CHAPTER II

REVIEW OF RELATED LITERATURE
2.1 REVIEW OF RELATED LITERATURE

Every worthwhile research study in any field of knowledge requires an adequate familiarity with the work which has already been done in the same area. A summary of the writings of recognized authorities and of previous research provides evidence that researcher is familiar with what is already known and what is still unknown and untested. Since effective research is based upon past knowledge, this step helps to eliminate the duplication of what has been done and provides useful hypotheses and helpful suggestions for significant investigation.

Citing studies that show substantial agreement and those that seem to present conflicting conclusions, helps to sharpen and define understanding of existing knowledge in the problem area. It provides a background for the research project and makes the reader aware of the status of the issue. Parading a long list of annotated studies relating to the problem is ineffective and inappropriate. Only those studies that are plainly relevant, competently executed and clearly reported should be included.

The survey of related studies implies locating, studying and evaluating reports of relevant researchers, study of published articles, going through related portions of encyclopedias and research abstracts, study of pertinent pages out of comprehensive books on the subject and going through related manuscripts, if any. For a worthwhile study in any field of knowledge, the research worker needs an adequate familiarity with the work which has already been done in the area of his choice. He needs to acquire up to date information about what has been thought and done in the particular area. He has to build upon the accumulated and recorded knowledge of the past. He draws maximum benefit from the previous investigations, utilizes the previous findings, takes many hints from the designs and procedures of the previous researchers, matches the conclusions with the earlier conclusions and tries to add from his side to the existing store of knowledge.

The preliminary survey of the previous studies, literature, discussions and experience related to the problem under investigation may accomplish a number of purposes. The search for related material is time consuming but fruitful phase of any research programme. It helps the research worker to find- what is already known, what
others have attempted to find out, what methods of attack have been promising or disappointing and what problems remain to be solved. It shows whether the evidence already available, solves the problem adequately without further investigation. It forms the foundation upon which all further work will be built. It enables him to know the means of getting to the frontier in the field of his research. Unless he has learnt what others have done and what still remains to be done, he cannot develop a research project that will contribute something to the knowledge existing in the field.

The study of related literature provides ideas, theories, explanations, hypothesis or method of research. It is valuable in formulating and studying the problem and also helps in locating comparative data useful in the interpretation of results. Above all, it prevents the pointless repetition of research which is a serious problem being faced by the researcher, because sometimes the final work may overlap to a large extent, an already available piece of work. There have been instances when the researcher has not been fully honest and has appropriated large portions of the work of another without acknowledgement. This duplication may also be caused by ignorance, but in any case it may lead to problems in approval and award for the present researcher.

There have been cases when the problem was vast and two or more researchers at distant places started working on it independently and almost simultaneously came out with similar results. It was difficult to decide, who should be given more credit in terms of originality and pioneer ship. Again, it was difficult to decide whether any duplication has taken place intentionally.

In the past, ignorance of related investigations was excusable to some extent because most of bibliographical and library resources were non-existent. Nowadays, this type of act can’t be excused because of multiplicity of avenues for accessing information. If the present day researcher leaves his chapter on related information completely blank and makes a claim that his was a completely new investigation- never carried out by anybody before, then he is almost certainly wrong. One should not conclude too early that related information on his topic doesn’t exist; rather one should persist in search for the same.

At the same time, if it is assumed that the researcher has complete analytical knowledge of the studies reported in the field of his problem at the very beginning of his
work, before even evaluating and defining his problem, this would be expecting too much from him. The present researcher naturally wants to do something as distinctive and worthwhile as possible. It may be safely said that too much knowledge does not hamper originality. If done intelligently, the activities of previous researchers help the present study by acting as a baseline for further progress. Buds of thought can burst out along the stem and reflections, fine insights and hunches will appear. The research will be at a higher level of generalization and will become more complete. Thus in order to be truly creative and original, one must read extensively and critically as it acts as a stimulus to thinking.

While searching related literature, the researcher should note certain important elements. These include reports of closely related studies that have been investigated, design of the study including procedures employed and data gathering instruments used, sampled population, sampling techniques employed, variables, extraneous variables that could have been avoided and recommendations for future research.

