CHAPTER - II

REVIEW OF RELATED LITERATURE

2.1 INTRODUCTION

The aim of this chapter is to record briefly the findings of research studies conducted on topics that are related to the problem under study. Thus for any investigator, the study of literature related to his/her investigation is essential and it serves the following purposes.

i) To show whether the evidence already available solves the problem adequately without further investigation and thus avoids the risk of duplication.

ii) To provide ideas, theories, explanations of hypotheses valuable in formulating the problem.

iii) To suggest methods of research appropriate to the problem.

iv) To locate comparative data useful in the interpretation of result.

v) To contribute to the general scholarship of the investigator.

The review of related literature enables the researcher to define the units in the field. It helps the researcher to delimit and define his/her problem. It allows the researcher to acquaint himself/herself with current knowledge in the field in which, he/she is going to conduct the research.
Therefore, the investigator went through the surveys of educational research, educational journals and other education related research literature and prepared an abstract of review and the same is presented in the succeeding paragraphs.

2.2 CLASSIFICATION OF RELATED LITERATURE

The review of related literature pertaining to the present study is classified into two categories:

A. Review of Indian Studies

B. Review of International Studies

2.3 REVIEW OF INDIAN STUDIES ON ACHIEVEMENT IN CHEMISTRY

Indian studies related to achievement in science in general and achievement in chemistry in particular along with other related variables are presented in this section.

Nityagopal Mondal and Birbal Saha (2013) studied on achievement difference in science at secondary level in Darjeeling District: A Comparative Study. The study was conducted to provide some information and comparison about the achievement in science subjects at secondary level in Darjeeling District, West Bengal. Data was collected of 140 students from four higher secondary schools in Darjeeling District, randomly. The results revealed that (1) Male and female students differ significantly with regard to achievement in science subjects at secondary level, (2) Urban male and rural male students differ significantly in achievement in science at secondary stages and (3) Urban female and rural female students differ significantly in achievement in science at secondary level.
Ashokkumar B. Surapur (2012) conducted a study on the impact of government school students' interest in science, study habits, and school adjustment on academic achievement in science. The purpose of the study was to analyze independent and combined effects of variables viz., Interest in science (higher and lower), Study habits (good and poor), and School Adjustment (high and low) on Academic achievement in Science. The sample of the study includes 300 students selected randomly from IXth Standard. The study revealed that (i) The government school students with higher interest in science have more influence on academic achievement in science than the government school students with lower interest in science, (ii) The government school students with higher interest in science and high school adjustment have more influence on academic achievement in science than the government school students with higher interest in science and low school adjustment, and (iii) The government school students with good study habits and low school adjustment have more influence on academic achievement in science than the government school students with poor study habits and low school adjustment.

Nataraj, P.N., and Manjula, G. (2012) conducted a study on scientific aptitude of high school students in relation to their achievement in science. In this study, the researchers have attempted to study the scientific aptitude of high school students in relation to their achievement in science. The investigation was carried out on 650, 9th standard students. The findings of the study on scientific aptitude and achievement in science shows that male and female, Hindu, Christian and Muslim students do not differ significantly, While scientific aptitude and achievement in science between rural and urban high school students differ significantly. Also significant correlation is found between achievement in science and scientific aptitude of high school students.
Rajendran, S. (2012) conducted a study on the relationship between scientific attitude and achievement in science of X standard students in Coimbatore District. The major objectives of the study were to find out the relationship between scientific attitude and achievement in science of X standard students studying in Coimbatore District. The sample of the study includes 1394 students studying in X standard in Coimbatore District. The sample has been selected by applying stratified random sampling technique. The major findings were: (1) There is a positive relationship between scientific attitude and achievement in science of X standard students, (2) Girls are better than boys of X standard in their scientific attitude and achievement in science and (3) The X standard students studying in government, aided, municipal and corporation schools differ in their scientific attitude and achievement in science.

Kalaivani, S., and Babu, R. (2011) conducted a study on higher secondary students achievement in chemistry in relation to their study habits. The objectives of the study were: (1) To find out the higher secondary students study habits; (2) To find out the higher secondary school students achievement in chemistry; (3) To find out whether there is significant difference between male and female, rural and urban, employed and unemployed parents students study habits; (4) To find out whether there is significant difference between male and female, rural and urban, employed and unemployed parents students achievement in chemistry; (5) To find out whether there is significant relationship between study habits and achievement in chemistry. The investigators have selected a sample of 565 higher secondary school students from six schools from Cuddalore District. The sample has been selected by applying simple random technique. The data has been subjected to statistical treatment for analysis and interpretation with the computer by using SPSS package. The major
findings were: (1) There is a significant relationship between study habits and achievement in chemistry, (2) There is significant difference between rural and urban students, government and private higher secondary school students in respect of their achievement in chemistry, (3) There is no significant difference between male and female students in respect of their achievement in chemistry, (4) There is significant difference between rural and urban students in respect of their study habits and (5) There is no significant difference between male and female, government and private higher secondary school students in respect of their study habits.

Murugan, R. (2010) conducted a study on the effect of home environment on achievement in science of VIII standard students in Mettur Taluk of Tamilnadu. The objectives of the study were: (1) To find out the difference in the home environment of the students based on gender and location, (2) To compare in the students achievement in science based on gender and location, (3) To find out the effect of home environment on achievement in science of the VIII standard students. Cluster random sampling of 160 students is used. The collected data was analyzed by using statistical technique like mean, standard deviation, frequency, range, t-test and correlation with the help of SPSS software. The major findings were: (1) The achievement of students in science is dependent on their home environment. The students of high home environment have achieved higher than that of the students with medium and low home environment. The students having medium home environment background have achieved higher than low home environment background students. (2) There is a significant difference between boys and girls achievement in science. The girls have performed better than boys. (3) The urban
area students have performed better than the rural areas students in science achievement. So there is a significant difference in the achievement of students in urban and rural areas.

