational interest. An examination of children whose mothers had education of SSLC and PUC, 72 per cent and 28 per cent showed low and average level of vocational interest. Children whose mother's education was graduation and above showed average (60%) and low (40%) level of vocational interest. Further on mean scores of children whose mothers had completed graduation and above showed high on vocational interest (1.60) than illiterate, primary education and SSLC and PUC (1.13, 1.16 and 1.28) respectively. However, chi-square value 12.52 was found to be significant.

When examined non-residential school children, among the children who had illiterate mothers, showed low (63.63%) followed by average (27.28%) and high (9.09%) level of vocational interest respectively. For those whose mothers completed primary education, showed low (63.90%) vocational interest, followed by average (27.77%) and only 8.33 per cent had high level of vocational interest. For SSLC and PUC it was observed, 58.33 per cent had low and 41.67 per cent had average vocational interest. While for graduation and above, 100 per cent showed low level of vocational interest. With respect mean scores of children whose mothers were illiterate showed high on vocational interest (1.45) than primary education, SSLC and PUC and graduation and above (1.44, 1.42 and 1.00) respectively. The chi-square value 3.59 revealed no significant association. The F value 2.30 did not reveal significant difference between mother's education and vocational interest of residential and non-residential children.

4.7.6 Influence of parent's occupation on vocational interest of residential and non residential school children

Content in the Table 24 depicts the association between parent occupation and vocational interest of residential and non residential children. Among the residential school, children whose fathers were unemployed, 80 per cent of children had low vocational interest and average (20%) level of vocational interest. Children whose father's were self employed showed low (71.43%) and average (28.57%) vocational interest. Father's who were involved in service at shops/homes/transport/own

Table 23: Association between parent's education and vocational interest of residential and non residential school children

N = 240

Father Education	Residential (n=120)					Non-residential (n=120)				
	Low	Average	High	Total	Mean (S.D)	Low	Average	High	Total	Mean (S.D)
Illiterate	35 (89.74)	4 (10.26)	-	39 (100)	1.10 (0.30)	25 (64.10)	9 (23.08)	5 (12.82)	39 (100)	1.48 (0.72)
Primary Education	12 (80.0)	3 (20.0)	-	15 (100)	1.20 (0.41)	34 69.39)	14 (28.57)	1 (2.04)	49 (100)	1.32 (0.51)
SSLC & PUC	26 (86.67)	4 (13.33)	-	30 (100)	1.13 (0.34)	16 (55.18)	10 (34.48)	3 (10.34)	29 (100)	1.55 (0.69)
Graduation & above	22 (61.11)	14 (38.89)	-	36 (100)	1.39 (0.50)	2 (66.67)	1 (33.33)	-	3 (100)	1.33 (0.58)
Modified χ^2	10.79*					5.32 ^{NS}				
F-value	1.24 ^{NS}									
	SEM= 0.07									
Mother Education										
Illiterate	35 (87.5)	5 (12.5)	-	40 (100)	1.13 (0.33)	21 (63.63)	9 (27.28)	3 (9.09)	33 (100)	1.45 (0.67)
Primary Education	38 (84.44)	7 (15.56)	-	45 (100)	1.16 (0.37)	46 (63.90)	20 (27.77)	6 (8.33)	72 (100)	1.44 (0.65)
SSLC & PUC	18 (72.0)	7 (28.0)	-	25 (100)	1.28 (0.46)	7 (58.33)	5 (41.67)	-	12 (100)	1.42 (0.51)
Graduation & above	4 (40.0)	6 (60.0)	-	10 (100)	1.60 (0.57)	3 (100)	-	-	3 (100)	1.00 (0.00)
Modified χ^2	12.52*					3.59 ^{NS}				
F-value	2.30 ^{NS}									
	SEM= 0.05									

Figures in the parenthesis indicate percentage, *Significant at 0.05 level, NS-Non Significant

cultivation/independent business 91.30 per cent of children had low and 8.70 per cent showed average level of vocational interest. Father's who had service in central/state/public, 55.88 per cent of children showed low and 44.12 per cent showed average vocational interest. As per mean scores children of whose fathers involved in service in central/state/public scored high on study habits (1.44) than unemployed, self employed, services at shops/homes/ transport/ own cultivation/independent business (1.20, 1.28 and 1.08) respectively. The modified chi-square showed significant association between father's occupation and vocational interest of children (17.59).

With regard to non-residential school children, fathers who were unemployed, majority of children 57.14 per cent, 28.57 per cent and 14.29 per cent showed low, average and high level of vocational interest. Among children of self employed fathers 59.09 per cent, 31.82 per cent and 9.09 per cent showed low, average and high level of vocational interest respectively. Among the children whose father was in shops/homes/ transport/ own cultivation/independent business, around 67.04 per cent fell in low level of vocational interest, average (26.14%) and high (6.82%) level of vocational interest respectively. For those whose father was in central/state/public sector, 66.67 per cent, 33.33 per cent showed average and high level of vocational interest respectively. Based on mean scores children of fathers working in central/state/public scored high on study habits (1.66) than unemployed, self employed and services at shops/homes/transport/ own cultivation/independent business (1.57, 1.50 and 1.39) respectively. However, modified chi-square had no significant association between father's occupation and vocational interest of children (3.28). Among residential and non-residential children the F value 0.09 showed no significant difference between father occupation and vocational interest.

With regard to mother's occupation among residential school, children whose mothers were unemployed, 74.63 per cent, 25.37 per cent showed low and average level of vocational interest. For children whose mother was self-employed, had low (100%) level of vocational interest. Among the mothers who had services in shops/homes/ transport/ own cultivation/independent business, around 86.36 per cent had low vocational interest and 13.64 per cent had average vocational interest. Mothers of children who had services in central/state/public, had low (66.67%) and average (33.33%) level of vocational interest. None of the children fell under high level of

Table 24: Association between parent's occupation and vocational interest of residential and non residential school children

N = 240

Father Occupation	Residential (n=120)					Non –Residential (n=120)				
	Low	Average	High	Total	Mean (S.D)	Low	Average	High	Total	Mean (S.D)
Unemployment	8 (80.0)	2 (20.0)	-	10 (100)	1.20 (0.42)	4 (57.14)	2 (28.57)	1 (14.29)	7 (100)	1.57 (0.79)
Self-employment	5 (71.43)	2 (28.57)	-	7 (100)	1.28 (0.49)	13 (59.09)	7 (31.82)	2 (9.09)	22 (100)	1.50 (0.67)
Services at shops, transport, own cultivation of land/independent business	63 (91.30)	6 (8.70)	-	69 (100)	1.08 (0.28)	59 (67.04)	23 (26.14)	6 (6.82)	88 (100)	1.39 (0.62)
Services in central/state/public	19 (55.88)	15 (44.12)	-	34 (100)	1.44 (0.50)	1 (33.33)	2 (66.67)	-	3 (100)	1.66 (0.58)
Modified χ^2	17.59**					3.28 ^{NS}				
F-value	0.09									
	SEM=0.04									
Mother Occupation										
Unemployment	50 (74.63)	17 (25.37)	-	67 (100)	1.25 (0.44)	37 (60.66)	19 (31.14)	5 (8.29)	61 (100)	1.47 (0.65)
Self employment	3 (100)	-	-	3 (100)	1.00 (0.00)	8 (57.14)	6 (42.86)	-	14 (100)	1.43 (0.51)
Services at shops, transport, own cultivation of land/independent business	38 (86.36)	6 (13.64)	-	44 (100)	1.14 (0.35)	32 (72.72)	8 (18.19)	4 (9.09)	44 (100)	1.36 (0.65)
Services in central/state/public	4 (66.67)	2 (33.33)	-	6 (100)	1.33 (0.52)	-	1 (100)	-	1 (100)	2.00 (0.00)
Modified χ^2	3.57 ^{NS}					7.30 ^{NS}				
F-value	0.30 ^{NS}									
	SEM=0.06									

Figures in the parenthesis indicate percentage, **Significant at 0.01 level, NS-Non Significant

vocational interest. Based on mean scores children of whose mothers involved in service in central/state/public scored high on vocational interest (1.33) than unemployed, self employed and services at shops/homes/transport/own-cultivation/ independent business (1.25, 1.00 and 1.14) respectively. The modified chi-square analysis didn't show any significant association (3.57).

In case of non-residential school, among children whose mothers were unemployed, 60.6 per cent of children showed low, average (31.14%) and high (8.29%) level of vocational interest respectively. For children whose mother was self-employed, 57.14 per cent had low and average (42.86%) vocational interest. Among children of mothers who had service in shops/homes/transport/own cultivation/independent business, 72.72 per cent of children had low followed by average (18.19%) and high (9.09%) level of vocational interest. All children (100%) showed average level of vocational interest whose mother's had services in central/state/public. With respect to mean scores children of whose mothers involved in service in central/state/public scored high on vocational interest (2.00) than unemployed, self employed, and services at shops/homes/transport/own-cultivation/independent business (1.47, 1.43 and 1.36) respectively. The modified chi-square analysis showed no significant association (7.30). The F value 0.30 as shown in the table was not significant between occupation of mother's and vocational interest of residential and non-residential children.

4.7.8 Vocational interest of residential and non residential children by family income

The Table 25 depicts vocational interest of residential and non residential children by family income. As can be observed in residential school children, among those with family income of > 5000, 5000-9,999, 10,000-19,000 and >20,000 showed low interest (82.35, 86.36, 76.67% and 50%) and followed by average (17.65%, 13.64%, 23.33% and 50%) level of vocational interest. None of them fell under high level of vocational interest. With respect to mean scores of family income with >20,000 scored higher on vocational interest (1.50) than family income with > 5000, 5000-9,999 and 10,000-19,000 (1.18, 1.14 and 1.23) respectively. However, modified chi-square revealed significant association (7.89) between family income and vocational interest of residential children.

Table 25: Vocational interest of residential and non residential school children by family income

N = 240

Family Income	Residential (n=120)				Mean (S.D)	Non-residential (n=120)				Mean (S.D)
	Low	Average	High	Total		Low	Average	High	Total	
>5,000	28 (82.35)	6 (17.65)	-	34 (100)	1.18 (0.39)	36 (62.07)	18 (31.03)	4 (6.90)	58 (100)	1.45 (0.63)
5,000-9,999	38 (86.36)	6 (13.64)	-	44 (100)	1.14 (0.35)	31 (67.40)	12 (26.08)	3 (6.52)	46 (100)	1.39 (0.61)
10,000-19,000	23 (76.67)	7 (23.33)	-	30 (100)	1.23 (0.43)	10 (62.5)	4 (25.0)	2 (12.5)	16 (100)	1.50 (0.73)
>20,000	6 (50.0)	6 (50.0)	-	12 (100)	1.50 (0.40)	-	-	-	-	-
Modified χ^2	7.89*					1.03 ^{NS}				
F-value	0.006 ^{NS}									
	SEM=0.05									

Figures in the parenthesis indicate percentage, *Significant at 0.05 level, NS-Non Significant

Similarly among non-residential school children, those with the family income of >5000, 5000-9999 and 10,000-19,000 showed low (62.07%, 67.40 and 62.5%) followed by average (31.03%, 26.08 and 25%) and high (6.90%, 6.52% and 12.5%) level of vocational interest. No children fell under family income of > 20000. As per mean scores family income with 10,000-19,000 scored higher on vocational interest (1.50) than family income with > 5000 and 5000-9,999 (1.45 and 1.39) respectively. The chi-square analysis showed not-significant association (1.03). The F value 0.006 was not significant between family income and vocational interest of residential and non-residential children.

4.7.9 Vocational interest of residential and non residential children by socioeconomic status

A perusal of Table 26 indicates the influence of socio-economic status on vocational interest. It is clear from the table that among residential school, equal per cent (50%) of children in low socio-economic group showed low and average level of vocational interest. None fell under high level of vocational interest. Majority of Children from the medium and high socio-economic status showed low (81.73% and 64.28%) and average (18.27% and 35.72%) level of vocational interest respectively. No one belonged to high level of vocational interest. Based on mean scores low socio-economic status had high on vocational interest (1.50) than medium and high socio-economic status (1.18 and 1.35) respectively. However, modified chi-square indicated non-significant association (3.32) between socio economic status and vocational interest

As far as the vocational interest of non-residential school children, among low socio-economic status, 66.67 per cent and 33.33 per cent belonged to low and high level of vocational interest. None belonged to average level of vocational interest. In case of medium socio-economic status 64.10 per cent, 29.06 per cent and 6.84 per cent showed low level of vocational interest followed by average and high level of vocational interest respectively. None of them fell under high socio-economic status group. With respect to mean scores low socio-economic statuses were high on vocational interest (1.67) than medium socio-economic status (1.43). The chi-square analyses showed no significant association (3.61). The F value 0.02 also showed there was no significant difference

Table 26: Vocational interest of residential and non residential school children by socioeconomic status

N = 240

Socio-economic status	Residential (n=120)				Mean (S.D)	Non-residential (n=120)				Mean (S.D)
	Low	Average	High	Total		Low	Average	High	Total	
Low	1 (50.0)	1 (50.0)	-	2 (100)	1.50 (0.71)	2 (66.67)	-	1 (33.33)	3 (100)	1.67 (1.15)
Medium	85 (81.73)	19 (18.27)	-	104 (100)	1.18 (0.39)	75 (64.10)	34 (29.06)	8 (6.84)	117 (100)	1.43 (0.62)
High	9 (64.28)	5 (35.72)	-	14 (100)	1.35 (0.50)	-	-	-	-	-
Modified χ^2	3.32 ^{NS}					3.61 ^{NS}				
F-value	0.02 ^{NS}									
	SEM=0.87									

Figures in the parenthesis indicate percentage, NS-Non Significant

between socio economic status and vocational interest of residential and non-residential children.

4.8 Relation between child and familial characteristics and vocational interest of residential and non-residential school children

The Table 27 shows the coefficient of correlation between child and familial characteristics and vocational interest of school children. Standard of the children was positively and significantly related with scientific. Education of father was negatively and significantly related with consumer servicers and production area. Whereas, mother's education was positively and significantly related with artisans and technician area. Family income and socio economic status was negatively and significantly related with consumer servicers and production area. It is important to highlight that rest of the child and familial characteristics found to be not significant related with areas of vocational interest.

4.9 Inter relationship between study habits, aptitude and vocational interest of residential and non-residential school children

As perusal of Table 28 revealed that there was highly significant relationship with study habits and vocational interest of both residential and non-residential school children.

Among aptitude dimensions, in case of abstract reasoning there was highly significant relationship with study habits and no significant relationship with vocational interest of residential school children. Whereas no significant relationship with study habits and vocational interest of non-residential school children.

In case of verbal reasoning there was significant relationship with vocational interest of residential school children. No significant relationship with study habits of residential and vocational interest and study habits of non-residential school children.