Knowledge is indispensable and widely spread, but because of different I.Q levels, different individuals have different ways of carrying out research. The various sources of related literature can be broadly classified as primary and secondary sources. Primary sources are those sources which provide direct description of the study by the person/agency who have actually carried out the work. On the other hand secondary sources are those sources which include publications written by authors who were not first-hand observers or creators of the work.

### 2.2 STUDIES RELATED TO ACHIEVEMENT

Kumar (1986) found in his study that there exists no significant difference in achievement of boys and girls belonging to arts and biology groups. Giraudo (1990) found in his study that there exists a positive relationship between family environment variables and a child’s academic achievement.
Hardesty (1992) found in his study that there were lower female science achievement scores than male students.

Nateson (1992) found in his study that the girls were higher in academic achievement.

Vijayalakshmi and Nateson (1992) found in their study that the girls had a higher mean academic achievement as compared to boys.

Govinda and Varghese (1993) found in their study that the private unaided schools are of better quality and strongly associated with higher achievement.

Kaur and Gill (1993) found in their study that achievement in English and total achievement are independent of sex, but boys scored higher than girls in achievement in Punjabi, Mathematics and Science.

Choudhary and Muni (1995) found in their study that the parental support had positive effect on their children academic performance.

Mundaragi (1995) found in his study that the boys were higher in academic achievement than girls.

Furstenberg and Hughes (1995) found in their study that the parents involvement in their child’s education increases the rate of academic success of their child.

Peng and Hall (1995); Mccoy (2005) found in their study that gender, ethnicity and father’s occupation significantly contributes to student achievement.

Agarwal and Kapoor (1998) found that at initial level, parents giving directions and guidance at appropriate time contributes to children’s performance in schools.

Singh and Dubey (1999) found in their study that the scholastic achievement is not influenced by sex and locality of students.

Andrea (2001) found in his study that students who showed greater parental and peer influence had more academic outcome.

Xitro, Fan and Chen (2001) found in their study that there exists a relationship between parental involvement, status and student’s academic achievement.

Bajwa and Sharma (2002) found in their study that Yoga training improves the student’s academic achievement.

Devi (2003) found in their study that there exists insignificant relationship between dimensions of family environment and academic achievement of school students.

Chambers and Schreiber (2004) found in their study that the girls show better academic performance than boys in certain instances.

Krashen (2005) found in their study that the students whose parents are educated score higher than on standardized tests than those whose parents were not educated.

Abiam and Odok (2006) found in their study that there exists no significant difference in achievement of boys and girls.

Nuthana (2007) found in his study that the boys and girls were having the same performance on academic achievement.

Rajendran et al (2007); Pandey et al (2008) found in their study that there exists no significant difference between boys and girls on academic achievement.

Tulika (2007) found in her study a significant difference in academic achievement among boys and girls of 10+1 class.

Bidyadha (2008) found in his study that tribal secondary level students are lagging behind in the mental abilities and achievement motivation to their non tribal counterparts. He further revealed that there was significant difference in the academic achievement of boys and girls. Girls had high academic achievement than boys. Chaudri (2009), Chaliha and Gupta (2010) also supported the same result.

Kumar (2008) found in his study that large fraction of science students score more than 90% among overall pass out students and male students dominate over female students.

Chadha (2010) found in his study that there was a significant relationship between optimistic- pessimistic attitude and academic achievement among adolescents of schools of Ludhiana district with respect to streams.

Chahal and Bhandari (2010) found in their study that the teaching through scientifically designed awareness training model of teaching is very helpful in making teaching learning effective. It has proved that awareness training model has significant positive effect on academic achievement of +1 students. It influences equally strongly both the high as well as low achievers.
Gartia (2010) found in his study that there is no significant difference in academic procrastination and academic achievement in respect of gender. He further revealed that 76% of under graduate students have academic procrastination behaviour.

Gupta and Chaliha (2010) found in their study that there exists a significant difference in the academic achievement of boys and girls.

Sohta (2010) found in study that self efficacy was significantly correlated to academic achievement of orthopedically disabled and able bodied students. He further revealed that there is a significant relationship between classroom misdemeanors and academic achievement of orthopedically disabled students.