Kalaivani, S., Jayanthi, C., and Babu, R. (2010) conducted a correlation study of higher secondary students achievement in chemistry and their self-concept. The objectives of the study were: (1) To find out the correlation difference between achievement in chemistry and self-concept of higher secondary students based on the type of school, parents occupation. The investigators have selected a sample of 565 higher secondary school students from 11 schools from Cuddalore District. The sample has been selected by applying simple random technique. The data has been subjected to statistical treatment for analysis and interpretation with the computer by using SPSS package. The major findings were: (1) Higher secondary students significantly differ in their achievement in chemistry on the basis of type of school, (2) Higher secondary students do not significantly differ in their achievement in chemistry on the basis of parents occupation, (3) Higher secondary students significantly differ in their self-concept in chemistry on the basis of type of school and (4) Higher secondary students do not significantly differ in their self-concept in chemistry on the basis of parent’s occupation.

Vasugi, K., and Padamakalavathy, K. (2009) conducted a study on scientific aptitude and achievement in science among high school students. The study was conducted (i) To study about scientific aptitude among high school students of Dindigul district. (ii) To determine the significant differences between scientific aptitude with variables like sex, locale, medium of instruction, type of
school, educational qualification of parents of the students and their income. (iii) To find out the relationship between the scientific aptitude and achievement in science among high school students of Dindigul district. The normative survey method was used to find out scientific aptitude and achievement in science among high school students of Dindigul district. The sample used for this study was randomly selected 200 high school students from Dindigul district. Major findings of the study were: (1) The scientific aptitude of high school students in Dindigul district is high. (2) The high school boys and girls significantly differ in their scientific aptitude. (3) The urban and rural high school students differ significantly in their scientific aptitude. (4) The English and Tamil medium students differ significantly in their scientific aptitude. (5) The high school students from matriculation and government aided school differ significantly in their scientific aptitude. (6) The high school students with educated parents and illiterate parents differ significantly in their scientific aptitude. (7) The students belonging to sufficient income status and deficit income status differ significantly in their scientific aptitude. (8) There is a significant positive high relationship between scientific aptitude and achievement in science.

Jeba and Annaraja (2008) conducted a study to find out the relationship between multiple intelligence and achievement in chemistry among high school students. The major objective of the study was to find the relationship between multiple intelligence and achievement in chemistry. 250 samples of high school students were selected from Kanyakumari district. Mean, correlation and ANOVA were the statistics used to analyze the data. Major findings of the study were: (i) There was no significant difference in multiple intelligence and achievement by their gender, type of school and locality and (ii) There was no significant relationship between multiple intelligence and achievement.
Shivakumar, P. (2006) conducted a study on the influence of home environment upon the academic achievement in science of VII standard students in Chamarajanagar Taluk, Karnataka. The objectives of the study were: (1) To find out the influence of home environment on the achievement of students in science, (2) To know whether gender has any influence on the achievement of students in science, (3) To compare the achievement of students in science studying in government and private unaided schools, (4) To find out the influence of locality on achievement of students in science. Cluster random sampling of 160 students is used. The collected data was analysed using statistical technique like mean, standard deviation, frequency, range, t-test and chi-square test with the help of SPSS software. The major findings were: (1) The achievement of students in science is dependent on their home environment. The students of high home environment have achieved higher than that of the students with medium and low home environment. The students having medium home environment background have achieved higher than low home environment background students. (2) There is a significant difference between boys and girls achievement in science. The girls have performed better than boys. (3) There is no significant difference in the achievement of students in science government and private unaided schools. (4) The urban area students have performed better than the rural areas students in achievement in science. So there is a significant difference in the achievement of students in urban and rural areas. (5) The achievement of students in science is dependent of their parents educational qualification. (6) The achievement of students in science is dependent on their parent’s occupation.

Raheem, A. (2006) conducted a study on certain cognitive and non-cognitive predictors of attitude towards science and science achievement among
Muslim and non-Muslim adolescents. The study was conducted to identify the significant predictors of attitude towards science and science achievement and their extent of predictability for the total sample, Muslim and non-Muslim sample, male and female sample, Muslim male, Muslim female, non-Muslim male, non-Muslim female sample. The nature of design of the study is said to be exploratory one. Nineteen schools, selected by stratified random sampling of Aligarh District made its population. The sample constitutes eight hundred four students comprising one hundred ninety-nine Muslim males, one hundred ninety Muslim female, two hundred ten non-Muslim males and two hundred five non-Muslim female. The major findings were: (1) Intelligence, SES and creativity are found to be the significant predictors of attitude towards science for the total sample and have the predictability strength of 18.3 per cent. (2) Intelligence, SES and creativity for the Muslims and intelligence and SES for the non-Muslims are found to be the significant predictors of attitude towards science.

James, A., and Marice, P. V. (2004) conducted a study on achievement in science as related to scientific aptitude and scientific attitude among XIth standard students in Tamil Nadu. The major objectives of the study were: (1) To explore the relationship among the variables namely achievement in science, scientific aptitude and scientific attitude, (2) To investigate the association between (i) achievement in science, (ii) scientific aptitude, (iii) scientific attitude and some selected variables. The sample constituted 470 students of standard XI who had opted for science group drawn from 10 schools of Coimbatore District of Tamilnadu. The major findings were: (1) There is positive relationship between achievement in science and scientific aptitude whereas achievement in science and scientific attitude are not related. (2) There is significant gender difference in science achievement, favouring girls. However, boys and girls are on par in scientific aptitude and scientific attitude. (3) Students hailing from rural and urban areas have similar scientific attitude and
same type of academic achievement in science. But they differ in their scientific aptitude. (4) Students from matriculation and state board schools have same type of achievement score in science but they differ in their scientific aptitude and scientific attitude, favouring students from matriculation schools. (5) Students from different types of school (gender wise) differ in their achievement in science favouring girl’s schools. But they are found on par in their scientific aptitude and scientific attitude. (6) There is significant association between gender and science achievement, and gender and scientific attitude whereas no significant association is observed between achievement in science and scientific aptitude. (7) Significant association is observed between residential origin (rural and urban) and scientific aptitude. But students irrespective of their residential origin have similar scientific attitude and same type of achievement in science. (8) School type (syllabus wise) is found to be significantly associated with scientific aptitude and scientific attitude. (9) Achievement in science and scientific attitude are found to be significantly associated with school type (gender wise) whereas no significant association is found between scientific aptitude and school type.