Table 27: Coefficient of correlation between child and familial characteristics and vocational interest of school children

Independent variables	Vocational interest areas									
	Literary	Scientific	Administration	Accountancy	Artisans and technicians	Artistic	Agriculture	Reformative	Social worker	Consumer servicers and production
Age	0.05	0.06	0.047	-0.03	-0.01	0.03	0.04	0.03	0.03	0.07
Ordinal Position	0.00	0.09	0.06	0.05	0.01	0.08	0.04	0.03	0.01	0.01
Standard	0.07	0.14*	0.11	0.05	0.06	0.07	0.08	0.10	0.07	0.03
Father Education	-0.00	0.07	0.09	0.06	0.04	0.11	0.03	-0.02	0.06	-0.15*
Mother Education	0.08	0.05	0.06	0.05	0.13*	0.09	0.09	-0.01	0.06	-0.04
Father Occupation	0.01	0.02	0.07	0.05	0.02	0.04	0.05	-0.01	0.09	-0.23
Mother Occupation	0.02	0.06	-0.11	0.10	-0.10	-0.07	-0.12	-0.09	-0.06	-0.01
Family Income	-0.07	0.04	-0.05	0.02	-0.03	0.03	0.04	-0.06	0.12	-0.18*
Socio-Economic Status	0.07	0.03	-0.00	0.01	0.03	0.00	0.02	-0.06	-0.02	-0.17*

Figures in the parenthesis indicate percentage, *Significant at 0.05 level

Table 28: Inter relationship between study habits, aptitude and vocational interest of residential and non-residential school children

Variables	Residential (n=120)		Non-residential (n=120)	
	SH R	VIR r	SH R	VIR r
Study habits	1.00	0.92**	1.00	0.88**
Aptitude dimensions				
Abstract reasoning	0.45**	0.26	0.23	-0.06
Mechanical reasoning	-0.26	0.26	-0.08	-0.06
Verbal reasoning	-0.11	0.37*	-0.02	-0.02
Numerical ability	0.30*	0.21	-0.21	0.12
Clerical speed & accuracy	0.23	0.04	0.31*	-0.23
Spelling	0.09	0.26	0.13	0.12
Sentences	0.49**	0.14	0.18	-0.16
Space relations	-0.04	0.23	-0.06	-0.05
Scholastic aptitude (VR+NA)	0.06	0.38*	-0.20	0.20

Figures in the parenthesis indicate percentage, *Significant at 0.05 level, **Significant at 0.01 level

With regard to numerical ability significant relationship was observed with study habits of residential school children. Whereas, no significant relationship with study habits and vocational interest of non-residential school children.

For clerical speed and accuracy a significant relationship was found with study habits and no significant relationship with vocational interest of non-residential school children.

With respect to sentences there was significant relationship with study habits and no relationship with vocational interest of residential school children. Whereas, no significant relationship with study habits and vocational interest of non-residential school children.

In case of scholastic aptitude a significant relationship with vocational interest of residential school children. No significant relationship with study habits of residential and vocational interest and study habits of non-residential school children.

Further observation of the same table revealed that aptitude dimensions like mechanical reasoning, spelling and space relations did not show any significant relationship with study habits and vocational interest of both residential and non-residential school children.

Majority of students found under category of low vocational interest and average and good category of study habits in both residential and non-residential school children. There was positive but not significant relation between vocational interest and study habits of children.

5. DISCUSSION

The information related to study habits, aptitude and vocational interest of residential and non-residential school children is discussed under following headings,

- 5.1 Study habits of residential and non-residential school children
- 5.2 Factors influencing study habits of residential and non-residential school children
- 5.3 Aptitude of residential and non-residential school children
- 5.4 Factors influencing aptitude of residential and non-residential school children
- 5.5 Vocational interest of residential and non-residential school children
- 5.6 Factors influencing vocational interest of residential and non-residential school children
- 5.7 Interrelation between study habits, aptitude and vocational interest of residential and non-residential school children

5.1 Study habits of residential and non-residential school children

Study habits keep the learner perfect in getting knowledge and developing attitude towards things necessary for achievement in different field of human endeavour. It is planned program of subject mastery. The most important requisite for effective study habit is a good system of study, regulation of work and the persistence till the end of the programme.

Percentage distribution of residential and non-residential school children by study habits (Table 2) revealed that majority of children had good (61.7%) and average (37.5%) study habits in both the groups. From the same table it was observed that there was significant difference between residential and non-residential school children on study habits indicating that study habits was considerably better in residential school children than non-residential school children. This may be due to the reason that, children living in hostels have regular study hours which they have to maintain every

day and effectively manage the time and memorize the lessons. They also carry out their plan of work through scheduled time tables. Residential school children also have the facility of special classes, library usage and availability of teachers in campus for their doubt clarifications. This type of conducive environment for study makes them to acquire good study habits. The results of the present study is in conformity with findings of Razia (2015) who pointed out that the study habits of secondary school students were average. Thiyaagu (2013) who revealed that there was significant difference between study habits of students with respect to type of school, where hostellers were better than day scholars due to lack of interest given by the parents of day scholars but every day study hours conducted in hostels. Lawrence (2014) revealed that majority of secondary school children had moderate (69.4%) and 9.4 per cent of them had high level of study habits. Whereas 74.3 per cent of hostellers had moderate and 17.1 per cent of them had high level of study habits. Those who studying in hostels had good study habits than day-scholar students. Doris and Mosunmade (2013) pointed out that 51.5 per cent of the students spend their free period for study and organizing their studies, note taking during lectures (55.3%) and memorization (51.2%) were methods used by most of the students for knowledge assimilation.

5.2 Factors influencing study habits of residential and non-residential school children

Child characteristics

5.2.1 Age and standard

It is evident from the result (Table 3 and Table 5) that age and standard of the children had no significant influence on the study habits of residential and non-residential school children. However older (15 years) and higher class children (10th) performed better in study habits than younger and lower class children. The reason might be that as age increases children has to understand different concepts of syllabus and their involvement in studies also increases and thus helps them to develop good study habits. The findings are in line with Ossai (2012) who observed that the mean score of 16-19years (58.73) was higher than the 12-15 years (44.99), which shows study habits tend to improve with age. Several studies (Suneetha and Mayuri, 2001; Ehiozuwa

and Anaso, 2013; and Lawrence, 2014) revealed that older and higher class children have better study habits than their counterparts.

5.2.2 Gender

It was important to highlight that gender has no significant influence and association with study habits of residential and non-residential school children (Table 4). The reason might be that in present scenario, parent's encourage, support their children and school provide equal opportunity regardless of gender to achieve their academic excellence through providing facilities like text books, note books and educational materials for studies. Which might have helped them to cultivate better study habits. The findings are in line with Nuthana (2009) who revealed that both boys and girls did not differ significantly on overall study habits. Premalakshmi (2012), Haider and Verma (2009) and Kumar and Sohi (2013) revealed that no significant difference was observed between boys and girls with regard to study habits. Ayodele and Adebisi (2013) opined that gender was found to have no influence on study habits of students. Gudaganavar and Halayannavar (2014) results showed that, there was no association between boys and girls on study habits.

5.2.3 Ordinal position

It is very interesting to highlight (Table-6) that ordinal position had significant influence on study habits of residential and non-residential school children indicating that last born children performed better than first born children. This might be because younger children get encouragement and guidance from their parents, siblings help them to keep track in their studies and also help in their routine homework in solving problems and rewarding them in their achievement. This might had influenced the last born children to develop positive learning and good study skills than first and middle born children.

Familial characteristics

5.2.4 Family type

With regard to type of family there was no significant difference and association on study habits of residential and non-residential school children (Table 7). However

the children from nuclear families had good study habits as compared to joint families. The present research in conformity with the study conducted by Chand (2013) who reported that, there exists no significant difference between students belonging to nuclear and joint family on different components of study habits and total study habits.

5.2.5 Parent's education and occupation

It is evident from the table 8 and table 9 that there was no significant difference as well as no association between residential and non-residential school children in relation to parent's education and occupation on study habits. In case of both residential and non-residential school children whose parents completed graduation performed better in study habits than other counterparts. With regard to occupation of parents who had involved in services in central/state/public their children showed higher study habits. The study is in line with Nagaraju *et al.* (2002) who found that fathers and mothers educational qualification has influence on the study habits of IX class pupils. Ekeke *et al.* (2013) who revealed that parent education influence the students study habits as educated parents tend to encourage children and provide support.

5.2.6 Family income and socio-economic status

The findings of present study (Table 10 and 11) showed that family income and socio-economic status had no significant influence on study habits of residential and non-residential school children. The reason could be that availing facilities in schools like free books, uniform, mid day meal and scholarship facility for children helped them to attend school regularly and develop good study habits without much financial burden on part of the family. The findings supported by Nagaraju *et al.* (2002) who revealed annual income, of the family has no significant influence on the study habits of IX class pupils. Quist *et al.* (2006) opined that study habits of students from high socioeconomic homes did not differ significantly from students from low socio economic homes. However the present study results are not in accordance with the study conducted by Abdullahi (2010) revealed that children from higher socio-economic status students performed better in study habits components of homework and assignment, written work and concentration than lower socio-economic status students. Similarly finding was observed by Razia (2015) who found that significant and positive relationship exists between study habits and socio-economic status (SES)

of students. With high SES students having better study habits than low SES students and so also middle SES students performed better in comparison to low SES students.

5.3 Aptitude of residential and non-residential school children

Aptitude measure a student's ability to learn which helps teachers and parents to predict how well a student is likely to do in school. These tap a combination of learning experiences and inborn potential that was obtained under uncontrolled and undefined conditions. It is the interaction between individual characteristics and learning opportunities in the environment. Test results obtained can then be used to predict a learner's probable success in a future course or career. Aptitudes can be measured and are used to predict a person's potential for achievement in a defined area.

5.3.1 Abstract reasoning

The results of present study (Table 12a) showed that residential school children (62.5%) performed better in abstract reasoning than non-residential school children (7.5%). This may be due to involvement of children in studies, their acquisition of skills, inherent qualities, logical thinking ability and solving complex problems. It was also observed that majority of children were given opportunity to involve in group discussion activity, quiz computations and solving puzzle activities which might had made them to excel in abstract reasoning ability than non-residential school children. With respect gender there was no significant difference and association existed between boys and girls on abstract reasoning ability. This might be due to equal opportunity given to both boys and girls in studies, natural talent, skill acquisition and quickness in learning which might have improved their ability. This is in line with study conducted by Mankar and Chavan (2013) who revealed similar distribution of children on abstract reasoning (low-25%, medium-54.16% and high-20.84%).

5.3.2 Mechanical reasoning

Mean difference were significant where in residential school children performed better in mechanical reasoning than non-residential school children. The results of the Table 12b showed that mechanical reasoning ability was higher in boys than that of girls. The difference

in performance between two gender could be due to the difference in treatment by parents. In Indian situation boys are encouraged to work in machinery, engineering and automobile field compared to girls. More over boys are highly interested in mechanical work, motion device, electrical trade operating, repair of complicated equipment and understanding principles behind machines. According to Connellana *et al.* (2000) who pointed out that sexual dimorphism in perception of mechanical (schematic face) objects was more preferred by male neonates of one day old while female infants preferred a human face. Swanson (1990) who revealed high meta cognitive individuals outperformed lower meta cognitive individuals problem solving regardless of their overall aptitude test.

5.3.3 Verbal reasoning, numerical ability and scholastic aptitude

Further the result of the table 12c,12d and 12g revealed that in case of verbal reasoning, numerical ability and scholastic aptitude there was significant difference observed which indicating that residential school children performed better than non-residential school children. The reason could be because of proper study environment, clarification of numerical problems by teachers available at campus, facility of competitive exam books, puzzles and story books at library, reading comprehension, understanding concepts framed in words and analogies to follow instructions made them to perform better in verbal reasoning, numerical ability and scholastic aptitude as compared to non-residential school children. This was supported by Nagraju (2006) who revealed that there was a significant difference between residential and non residential school students in relation to mathematics problems solving. Olatoye and Aderogba (2011) reported that significant difference between numerical and verbal abilities combined together to account for 38.8 per cent of the total variance in student performance in the aptitude test. Fatoke *et al.* (2013) reported that students with high numerical ability performed better than their low numerical ability counterparts and also showed convincingly that the problem- solving approach proved to be a more effective and reliable method of teaching than the conventional lecture method.

With respect to gender no significant influence was found with regard to verbal reasoning, numerical ability and scholastic aptitude. However girls performed better in verbal reasoning and boys performed better numerical ability and scholastic aptitude than their counterparts. The findings are in conformity with Olatoye and Aderogba

(2011) who reported no significant difference between male and female students' performance in verbal ability and numerical ability. Goldin *et al.* (2006) revealed that female high school students outperform male students in most subjects and in particular on verbal tests. However, Bassey *et al.* (2004) reported that male students performed better than females in numerical ability tests. Kolawole (2007) and Tella (2007) indicated that boys performed significantly better than girls in mathematics computation task. Bakare (1990) reported that trainable cognitive domains like numerical and verbal skills could lead to improvement in general aptitude performance of the students. This was mainly because of girls use their right brain which results in better performance in language ability and boys use their left brain more which results in better performance in creativity. Zeidner (1986) reported that male students performed better in general aptitude test than their female counterparts. However the difference was statistically not significant. Yeli and Dafedar (2013) revealed that boy and girl students of secondary schools had similar scholastic aptitude scores. The students of unaided secondary schools had higher scholastic aptitude scores as compared to students of government secondary schools.

5.3.4 Linguistic ability (clerical speed and accuracy, spelling and sentence)

It is interesting to highlight that (Table 12f) among dimension of linguistic ability, with regard to clerical speed and accuracy no significant difference and association was found between residential and non-residential school children. And also no significant difference and association was found between boys and girls. (Table 12f). However majority (90%) of children have high ability in clerical speed and accuracy. This may be because of the prevalence of the examination system with a high tendency of 30 per cent objective type of answers. The study in line with Sujata (2005) who indicated that higher percentage (41.25%) of degree students had high aptitude in clerical speed and accuracy.

With respect to spelling ability majority (>95%) of children from both residential and non residential schools were in the low level. The reason might be that school curriculum is an examination driven nature and teachers have to finish the prescribed course content in a given frame of time in order to produce results. So less emphasis is given for reasoning, creativity, vocabulary, grammatical errors and use of

dictionary which might have affected the children low ability in language usage. There was no significant association as well as no significant difference between type of school, gender and spelling ability.

In case of sentences, there was significant difference between residential and non-residential school children indicating residential were better than non-residential. This would be because as residential schools have facility of library, reading other books than text books resulted in good performance in sentence ability. There was no association between type of school and sentences. With regard to gender majority were in lower range but females out performed than boys in sentences ability. This would be because girls concentrate more during reading and writing. This might have helped them in their sentence ability. There was no association between gender and sentences ability. The finding was supported by Kirtika and Duhan (2009) found that about 75 per cent of the adolescents were in below average category in linguistic ability and only 20 per cent performed average.

5.3.5 Space relation

With regard to aptitude dimension of space relation no significant difference and association was found between residential and non-residential school children. And also no significant difference and association was found between boys and girls. (Table 12e). However majority (90%) of children had low ability in space relation. The study is in accordance with Sujata (2005) who indicated that higher percentage of degree students had low aptitude in space relations than other areas of aptitude.

5.4 Factors influencing aptitude of residential and non-residential school children

It was interesting to note that factors like, father's education, occupation and socio-economic status was positively and significantly related with abstract reasoning, numerical ability and scholastic aptitude of children. Whereas ordinal position and family income was positively and significantly related with numerical ability. This may be because of the fact as better the parent's education, occupation, family income and socio-economic status they likely to spend money for children education and engage

children in daily home reading, encourage and provide material support and facilities to their children at home. Mankar and Chavan (2013) who revealed that, there was a strong correlation of personal characteristics and aptitude of students. Faculty wise correlation seen very significant with numerical ability (0.40) than other areas of aptitude.

5.5 Vocational interest of residential and non-residential children

There was significant difference between residential and non-residential school children on different areas of vocational interest (Table 14). It is interesting to highlight that majority of residential school children had low level of vocational interest in the areas of literary (66.7%), scientific (49.2%), administration (72.5%), accountancy (82.5%), artisans and technician (80.8%), artistic (52.5%), agriculture (65%), reformative (83.3%), social worker (60%) and consumer servicers and production (83.3%) areas than non-residential school children. Whereas majority of non-residential school children showed average interest in literary (46.7%), scientific (36.7%), administration (44.2%), accountancy (26.7%), artisans and technician (25.8%), artistic (37.5%), agriculture (30%), reformative (31.7%), social worker (38.3%) and consumer servicers and production (27.5%) areas of vocation. This might be because, as non-residential school children they are living with family/relatives/friends/neighbours, attend school for a particular period of time, had social network and exposure to mass media which help them to select a better vocational choices than residential school children. The results are in line with Desetty *et al.* (2012) study which revealed that majority of adolescents have low level of vocational interest in the areas like, literacy (73%), accountancy (80%), artisans and technician (86%), agriculture (78%), reformative (73%), social worker (80%) and consumer servicers and production (87%).