Kumar (2011) found in his study that there is a significant difference between mean scores of socio economic status and academic achievement of students of SC, ST, OBC and general category students.

Pannu (2011) found in her study that adoloscents studying in private schools had higher academic achievement than adoloscents studying in government schools.

Sadia and Khatoon (2011) found in their study that the female and male students of government and government aided schools and Hindu and Muslim managed schools show no significant difference in achievement.

Singh (2011) found in his study that the academic performances of 6\textsuperscript{th} class students were significantly related to age, sex and parental education.

Sawhney (2012) found in his study that boys and girls do not differ significantly from each other in academic achievement.

Parmar (2013) found in his study that the achievement in Chemistry in girls is significantly higher than that of boys.

Choudhari (2013) found in his study that the students of CBSE are performing better in academics as well as sports than the students of state boards.

Srinivas (2013) found in his study that there exists no significant difference in achievement of boys and girls.

Thus by and large most of the studies conclude a significant relationship. This study being based on primary data would statistically analyze its own data and results to conclude existence of any difference in academic achievement of boys and girls.
2.3 STUDIES ON ACHIEVEMENT AND SCIENTIFIC APTITUDE

Ganguly et al (1972) found in their study that the scientific aptitude was highly associated with academic success in science.
Skaria (1984) found in his study that there exists a high association in scientific aptitude and science achievement of students.
Thompy (1985) found in his study a significant correlation between Biology achievement and scientific aptitude.
Mehna (1986) found in his study that scientific aptitude was a significant predictor of science achievement.
Singh (1987) found in his study that 10th class male science students possess higher level of science aptitude than their female counterparts.
Ghosh and Gupta (1988) found a significant correlation of Physics, Chemistry and Biology with scientific aptitude.
Pillai (1989) found in his study a positive relationship between scientific aptitude and achievement in Biology of secondary school pupils.
Pillai (1990) found in his study that biology achievement of secondary pupils may differ according to the differences in scientific aptitude or attitude towards science.
Thakur (1990) found in his study a positive relationship between science achievement, scientific aptitude and intelligence.
Sreekumar (1992) found in his study a positive relationship between science achievement, scientific aptitude and interest.
Sujatha (1994) found in her study a positive relationship between science achievement, scientific aptitude and interest in science subject(s).
Rao (1995) found in his study that the scientific aptitude was similar in boys and girls and both the groups were in average range.
Robertson (2002) found in his study that boys do not possess more scientific aptitude and science achievement than girls. There is however a relationship between scientific aptitude and science achievement.
Gulati (2003) found in his study that boys of private schools do not possess more scientific aptitude than girls of private schools.

Rao (2004) found in his study that scientific aptitude, scientific attitude and achievement in biology are positively related.

Surekha (2007) found in her study that the students of private schools are better than students of government schools and girls of private schools perform academically better than girls of government schools.

Adesoji and Oginni (2012) found in their study a significant correlation of scientific aptitude on student achievement in Chemistry.

Parmar (2013) found that aptitude in Chemistry of girls is significantly higher than that of boys.

Kumar et al (2008) found that Physics and Chemistry are most preferred subjects followed by mathematics and Biology.

Figure 2.1
Performance of students in different subjects

Source-CBSE (2007)
Figure 2.2
Performance in Physics in different states, 12th student
Figure 2.3
Performance in Chemistry in different states, 12th students

[Graphs showing performance trends in different states]
Figure 2.4
Performance in Biology in different states, 12th students
Thus, by and large most of the studies conclude a positive relationship between scientific aptitude and achievement in science. This study being based on primary data would statistically analyze its own data and results to establish the existence of any statistical relationship between achievement and scientific aptitude.