Amaladoss Xavier, S.S., and Amalraj, A. (2003) conducted a study on Achievement of Higher Secondary Students in Chemistry. The objectives of the study were to study the achievement of Higher Secondary students in chemistry and its branches in terms of personal factors (gender); educational factors (medium of study); institutional factors (location of the school) and other background variables. The Higher Secondary final year students of Kanyakumari Revenue District have been chosen as the population 900 students were chosen using the stratified random sampling techniques. The major findings of the study were: (1) The level of achievement of student in Chemistry is average. (2) The achievement of student in inorganic Chemistry is higher than in other branches of Chemistry.
Rajeswari (2001) conducted a study to know the effect of reasoning ability and scientific attitude on achievement of higher secondary students in chemistry. The study focuses on the correlation between reasoning ability and achievement of the children with regard to the background variables. It also focuses on the correlation between scientific attitude and achievement of the children with regard to the background variables. In this study survey method was adopted. A sample of 300 students was selected randomly. The major findings were that there was no correlation between reasoning ability and achievement with regard to boys, girls, boy’s school, girl’s school, co-education school, government school, aided school, unaided school and students from rural area. But there was correlation between reasoning ability and achievement with regard to students from urban area. More over there is no correlation between scientific attitude and achievement with regard to boys, girls, boy’s school, girl’s school, co-education school, government school, aided school, unaided school and students from rural area. But there is correlation between scientific attitude and achievement with regard to students studying in aided school and students from urban area.

2.4 REVIEW OF INTERNATIONAL STUDIES ON ACHIEVEMENT IN CHEMISTRY

International studies related to achievement in science in general and achievement in chemistry in particular along with other related variables is included in this section.

Nik Zarini Nik Kar (2012) conducted an experimental study on the effect of inquiry discovery approach towards student achievement in the subject of chemistry. The purpose of this study was to examine the effects of inquiry-discovery approach
in teaching and learning of chemistry as compared to the conventional approach. The effects of inquiry-discovery approaches are focused on students' achievement and attitude towards chemistry as a subject and also the learning of chemistry. The quantitative research using quasi experiment was employed to examine the effectiveness of the inquiry-discovery approaches. A total number of 81 science stream students were involved as the subject of this study. Approximately, 40 students of the treatment group learned chemistry through inquiry-discovery approach while the other 41 students of control group received the lesson through the conventional approach. The findings obviously show that there is a significant difference in the achievement of students as well as their attitude towards the chemistry lesson in both approaches. This study has proven that inquiry-discovery approach is improving the students' performance as well as their understanding of the chemistry subject. This approach has also stimulated the positive attitude of students toward chemistry subject.

Nagib Mahfood Balfakih (2011) carried out a study on the effectiveness of analogy on 10th grade students’ chemistry achievement in the United Arab Emirates. This study investigated the effectiveness of using analogy for tenth-grade students’ achievement in chemistry. A random sample consisted of 478 students selected among the total 5,320. 10th grade intact classes (eight classes consisted of only male and the other eight of only female classes). Lesson plans were redesigned to integrate analogy to teach seven chemistry concepts. The research design was pre- and post-test quasi experimental. Results indicated that the experimental group scored significantly higher than counterparts in the control group in the chemistry achievement test.
Harkirat S. Dhindsa and Shahrizal-Emran (2011) conducted a study on using interactive whiteboard technology-rich constructivist learning environment to minimize gender differences in chemistry achievement. The aim of this study was to evaluate if a constructivist teaching approach, enriched with interactive whiteboard technology, could empower males to minimize gender differences in achievement in chemistry. Two groups of students were taught for six weeks: one group using the constructivist teaching approach enriched with interactive whiteboard technology and the other group using a traditional teaching approach. The results of the study demonstrated statistically significant gender differences in pre-test mean achievement scores of both the groups. There were statistically significant gender differences in post-test mean achievement scores for group taught traditionally, however, mean achievement scores of male and female students taught using constructivist approach were statistically non-significantly different. It is believed that this technique has potential to minimize gender difference in chemistry achievement.

Jennifer Champion (2011) conducted a study on the pedagogic effects of co-operative learning assessment in the chemistry I classroom. The purpose of this quasi-experimental study was to examine the impact of co-operative learning assessment on student achievement. This study aimed to determine the relationship between teacher-assigned/group-elected laboratory positions (independent variable) and academic achievement (dependent variable) while using the cards on the table approach of co-operative learning assessment. Participants consisted of 2 classes of Chemistry I students enrolled in a small rural school system. Alternative assessment practices such as the cards on the table approach of co-operative learning assessment were examined and discussed. Results of ANOVA analyses indicated no significance difference in the adjusted scores between teacher-assigned versus
group-elected laboratory positions within structured laboratory groups on the 
academic achievement of chemistry I students as measured by a standardized pre-
test/post-test while using the co-operative learning assessment. Conducting paired 
samples t-tests revealed the group-assigned students improved significantly from 
pre-test to post-test while the teacher-assigned students had no significant 
improvements.

Cengiz Tuysuz (2010) studied the effect of the virtual laboratory on 
students' achievement and attitude in chemistry. In this study, a virtual laboratory 
related to "Separation of Matter" unit for 9th grade students was prepared and its 
effects on students' achievements and attitudes were investigated. For this aim 
16 virtual experiments prepared by using flash program and used in the experimental 
group. Result of this study showed that virtual laboratory applications made positive 
effects on students' achievements and attitudes when compared to traditional teaching methods.