5.5.1 Residential school children and vocational interest

Comparison of vocational interest of residential boys and girls is depicted in the Table 15. The results of table revealed that there was significant difference between gender and vocational interest in the areas of administration, agriculture and consumer servicers and production among residential school children. From traditional roles in family men are considered to be a bread winner and primary income earner in the

family, whereas women have to look after household activities. So this makes men to take up the career to fulfil the requirements of the family. In the present study majority of boys had aspiration towards vocations like, police officer/superintendent's, commander and district commissioner in the administration area and in agriculture area had interest in the vocations like, agriculture inspector, scientist and agriculturist. Whereas girls had interest towards consumer servicers and production area of vocations such as, care taker, home science teacher, tailor and home decorator.

From the same table it was observed that no significant difference between boys and girls of residential school children with regard to vocations like, literary, scientific, accountancy, artisans and technician, artistic, reformative and social worker areas. The results are in line with the study conducted by Begum (2013) who reported that there was significant difference in the vocational interests of male and female secondary school students. Gautam *et al.* (2013) who revealed that significant difference for the vocational interest of tribal boys and girls for agriculture, administration and consumer servicers and production activities. Mattoo (2013) who found that boys are inclined towards technical and outdoor interests than girls. However, girls are reported to be higher in fine arts, crafts and consumer servicers and production interest areas. Gender differences could not be established between boys and girls on literary, scientific and medical interests. It can be inferred that both the groups of students have inclination towards these areas to an equal extend.

5.5.2 Non-residential school children and vocational interest

The Table 16 depicts comparison between boys and girls interest with regards to their choice in area wise vocation of non-residential school children. The results indicated that a slightly higher percentage of boys had average interest towards vocation such as accountancy, artisans and technician, agriculture and social worker areas and relatively more number of boys showed high interest in administration, artistic, consumer servicers and production areas as compared to girls. The results are similar with research studies carried out by Thompson *et al.* (2004) who opined that males

having slightly higher interest on the realistic, investigative, enterprising, and conventional themes than females.

A significant difference was observed in the areas of administration, accountancy, artisans and technician, artistic, agriculture and social worker between boys and girls. Where boys want to become police officer/superintendent's, business man, agriculture inspector, social worker reformer and army as these fields hold high position, glamour and prestige in the society. This is in line with study conducted by Baruah (2013) reported that there was significant difference between boys and girls in selected areas of vocational choice indicating that boys shown average interest in administration, accountancy, artistic and social worker area whereas girls in administration and artistic. Boys showed least interest in consumer servicers and production and girls in literacy areas.

With regard to vocational choice such as literary, scientific, reformative and consumer servicers and production areas both boys and girls expressed similar vocational interest. The findings are in line with research conducted by Baruah (2013) pointed out that students choose vocational areas as per their interest. It was also found that, in many cases interest between boys and girls are similar.

5.5.3 Preference of vocational interest of residential and non residential school children

From the Table 17 it was observed that preference of choosing vocational interest differs from residential to non-residential school children. Among residential school majority of children showed main preference as artistic followed by scientific, social worker and least preference with reformative. Where among non-residential school, majority of children showed main preference for scientific, followed by artistic, literary and least preference with the accountancy. The study in line with Dhillon and Kaur (2005) who observed that environment of the schools plays important role in the development and selection of vocational choice.

5.6 Factors influencing vocational interest of residential and non-residential school children

Child characteristics

5.6.1 Age

It is evident from Table 18 that age of the children had significant influence on the vocational interest of residential and non-residential school children. Where non-residential children performed better than residential school children in vocational aspiration. Older children (15 years) were found to have better vocational interest than younger children. The reason might be that as age increases children become more social worker, tend to acquire new information, exposure to mass media and seek guidance from elders which might help them to be aware of different vocational areas and showed better interest. The present study also revealed positive significant relationship between age and vocational interest of non-residential school children. The finding is supported by the study conducted by Thompson *et al.* (2004) who found significant difference between age and vocational interest of children and as a linear trend across age categories with level of interest generally increasing with age.

5.6.2 Gender

It was interesting to highlight that gender has no significant difference and association with vocational interest of residential and non-residential school children (Table 19). The reason might be that in present context, both boys and girls getting guidance from their parents and teachers for proper selection of vocational career and employment opportunities. Which might have helped them to know about different areas of vocations. The result is in accordance with the study conducted by Otta and Williams (2012) who also observed no significant difference between the male and female in their vocational interest.

5.6.3 Standard and ordinal position

From the Table 20 and 21 it was observed that there was no significant difference and association between standard and ordinal position with regard to

vocational interest of residential and non-residential school children. It is interesting to note that majority of children from different standard and ordinal position had low level of vocational interest than average and high level. Findings of the study are in line with Desetty *et al.* (2012) who reported that irrespective of their personal background, gender and ordinal position, majority of adolescents were assessed to have low level interest in the perspective related to literacy (73%), accountancy (80%), artisans and technician (86%), agriculture (78%), reformative (73%), social worker (80%) and consumer servicers and production (87%) vocational areas followed by average and high level interests on the same areas.

Familial characteristics

5.6.4 Family type

The type of family has no significant influence and association on vocational interest of residential and non-residential school children. The probable reason may be that, the choice of vocational area depends on the individual interest, knowledge and perception for particular area but not in accordance with family type (Table 22).

5.6.5 Parents education and occupation

It is evident from the Table 23 and 24 that there was no significant difference between residential and non-residential school children with regard to parent's education, occupation and family income on vocational interest of children. The findings is supported by Mattoo (2013) who observed that parental education could not make any significant difference in some of the career choices like, fine arts, literary, scientific, medical, outdoor, sports and consumer servicers and production. Jamabo (2014) also found that adolescents' vocational aspiration is not necessarily influenced by their parental level of education.

It was interested to note that parent's education, father's occupation and family income had significant association on vocational interest of residential school children (Table 25). The reason could be that the children whose fathers have higher educational qualification, better occupied jobs with salaried income had influence on shaping vocational aspiration and likely to insist motivation for upward occupational choices of

children. The findings are in line with Kentli (2014) who found that parents seemed to be the most influential factor on students' vocational aspiration, followed by the favourite academic subject and social worker environment.

5.6.6 Socio-economic status

The results of present study showed (Table 26) that there was no significant difference between residential and non-residential school on socio-economic status with respect to vocational interest of children. The results are in line with study conducted by Zeshan *et al.* (2014) which revealed that there was no significant difference between the vocational interest and socio economic status of male and female, rural and urban adolescents. The results are not in accordance with study carried out by Edoh and Alutu (2011) who found that there was significant difference in educational values and aspirations of students from different socio-economic status groups. Jamabo (2014) also found that parental socioeconomic status has strong influence on adolescents' vocational aspiration.

5.6.7 Relationship between child and familial characteristics and vocational interest of residential and non-residential school children

The present study (Table 27) revealed a positive and significant relationship between standard of children and scientific area of vocational interest. Mother education was positively and significantly related with artisans and technician area of vocational interest. The familial factors like father education, family income and socio economic status had negative and significant relation with consumer servicers and production vocational area of children. It showed that children whose father's had higher educational qualification and better socio economic status showed less aspiration for consumer servicers and production vocational choice. This is supported by Desetty *et al.* (2012) revealed that educational qualification and socio economic status of parents place an important role in shaping the occupational aspiration of children. Pradhan (2002) reported that factors which affect influence the vocational aspirations of children are economic status, parent's educational qualification and parent's occupation.

5.7 Interrelation between study habits, aptitude and vocational interest of residential and non-residential school children

It is clear from the Table 28 that there was highly positive and significant relationship between study habits and vocational interest among residential and non-residential school children. From the same table it was observed that the dimensions of aptitude like abstract reasoning, numerical ability and sentences was positively and significantly correlated with study habits of residential children ($r = 0.45, 0.30$ and 0.49) Similarly verbal reasoning and scholastic aptitude was positively and significantly related with vocational interest residential school children. This is in line with study conducted by Joseph (2012) who revealed that students' study habits are significantly contributing to numerical ability of students. Choudhury and Das (2012) reported that study habits and achievement in numerical ability were significantly related.

Among non-residential school children it was observed that there was high positive and significant relationship between study habits and vocational interest.

6. SUMMARY AND CONCLUSIONS

The present investigation on “Study habits, aptitude and vocational interest of residential and non residential school children” was undertaken during the year 2014-2015 with the objective to know the study habits, aptitude and vocational interest of residential and non residential school children, to know the influence of child and familial factors on study habits, aptitude and vocational interest of residential and non residential school children and to know the relationship between study habits, aptitude and vocational interest of residential and non residential school children.

The population for the study comprised of children studying in 8th, 9th and 10th standard from residential and non residential government schools situated in Dharwad taluk of Karnataka state. At the time of survey there were 17 government high schools in Dharwad taluk, among them, five were residential and 12 were non residential schools. For the study four residential and four non-residential schools were selected from rural and urban areas. From each school 10 children (five boys and five girls from each class) studying in class 8th, 9th and 10th standards were randomly selected. Thus a total sample comprised of 240 children of which 120 were from residential and 120 were from non-residential school children. General information about the school children was collected with the help of self structured questionnaire.

The study habits of children were assessed by using of Mathur scale of study habits (2002) and aptitude inventory by Bennet *et al.* (1993). The information about vocational interest was assessed by Kulshrestha (2011) scale and socio economic status of the family by Aggarwal *et.al* (2005).

Frequency and percentages were computed in order to know the demographic characteristics, chi-square, Karl Pearson correlation coefficient, t-test and one way ANOVA were used to know the influence of selected factors on study habits, aptitude and vocational interest of high school children.

The salient findings of the study

Study habits

- Majority of children from residential (68.3%) and non-residential school (55%) had good study habits. Statistical significant difference in study habits was observed between residential and non-residential school children. Where residential school children performed better than non-residential school children.
- Age, gender and standard had no significant influence on study habits of residential and non-residential school children.
- In case of ordinal position there was statistical significant difference between residential and non-residential school children.
- Family type, parent's education, parent's occupation, family income and socio-economic status had no significant influence on study habits of residential and non-residential school children.

Aptitude

- There was significant difference between residential and non-residential school children on abstract reasoning. Whereas gender has no influence on abstract reasoning of children.
- A significant difference was observed between residential and non-residential school children and as well as between boys and girls with regard to mechanical reasoning dimension of aptitude.
- There was significant difference between residential and non-residential school children with regard to verbal reasoning and numerical ability. Where residential school children performed better than non-residential school children.
- Boys performed better than girls in numerical ability, whereas girls performed better in verbal reasoning than boys. But there was no significant difference between gender in their verbal reasoning and numerical ability.

- Type of school and gender has no significant influence on aptitude of children in the areas of clerical speed and accuracy, space relation and spelling.
- Significant difference was observed between residential and non-residential school children with regard to sentence formation and scholastic aptitude.
- There was no significant difference between boys and girls with regard to sentence formation and scholastic aptitude.
- Abstract reasoning was significantly related with father's education and occupation as well as socio-economic status.
- Numerical ability has significant and positive relation with ordinal position of child, father's education and occupation, family income and socio-economic status.
- Mechanical reasoning, verbal reasoning, linguistic ability and space relations were not significantly related with any of the child and familial characteristics.
- Scholastic aptitude was significantly related with socio-economic status, father's education and occupation.

Vocational interest

- Majority of the students found to have low level of vocational interest. Statistical significant difference was observed between residential and non-residential school children in areas like literary, scientific, administration, accountancy, artisans and technician, agriculture, reformatory, social worker and consumer services and production.
- Significant difference was observed between residential boys and girls in the areas of administration, agriculture and consumer services and production. Whereas, more or less both boys and girls were similar in areas like literary, scientific, accountancy, artisans and technician, artistic, reformatory and social worker.
- There was significant difference between non-residential boys and girls in the areas such as administration, accountancy, artisans and technician, artistic, agriculture and social worker areas.

- Preference of choosing vocational interest differed from residential to non-residential school children. Among residential school majority of children showed main preference for artistic followed by scientific, social worker and least preference with reformative. Whereas among non-residential school, majority of children showed main preference for scientific, followed by artistic, literary and least preference with the accountancy.
- Age had significant influence on vocational interest of residential and non-residential school children.
- Significant association was observed between age and vocational interest of non-residential school children.
- Child factors (gender, standard and ordinal position) and familial factors (family type, parent's education, parent's occupation, family income and socio-economic status) has no influence on vocational interest of residential and non-residential school children.
- There was positive and significant association between parent's education and vocational interest of residential school children.
- A highly significant association was observed between occupation of father and vocational interest of residential school children.
- There was positive and significant association between family income and vocational interest of residential school children.
- Scientific dimension of vocational interest was significantly related with the standard of school children.
- Artisans and technician dimension of vocational interest of school children was significantly related with the mother's education.

- Consumer servicers and production dimension of vocational interest was negatively and significantly related with the father's education, family income and socio-economic status.
- Literary, administration, accountancy, artisans and technician, artistic, agriculture, reformatory, social worker and consumer servicers and production were not significantly related with any of the child and familial factors.

Interrelationship between study habits, aptitude and vocational interest of residential and non-residential school children

- Study habits had highly significant and positive relation with vocational interest of both residential and non-residential school children.
- Highly significant and positive relationship was observed between abstract reasoning and study habits of residential school children. However, there was no significant relationship between abstract reasoning and vocational interest of residential and non-residential school children.
- Verbal reasoning and scholastic aptitude were significantly and positively related with vocational interest of residential children, but had no significant relation with the vocational interest of non-residential school children. There was no significant relationship with study habits of both residential and non-residential school children.
- Mechanical reasoning, spelling and space relation had no significant relationship with study habits and vocational interest of residential and non-residential school children.
- Numerical ability and sentences had positive and significant relationship with study habits of residential school children and no significant relation with vocational interest of residential and non-residential school children.
- Clerical speed and accuracy was significantly related with study habits of non-residential school children.

Implications and recommendations

Study habits

- ✓ Majority of residential and non-residential school children had good (61.7%) and average (37.5%) study habits. This depicts that the educational system brought changes in the study involvement of children. Children should be motivated to develop and follow effective study habits to excel in studies by providing conducive home and school environment. In schools conducting regular weekly, monthly tests and oral tests will help children to turn out to be a regular, alert, active and serious in studies and maintaining good study habits.
- ✓ Regular home assignments to children which acts as independent learning and it has to be checked by teachers and appreciation for good assignments will help children to develop interest in studies and concentrate in following effective study techniques.
- ✓ All schools-residential or non-residential should go for the services of either a counselor or an evaluator to help the children to cultivate effective study habits and develop interest in choosing their career wisely.

Aptitude

- ✓ Majority of children from both residential and non-residential school were good in aptitude dimensions like abstract reasoning, numerical ability, space relations and clerical speed and accuracy. So this implies that children need to be identified by counseling and guidance for their career. So prior to selection of professional courses conducting aptitude test is vital.
- ✓ In case of both residential and non-residential school children majority had low level of aptitude in dimensions like, mechanical reasoning, verbal reasoning, spelling and sentences. So there is need to reorient the education program giving scope to promote reasoning, creativity and language ability.
- ✓ Majority of boys and girls had high level of aptitude in dimensions like, abstract reasoning, numerical ability, space relation and clerical speed and accuracy.

Hence need of seeking concern of children to select or choose their area of interest.