**2.4 STUDIES ON ACHIEVEMENT AND STUDY HABITS**

Carter (1950) found in his study a positive correlation between study habits and academic achievement.
Vedavali (1953) found in her study that male students have better study habits than female counterparts.
Rasul (1968), Sharif (1978) found in their study that study habits have positive relationship with learning which results in better achievement.
Jain and Robson (1969) found in their study that good achievers always have good study habits.
Bahl (1972) found in her study that there is a very high positive correlation between study habits and academic achievement.
Jamuar (1973) found in his study that significant correlation existed between study habits and academic achievement.
Singh (1984) found in his study that study habits of boys and girls differed significantly at different levels of academic achievement.
Ngailiankim (1988) found in his study that there exists no significant difference in study habits of high, average and low achievers in mathematics.
Okpala and Onocha (1988), Olatoye and Ogunkola (2008) found in their study that study habits makes a significant contribution to prediction of Physics achievement.
Pelufo (1988) found in his study that those first year university students, who have followed the program of study, improved their study habits which led to better academic achievement.
Shanmugasundaran (1988) found in his study that there is a positive relationship between study habits and academic achievement.
Palsane and Sharma (1989) found in their study that boys were poorer in study habits as compared to girls.

Deb (1990) found in his study that a positive relationship exists between study habits and academic achievement.

Mehra et al (1989-1990) found in their study that there exists a significant positive relationship and significant correlation between study habits and academic achievement.

Ramaswamy (1990) found in his study a significant relation between study habits and academic achievement variables.

Sundararajan and Lilly (1991) found in their study that girls had significantly better study habits than boys.

Curtis (1992) found in his study that if parents monitor school work, help with plans and talk to their child about parental experiences variables of the family environment, their child’s time on task, general self esteem and attitude about school will improve.

Panda (1992) found in his study that the boys have significantly better study habits than girls.

Tymms and Libbon (1992) found in their study that the students who worked for long hours gained slightly better grades than those who worked for modest periods.

Mehra and Malhotra (1993) found in their study that study habits and study attitudes were important predictors of academic achievement.

Stella and Purushothaman (1993) found in their study that urban students had better study habits than rural students but no significant difference was found between boys and girls.

NAEP (National Assessment of Educational Progress) (1994) found in its study a positive correlation between study habits and academic achievement of elementary and secondary school students.

Loranger (1994) found in his study that successful students tended to be more motivated to succeed and more likely to be active, purposeful and flexible in their strategy use while less successful students perceived themselves as successful and they lack self knowledge of inefficient strategy use.

Singh and Singh (1995) found in their study that the advantaged group compared to disadvantaged group had better study mechanisms, regularity in study, attentiveness in classroom and habit of seeking help from teachers and classmates.
Patel (1996) found that pupils who had good study habits get significantly more achievement scores than those who had poor study habits.

Verma (1996) found in his study a significant independent effect of study habits on performance in Hindi, English and Social studies. Study also revealed that students possessing good study habits scored higher than the students possessing poor study habits in these courses.

Sampath and Selvarajgnanaguru (1997) found in their study that there exists no significant difference in study habits of boys and girls.

Gordon (1998) found in his study that academic self concept, study habits and persistence are significantly related to academic achievement.

Bhatnagar and Gupta (1999) found in their study that for better scholastic achievement, it is necessary to aid pupils make progress in their education by removing their difficulties and developing good study habits.

Stella and Purustiothaman (1999) found in their study that high I.Q., high achievers had better study habits than low I.Q., underachievers.

Whatstone (1999); Kornell and Biork (2007); Karpicke, Butler and Roediger (2009) found in their studies that self testing, re-reading and scheduling of study play important roles in real world student achievement.

Verma and Kumar (1999) found in their study that study habits were positively correlated with achievement in 10th grade examinations in Delhi.

Aluede and Onolemhemhen (2001) found in their study that counseling students on good study habits can bring about improvement in the student’s academic achievement.

Lewis (2001) found in his study that there is a significant relationship between learning strategies and academic achievement.

Suneetha and Mayuri (2001) found in their study that boys and girls differed significantly in drilling, interaction, sets and language dimensions of study habits inventory.

Nagaraju et al (2002) found in their study that father and mothers’ educational qualifications have significant influence on study habits. Annual income of the family has no significant influence on study habits of 9th class pupils.
Riaz et al (2002) found in their study that there is a significant and positive relationship between achievement of students and the said factors like schedule of study, habit of notes taking and writing back.

Rao and Seema (2004); Jayanta (2006) found in their study that study habits are related with science achievement in secondary school students.

Malathi and Malini(2006) found in their study that the study habits of boy students was better than girl students.