Daina Mozeika, Dagnija Cedere and Janis Gedrovics (2010) conducted a 
study on promoting student learning achievements in chemistry by using the 
tetrahedral spatial mind model. The developed method, called the TETRA-method, 
is directed to the formation of connections among various phenomena, it was tested 
to ensure that students (grade 8-10) achieve stable knowledge, improve 
understanding and promote the students' learning achievements if the method is used 
in learning chemistry. The students' achievements were compared on different topics 
during the learning Process. Obtained results allow us to conclude that the use of the 
tetra-method gives an option to raise the students' knowledge level more frequently 
one level above the previous. The knowledge stability test showed that students' 
knowledge becomes stable.
Cansel Kadioglu and Esen Kadioglu (2008) investigated the motivational factors contributing to Turkish high school students' achievement in gases and chemical reactions. This study aimed to investigate the contribution of motivational factors to 10th grade students' achievement in gases and chemical reactions in chemistry. Three hundred fifty nine 10th grade students participated in the study. Multiple Regression Correlation analysis indicated that the constructs of intrinsic goal orientation, self-efficacy for learning and performance, and test anxiety each made a statistically significant contribution to the students' achievement.

Francis A. Adesoji and Segun M. Olatunbosun (2008) carried out a study about student, teacher and school environment factors determinants of achievement in senior secondary school chemistry in Oyo State, Nigeria. The study constructed and tested an eight-variable model for providing a causal explanation of achievement of secondary school students in chemistry in terms of student variables - attitude to learning chemistry, background knowledge in integrated Science, teacher variables - attitude to chemistry teaching, attendance at chemistry workshop and school environment related variables-class size, laboratory adequacy and school location. The study adopted an ex-post facto research type the population was made up of 621 senior secondary III chemistry students and 27 Senior Secondary III chemistry teachers in Oyo State, Nigeria. The results revealed that 7.20% of the total effect on achievement in chemistry was accounted for by all the seven predictor variables when taken together. It was also revealed that only four variables -school location($X_1$) laboratory adequacy ($X_3$), teachers' attitude to chemistry teaching($X_5$) and teachers' attendance at chemistry workshop($X_4$) had direct causal influence and also made significant contributions to the prediction of achievement in chemistry ($X_8$) (the criterion variable).
Esen Uzuntiryaki (2007) conducted a study on learning styles and high school students' Chemistry Achievement. The aim of the present study was to investigate the effect of students' learning styles on their chemistry achievement, and whether matching between teaching and learning style also affects students' chemistry achievement. Two hundred and sixty-five tenth-grade students enrolled in a chemistry course and seven chemistry teachers participated in the study. Results showed that there was a statistically significant difference among students with different learning styles with respect to chemistry achievement. Students in facilitator/personal model/expert teaching style and delegator/facilitator/expert teaching style had better understanding of chemistry concepts, but there was no statistically significant effect of matching between students' learning styles and teachers' teaching styles on students' chemistry achievement.

Marcel Frailich, Miri Kesner and Avi Hofstein (2007) conducted a study on the influence of web-based chemistry learning on students' perceptions, attitudes, and achievements. The goal of this study was to investigate whether integrating a website into chemistry teaching influences 10th-grade students' perceptions of the classroom learning environment, their attitudes regarding the relevance of chemistry, and their understanding of the concept of chemical bonding. Two groups participated in this study: an experimental group and a comparison group. The main study was conducted during the academic year 2005. The teachers in the experimental group were asked to implement four relevant activities from the website that was developed, all dealing with the concept of chemical bonding. Quantitative tools of the study included. A Chemistry Classroom Web-Based Learning Environment Inventory to assess students' perceptions regarding the relevance of chemistry to their life and attitude towards chemistry studies, a
feedback questionnaire that examined the students' response after performing the website activities, and an achievement test that assessed their knowledge and understanding of the concept of chemical bonding. It was found that the experimental group outperformed the comparison group significantly in most of the research categories. This led to conclude that the web-based learning environment has potential to enhance the comprehension of chemistry concepts, students' attitudes and interests and to increase students' awareness regarding the relevant aspects of chemistry to daily life.

Ahmet Akbas and Adnan Kan (2007) conducted a study on affective factors that influence chemistry achievement (motivation and anxiety) and the power of these factors to predict chemistry achievement – II. In this research, motivation and anxiety for chemistry course of 819 high school students attending 10 different high schools located in the city centre of Mersin were investigated. Anxiety and Motivation Scales developed towards chemistry course by researchers were used as an instrument to collect the data. In order to reach our research problem and sub problems, descriptive statistics, t tests, simple and multiple linear regression analysis and variance analysis have been performed. In this study, it was determined that while 2nd grade students of high school have the highest motivation for chemistry course, 1st grade students possess the highest anxiety for chemistry lesson, on their own, is a significant predictor of chemistry achievement’.

Samuel, W. Wachanga and John Gowland Mwangi (2004) conducted an experimental study on the effects of the co-operative class experiment teaching method on secondary school students' chemistry achievement in Kenya's Nakuru District. This study sought to examine how the co-operative class experiment
teaching methods affect students' achievement. Using a non-equivalent control group design with 521 randomly selected secondary school students, the study found that co-operative class experiment method facilitated students' chemistry learning more than regular methods. Gender did not affect achievement. Neither did school type significantly affect girls' achievement when co-operative class experiment method was used but it significantly affected boys' achievement with boys in boys' schools attaining higher scores.