- ✓ Most of the boys and girls showed low level of aptitude in dimensions like, mechanical reasoning, verbal reasoning, spelling and sentences. So children should be motivated and follow up guidance will help them to improve and to do better.
- ✓ Students should not concentrate on curriculum oriented information to fetch good marks in exams but should concentrate on general aptitude and knowledge.

Vocational interest

- ✓ Most of residential and non-residential school children had low level of vocational interest in all the areas of vocations. Hence, some particular measures should be adopted by the authorities such as special coaching classes, vocational guidance programs for children right from the high school level using role models. This can be done by inviting professional experts and business people to address them on job opportunities.
- ✓ Students must choose vocation where he/she has interest and aptitude ability. So parents, teachers and counselors should guide children to select the area of vocation of his/her interest.
- ✓ Children should be monitored both at home and in school to identify and encourage those who have vocational talents taking into consideration of their personalities and how such personalities can fit into particular careers of their interest.
- ✓ Develop a comprehensive program promoting career discussion that involves family and school based interventions facilitating family school partnership can lead to academic and career success for students.

Suggestions for further research

- Comparison of low and high achievers regarding study habits, study involvement and aptitude ability.

- Present study was limited to the age group of 13-15 years. Therefore a study can be taken up on study habits, aptitude and vocational interest of secondary school children.
- Influence of academic achievement on study habits and aptitude of rural and urban adolescences.

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Appendix-I. General information schedule

ವಿದ್ಯಾರ್ಥಿಯ ಹೆಸರು :

ದಿನಾಂಕ

:

ಲಿಂಗ :- ಗಂಡು/ಹೆಣ್ಣು

ಜಾತಿ

:

ವಯಸ್ಸು :

ಊರು:

ಶಾಲೆಯ ಹೆಸರು :

ಶಾಲೆ : ವಸತಿ ನಿಲಯ/ವಸತಿ ನಿಲಯವಲ್ಲದ

ವಸತಿ ನಿಲಯದ ಹೆಸರು :

ಜನಿಸಿದ ಕ್ರಮ : ಮೊದಲನೇ/ಮಧ್ಯಮ/ಕೊನೆಯ

ಕುಟುಂಬದ ವಿಧ : ವಿಭಕ್ತ /ಅವಿಭಕ್ತ ಕುಟುಂಬ

ಕುಟುಂಬದ ಗಾತ್ರ : ಸಣ್ಣ/ಮಧ್ಯಮ/ದೊಡ್ಡ

1. Name of the Student:

Gender: Male /Female

2. Name of village/Town:

Caste:

3. Age: _____years_____Months

Date of Birth: _____

4. School Name:

5. School: Residential/ Non Residential

6. Hostel Name:

5. Ordinal position: First born/Middle born/Last born

7. Family type: Nuclear family/Joint family

8. Family size: Small/Medium/large

9. Family composition:

Sl.No	Name	Age	Gender	Relationship with respondent	Education	Occupation	Income per month

Appendix II: Socio-economic status scale

Family composition:

1. Monthly income from all sources ಎಲ್ಲಾ ಮೂಲಗಳಿಂದ ತಿಂಗಳಿಗೆ ಬರುವ ಆದಾಯ- Rs.

2.a) Education of the respondent ನಿಮ್ಮ ಶಿಕ್ಷಣದ ಮಟ್ಟ

b) Education of the Husband/Wife ಗಂಡ/ಹೆಂಡತಿಯ ಶಿಕ್ಷಣದ ಮಟ್ಟ

3. a) Occupation of the respondent ನಿಮ್ಮ ಉದ್ಯೋಗ

b) Occupation of the Husband/Wife ಗಂಡ/ಹೆಂಡತಿಯ ಉದ್ಯೋಗ

4. Family possession ಕುಟುಂಬದ ಒಡೆತನ/ಸ್ವಾಧೀನ/ಐಶ್ವರ್ಯ

1. Refrigerator ಫ್ರಿಜ್ Yes/No

2. TV ಟಿ.ವಿ. Yes/No

3. Radio/Transistor/Music System Yes/No

ರೆಡಿಯೋ/ಟ್ರಾನ್ಸಿಸ್ಟರ್/ಸಂಗೀತ ಮಾಧ್ಯಮಗಳು

4. AC ಎ.ಸಿ. Yes/No

5. Washing Machine ವಾಷಿಂಗ್ ಮಶಿನ್ Yes/No

6. Telephone ಫೋನ್ Yes/No

7. Mobile ಮೊಬೈಲ್ Yes/No

8. Credit card ಕ್ರೆಡಿಟ್ ಕಾರ್ಡ್ Yes/No

9. Sanitary latrine ಪಾಯಖಾನೆ Yes/No

10. Which newspaper subscribed? (ಯಾವ ದಿನಪತ್ರಿಕೆ ತರಿಸುತ್ತಿರಾ?)

5. Type of house (Choose one of the following), ವಾಸಿಸುತ್ತಿರುವ ಮನೆಯ ವಿಧ

1. Own house with 5 or more rooms ಅಥವಾ ಹೆಚ್ಚಿನ ಕೋಣೆಯುಳ್ಳ ಸ್ವಂತ ಮನೆ

2. Own house with 3-4 rooms 3-4 ಕೋಣೆಯುಳ್ಳ ಸ್ವಂತ ಮನೆ

3. Rented/GOvt. house with 5 or more rooms 5 ಅಥವಾ ಹೆಚ್ಚಿನ ಕೋಣೆಯುಳ್ಳ ಸರಕಾರಿ/ಬಾಡಿಗೆ ಮನೆ

4. Own house with 1-2 rooms 1-2 ಕೋಣೆಯುಳ್ಳ ಸ್ವಂತ ಮನೆ

5. Rented/Govt. house with 3-4 rooms 3-4 ಕೋಣೆಯುಳ್ಳ ಬಾಡಿಗೆ ಅಥವಾ ಸರಕಾರಿ ಮನೆ

6. Rented/Govt. house with 1-2 rooms 1-2ಕೋಣೆಯುಳ್ಳ ಬಾಡಿಗೆ ಅಥವಾ ಸರಕಾರಿ ಮನೆ

೭. Own jhuggi ಸ್ವಂತ ಗುಡಿಸಲು

೮. Rented jhuggi ಬಾಡಿಗೆ ಗುಡಿಸಲು

೯. No place to live, pavement, mobile cart ವಾಸಿಸಲು ಮನೆ ಇಲ್ಲ

6. Possession of a vehicleವಾಹನದ ಒಡೆತನ

1) 2 or more cars/tractors/trucksಎರಡು ಅಥವಾ 2ಕ್ಕಿಂತ ಹೆಚ್ಚಿನ ಕಾರು/ಟ್ರಾಕ್ಟರ್/ಲಾರಿ

2) 1 car/tractor/truckಒಂದು ಕಾರು/ಟ್ರಾಕ್ಟರ್/ಲಾರಿ

3) 1 or more scooter(s)/bullock cart(s)ಒಂದು ಅಥವಾ 1 ಕ್ಕಿಂತ ಹೆಚ್ಚಿನ ಸ್ಕೂಟರ್

4) 1 or more cycles (not baby cycle)ಒಂದು ಅಥವಾ 1 ಕ್ಕಿಂತ ಹೆಚ್ಚಿನ ಸೈಕಲ್

5. None of the aboveಯಾವುದು ಇಲ್ಲ

7. No. of earning members in the familyಆದಾಯ ಗಳಿಸುವ ಕುಟುಂಬದ ಸದಸ್ಯರ ಸಂಖ್ಯೆ

1) 3 or more members earning and income pooledಮೂರು/ಹೆಚ್ಚಿನ ಸದಸ್ಯರು ಆದಾಯಕ್ಕೆ ಆಧಾರ

2) 2 or both husband and wife earningಎರಡು ಅಥವಾ ಗಂಡ ಹೆಂಡತಿ ಇಬ್ಬರ ಆದಾಯ/ಗಳಿಕೆ

3) Only 1 family member earning Husband/wifeಒಬ್ಬ ಕುಟುಂಬದ ಸದಸ್ಯನ ಆದಾಯ

4) No earning memberಯಾರು ಇಲ್ಲ

8. No. of children living in familyಮನೆಯಲ್ಲಿರುವ ಮಕ್ಕಳ ಸಂಖ್ಯೆ

1) 0-1

2) 2

3) 3

4) 4

5) 5

6) >6

9. Facilities of some essentials in the family (Choose one)ಕುಟುಂಬದ ಅವಶ್ಯಕತೆಗಳು

1. Both tap water supply and electricityನೀರಿನ ಹಾಗೂ ಕರೆಂಟಿನ ಸೌಲಭ್ಯ

2. Only electricityಕರೆಂಟಿನ ಸೌಲಭ್ಯ

3. Only tap water ನೀರಿನ ಸೌಲಭ್ಯ ಮಾತ್ರ

4. None is presentಯಾವುದು ಇಲ್ಲ

10. Education of children

Note: Exclude 5 children (under 5 years of age) for this item, Children here are the ones who are 5 years or aboveಮಕ್ಕಳ ವಿದ್ಯಾಭ್ಯಾಸ (ಐದು ವರ್ಷದ ಕೆಳಗಿನ ಮಗುವನ್ನು ಬಿಟ್ಟು)

1. All children going/ever gone to school/collegeಎಲ್ಲಾ ಮಕ್ಕಳು ಶಾಲೆಗೆ ಹೋಗುತ್ತಾರೆ/ಯಾವಾಗಲೂಹೋಗುತ್ತಾರೆ

2. More than 50% children ever gone/going to school/college 50% ಹೆಚ್ಚಿನ ಮಕ್ಕಳು ಶಾಲೆಗೆ ಹೋಗುತ್ತಾರೆ/ಯಾವಾಗಲೂ ಹೋಗುತ್ತಾರೆ

3. Less than 50% children ever gone/going to school/college 50% ಕಡಿಮೆ ಮಕ್ಕಳು ಶಾಲೆಗೆ ಹೋಗುತ್ತಾರೆ

4. No child ever gone/going to school/college ಯಾವ ಮಗುವು ಶಾಲೆಗೆ ಹೋಗುವುದಿಲ್ಲ

11. Employment of a domestic servant at home ಮನೆಯಲ್ಲಿನ ಅಳಿನ ಕೆಲಸ

1. Employed more than 2 full time servants 2 ಹೊತ್ತಿಗಿಂತ ಹೆಚ್ಚು ಕೆಲಸ ಮಾಡುವ ಆಳುಗಳು

2. Employed only 1 full time servant 1 ಹೊತ್ತು ಕೆಲಸ ಮಾಡುವ ಆಳು

3. Employed more than 3 part time servants ಮೂರು ಕೆಲಸಗಳಿಗೆ (ಬಟ್ಟೆ, ಕಸಗುಡಿಸುವುದು, ಅಡಿಗೆ)

4. Employed 1-2 part time servants 1-2 ಸಾರಿ

5. Employed no servants for domestic work ಮನೆಗೆಲಸಕ್ಕಾಗಿ ಯಾವ ಆಳೂ ಇಲ್ಲ

12. Type of locality the family is residing ಕುಟುಂಬವಿರುವ ಜಾಗ

1. Living in urban locality ಪಟ್ಟಣ

2. Living in rural locality ಹಳ್ಳಿ

3. Living in resettlement colony ಕಾಲೋನಿ

4. Living in slums/jhuggis ಸ್ಲಮ್/ಕೊಳಗೇರಿ/ಗುಡಿಸಲು

5. No fixed living and mobile ಯಾವುದೇ ಮನೆಯಿಲ್ಲ/ವಲಸೆಗಾರರು

13. Caste of the family ಕುಟುಂಬದ ಜಾತಿ

1. Upper caste ಹೆಚ್ಚಿನ ಜಾತಿ

3. Dalits ದಲಿತ

2. OBC ಹಿಂದುಳಿದ ಜಾತಿಗಳು

4. Tribals ಬುಡಕಟ್ಟು ಜನಾಂಗ

14. Members of family gone abroad in last three year (official or personal)

ಮೂರು ವರ್ಷದಲ್ಲಿ ಪರದೇಶಕ್ಕೆ ಹೋದ ಕುಟುಂಬದ ಸದಸ್ಯರ ಸಂಖ್ಯೆ (ಆಫೀಸ್ ಕೆಲಸಕ್ಕಾಗಿ ಅಥವಾ ಸ್ವಂತಕ್ಕಾಗಿ)

○ Whole family ಪೂರ್ತಿ ಕುಟುಂಬ

○ Only father and mother ತಂದೆ ಮತ್ತು ತಾಯಿ ಮಾತ್ರ

○ Only 1 family member ಒಬ್ಬ ಕುಟುಂಬದ ಸದಸ್ಯ ಮಾತ್ರ

○ None ಯಾರೂ ಇಲ್ಲ

15. How many acres of Agricultural land is used for cultivation ಎಷ್ಟು ಎಕರೆ ಕೃಷಿ

ಭೂಮಿಯನ್ನು ಬೇಸಾಯಕ್ಕಾಗಿ ಉಪಯೋಗಿಸುತ್ತೀರಾ

16. How many sites does your family haveಮನೆ ಕಟ್ಟಲು ಇರುವ ಜಾಗ ಇದೇಯೇ ಹೌದು/ಇಲ್ಲ
ಹೌದಾದರೆ ಎಷ್ಟು

1. 30/40 _____

3. _____

2. 40/60 _____

4. _____

17. (a) Presence of milch cattles in the family for business or non-business
purposesವ್ಯವಹಾರಕ್ಕಾಗಿ ಉಪಯೋಗಿಸುವ ಹಾಲು ಕೊಡುವ ದನಕರುಗಳ ಸಂಖ್ಯೆ

(b) Presence of milch cattles in the family for non-businessವ್ಯವಹಾರಕ್ಕಾಗಿ
ಉಪಯೋಗಬಾರದ ಹಾಲು ಕೊಡುವ ದನಕರುಗಳ ಸಂಖ್ಯೆ

18. Presence of non-milch cattles or pet animals in the familyಹಾಲು ಕೊಡದೆ ಇರುವ ಅಥವಾ
ಸಾಕುವ ಪ್ರಾಣಿಗಳ ಸಂಖ್ಯೆ

19. Do you have any rented houses/shops/sheds excluding your staying?

ನೀವು ವಾಸಿಸುವ ಸ್ವಂತ ಮನೆಯನ್ನು ಬಿಟ್ಟು ಬಾಡಿಗೆಗೆ ನೀಡಿರುವ ಮನೆ, 1 ಅಂಗಡಿ, ಶೆಡ್‌ಗಳೆಷ್ಟು

1) 3 ಅಥವಾ ಹೆಚ್ಚು 2) 2 ಅಥವಾ ಹೆಚ್ಚು 3) 1 ಯಾವುದು ಇರುವುದಿಲ್ಲ

20. Positions held (besides the positions as employee) by any one member in the family
ಕುಟುಂಬದಲ್ಲಿ ಇರುವ ಸದಸ್ಯರ ತಮ್ಮ ಅಧಿಕಾರವನ್ನು ಹೊರತುಪಡಿಸಿ ಬೇರೆ ಅಧಿಕಾರವನ್ನು ಹೊಂದಿದ್ದಾರೆಯೇ?