Sirohi(2004) found in his study that guidance programme shall lead to better results, improving the achievement of students and their potentialities to be maximally utilized.

Joseman(2006) found in their study that in order to maximize students’ academic achievement, approaches to study and study habit of the students are as important as class room environment and that inability of a school system to develop useful study habits in its learners leads to wastage and stagnation.

Nuthana (2007) found in her study that overall study habits are significantly related to academic achievement .There was also significant relation between habits of concentration, reading and notes taking habits and preparing well for exams.

Nouhi and Nakhei (2008) found in their study that mastering skills by students makes study more enjoyable and effective which in turn strengthen the students’ interest so that he or she spends more time on studying.

Watters et al (2009) found in their study that self regulated learning leads to better achievement.

Singh et al(2010) found in their study that that the study habits of 6th class students were significantly related to gender, age, socio-economic status and parental education.

Ball (2011); Mueller (2011); Weichert et al (2011) found in their study that with more study timings, there is high frequency of academic achievement.

Hartwig and John Dunlosky (2011) found in their study that use of various study strategies, including self testing and re-reading leads to higher academic achievement.

Tape (2011) found in their study that family background, peer group pressure, personality type of student and the school environment all affect the reading habits of students in secondary schools.
Parua and Archana (2011) found in their study a significant positive relationship between study habits and scholastic achievement of secondary school students. Better scholastic achievement depends on good study habits. Study also reveals that the dimensions like comprehension, concentration, study sets, interaction drilling, support and recording and language are significantly related to academic achievement. Findings also brings out the importance of systematic and planned approach in preparing lessons, a proper distribution of time, careful attention in classroom, taking down the notes and formation of elaborative answers.

Thus, by and large most of the studies conclude a positive relationship between Study habits and Academic achievement. This study will also attempt to either re-establish the same on the basis of primary data or will challenge it on the basis of strong contrary evidence.

### 2.5 STUDIES ON ACHIEVEMENT AND SOCIO-ECONOMIC STATUS

Chawla (1973) found that girls belonging to high socio-economic status families have higher academic achievement than girls belonging to low socio-economic status families. Turner (1975) found that high socio-economic status group demonstrated improved achievement than low socio-economic group. Lewis (1985) found in her study that routine socio-economic factors have got much impact upon the academic achievement of children. Patel (1986) found a positive correlation between socio-economic status and academic achievement. Gakhar (1987) found that socio-economic status and achievement on mathematical concepts are positively correlated. Ramaswamy (1988) found that socio-economic conditions of the family are fairly closely associated with academic achievement of children.
Ayishabi (1991) found in his study conducted on Biology achievement of science and non science high school pupils that the backward caste students in biology achievement differed significantly on urban sample as well as rural sample.

Penny and Bond (1991) found that socio-economic status had the deepest effect on scholastic achievement among many studied factors.

Noon (1991) found in his study that the lower socio-economic strata tend to have lower levels of achievement compared to students from higher socio-economic strata.

Wnagoo and Khan (1991) found in their study that there exists a significant difference in academic achievement between students from private and government schools. The relationship between academic achievement and socio-economic status was found to be significant.

Usha (1992) found that socio-economic conditions of the family are closely associated with academic achievement of children.

Asthana (1993) found in his study that adjustment with examination and curriculum, socio-economic status, parental encouragement, family atmosphere, lack of facilities, poverty and unrealistic aspirations were prominent among dropout reasons at senior basic level.

Guha, Mitra and Roy (1995) found that achievement of primary school children hailing from privileged backgrounds was better.

Misra(1960); Osciala(1981); Adinarayana(1996); Gensberg and Phillis (1993) found in their studies that socio-economic status and family backgrounds have an impact on mental development and school achievement.

Singh (1996) found that high socio-economic status was positively related with achievement. The achievement of students belonging to SC/ST groups & girls was low. Also the achievement of students in government schools was poor.

Pradhan(1997) studied the effect of socio-economic status and interest on scholastic achievement of girls and found that socio-economic status was not effective with regard to scholastic achievement where as interest was seem to be more influential factor.