2.5 SYNTHESIS OF STUDIES ON ACHIEVEMENT IN CHEMISTRY

(2006) stated that the urban students performed better than the rural students in achievement in chemistry. Rajendran, S. (2012); Kalaivani, S., & Babu, R. (2011); Kalaivani, S., Jayanthi, C., & Babu, R. (2010); and James, A., & Marice, P. V. (2004) observed significant difference in achievement in chemistry among the students of different (management) type of school. But the studies conducted by Jeba & Annaraja (2008) and Shivakumar, P. (2006) indicates no significant difference in achievement in chemistry among the students of different (management) type of school. James, A., & Marice, P. V. (2004) noted the students of girls schools significantly differed from the students of boys schools and co-education schools in achievement in chemistry. Nataraj, P. N., & Manjula, G. (2012) observed that there was no significant difference in achievement in chemistry with respect to religion of students. Kalaivani, S. Jayanthi, C., & Babu, R. (2010) found that there was no significant difference in achievement in chemistry with respect to students’ parent’s occupation. Murugan, R. (2010); and Shivakumar, P. (2006) stated that there exists significant positive correlation between achievement in science and home environment of students. James, A., & Marice, P. V. (2004) found that there exists significant association between achievement in science and scientific attitude of students. Kalaivani, S., & Babu, R. (2011) observed the significant positive relationship between study habits and achievement in chemistry of students. Rajendran, S. (2012); and Rajeswari (2001) noted significant positive correlation between scientific attitude and achievement in chemistry. However, the study of James, A., & Marice, P. V. (2004) reveals no significant correlation between achievement in science and scientific attitude. Nataraj, P. N., & Manjula, G. (2012); Vasugi, K., & Padamakalavathy, K. (2009); and James, A., & Marice, P. V. (2004) found significant positive relationship between achievement in science and
scientific aptitude. Rajeswari (2001) found significant positive correlation between reasoning ability and achievement in chemistry. Jeba & Annaraja (2008) stated that there was no significant relationship between multiple intelligence and achievement in chemistry. Francis A. Adesoji & Segun M. Olatunbosun (2008) found that school location, laboratory adequacy, teachers’ attitude to chemistry teaching and teacher’s attendance at chemistry workshop as predictors of achievement in chemistry. Cansel Kadioglu & Esen Uzuntiryaki (2008) noted that the constructs of intrinsic goal orientation, self-efficacy for learning and performance, and test anxiety significantly contribute to students' achievement in chemistry. Ahmet Akbas & Adnan Kan (2007) observed that anxiety is a significant predictor of achievement in chemistry.

2.6 REVIEW OF INDIAN STUDIES ON EMOTIONAL INTELLIGENCE

Review of literature related to emotional intelligence and other related variables with regard to Indian context are presented in this section.

Vineeth Kumar, V., Manju Mehta and Nidhi Maheshwari (2013) conducted a study on the effect of emotional intelligence on the achievement motivation, psychological adjustment and scholastic performance of secondary school students. The objective of the study is to understand the effect of emotional intelligence (EI) on the achievement motivation, psychological adjustment and scholastic performance of secondary school students. For this study a sample of 450 urban male students of the tenth standard from Jaipur District were studied. Results revealed a significant effect of emotional intelligence on the achievement motivation and educational adjustment of students. However, emotional intelligence did not have a significant effect on the emotional adjustment, social adjustment and scholastic performance of students.
Portia, R. (2013) conducted a relational study on examining mental health and emotional intelligence of secondary class students. The major objectives of the study were: (1) To identify the mental health status of secondary class students in the school in Trichy in total and in terms of gender, (2) To find the significant difference in the mental health status of secondary class students in total and in terms of their gender and birth order, (3) To find the level of emotional intelligence of secondary class students in the school in Trichy in total and in terms of gender, (4) To find the significant difference in emotional intelligence of secondary class students in total and in respect of their gender and birth order, (5) To find the significance of correlation between the mental health status and emotional intelligence of secondary class students in total and in respect of their gender and birth order. A sample of 220 students was randomly selected from high school students in Trichy. Survey method was adopted in this study. The major findings were: (1) The secondary class students in Trichy are enjoying good mental health, (2) Mental health status of male and female students and birth order do not differ significantly, (3) Emotional intelligence of male and female students and birth order do not differ significantly and (4) Mental health status and emotional intelligence of high school students are inter linked.

Annakodi, R. (2013) conducted a study on emotional intelligence of the students at higher secondary level. The objectives of the study were: (1) To find out the significant difference between the emotional intelligence of male and female students, (2) To find out the significant difference between the emotional intelligence of rural and urban area students and (3) To find out the significant difference between the emotional intelligence of government, government aided and corporation school students. A sample of 300 students was randomly selected from class 11th of different streams of higher secondary school in Coimbatore. The
students were selected from government, government aided and corporation schools which are located in both rural and urban areas. The study reveals the significant difference in emotional intelligence between boys and girls; rural and urban area students; government and government aided school students; government aided and corporation school students.

Muyeen Maqbool Mir (2013) conducted a study on emotional intelligence and learning outcomes of senior secondary school students. The major objective of this research was to investigate the relationship of emotional intelligence and learning outcomes of senior secondary schools students. 200 senior secondary students were the sample of study and they selected through stratified random sampling method from senior secondary schools of Bhopal District of Madhya Pradesh State. The study reveals that emotional intelligence is positively correlated to learning outcomes of senior secondary school students. Gender does not influence the emotional intelligence and learning outcomes of senior secondary school students. The results of this research inferred that secondary school students those studied in schools of urban locality in Bhopal District of Madhya Pradesh State have better emotional intelligence and learning outcomes than their counterparts’ of rural areas.

Arul Lawrence, A.S., and Deepa, T. (2013) conducted a study on emotional intelligence and academic achievement of high school students in Kanyakumari district. The objective of the study was to find the significant relationship between emotional intelligence and academic achievement of high school students with reference to the background variables. Survey method was employed. The finding shows that there is no significant relationship between emotional intelligence and academic achievement of high school students.
Satish Kumar Kalhotra (2012) studied the emotional intelligence and academic achievement of school children. The research was to find out whether there is any relationship between emotional intelligence and academic achievement of school children who have not yet reached the adolescent age. The sample for the study consisted of 240 children (120 boys and 120 girls) of class 5th having age range 10-11 years from various schools of Jammu City (East). The study reveals positive correlation between emotional intelligence and academic achievement of school children. It also seems that those children who have high emotional intelligence will also be high academic achievers. Girls are emotionally intelligent than boys.