- ಮೂರು ಅಥವಾ ಹೆಚ್ಚಿನ ಸರಕಾರೇತರ ಸಂಘ ಸಂಸ್ಥೆಗಳಲ್ಲಿ ಅಥವಾ ಖಾಸಗಿ ಸಂಘಸಂಸ್ಥೆಗಳಲ್ಲಿ
ಅಧ್ಯಕ್ಷಿ/ಉಪಾಧ್ಯಕ್ಷಿ/ಸೆಕ್ರೆಟರಿ
- ಒಂದರಿಂದ ಎರಡು ಅಧ್ಯಕ್ಷಿ ಸದಸ್ಯ
- ಸರಕಾರಿ/ಖಾಸಗಿ ಸಂಘ ಸಂಸ್ಥೆಗಳಲ್ಲಿ ಸದಸ್ಯ
- ಯಾವುದೇ ಅಧಿಕಾರವಿಲ್ಲ

21. Total amount of income tax paid by the family (include all the earning members

IT) ತೆರಿಗೆ ಕೊಡುವ ಒಟ್ಟು ಮೊತ್ತ

1) > 10 lakhs

5) >10000-<20000

2) 1-10 lakhs

6) >5000-<10000

3) >50000 but <1 lakhs

7) <5000

4) >20000 - <50000

8) Nil

Total scores of this family: _____

Appendix III- Study Habits

Read each statement carefully. Decide how you generally behave and work. Your response should be based on, it is not necessary that your study habits are always according to the statement. Your answer should be based on how you generally work in that situation. Decide your answer on your present study habit. Your answer should not be based on how should I work but I am how generally I work at present.

ಸೂಚನೆ : ನಿಮಗೆ ಅನ್ವಯಿಸುವ ಉತ್ತರವನ್ನು ಆಯ್ಕೆ ಮಾಡಿ ಸರಿ (✓) ಎಂಬ ಚಿಹ್ನೆಯಿಂದ ಗುರುತಿಸಿ

ಅನಂ	ವಾಕ್ಯಗಳು/ sentences	ಹೌದು / Yes	ಇಲ್ಲ/ No
1	ನಾನು ಅಭ್ಯಾಸ ಮಾಡುವ ಕೋಣೆಯಲ್ಲಿ ಆಕರ್ಷಣೆಯಾಗುವ ವಸ್ತುಗಳಾದ ಟಿ.ವಿ, ರೇಡಿಯೋ, ಸಿನಿಮಾ ಮ್ಯಾಗಜಿನ್‌ಗಳನ್ನು ಇಟ್ಟಿರುವುದಿಲ್ಲ. I do not keep attention seeking things like Radio, T.V., Film Magazines, Novels, Toys etc. in my study room.		
2	ನನ್ನ ಅಭಿಪ್ರಾಯದಲ್ಲಿ ಶಿಕ್ಷಕರು ವಿದ್ಯಾರ್ಥಿಗಳ ಸಮಸ್ಯೆಗಳನ್ನು ಅರ್ಥಮಾಡಿಕೊಳ್ಳುವುದಿಲ್ಲ. In my opinion teachers do not try to understand problems of students.		
3	ನನಗೆ ಅಭ್ಯಾಸದಲ್ಲಿ ಅರ್ಥವಾಗದ ವಿಷಯಗಳನ್ನು ಇತರ ವಿದ್ಯಾರ್ಥಿಗಳ ಬಗ್ಗೆ ಆಲೋಚಿಸದೆ, ಶಿಕ್ಷಕರಲ್ಲಿ ಕೇಳಿ ಬಗೆಹರಿಸುತ್ತೇನೆ. Whenever I have any doubt in studies I ask my teachers for clarification without thinking what other students will think about me		
4	ಶಾಲೆಯ ವಿರಾಮದ ವೇಳೆಯಲ್ಲಿ ನನ್ನ ಮನೆಕೆಲಸ ಮಾಡಿ ಮುಗಿಸುವುದರಿಂದ ನನಗೆ ಮನೆಯಲ್ಲಿ ಅಭ್ಯಾಸ ಮಾಡಲು ಹೆಚ್ಚು ಸಮಯ ಸಿಗುತ್ತದೆ. I generally do my homework in the vacant period or extra time or in recess. In this I have more time to study at home		
5	ನಾನು ತರಗತಿಯಲ್ಲಿ ಪಾಠ ನಡೆಯುವಾಗ ಶಿಕ್ಷಕರು ಹೇಳಿದ ವಿಷಯಗಳನ್ನು ಬರೆದುಕೊಳ್ಳುತ್ತೇನೆ. while studying in class, I write down the statements of the teachers without thinking.		
6	ನಾನು ತಿಳಿದ ವಿಷಯವನ್ನು ಬರೆದು ತೆಗೆದಾಗ ಹೆಚ್ಚು ನೆನಪಿನಲ್ಲಿಟ್ಟುಕೊಳ್ಳಲು ಸಾಧ್ಯವಾಗುತ್ತದೆ. I can remember well the study material which I write and study than by reading only.		
7	ನಾನು ಮನೆಕೆಲಸ (ಹೋಮ್‌ವರ್ಕ್) ಮಾಡಲು ಮನೆಯವರ ಸಹಾಯ ಪಡೆಯುತ್ತೇನೆ. I seek help of elders in doing my homework.		
8	ಯಾವುದೇ ರೀತಿಯ ಶಬ್ದ ನನ್ನ ಅಭ್ಯಾಸಕ್ಕೆ ತೊಂದರೆ ಮಾಡುವುದಿಲ್ಲ. Any type of noise does not disturb me in studying.		

9	ಪರೀಕ್ಷೆಗಳು ಹತ್ತಿರ ಬಂದಾಗ ನಾನು ಶಾಲೆಗೆ ಹೋಗದೆ ಮನೆಯಲ್ಲಿ ಅಭ್ಯಾಸ ಮಾಡುತ್ತೇನೆ. Some days before examinations, I do not go to school/College and study at home.		
10	ನನ್ನ ಅಭಿಪ್ರಾಯದಲ್ಲಿ ಉತ್ತಮ ಕೈ ಬರಹ ಇದ್ದರೆ ಹೆಚ್ಚು ಅಂಕಗಳನ್ನು ಪಡೆಯಲು ಸಾಧ್ಯ. In my opinion writing answers in good handwriting fetch good marks.		
11	ನಾನು ಡಿಕ್ಷನರಿ (ಶಬ್ದಕೋಶ) ಉಪಯೋಗಿಸುವುದರಿಂದ ನನ್ನ ಶಬ್ದಗಳ ಮಾಹಿತಿ ಹೆಚ್ಚಾಗುತ್ತದೆ. My vocabulary increases by looking into the dictionary.		
12	ನಾನು ಯಾವುದೇ ಪ್ರಶ್ನೆಯ ಉತ್ತರವನ್ನು ಎರಡು ಅಥವಾ ಮೂರು ಸಾರಿ ಪುನರಾವರ್ತಿಸಿದೆ ಇದ್ದರೆ ನನಗೆ ಅದು ನೆನಪಿರುವುದಿಲ್ಲ. Untill and unless I do not repeat the answer of any question two or three times, I do not remember it.		
13	ಕ್ಲಾಸಿನಲ್ಲಿ ನನ್ನ ಭವಿಷ್ಯದ ಸುಂದರ ಕನಸುಗಳನ್ನು ಕಾಣುವುದರಿಂದ ನನಗೆ ಏಕಾಗ್ರತೆಯಿಂದ ಪಾಠ ಕೇಳಲಾಗುವುದಿಲ್ಲ. While studying in class, I am lost in the dreams of the happy future, and it distracts my attention from the subject being taught.		
14	ನಾನು ನನ್ನ ಮನೆಕೆಲಸ (ಹೋಮ್‌ವರ್ಕ್) ಆಗಿಂದಾಗಲೇ ಮುಗಿಸುತ್ತೇನೆ. I like to do my home work before time of submission.		
15	ಶಿಕ್ಷಕರು ಪುಸ್ತಕದಲ್ಲಿ ಬರೆದ ಸಲಹೆ-ಸೂಚನೆಗಳನ್ನು ನೋಡುವುದು ನನ್ನ ಅಭಿಪ್ರಾಯದಲ್ಲಿ ಸಮಯ ವ್ಯರ್ಥ ಮಾಡಿದಂತಾಗುತ್ತದೆ. In my opinion it is wastage of time to look into the suggestions given by the teacher in the checked home work.		
16	ನನ್ನ ಇಚ್ಛೆಯಂತೆ ನನಗೆ ಇಷ್ಟವಾದ ಶಿಕ್ಷಕರು ಪಾಠ ಹೇಳಿಕೊಟ್ಟರೆ ಮಾತ್ರ ನಾನು ಉತ್ತಮ ಅಂಕಗಳೊಂದಿಗೆ ಪರೀಕ್ಷೆಯನ್ನು ಪಾಸು ಮಾಡಬಲ್ಲೆ. I can pass in examination with good marks if I am taught by teachers of my liking.		
17	ನಾನು ಅಪರೂಪಕ್ಕೊಮ್ಮೆ ಗ್ರಂಥಾಲಯದಿಂದ ಪುಸ್ತಕಗಳನ್ನು ಪಡೆಯುತ್ತೇನೆ. I seldom get books issued from library.		
18	ಅಭ್ಯಾಸದ ವೇಳೆಯಲ್ಲಿ ರೇಡಿಯೋ/ಟಿ.ವಿ ಶಬ್ದದಿಂದ ಮತ್ತು ಜನರು ಮನೆಗೆ ಬಂದು ಹೋಗುವುದು ನನ್ನ ಏಕಾಗ್ರತೆಗೆ ತೊಂದರೆಯಾಗುತ್ತದೆ. While studying my concentration is disturbed due to people coming and playing of Radio/T.V.and noise outside my studyroom.		
19	ಸತತವಾಗಿ ಅಭ್ಯಾಸ ಮಾಡಿದ ನಂತರ ಪುನಃ ನನಗೆ ಓದಲು ಮನಸ್ಸಿರುವುದಿಲ್ಲ. After contineously studying for some days, I do not have mood to study.		
20	ನಾನು ಅಭ್ಯಾಸ ಮಾಡುವಾಗ ನನಗೆ ಅವಶ್ಯಕತೆಯಿಲ್ಲದ ವಿಷಯವನ್ನು ನಾನು ಬರೆದಿಟ್ಟುಕೊಳ್ಳುತ್ತೇನೆ. While studying I note down unimportant subject matter as well which afterwards prove to be unwanted.		
21	ನಾನು ಬಹಳ ಕಡಿಮೆ ಮನೆಕೆಲಸ (ಹೋಮ್‌ವರ್ಕ್) ಕೊಡುವ ಶಿಕ್ಷಕರಿಂದ ಕಲಿಯಲು ಬಯಸುತ್ತೇನೆ. I prefer to be tanght by that teacher who gives very less homework.		

22	ನಾನು ಪದ್ಯಗಳನ್ನು ಹಾಡುತ್ತಾ ಬಾಯಿಪಾಠ ಮಾಡುತ್ತೇನೆ. I cramme poetry by singing it.		
23	ನಾನು ಶಾಲೆಯಿಂದ ಮನೆಗೆ ಹೋದ ತಕ್ಷಣ ಮನೆಕೆಲಸವನ್ನು ಮಾಡಿಮುಗಿಸುತ್ತೇನೆ I do my homework as soon as I reach home from school.		
24	ನಾನು ಮನೆಯಲ್ಲಿ ಅಭ್ಯಾಸಕ್ಕೆ ಕುಳಿತ ಮೇಲೆ ಬಹಳ ಸಮಯದವರೆಗೆ ಅಧ್ಯಯನದಲ್ಲಿ ಗಮನಕೊಡಬಲ್ಲೆ. At home even after I sit for studies I can concentrate in studies after long time		
25	ಯಾವುದೇ ಪ್ರಶ್ನೆಗೆ ಉತ್ತರಿಸುವ ಮುನ್ನ ನಾನು ಎರಡು/ಮೂರು ಬಾರಿ ಯೋಚಿಸುತ್ತೇನೆ. Before answering any question, I think over it twice or thrice.		
26	ನಾನು ಆಟವಾಡುತ್ತಿರುವಾಗ ಕ್ಲಾಸಿಗೆ ಹೋಗುವ ಸಮಯವಾದರೆ, ನಾನು ಆಟವನ್ನು ಬಿಟ್ಟು ಹೋಗುವುದಿಲ್ಲ. If I am playing, when it is time to attend class, I do not leave playing to go to class.		
27	ನಾನು ಓದಲು ಕುಣಿತಾಗ ಅಲಸಿಯಾಗುತ್ತೇನೆ. I get lazy while studying.		
28	ನನ್ನ ಅಭಿಪ್ರಾಯದಲ್ಲಿ ಪ್ರತಿ ವಿದ್ಯಾರ್ಥಿ ಕನಿಷ್ಠ ಒಂದು ವಿದೇಶಿ ಭಾಷೆ ಕಲಿಯಬೇಕು ಏಕೆಂದರೆ ಇತರ ದೇಶದ ಚಿಂತಕರ ಆಲೋಚನೆಗಳನ್ನು ಅಧ್ಯಯನ ಮಾಡಬಹುದು. In my opinion every student must learn atleast one foreign language so that he can study the thoughts of thinkers of other countries.		
29	ನನಗೆ ಅರ್ಥವಾಗದ ವಿಷಯದ ಬಗ್ಗೆ ಶಿಕ್ಷಕರನ್ನು ಕೇಳಲು ಹಿಂಜರಿಯುತ್ತೇನೆ. Even when I do not understand the subject matter, I feel hesitation in asking the teacher.		
30	ಮನೆಯ ಹಣಕಾಸಿನ ಸಮಸ್ಯೆಗಳು ನನ್ನ ಅಧ್ಯಯನಕ್ಕೆ ಅಡಚಣೆಯನ್ನು ಉಂಟುಮಾಡುತ್ತದೆ. Financial problems in the family is a hurdle in my concentrating in studies.		
31	ನನ್ನ ಬರವಣಿಗೆಯ ವೇಗ ನಿಧಾನವಾಗಿರುವುದಿಂದ ನಾನು ಪರೀಕ್ಷೆಯಲ್ಲಿ ಕೊನೆಯ ಕ್ಷಣದವರೆಗೆ ಬರೆದರೂ ಕೂಡಾ, ಎಲ್ಲ ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಲಾಗುವುದಿಲ್ಲ. Even though, in examination I write to the last second, I fail to attempt all the questions due to my slow speed of writing.		
32	ನನಗೆ ವಿಷಯವನ್ನು ಅರಿತುಕೊಳ್ಳಲು ತೊಂದರೆಯಾದಾಗ ಶಿಕ್ಷಕರನ್ನು ಸಂಪರ್ಕಿಸಿದಾಗ ಅವರು ನನಗೆ ಸಹಾಯ ಮಾಡುತ್ತಾರೆ. My teachers help me whenever I contact them for removal of subject difficulties.		
33	ನಾನು ಆಯ್ಕೆಯುಳ್ಳ ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸುವಾಗ ಸರಿ ಅಥವಾ ತಪ್ಪು ಎಂದು ಗುರುತು ಹಾಕುವಾಗ ನಾನು ಗೊಂದಲಕ್ಕೊಳಗಾಗುತ್ತೇನೆ, ಅದಕ್ಕಾಗಿ ಮೊದಲು ಹಾಕಿದ ಉತ್ತರವನ್ನು ಸರಿಯಿಲ್ಲವೆಂದು ಹೊಡೆದು ಹಾಕಿ ಮತ್ತೊಂದು ಉತ್ತರಕ್ಕೆ ಸರಿ ಎಂದು ಹಾಕುತ್ತೇನೆ, ಆದರೆ ಅದೇ ನನಗೆ ಮೊದಲು ಹಾಕಿದ ಉತ್ತರ ಸರಿಯಿತ್ತೆಂದು ಅನಿಸುತ್ತದೆ. While attempting objective type test, while marking yes or no, I am in conflict and fail to keep my opinion. So I cross the answers given first. But afterwards I find that my first given answers were correct.		