Lopez (1995); Duke(2000) found in their study that the achievement of students is negatively correlated with low socio-economic status level of parents because it hinders the individual in gaining access to sources and resources in learning.
Van Acker and Wehby (2000) found that socio-economic status and attitude towards educational experience as well as other variables have a great impact on academic achievement.

Bala (2001) found in her study that better the socio-economic status better will be the family environment. As high socio-economic status is positively related with nutrition, good parent child relationship, language experience, better educational facilities and more opportunities for educational stimulation coupled with encouragement from parent of all which lead to healthy development of children. This enhances the crystallization of intelligence which in turns increases the academic achievement of children.

Mcconney and Perry (2010) found in their study that there exists a relationship between student’s socio-economic status, science and mathematics achievement.

Sander (2001) found in their study that the low socio-economic level strongly affect the achievement of students, dragging them down to a lower level.


Devi and Mayuri (2003) found in their study that girls were superior to boys in socio-economic status. Family factors like parental aspirations and socio-economic status significantly contributed to academic achievement.

Cristopher (2005) found in his study that parental socio-economic status, parenting styles and practices have significant effect on adolescent school achievement.

Eaman (2005) found in his study that the students from low socio-economic status background who attend poorly funded schools do not perform well compared to the students from higher social classes.

Panigrahi (2005) found in his study a low positive correlation between socio-economic status and academic achievement.

Walker et al (2005) found a greater correlation among the effect of school environment and socio-economic status on academic achievement.

Casanova et al (2006) found in their study that socio-economic status of family have a deep impact on academic achievement.
Garzon (2006); Kohlenberg (2006) and Kirkup (2008) found in their study that the students with high level of socio-economic status perform better than the middle class students and the middle class students perform better than the students of low level of socio-economic status.

Aruna and Amanulla (2007) found in their study that a significant difference exists between boys and girls, rural and urban pupils and those belonging to high and low socio-economic status in their achievement in social studies. Students of high socio-economic status were high achievers and those of low socio-economic status were low achievers.

Nuthana (2007) found in his study a significant association between socio-economic status and academic achievement among boys and girls and also revealed that socio-economic status of the family had significant influence on academic achievement of boys and girls.

Hanes (2008) Higher socio-economic levels lead to higher performance of students in studies and vice versa.

Kumar (2009) found in his study that the contrast between state boards and CBSE is not merely in their exam results and functioning. It has socio-economic dimensions as well. The state boards cater to the children of poor strata. In case of examination system, CBSE schools are better equipped to tackle the problem of conducting the examination.

Andrew and Laura (2010) found in their study that there exists a relationship between students’ socio-economic status and their achievement in Mathematics and Science.

Farooq et al (2011) found in their study that the students’ gender strongly affects their academic performance with girls performing better in the subject of Mathematics and English as well as cumulatively.

Kumar (2011) found in his study that there is a significant difference between the mean scores of socio-economic status and academic achievement of students of SC, ST, OBC and general category students.

Karimi et al (2012) found in their study a significant correlation between socio-economic background and academic achievement.

Thus most of the studies show a positive correlation between socio-economic status and academic achievement except few exceptions. Extent of relationship has been varying, but by and large positive relationship has been proved. Ahluwal (1952);
Bhatnagar (1952); Frankel (1960); Jamuar (1963); Kamat & Deshmukh (1963); Chopra (1964); Jain (1965); Chopra (1966); De & Sinha (1968); Satyanandan (1969); Dielmen & Furono (1970); Pathak (1972); Parkash Chandra (1975); Khanna (1980); Aruna (1981); Sarah (1983); Jagnadhan (1985); Parelius and Perilius (1987); Patel (1993); Shukla (1994); Saxena et al (1995); World bank (1996); Caldes and Bankston (1997); Ma and Klinger (2000); Mitchell and Collom (2001); Jeynes (2002); Seang (2002); Bhuwal (2003); Siren (2005); Panigrahi (2005); Dills (2006) endorse this view. However studies by Sinha (1966); Gopal (1968); Sharma (1969) did not establish any significant relation between socio-economic status and academic achievement.

This study will also attempt to either re-establish the same on the basis of primary data obtained from sample obtained from the targeted population of secondary school students or will challenge it on the basis of strong contrary evidence.