Shalini Yadav (2012) studied the emotional intelligence and values of adolescents studying in government and non-government schools. This investigation has been done on two hundred male and female adolescent students of government and non-government schools of Rewari district of Haryana. The result of the study reveals that there exists no significant difference between the emotional intelligence of government school students and that of the non-government school students. Both the groups have average level of emotional intelligence. Similarly male and female students also do not differ significantly in their emotional intelligence. Government and non-government school students have shown significant difference in some of their values.

Md. Mahmood Alam (2012) studied on emotional intelligence, self-efficacy and career maturity among the students of Hyderabad City. The study examined the relationships between career maturity, emotional intelligence and self-efficacy of adolescents. The sample consisted of 500 high school students (250 boys and 250 girls) selected from government and public schools of Hyderabad City. The major findings were: (i) there are significant relationships among career
maturity, emotional intelligence and self-efficacy. (ii) the two groups’ viz., government school students and public school students differed on the selected variables with the latter showing higher levels of career maturity, emotional intelligence and self-efficacy.

Darshana Sharma and Bandhana (2012) conducted study on the emotional intelligence, home environment and problem solving ability of adolescents. The study was conducted to ascertain the main and interactional effect of emotional intelligence, home environment and sex on the problem solving ability of adolescents. A random sample of 1007 adolescents (502 male & 505 females) was selected from government and private higher secondary schools of Jammu City. The results revealed the emotional intelligence and home environment has a significant impact on problem solving ability.

Sridevi and Lisha Parveen (2010) conducted a study to know the relationship of emotional intelligence, adjustment, self-concept and scholastic achievement of higher secondary students. The objectives of the study were to examine the relationship among emotional intelligence, adjustment, self-concept and scholastic achievement of higher secondary students. To find out whether there is any significant difference in emotional intelligence of higher secondary students with respect to gender and type of college. Normative survey method was adopted for this study. Stratified random sampling of 200 college students is used. The findings were there is a positive relationship among emotional intelligence, adjustment, self-concept and achievement of higher secondary students. Female students possess higher emotional intelligence than male students. There is no significant difference in emotional intelligence of higher secondary students with respect to the type of college in which they are studying.
Jadhav Vandana, V., and Patil Ajakumar, B. (2010) studied on emotional intelligence among student-teachers in relation to general intelligence and academic achievement. The study was aimed at investigating the emotional intelligence among student-teachers in relation to general intelligence and academic achievement. On the basis of findings of the study it was concluded that a) there is no significant relationship between emotional intelligence and general intelligence of student-teachers b) there is no significant relationship between emotional intelligence and academic achievement of student-teachers.

Umadevi (2009) conducted a study to identify the relationship between emotional intelligence, achievement motivation and academic achievement. The major objectives of the study were: (i) To find out the relationship between emotional intelligence and academic achievement of student-teachers. (ii) To find out the relationship between academic motivation and academic achievement of student-teachers with respect to sex, arts and science groups. Normative survey method was adopted for the present study. The present study was conducted on a sample of 200 primary school student-teachers studying in various B.Ed colleges of Davangere city, which included 100 boys and 100 girls, and 131 arts students and 69 science students. The major findings were: (i) There was a positive relationship between emotional intelligence and academic achievement of primary school student-teachers. (ii) There was a positive relationship between academic motivation and academic achievement of primary school student-teachers. (iii) Male and female student-teachers, Arts and Science student-teachers did not differ in emotional intelligence and in academic motivation.

Mukti Shah and Nutankumar S. Thingujam (2008) conducted a study on perceived emotional intelligence and ways of coping among students. The present study was aimed at studying coping in relation to emotional intelligence. The
sample comprised of 197 students, between the age of 18 and 25 years. Participants completed self-reported measures of emotional intelligence and ways of coping. It was found that appraisal of emotions in the self was positively correlated with plenty problem solving and positive reappraisal coping styles. Appraisal of emotions in others was positively correlated with plan-full problem solving and positive reappraisal. Emotional regulation of the self was positively correlated with plan full problem solving, confronting coping, self-controlling, positive-reappraisal and with distancing, but negatively correlated with escape avoidance. No gender differences were found in perceived emotional intelligence and ways of coping except for self-control, where males reported higher than females.

Darsana, M. (2007) conducted a study on relationship between emotional intelligence and certain achievement facilitating variables of higher secondary school students. The objectives of the study were to find the relationship between emotional intelligence and achievement facilitating variables for the whole sample and relevant sub-samples. To compare emotional intelligence of groups in pairs classified on the basis of sex, locality of school, nature of school and socio-economic status. A representative sample of 387 students from higher secondary school of Kollam district in Kerala was selected. The findings were: (1) Significant relationship between emotional intelligence and socio-economic status for the whole sample of sub-sample: boys, urban, rural, and government was noticed. (2) Significant relationship between emotional intelligence and socio-economic status of the whole sample and sub-samples was also observed. (3) There was substantial relationship between emotional intelligence and achievement motivation for the whole sample and relevant sub-sample. (4) There was significant difference between boys and girls in their emotional understanding and emotional intelligence.
Ujwala Madhukar Done (2007) conducted a study on the effect of emotional intelligence development programme on higher secondary students. The objectives of the study were: (1) To determine the component of emotional intelligence, (2) To study the present condition of emotional intelligence of higher secondary school students, and (3) To study the effectiveness of emotional intelligence programmes. Survey method was used in this study to collect data about the present condition of emotional intelligence development programme material and the effectiveness of these materials by applying experimental method. The sample consisted of 1577 students of arts, science and commerce faculties from 11 junior colleges. The findings of the study were: (1) The emotional intelligence between arts, science and commerce students in all junior colleges was the same, (2) The emotional intelligence between boys and girls was the same in almost all junior colleges, (3) The emotional intelligence development programme was effective for the development of the component of empathy in emotional intelligence.