34	ನಾನು ಪರೀಕ್ಷಾ ಕೊಠಡಿಯನ್ನು ಪ್ರವೇಶಿಸುವ ಕೊನೆಯ ಕ್ಷಣದವರೆಗೂ ನನ್ನ ಟಿಪ್ಪಣಿಗಳನ್ನು ಅಭ್ಯಾಸ ಮಾಡುತ್ತೇನೆ. I study my notes to the last moment of entering into the examination hall.		
35	ನಾನು ರೂಮಿನಲ್ಲಿ ಒಬ್ಬನೇ ಒಚಿಟಿಯಾಗಿ ಓದಲು ಇಷ್ಟಪಡುತ್ತೇನೆ. I like to study in noiseless seclusive room		
36	ಯಾವುದೇ ವಿಷಯವನ್ನು ಅಭ್ಯಾಸ ಮಾಡುವಾಗ ನನಗೆ ಒಳಿತಿ ತಾಸಿಗಿಚಿತ ಹೆಚ್ಚು ಸಮಯ ಗಮನ ಕೊಡಲು ಆಗುವುದಿಲ್ಲ. I cannot concentrate in study of any subject for more than an hour.		
37	ಸಣ್ಣ-ಸಣ್ಣ ತಪ್ಪುಗಳ ಮೇಲೆ ಹೆಚ್ಚು ಗಮನ ನೀಡಿದ ಕಾರಣ ನಾನು ಕಡಿಮೆ ಅಂಕಗಳನ್ನು ಗಳಿಸುತ್ತೇನೆಚಿದು ನನಗೆ ಅನಿಸುತ್ತದೆ. I mostly find that due to not paying attention over small mistakes. I scoreless marks.		
38	ನಾನು ವಿವಿಧ ಚಿಂತಕರ ಆಲೋಚನೆಗಳನ್ನಿಟ್ಟುಕೊಂಡು, ನಾನು ಯಾವುದೇ ಪ್ರಶ್ನೆಗೆ ಉತ್ತರ ಬರೆಯಬಲ್ಲೆ I write my answer to any question keeping in view the thoughts of different thinkers.		
39	ನನ್ನ ಶಿಕ್ಷಕರು ಯಾವಾಗಲೂ ನನ್ನ ಸರಿಹೊಂದದ ಉತ್ತರಗಳಿಗೆ ಮತ್ತು ಕೆಟ್ಟದಾದ ಕೈ-ಬರಹಕ್ಕೆ ಬಯುತ್ತಾರೆ. My teachers have always complaints of my wayward answers and bad handwriting.		
40	ಪೂರ್ವ ಯೋಜನೆಯಿಲ್ಲದ ಅಧ್ಯಯನದಲ್ಲಿ ಸಿಗುವ ಸಚಿತೋಷವು, ಪೂರ್ವ ಯೋಜಿತ ಅಧ್ಯಯನಗಳಲ್ಲಿ ಸಿಗುವುದಿಲ್ಲ, ಆದ್ದರಿಂದ ನನ್ನ ಅಧ್ಯಯನಗಳು ಪೂರ್ವ ಯೋಜನೆ ಯೋಜಿಸಲ್ಪಟ್ಟಿರುವುದಿಲ್ಲ. The joy of studying without pre-planning is not in the pre-planned studies. Therefore I never pre-plan my studies.		
41	ನನಗೆ ಓದಿನಲ್ಲಿ ಸಂತೋಷ ಸಿಗದೆ ಇದ್ದಾಗ ನನಗೆ ಅಧ್ಯಯನದಲ್ಲಿ ಏಕಾಗ್ರತೆ ಹೊಂದಲು ಕಷ್ಟವೆನಿಸುತ್ತದೆ. It is difficult for me to concentrate in studies when I do not get joy in studies.		
42	ನಾನು ಅದೇ ದಿನ ಪ್ರತಿ ವಿಷಯದ ಮನೆಕೆಲಸ ಪೂರ್ಣಗೊಳಿಸುತ್ತೇನೆ. I Complete the homework of each subject the same day.		
43	ನಾನು ಆರ್ಥಿಕವಾಗಿ ನನ್ನ ಕುಟುಂಬಕ್ಕೆ ಸಹಾಯ ಮಾಡಲು ಓದುವುದನ್ನು ಬಿಟ್ಟು ಕೆಲವು ಕೆಲಸ ಅಥವಾ ವ್ಯಾಪಾರ ಮಾಡಬೇಕೆಂದು ಅನಿಸುತ್ತದೆ. I so think that I should leave studies and take up some service or business so that I can help my family financially.		
44	ಇಬ್ಬರು ಸ್ನೇಹಿತರು ಸೇರಿ ಅಭ್ಯಾಸ ಮಾಡುವುದರಿಂದ ಹೆಚ್ಚು ಆಸಕ್ತಿ ಮತ್ತು ಸಂತೋಷ ಉಂಟಾಗುತ್ತದೆ. If two students study jointly, then the study is better and there is joy in it.		
45	ನಾನು ಸಂಪೂರ್ಣವಾಗಿ ಪ್ರಶ್ನೆಯನ್ನು ಸರಿಯಾಗಿ ಅರ್ಥಮಾಡಿಕೊಳ್ಳದೆ ಉತ್ತರಿಸಲು ಆರಂಭಿಸಿ ಬಿಡುತ್ತೇನೆ. I mostly start answering without reading and understanding the question fully.		

46	ನಾನು ಮನೆ ಕೆಲಸಗಳನ್ನು ಹೆಚ್ಚು ಮಾಡಬೇಕಾಗಿರುವುದರಿಂದ ನನಗೆ ಮನೆಚಿುಲ್ಲಿ ಅಭ್ಯಾಸ ಮಾಡಲು ಕಡಿಮೆ ಸಮಯ ಸಿಗುತ್ತದೆ. I have to do many household works at home, therefore, I get less time to study at home.		
47	ಆಟ,ಸಮಾಜ ಸೇವೆ, ಸ್ನೇಹಿತರೊಂದಿಗೆ ಮೋಜು ಮಸ್ತಿ, ಸಿನಿಮಾಗೆ ಹೋಗುವುದು ನನ್ನ ಅಭ್ಯಾಸಕ್ಕೆ ಅಡ್ಡಿಯಾಗುತ್ತದೆ. Games, Social Service, Gossiping with friends, visiting cinema and clud are hinderances in my studies.		
48	ನಾನು ತರಗತಿಯಲ್ಲಿ ನನಗೆ ಸರಿಯೆನಿಸಿದ ವಿಚಾರಗಳನ್ನು ವ್ಯಕ್ತಪಡಿಸಲು ಹಿಂಜರಿಯುವುದಿಲ್ಲ. I never hesitate to express my view point which I think correct in the class.		
49	ಆಸಕ್ತಿದಾಯಕವಲ್ಲದ ವಿಷಯಗಳ ಅವಧಿಯಲ್ಲಿ ನನಗೆ ಬೇಸರವಾಗುವುದರಿಂದ, ನಾನು ಬರೆಯುವುದು ಅಥವಾ ಚಿತ್ರಗಳನ್ನು ತೆಗೆಯುವುದು ಅಥವಾ ಕನಸಿನಲ್ಲಿ ಕಳೆದು ಹೋಗುತ್ತೇನೆ. In the periods of some subjects which are not interesting, I am bored and I then draw pictures of write letter or lost in dreams.		
50	ನನ್ನ ವಿಚಾರದಲ್ಲಿ ಉನ್ನತ ಶಿಕ್ಷಣವೆಚ್ಚಿದರೆ ಹೆಚ್ಚಿನ ಹಣ, ಸಮಯ ಹಾಗೂ ಶ್ರಮವನ್ನು ವ್ಯರ್ಥ ಮಾಡಿದಂತಾಗುತ್ತದೆ. In my opinion higher studies are wastage of money, time and labour.		
51	ಶಿಕ್ಷಕರು ತರಗತಿಯಲ್ಲಿ ಪಾಠ ಮಾಡುವಾಗ, ನಾನು ಟಿಪ್ಪಣಿಗಳನ್ನು ಬರೆದಿಟ್ಟುಕೊಳ್ಳುವುದಿಲ್ಲ. When teacher is teaching in class, I do not take notes without thinking,		
52	ನಾನು ಬರೆಯುವುದನ್ನು ಹೆಚ್ಚಾಗಿ ಮಾಡಿದರೆ ಹೆಚ್ಚು ನೆನಪಿನಲ್ಲಿಡಲು ಸಹಾಯವಾಗುತ್ತದೆ. The more written work I do, the more I remember.		
53	ನನ್ನ ಅಭಿಪ್ರಾಯದಲ್ಲಿ ಜ್ಞಾನವನ್ನು ಬರಿ ಪುಸ್ತಕಗಳನ್ನು ಓದುವ ಮೂಲಕ ಹೆಚ್ಚಿಸಲು ಸಾಧ್ಯವಿಲ್ಲ ಆದರೆ ಅದನ್ನು ಕಾರ್ಯರೂಪಕ್ಕೆ ತರುವ ಮೂಲಕ ಹೆಚ್ಚಿಸಲು ಸಾಧ್ಯ. In my opinion knowledge does not increase by reading books only, but is necessary to put the earned knowledge to practice.		
54	ನಾನು ಶಿಕ್ಷೆಯ ಭಯವಿರುವುದಕ್ಕೆ ಮಾತ್ರ ನನ್ನ ಮನೆಕೆಲಸವನ್ನು (ಹೋಮ್‌ವರ್ಕ್) ಪೂರ್ಣಗೊಳಿಸುತ್ತೇನೆ. I complete my homework only when I have fear of punishment.		
55	ಕೇಳಿದ ಯಾವುದೇ ವಿಷಯವನ್ನು ನೆನಪಿನಲ್ಲಿಟ್ಟು ಕೊಳ್ಳಲು ನಾನು ಜೋರು ಧ್ವನಿಯಲ್ಲಿ ಓದುತ್ತೇನೆ ಮತ್ತು ಬೇಗನೆ ನೆನಪಿಸಿಕೊಳ್ಳಲು ಪದೇ ಪದೇ ಈ ರೀತಿಯಾಗಿ ಓದುತ್ತೇನೆ. To remember any subject matter by heard, I read it in loud sound and do this repeatedly in this way I can remember fast.		
56	ನಾನು ಪರೀಕ್ಷೆಯಲ್ಲಿ ಸ್ಪಷ್ಟವಾಗಿ ಮತ್ತು ವ್ಯವಸ್ಥಿತವಾಗಿ ವಿಚಾರಗಳನ್ನು ವ್ಯಕ್ತಪಡಿಸದೇ ಇರುವುದಕ್ಕಾಗಿ ನನಗೆ ಕಡಿಮೆ ಅಂಕಗಳು ಬರುತ್ತವೆ ಎಚ್ಚಿರು ಅನಿಸುತ್ತದೆ. I think that by not expressing thought clearly and systematically in examination is the reason of my securing low marks.		
57	ನಾನು ಸಾಮಾನ್ಯವಾಗಿ ಕ್ಯಾಸ್‌ವರ್ಕ್, ಮನೆಕೆಲಸ ಮತ್ತು ಪರೀಕ್ಷೆಯ ಸಂದರ್ಭಗಳಲ್ಲಿ ಕೈಬರಹ ಮತ್ತು ಅಚ್ಚುಕಟ್ಟುತನದ ಕಡೆಗೆ ಗಮನ ಕೊಡುವುದಿಲ್ಲ. I generally do not pay attention towards handwriting and neatness in class work, homework and in examination.		

58	ನಾನು ಅಧ್ಯಯನಕ್ಕೆ ಕುಳಿತುಕೊಳ್ಳುವ ಮೊದಲು ಕ್ಲಾಸವರ್ಕ್, ಸಮಯದ ಮಿತಿ, ಅಧ್ಯಯನ ವಿಷಯ ಮತ್ತು ಎಷ್ಟು ಕೆಲಸ ಮಾಡಬೇಕೆಂಬುದನ್ನು ನಾನು ಅಧ್ಯಯನಕ್ಕೆ ಕುಳಿತುಕೊಳ್ಳುವ ಮೊದಲ ನಿರ್ಧರಿಸುತ್ತೇನೆ. Before sitting for studies, I pre-decide the time limit, content to study and how much work to do.		
59	ನಾನು ಪರೀಕ್ಷೆಯಲ್ಲಿ ಪಾಸ್ ಆಗುವ ಉದ್ದೇಶಕ್ಕಾಗಿ ಮಾತ್ರ ನಾನು ಅಭ್ಯಾಸ ಮಾಡುತ್ತೇನೆ. I study with objective to just pass in the examination only.		
60	ಸಮಯದ ಅಭಾವದಿಂದಾಗಿ ಉತ್ತರ ಪತ್ರಿಕೆಯನ್ನು ಕೊಡುವ ಮೊದಲು, ಬರೆದುದನ್ನು ಪುನಃ ನೋಡಿಕೊಳ್ಳಲು ನನಗೆ ಸಾಧ್ಯವಾಗುವುದಿಲ್ಲ. Since I am left with no time, I cannot revise my answers before handing over the answerbook in the examination.		

Appendix IV: Differential aptitude test

The differential aptitude inventory developed by Bennett *et al.* (1993) was used to assess the aptitude of school children. The tool consists of seven subtests. The details of items and time required for each component is as follows,

Sl. No	Components	What it does/measures	Total Items	Time required
1	Verbal reasoning	This measures general cognitive ability in positions requiring higher order thinking skills.	50	30 minutes
2	Numerical ability	This tests the understanding of numerical relationships and facility in handling numerical concepts.	40	30 minutes
3	Abstract reasoning	This is a nonverbal measure of the ability to perceive relationships in abstract figure patterns.	50	25 minutes
4	Mechanical reasoning	This measures the ability to understand basic mechanical principles of machinery, tools and motion.	68	30 minutes
5	Space relations	This measures the ability to visualize a three-dimensional object from a two-dimensional pattern, and how this object would look if rotated.	40	30 minutes
6	Clerical speed and accuracy Part I Part II	This measures how quickly and accurately you can compare and mark written lists.	100 100	3 minutes 3 minutes
7	Language usage Part I spelling Part II sentences	Language usage measures the ability to detect errors in grammar, punctuation, and capitalization.	100 50	10 minutes 25 minutes

Verbal Reasoning

ಕೆಳಗೆ ಕೊಟ್ಟಿರುವ ವಾಕ್ಯಗಳಲ್ಲಿ ಎರಡು ಪಾಠಿ ಸ್ಥಳಗಳನ್ನು ಕೊಡಲಾಗಿದೆ. ಮೊದಲ ಪಾಠಿ ಬಿಟ್ಟ ಸ್ಥಳಕ್ಕೆ ಮೊದಲನೇ ಸಾಲಿನಲ್ಲಿ ಕೊಟ್ಟಿರುವ ಪರ್ಯಾಯ ಉತ್ತರವನ್ನು ಹಾಗೂ ಎರಡನೇ ಪಾಠಿ ಬಿಟ್ಟ ಸ್ಥಳಕ್ಕೆ ಎರಡನೇ ಸಾಲಿನಲ್ಲಿ ಕೊಟ್ಟಿರುವ ಪರ್ಯಾಯ ಉತ್ತರವನ್ನು ಆಯ್ಕೆ ಗುರುತಿಸಿ.

1. ...is to Uttar Pradesh as U.K. is to...
1. M.B. 2. B.P. 3. U.P. 4. M.P.
A. China B. Norway C. Turkey D. United Kingdom
2. ...is to cavalry as foot is to...
1. horse 2. cemetery 3. votary 4. hiding
A. yard B. travel C. armoury D. infantry
3. ...is to wide as thin is to...
1. store 2. narrow 3. nothing 4. street
A. fat B. weight C. man D. present
4. ...is to masculine as woman is to...
1. disguise 2. malicious 3. virile 4. man
A. intuitive B. madame C. feminine D. girl
5. ...is to dispute as endure is to...
1. impute 2. repute 3. argue 4. distaff
A. last B. verdure C. imbue D. invert
6. ...is to verse as sculptor is to...
1. poet 2. reverse 3. free 4. music
A. crime B. chisel C. statue D. artist
7. ...is to chain as head is to...
1. watch 2. iron 3. pull 4. link
A. pearl B. board C. necklace D. aim
8. ...is to animal as rind is to...
1. shell 2. husk 3. skin 4. map
A. hard B. melon C. nut D. corn
9. ...is to cork as box is to...
1. bottle 2. fish 3. bristle 4. light
A. fight B. lid C. hat D. crate
10. ...is to tusk as deer is to...
1. ivory 2. work 3. elephant 4. trunk
A. doe B. hunt C. moose D. antler
11. ...is to contralto as tenor is to...
1. singer 2. soprano 3. sonata 4. solo
A. score B. song C. orchestra D. baritone
12. ...is to hang as guillotine is to...
1. picture 2. gallows 3. criminal 4. punish
A. revolution B. behead C. capitulate D. citizen
13. ...is to tree as melon is to...
1. bush 2. elm 3. gnarled 4. apple
A. vine B. water C. ripe D. sweet

GO ON TO THE NEXT PAGE AND KEEP WORKING

92

Numerical ability

ಈ ಕೆಳಗೆ ಸಂಖ್ಯಾ ಸಾಮರ್ಥ್ಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದ ಪ್ರಶ್ನೆಗಳನ್ನು ಕೂಡಲಾಗಿದ್ದು ಸರಿಯಾದ ಉತ್ತರವನ್ನು A,B,C,D ಮತ್ತು E ಯಲ್ಲಿ ತಿಳಿಸಲಾಗಿದೆ. ಅದರಲ್ಲಿ ಒಂದು ಸರಿಯಾದ ಉತ್ತರವನ್ನು ಆಯ್ಕೆಮಾಡು (✓) ಈ ಚಿಹ್ನೆಯಿಂದ ಗುರುತಿಸಿರಿ.

DO ALL YOUR ROUGH WORK IN THE SPACE PROVIDED ON THE ANSWER SHEET

1. Add	ANSWER	7. Multiply	ANSWER	13.	ANSWER
$\begin{array}{r} 393 \\ 4658 \\ 3790 \\ \hline 67 \end{array}$	A 7908 B 8608 C 8898 D 8908 E none of these	$\begin{array}{r} .016 \\ .016 \end{array}$	A 256 B 25.6 C .00256 D .000256 E none of these	$\frac{1}{4} + \frac{1}{8} =$	A $\frac{1}{32}$ B $\frac{1}{8}$ C $\frac{1}{2}$ D 2 E none of the
2. Subtract	A 2485 B 2486 C 2496 D 3486 E none of these	8. Divide	A $1.13/46$ B $1.23/46$ C 1.5 D 15 E none of these	14.	A $6/49$ B $3/7$ C $2/3$ D $6/7$ E none of the
$\begin{array}{r} 5473 \\ 2987 \\ \hline \end{array}$		$\begin{array}{r} 46 \overline{)69} \end{array}$		$\frac{2}{7} \times \frac{3}{7} =$	
3. Multiply	A 10900 B 11100 C 11900 D 11700 E none of these	9. Divide	A .0003 B .03 C .3 D 3 E none of these	15.	A $27/30$ B $1\frac{1}{2}$ C $30/45$ D $2/3$ E none of these
$\begin{array}{r} 484 \\ 25 \\ \hline \end{array}$		$\begin{array}{r} .75 \overline{)2.25} \end{array}$		$\frac{3 \times 10}{5 \times 9} =$	
4. Multiply	A 1.5300 B 153.00 C 1530 D 15300 E none of these	10. Divide	A .02 B .2 C 2 D 20 E none of these	16. Add	A $26\frac{11}{14}$ B $27\frac{1}{8}$ C $28\frac{1}{2}$ D $28\frac{11}{14}$ E none of these
$\begin{array}{r} 2.04 \\ .75 \\ \hline \end{array}$		$\begin{array}{r} 3.6 \overline{).72} \end{array}$		$\begin{array}{r} 4\frac{3}{4} \\ 9\frac{1}{2} \\ 13\frac{7}{8} \\ \hline \end{array}$	
5. Multiply	A .99 B 98.40 C 99.00 D 9900 E none of these	11. Divide	A .47 B 4.07 C 4.7 D 47 E none of these	17. Add	A 49 ft. B 49 ft. 2 in. C 47 ft. 24 in. D 48 ft. E none of these
$\begin{array}{r} 4.50 \\ 22 \\ \hline \end{array}$		$\begin{array}{r} 64.7 \overline{)304.09} \end{array}$		$\begin{array}{r} 2 \text{ ft. } 3 \text{ in.} \\ 28 \text{ ft. } 11\frac{1}{2} \text{ in.} \\ 17 \text{ ft. } 5 \text{ in.} \\ \hline 4\frac{1}{2} \text{ in.} \end{array}$	
6. Multiply	A .001375 B .00625 C .625 D 1.375 E none of these	12. Divide	A 1.009 B 10.9 C 10.09 D 100.9 E none of these	18. Add	A 28 lbs. 6 oz. B 28 lbs. C 27 lbs. 16 oz. D 18 lbs. E none of these
$\begin{array}{r} .025 \\ .025 \\ \hline \end{array}$		$\begin{array}{r} .04 \overline{)4.036} \end{array}$		$\begin{array}{r} 3 \text{ lbs. } 3 \text{ oz.} \\ 6 \text{ lbs. } 7 \text{ oz.} \\ 7 \text{ lbs. } 5 \text{ oz.} \\ 11 \text{ lbs. } 1 \text{ oz.} \\ \hline \end{array}$	

3

Clerical speed and accuracy

ಕೆಳಗಿನವುಗಳಲ್ಲಿ ಅಂಕಿ/ ಅಕ್ಷರಗಳನ್ನು ಗುಂಪಿನಲ್ಲಿ ಕೊಡಲಾಗಿದೆ. ಅವುಗಳಲ್ಲಿ ಗುರುತಿಸಿರುವ ಅಂಕಿ/ಅಕ್ಷರವನ್ನು ನೋಡಿ ನಿಮಗೆ ಕೊಟ್ಟಿರುವ ಉತ್ತರ ಪತ್ರಿಕೆಯಲ್ಲಿ ಒಂದಕ್ಕೆ (೦) ಚಿಹ್ನೆಯಿಂದ ಗುರುತು ಹಾಕಬೇಕು.

PART I

1. uv ax xn vx zv
 2. bl dl ld lb bd
 3. at au ut ta tu
 4. wu vu vw wv uw
 5. wm um mu wu mw

6. ts ts ct 69 9t
 7. ro na nr rn ar
 8. na na am at ma
 9. AV VN NV NA VA
 10. OQ CQ QC QO OC

11. CU UU UC US CC
 12. 4H 4N NH N4 HN
 13. Rr RP pR PP rr
 14. Aa A8 8a BA aA
 15. LT Tt tT Tl tt

16. A/ Vv uv VV AA
 17. 4l 3e 4a 4c 3a
 18. X7 V9 V5 X9 V7
 19. A9 7b 79 9b b7
 20. 20 25 02 05 52

21. ar ra ro or oa
 22. lc le ol oc co
 23. la l3 3l 3a al
 24. ma cm ca mc am
 25. av vt vw wa va

26. ud un nd nu du
 27. fk lk kf lf kl
 28. pq qp qp qo op
 29. 2u 2q qu q2 u2
 30. 4l 44 l4 ll 40

31. nr ne en rn re
 32. bb dd ld db bd
 33. RB RD DR BR RD
 34. MW MV VW VM WM
 35. OD OB BD DO BO

36. FR PB RB RP BP
 37. Dd Db dB bB DD
 38. EE Ef eF Fe FF
 39. Ze Zz ZE zE eZ
 40. Zz NZ zZ zn ZN

41. 7c 9b 9c 9e 7b
 42. 7c 2b 7b 2d 7d
 43. n3 Sn 3s ns 3n
 44. 20 25 02 05 52
 45. ec ac ca ce aa

46. 2h b4 42 4h 24
 47. av va vo ao ov
 48. fa fr ra rf ar
 49. ma cm ca mc am
 50. rc cr co oc or

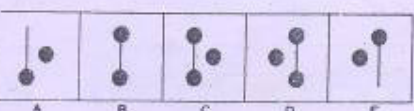
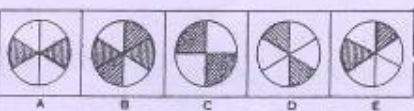
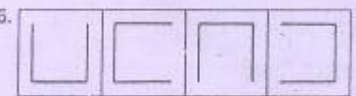
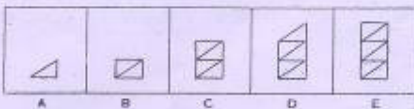
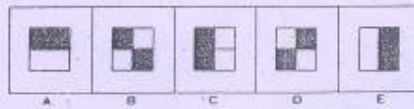
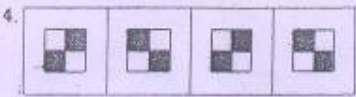
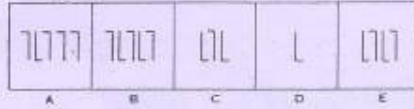
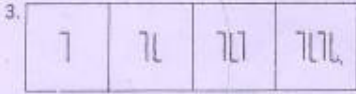
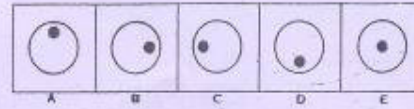
GO ON TO THE NEXT PAGE AND KEEP RIGHT ON WORKING.

Abstract reasoning

ಕೆಳಗೆ ಸೂಚಿಸಿದ ಪ್ರತಿ ಪ್ರಶ್ನೆಗಳಿಗೆ 4 ಚಿತ್ರಗಳನ್ನು ಕೊಡಲಾಗಿದೆ ಅದಕ್ಕೆ ಸರಿ ಹೊಂದುವ 5ನೇ ಚಿತ್ರವನ್ನು ಬಲಗಡೆ ಕೊಟ್ಟಿರುವ ಚಿತ್ರಗಳಲ್ಲಿ ಆಯ್ಕೆಕೊಂಡು ನೀವು (/) ಈ ಚಿಹ್ನೆಯಿಂದ ಗುರುತಿಸಿರಿ.

PROBLEM FIGURES

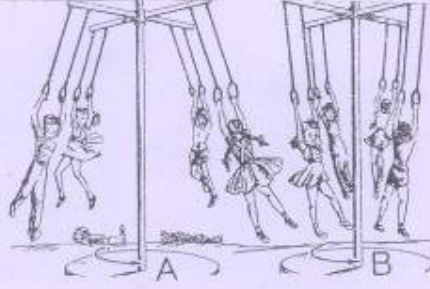
ANSWER FIGURES



Mechanical Reasoning

5

ಕೆಳಗೆ ಕೊಟ್ಟಿರುವ ಪ್ರಶ್ನೆಗಳು ಚಿತ್ರಗಳ ಮೇಲೆ ಅವಲಂಬಿತವಾಗಿವೆ. ನಿಮ್ಮ ಉತ್ತರವನ್ನು A B C ಗಳಲ್ಲಿ ಒಂದನ್ನು ಬರೆಯಿರಿ.



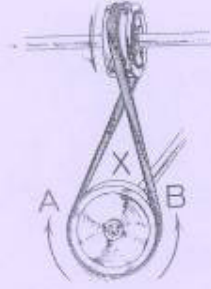
1

In which picture are the children turning faster?

(If equal, mark C)

ಯಾವ ಚಿತ್ರದಲ್ಲಿ ಮಕ್ಕಳು ವೇಗವಾಗಿ ತಿರುಗುತ್ತಿದ್ದಾರೆ ?

(ಸಮನಾಗಿದ್ದರೆ, ಸಿ ಎಂದು ಗುರುತಿಸಿ)

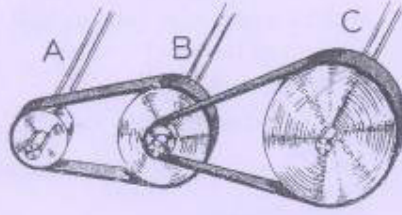


2

When the top pulley turns in the direction shown, which way, A or B, will the lower pulley turn?

(If it is not possible to know, mark C.)

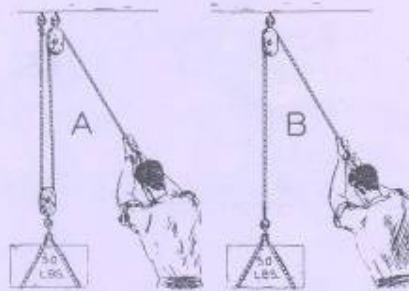
ಮೇಲಿನ ರಾಟೆಯನ್ನು ಚಿತ್ರದಲ್ಲಿ ತೋರಿಸಿದ ದಿಕ್ಕಿನಲ್ಲಿ ತಿರುಗಿಸಿದಾಗ ಕೆಳಗಿನ ರಾಟೆಯು ಯಾವ ದಿಕ್ಕಿನಲ್ಲಿ ತಿರುಗುತ್ತದೆ (ಎ ಅಥವಾ ಬಿ) (ಇದು ತಿಳಿಯಲು ಸಾಧ್ಯವಾಗದಿದ್ದರೆ ಸಿ ಎಂದು ಗುರುತಿಸಿ)



3

Which shaft (rod) will turn most slowly?

ಯಾವ ರಾಡ್ ಅತ್ಯಂತ ನಿಧಾನವಾಗಿ ತಿರುಗುತ್ತದೆ ?



4

Which man must pull harder to lift the weight?

(If equal, mark C.)

ಯಾವ ವ್ಯಕ್ತಿಯು ತೂಕವನ್ನು ಎತ್ತಲು ಹೆಚ್ಚು ಬಾರ

ಹಾರಬೇಕು? (ಸಮನಾಗಿದ್ದರೆ, ಸಿ ಎಂದು ಗುರುತಿಸಿ)

Do Not Stop. Go On to the Next Page.

PART II

1. YZ VY VX XY ZY
 2. t9 e6 69 96 6e
 3. ou oa un uo ao
 4. le lo ol or co
 5. X7 V9 V5 X9 V7

6. Sc sc ss eS e8
 7. eb et ot tb bo
 8. 6e 31 4d 2e 2d
 9. rc dc dr rd cr
 10. wa xw st tw ts

11. wm um ou wu uw
 12. pp qq pq pQ qP
 13. ev nx xn vx xv
 14. nu un um mn mu
 15. zn zz nz nn mn

16. pg gy py yp y8
 17. 59 9Y 6Y Y9 95
 18. nu on ou un uo
 19. ud un nd nu du
 20. 41 44 14 11 40

21. Rr RP pR PP rr
 22. LT IT IL TL TI
 23. MW MV VW VM WM
 24. Uu Wu uW WW uU
 25. 3x xc c3 ex 3e

26. AV VN NV NA Va
 27. YX XX Yy Xy xX
 28. EL EL FE LF LE
 29. MN NM VN MV NV
 30. EE EF eF Fe FT

31. SS CS SC 8S S5
 32. h6 h8 86 8h 6h
 33. 4d 3c 4a 4c 3a
 34. Z4 Z1 Z1 14 1Z 4Z
 35. Qo Qq OQ oq QQ

36. xE ex er e3 xe
 37. ar ra ro or oa
 38. 8c 8a 7a 6c 5c
 39. us ue se st eu
 40. wo ro rw ow wr

41. wu vu vw wv uw
 42. er ri ir ie re
 43. 31 23 32 13 21
 44. 2n 2q qu q2 u2
 45. xv yx vw wx wy

46. ac et ea ta te
 47. VI SI SV VS IV
 48. th he et ch ht
 49. rz rz zm az mz
 50. 9x sa ax 93 xa

GO ON TO THE NEXT PAGE AND KEEP RIGHT ON WORKING.