Tiwari, P. S. N., and Srivastava, N. (2004) studied on schooling and development of emotional intelligence. The objectives of the study were: (i) To examine the role of medium of instruction and grade in the development of emotional intelligence; and (ii) To examine the relationship between perceived environmental quality of home, school and emotional intelligence. A sample of 270 primary school children (135 male and 135 female) from Hindi, English and mixed medium institutions of Gorakhpur of Eastern Uttar Pradesh participated in the study. It was found that (1) Gender had no significant main effect while medium of instruction and grade had significant main effects on all the three components of emotional intelligence, i.e. Expression and Appraisal, Regulation and utilization of emotions. (2) Children attending English medium schools scored higher, followed
by Hindi and Mixed medium school children, respectively, (3) The older children of V Class scored higher than III and IV Class children, (4) It was also found that Perceived Environmental Quality of Home as well as school was positively related to emotional intelligence scores.

2.7 REVIEW OF INTERNATIONAL STUDIES ON EMOTIONAL INTELLIGENCE

Review of literature related to emotional intelligence and other related variables with regard to international context are presented in this section.

Farah Malik and Sultan Shujja (2013) conducted a study on emotional intelligence and academic achievement: Implications for children’s performance in schools. The study assessed relationship of emotional intelligence with academic achievement in children of 4 to 8th grades with age 9 through 13 years. Sample comprised 204 children; 107 high and 97 low achievers drawn from eight public and private schools in two cities of Pakistan. The results indicated a significant positive correlation between academic achievement and emotional intelligence. High and low achievers showed significant difference on overall emotional intelligence; No gender difference was found in both groups for total emotional quotient score but on interpersonal and stress management scales; gender differences within groups were significant. Children from public schools were high on emotional quotient than private schools but low on academic achievement. The findings might be of great interest to academicians, educational psychologists, school counselors and parents to understand association between emotional intelligence and academic achievement; also Pakistan related cultural specific issues.
Zargham Ghabanchi and Haniyeh Alami Doost (2012) conducted a study on the relationship between emotional intelligence and literary appreciation. This study attempts to see if there was a relationship between emotional intelligence and literary appreciation. To explore this, ninety university students who were all studying English literature were chosen from Ferdowsi University of Mashhad. Out of the ninety participants, fifty participants were female and forty were male. They were aged from twenty to twenty seven. The findings show that students of literature are different in their ability to appreciate literature and literary texts. Further, this study shows that there is a relation between literary appreciating and emotional intelligence.

Fataneh Naghavi and Ma’rof Redzuan (2012) studied the moderating role of family ecological factors (family size) on the relationship between family environment and emotional intelligence. The study investigated the moderating role of family size on the relationship between family environment and emotional intelligence among 234 early adolescents (girls and boys) in grades 2 and 3 of guidance schools of Tehran, Iran. Results revealed that family environment fostered emotional intelligence in their early adolescents. Furthermore, the findings demonstrated that family size moderated the relationship between family environment and emotional intelligence. Specifically early adolescent tended to indicate more emotional intelligence at higher levels of family environment when family have fewer members.

Shaima Ahammed; Abdullah, S. Abdullah and Sofoh, H. Hassane (2011) studied the role of emotional intelligence in the academic success of United Arab
Emirates university students (UAE). The purpose of this study was to examine the relationship between emotional intelligence as conceptualized by Mayer and Salovey (1997) and academic success of undergraduate students in UAE universities. Two hundred and four university students (71 males and 133 females) participated in the study. The result of the correlation analysis revealed that academic success was not related to emotional intelligence. However, the findings indicated a positive correlation between emotional intelligence and perceived academic success.

Shahin Vaezi and Nasser Fallah (2011) studied on the relationship between emotional intelligence and Iranian EFL teachers. This study investigated the relationship between Emotional Intelligence (EI) and burnout among 104 Iranian EFL teachers. In addition, teacher’s differences on EI and burnout were examined with respect to demographic variables. The participants were administrated EI and Burnout questionnaires. The results obtained showed that there were significant negative correlations between EI and burnout, teaching experience and age and positive correlations between teacher’s EI, teaching experience and age. Further, no significant difference was found in teacher’s EI and burnout with respect to gender.

Stella Mavroveli and Maria Jose Sanchez-Ruiz (2011) studied on trait emotional intelligence influences on academic achievement and school behaviour. This study investigates the associations between trait emotional intelligence and school outcomes, such as performance in reading, writing and math’s, peer-rated behaviour and social competences, and self-reported bullying behaviours in a sample of primary school children. It also examines whether trait emotional intelligence
scores differentiate between children with and without Special Educational Needs (SEN). The sample comprised 565 children (274 boys and 286 girls) between the ages of 7 and 12 attending three English state primary schools. As predicted by trait emotional intelligence theory, associations between trait emotional intelligence and academic achievement were modest and limited to year 3 children. Higher trait emotional intelligence scores were related to more nominations from peers for prosocial behaviours and fewer nominations for antisocial behaviour as well as lower scores on self-reported bullying behaviours. Furthermore, SEN students scored lower on trait emotional intelligence compared to students without SEN.

Natalie L. Shipley, Mary Jo Jackson and Sharon Larisa Segrest (2010) conducted a study on the effects of emotional intelligence, age, work experience and academic performance. In this study, the relationship between emotional intelligence and academic performance were examined in a sample of undergraduate business students (N=193). Emotional intelligence was found to be positively associated with work experience. Despite this finding, emotional intelligence was not significantly associated with age. Global trait emotional intelligence was not significantly associated with academic achievement, however, students in the mid-range GPA had a significantly higher mean “well-being” factor score than students in the lower and higher-range GPA.

Ademola Olatoye, Akintunde, S.O., and Yakasai, M. I. (2010) conducted a study on emotional intelligence, creativity and academic achievement of business administration students. This study investigated the extent to which the level of creativity and emotional intelligence influenced the level of academic achievement
The result shows that there was a very low negative, no significant relationship between creativity and CGPA scores. There was no significant difference between male and female students in academic achievement, creativity and emotional intelligence.