Language usage (Part I)

6

ಈ ಕೆಳಗೆ ಸೂಚಿಸಿರುವ ಶಬ್ದಗಳಲ್ಲಿ ಕೆಲವೊಂದು ಶಬ್ದಗಳು ಸರಿಯಾಗಿವೆ ಹಾಗೂ ಕೆಲವು ಶಬ್ದಗಳು ತಪ್ಪಾಗಿವೆ. ಪ್ರತಿಯೊಂದು ಶಬ್ದಗಳ ಮುಂದೆ ಸರಿ ಹಾಗೂ ತಪ್ಪು ಎಂಬ ಪರ್ಯಾಯ ಉತ್ತರಗಳನ್ನು ನೀಡಲಾಗಿದೆ. ನಿಮ್ಮ ಇಚ್ಛಿತ ಉತ್ತರವನ್ನು ನಿರ್ದಿಷ್ಟವಾದ ಜಾಗದಲ್ಲಿ (✓) ಈ ಚಿಹ್ನೆಯಿಂದ ಗುರುತಿಸಿ.

Sl. No	Words ಶಬ್ದಗಳು	Right ಸರಿ (✓)	Wrong ತಪ್ಪು (✓)	Sl. No	Words ಶಬ್ದಗಳು	Right ಸರಿ (✓)	Wrong ತಪ್ಪು (✓)
1	apointed			34	energy		
2	commission			35	sundry		
3	limited			36	visinity		
4	arival			37	colonel		
5	comunity			38	pamflet		
6	variety			39	conserning		
7	agency			40	securety		
8	distrubute			41	necessity		
9	hereafter			42	expences		
10	conference			43	testomony		
11	salary			44	avalable		
12	preveous			45	stating		
13	releive			46	courtesy		
14	expedite			47	naturaly		
15	essential			48	apoligy		
16	cilinder			49	invilid		
17	astabliish			50	construction		
18	quarrel			51	secretary		
19	premeum			52	duplacate		
20	rialize			53	seperate		
21	gratitude			54	traffic		
22	suggestion			55	captian		
23	consinment			56	sanitary		
24	revenue			57	specimen		
25	inferier			58	accommodate		
26	condem			59	february		
27	absolutely			60	consious		
28	cancel			61	athority		
29	carreer			62	owing		
30	bullitin			63	emergancy		
31	oposition			64	opperation		
32	ammunition			65	sylable		
33	survay			66	talant		

Language usage (Part II)

ಈ ಕೆಳಗೆ ಕೊಟ್ಟಿರುವ ಪ್ರತಿಯೊಂದು ವಾಕ್ಯಗಳಲ್ಲಿ ವ್ಯಾಕರಣ, ಅವಶ್ಯಕ ಚಹ್ನೆಗಳು (ಉದಾಹರಣೆಗೆ: ., ? , ! , ; , :) ಹಾಗೂ ಶಬ್ದಗಳಲ್ಲಿ ಒಂದಕ್ಕಿಂತ ಹೆಚ್ಚು ತಪ್ಪುಗಳಿವೆ ಅದನ್ನು ಗುರುತಿಸಿ ನಿಮಗೆ ತಪ್ಪೆನಿಸಿದಲ್ಲಿ ಸರ್ಕಲ್ ಮಾಡಿರಿ.

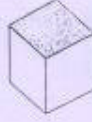
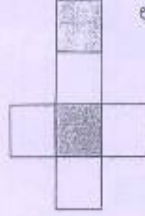
1. Where / did you / stop at / on your trip / to Delhi.
A B C D E
2. Was it / him / who / got burned / when the boiler bursted ?
A B C D E
3. The dog laid / sleeping / after chasing Gopal and I / with hardly no / time out.
A B C D E
4. I doubt / if Jack / has fewer / than sixteen / cricket bats.
A B C D E
5. "It is me," / said Ram, / as his mother / answered / his knock.
A B C D E
6. If I were / he, / I would be / sure / of myself.
A B C D E
7. I could / of won / if I had stood / in the game / a little longer.
A B C D E
8. If Mohan were here / he would sure / have done / faster work / than Gopal.
A B C D E
9. I cannot hardly / raise my hand / more than / three foot / above the board.
A B C D E
10. I sung / until / I was hoarse, / and then drunk / a glass of water.
A B C D E
11. Neither money / or fame / would of been / alright as payment / for such a job.
A B C D E
12. I do not understand / how anyone / could admire / a person as careless / as her.
A B C D E
13. Is it / I / whom / they / are calling ?
A B C D E
14. I did not feel / good enough / to attend / the conference / last tuesday.
A B C D E
15. I did / pretty good / in history / in last / week's tests.
A B C D E
16. Her father replied / "I feel / that Sita / is some better / than Mohini."
A B C D E
17. The rivers raised / ten feet / after the rains, / overflowing / their banks.
A B C D E
18. I thought / you was through / doing / your work / all ready.
A B C D E
19. We accepted / there proposal / that we cooperate / for our / mutual profit.
A B C D E
20. The writer / made / an illusion / to his hero's / earlier exploits.
A B C D E
21. I do not like / those kind / of mangoes, / give me some / of the ripe ones.
A B C D E
22. Leave / me go / with Sita / and She / to the show.
A B C D E
23. He is / one of those men / who work / well / and long.
A B C D E
24. Mohan said, / "Work, / not words, / is what / is needed."
A B C D E
25. None of the books / were / worth reading / more then / once or twice.
A B C D E

GO ON TO THE NEXT PAGE AND KEEP RIGHT ON WORKING.

Space relations

ಕೆಳಗೆ ಸೂಚಿಸಿದ ಪ್ರತಿ ಚಿತ್ರಕ್ಕೆ ಉತ್ತರವನ್ನು 5 ಚಿತ್ರಗಳಲ್ಲಿ ಕೊಡಲಾಗಿದೆ. ಕೊಟ್ಟಿರುವ ಚಿತ್ರಕ್ಕೆ ಒಂದು ರೂಪವನ್ನು ಕೊಟ್ಟಾಗ ಯಾವ ಅಕಾರವನ್ನು ಅದು ಪಡೆಯುತ್ತದೆ ಎಂದು ಬಲಗಡೆ ಕೊಟ್ಟಿರುವ ಚಿತ್ರಗಳಲ್ಲಿ ಆಯ್ಕೆಕೊಂಡು ಈ ಚಿಹ್ನೆಯಿಂದ (✓) ಗುರುತನ್ನು ಹಾಕಿರಿ.

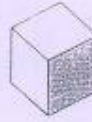
1



A



B



C



D



E

2



A



B



C



D



E

3



A



B



C

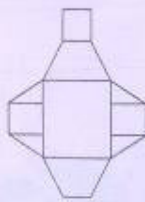


D



E

4



A



B



C

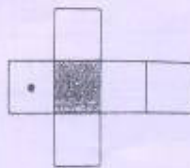


D



E

5



A



B



C



D



E

Appendix V-Vocational interest record

The main objective of this inventory is to know your vocational interest so that you can be guided for your vocation.

ಸೂಚನೆ: ಈ ಕೆಳಗೆ ಸೂಚಿಸಲಾದ ವಿವಿಧ ವಿದ್ಯಾಯಗಲಕಿ ನೀವು ಆಯ್ಕೆ ಮಾಡಲು ಇಚ್ಛಿಸುವ ವೃತ್ತಿ ಸಂಬಂಧಿಸಿದ ವಿದ್ಯಾಯಗಲನ್ನು ಹೌದು () ಅಥವಾ ಇಲ್ಲ () ✓ ಚಿನ್ಹೆಯನ್ನು ಪ್ರತಿಯೊಂದು ಖಾನೆಯಲ್ಲೂ ಸೂಚಿಸಿರಿ.

ಕ್ರ. ಸಂ.	ಸಾಹಿತ್ಯ	✓ X	ವಿಜ್ಞಾನ	✓ X	ಕಾರ್ಯರಂಗ	✓ X	ವ್ಯವಹಾರಿಕ	✓ X	ರಚನಾತ್ಮಕ	✓ X
1	ಭಾಷಾಂತರಕಾರ Language translator		ವಿಜ್ಞಾನಿ Scientist		ಜಿಲ್ಲಾ ನ್ಯಾಯಾಧೀಶ District magistrate		ಟೈಪಿಸ್ಟ್ Typist		ಕಂಬಾರ Black smith	
2	ಪತ್ರಕರ್ತ Journalist		ವೈದ್ಯ Doctor		ಪೊಲೀಸ ಅಧಿಕಾರಿ Police		ಖಾಸಗಿ ಉದ್ಯೋಗ Private job		ಬಣ್ಣ ಹಚ್ಚುವವ Painter	
3	ಕವಿ Poet		ಆರೋಗ್ಯ ಅಧಿಕಾರಿ Health officer		ಹೋಟೆಲ್ ನಿರ್ವಾಹಕ Hotel manager		ಕಂಪನಿಯ ಅಕೌಂಟೆಂಟ್ Company accountant		ರೆಡಿಯೋ ಮೆಕ್ಯಾನಿಕ್ Radio mechanic	
4	ಸಾಹಿತ್ಯ ಬರಹಗಾರ Literary writer		ಇಂಜಿನಿಯರ್ Engineer		ಶಿಕ್ಷಣ ನಿರ್ದೇಶಕ Education director		ಟಿಕೆಟ್ ಕಲೆಕ್ಟರ್ Ticket collector		ಬಣ್ಣ ಹಾಕುವವ Spinner	
5	ನಾಟಕಕಾರ Dramatist		ಪರಮಾಣು ವಿಜ್ಞಾನಿ Atomic scientist		ಮುಖ್ಯೋಪಾಧ್ಯಾಯ Principle		ಲೆಕ್ಕಾಧಿಕಾರಿ Accountant		ಸೃಜನ ಕಲೆ ಶಿಕ್ಷಕ Teacher of creativity and arts	
6	ಕಥೆ /ಕಾದಂಬರಿ ಬರಹಗಾರ Story writer		ಮೆಡಿಕಲ್ ರಿಪ್ರೆಸೆಂಟೇಟಿವ್ Medical representative		ತಹಶೀಲ್ದಾರ್ Tehsildar		ತೆರಿಗೆ ಆದಾಯ ಅಧಿಕಾರಿ Income tax officer		ಪುಸ್ತಕ ಬೈಂಡರ್ Book binder	

ಕ್ರ. ಸಂ.	ಕಲಾತ್ಮಕ	✓ X	ವ್ಯವಸಾಯ	✓ X	ಪ್ರೇರೇಪಿಸುವ	✓ X	ಸಾಮಾಜಿಕ	✓ X	ಗ್ರಾಹಕರ ಸಹಾಯ ಮತ್ತು ಉತ್ಪಾದನೆ	✓ X
1	ಸಂಗೀತಗಾರ Musician		ಕೃಷಿಕ Agriculture		ರಾಯಭಾರಿ Ambassador		ಗೂಡೆಚಾರ Crime investigator		ಗೃಹ ವಿಜ್ಞಾನ ಶಿಕ್ಷಕ Homescience teacher	
2	ವರ್ಣಚಿತ್ರಕಾರ Painter		ಜೀವದಂಗಡಿಯ ಅಧಿಕಾರಿ Seed store officer		ವಕೀಲ Advocate		ಗ್ರಾಮ ಮಟ್ಟದ ಕೆಲಸಗಾರ Village level worker		ಗೃಹಿಣಿ Housewife	
3	ವ್ಯಂಗ್ಯಚಿತ್ರಕಾರ Cartoonist		ಮಣ್ಣಿನ ತಜ್ಞ Soil specialist		ವಿಮಾ ಅಧಿಕಾರಿ Vima insurance		ಕಲ್ಯಾಣ ಸಮಿತಿ ನೌಕರ Social reformer		ಕಲೆ ಹಾಗೂ ಕೌಶಲ್ಯದ ಶಿಕ್ಷಕ Teacher of arts and crafts	
4	ಲಲಿತ ಕಲೆಗಳ ಶಿಕ್ಷಕ Teacher of fine arts		ಕೃಷಿ ಸಂಶೋಧಕ Agro researcher		ರಾಜ್ಯಕೀಯ ಪರಿಶೀಲನಾಧಿಕಾರಿ Politician inspector		ಉಚಿತ ಔಷಧಿ ವಿತರಕ Free medicine distributor		ಮನೆಯ ಅಲಂಕಾರ ಮಾಡುವಾತ Home decorator	
5	ಛಾಯಾ ಚಿತ್ರಕಾರ Photographer		ಕೋಳಿ ಸಾಕಾಣಿಕೆ Poultry		ಧಾರ್ಮಿಕ ಬೋಧಕ Religious preacher		ಗೌರವಾನ್ವಿತ ಶಿಕ್ಷಕ Honorary teacher		ಮಕ್ಕಳ ಕಾಳಜಿಯ ಉಸ್ತುವಾರಿ Care taker of children	
6	ನೃತ್ಯಕಾರ Dancer		ಕೃಷಿ ಸಹಾಯಕ Agriculture agent		ಗ್ರಾಮ ಸರಪಂಚ Village sarpanch		ಉಚಿತ ವೈದ್ಯ ಸೇವೆ Doctor serving free		ಹಣ್ಣು ಸಂಸ್ಕರಣೆ Manufacture of marmalades	
7	ಶಿಲ್ಪಕಾರ Sculptureist		ಸಸಿಗಳನ್ನು ತಯಾರಿಸುವವ Gardner		ಶಿಕ್ಷಕ (ಇಂಜಿನ್) Teacher		ಸಾಮಾಜಿಕ ಸೇವಕ Social worker		ಗೃಹ ವಿಜ್ಞಾನ ಸಂಶೋಧಕ Homescience researcher	
8	ಹಾಡುಗಾರ		ತಳಿ ವಿಜ್ಞಾನಿ		ಪ್ರವಾಸ ಮಾರ್ಗದರ್ಶಿ		ಸ್ವಯಂ ಸೇವಕ		ಅಡಿಗೆ ಪರಿಣಿತ	

STUDY HABITS, APTITUDE AND VOCATIONAL INTEREST OF RESIDENTIAL AND NON-RESIDENTIAL SCHOOL CHILDREN

**MADHU ASHOK GARAG
PUJAR**

2015

Dr. LATA

Major Advisor

ABSTRACT

A study on “Study habits, aptitude and vocational interest of residential and non residential school children” was carried out during 2014-2015 in Dharwad taluk. A total sample comprised of 240 children of whom 120 were from residential school and 120 were from non-residential school. Study habits scale (Mathur, 2002), aptitude inventory (Bennet *et al.*, 1993), vocational interest record (Kulshrestha, 2011) and socio economic status scale (Aggarwal *et al.*, 2005) were used for data collection. The results revealed that majority of children had good (61.7%) and average (37.5%) study habits among residential and non-residential school. There was significant difference between ordinal position and study habits of residential and non-residential children. In case of aptitude, residential school children performed better in dimensions viz. numerical ability, sentences, scholastic aptitude, abstract, mechanical and verbal reasoning than non-residential school children. Gender wise comparison indicated that boys performed better in mechanical reasoning than girls. Ordinal position and family income had significant relationship with the numerical ability of aptitude whereas, socio-economic status, father’s education and occupation had significant relationship with the abstract reasoning, numerical ability and scholastic aptitude of children. With regard to vocational interest, majority of the residential and non-residential children had low level of vocational interest in all the areas of vocations. Higher the age of children better the choice of vocation among residential and non-residential children. Parent’s education, father’s occupation and family income had positive significant association with vocational interest of residential children. There was highly significant relationship between study habits and vocational interest of residential and non-residential children. Among residential children, study habit was positively and significantly correlated with aptitude areas viz. abstract reasoning, numerical ability and sentences. Among non-residential children, study habit was positively and significantly correlated with clerical speed and accuracy. There was positive and significant correlation between vocational interest and aptitude areas viz. verbal reasoning and scholastic aptitude.