Mousa Alnabhan (2010) conducted a study on emotional intelligence as a predictor of leadership of Kuwaiti high and low achieving 11th graders. The current study examined the association between Emotional Intelligence (EI) and the leadership components of high school students in the state of Kuwait. The possibility of predicting each leadership component via emotional intelligence components was investigated for high and low achievers. A sample of 11th grade students from Kuwaiti secondary schools was randomly selected and divided into high and low achieving groups based on their grade point averages. The results revealed that some EI components can predict leadership for high achievers, where it was not possible to do so with the low achievers.

Bridget Connor and Sharon Slear (2009) conducted a study on emotional intelligence and anxiety; Emotional intelligence and resiliency. In this study, the investigators examined the possible relationship of emotional intelligence, anxiety, and resiliency. The study indicates that a positive and significant relationship exists between emotional intelligence and resiliency and a negative significant relationship exists between emotional intelligence and anxiety.

Tracy Johnson Saenz (2009) conducted an exploratory study of the relationship between emotional intelligence and IQ; Implications for Students with Learning Disabilities. The study was to investigate the relationship between
Emotional Intelligence (EI) and IQ scores in a research sample of students with learning disabilities. The findings of the study identified key emotional intelligence skills that are essential to the academic achievement and personal development of students with learning disabilities. The findings of the study showed no significant relationship between the total EI scores and IQ. Further there was no statistically significant relationship noted between the 13 EI sub-tests of the ESAP and IQ.

2.8 SYNTHESIS OF STUDIES ON EMOTIONAL INTELLIGENCE

Annakodi, R. (2013); and Darsana, M. (2007) found significant difference between the boys and girls in emotional intelligence. On contrary, Portia, R. (2013); Muyeen Maqbool Mir (2013); Shalini Yadav (2012); Ademola Olatoye, Akintunde, S.O., & Yakasai, M. I. (2010); Umadevi (2009); Mukti Shah & Nutankumar, S., Thingujam (2008); Ujwala Madhukar Done, (2007); and Tiwari, P. S. N., & Srivastava, N. (2004) observed that there was no significant difference between the boys and girls in emotional intelligence. Satish Kumar Kalhotra (2012); and Sridevi & Lisha Parveen (2010) observed that girls are better than the boys in emotional intelligence. Muyeen Maqbool Mir (2013); and Annakodi, R. (2013) noted that urban area students are better in emotional intelligence than the rural area students. Annakodi, R. (2013) and Md. Mahmood Alam (2012) observed significant difference in emotional intelligence among the students of different (management) type of school. But Shalini Yadav (2012) found no significant difference in emotional intelligence among the students of different (management) type of school. Tiwari, P. S. N., & Srivastava, N. (2004) noted no significant difference in emotional intelligence with regard to the medium of instruction. Portia, R. (2013) observed that there was no significant difference in emotional intelligence with

2.9 REVIEW OF INDIAN STUDIES ON HOME ENVIRONMENT

Review of Indian studies related to the home environment and other related variables are given in this section.
Mahadevan, P. and Muthumanickam, R. (2013) conducted a study on the home environment of higher secondary students in relation to selected variables. The study was made to find out the relation between home environment of higher secondary students and certain selected variables. 600 samples consisting of 300 male and 300 female higher secondary students were randomly selected for the study with gender, locality, type of management and group of study. The results reveal no significant difference in the home environment of higher secondary students irrespective of their sub-sample based on gender, locality, type of management and group of study.

Rajkumari Kalra Preeti Manani (2012) made a study on family environment as a determinant of academic anxiety and academic achievement. The study investigated the family environment, academic achievement and academic anxiety among the secondary school students. Effect of family environment on academic achievement and academic anxiety was also studied. The sample of the study consisted of 100 students (50 boys and 50 girls). Results revealed that girls and boys differ significantly with reference to their family environment, academic anxiety and academic achievement. It is also found that there lies a significant difference in academic anxiety of the students belonging to high and low family environment but at the same time students have almost same academic achievement irrespective to the level of family environment of the students.

Anita, N. Chawla (2012) conducted a study on the relationship between family environment and academic achievement. The main objective of the study was to test the relationship between family environment and academic achievement. The participants of the study were included two hundred students (100 boys and
100 girls) randomly selected from the 9th standard of Marathi medium schools of Nasik City. Findings of the study revealed that family environment score was positively correlated with the academic achievement of the students.

Umme Kulsum (2012) studied the effect of home environment of secondary school students on their personal values. An attempt was made to find out the effect of home environment of secondary school students on their personal values. A sample of 200 secondary school students selected randomly from rural and urban secondary schools situated in Bangalore District. Result revealed that urban and rural boys and girls from different types of home environment possess varied types of personal values.

Viswanathappa, G., and Indira Ramani Janapati (2012) conducted a study on social skills and home environment of secondary level Tribal students of Khammam District in Andhra Pradesh. The study aimed to assess the relationship between Social Skills and Home Environment of Secondary level Tribal students of Khammam District in Andhra Pradesh. The study was conducted on 235 tribal boys and 82 tribal girls studying at secondary level selected by using simple random sampling technique. The students were drawn from residential and non-residential schools of Khammam district, Andhra Pradesh. The results revealed that there is a lot of heterogeneity in the social skills and home environment among the secondary school tribal students. Tribal boys possess better social skills than tribal girls; tribal girls perceived healthy home environment more than tribal boys. The tribal students studying in the school of excellence managed by the tribal welfare department were found to exhibit better social skills and home environment than the tribal students of other types of schools.
Arati Chakra (2012) conducted a study on gender differences in the perceptions of adolescents on family environment. The study was conducted to find out gender difference in family environment of adolescents. A sample of 120 adolescents (60 boys and 60 girls) in the age group of 13-16 years was taken for the study. The results showed significant gender difference in most of the dimensions like cohesion, expressiveness, conflict, acceptance and caring, active recreational orientation and independence.

Sivakumar, D. (2012) conducted a study on relational studies on home environment and emotional maturity of higher secondary students. The objectives of the study were: (1) To find out whether there is any significant difference between boys and girls higher secondary students with respect to their home environment, (2) To find out whether there is any significant difference between XI and XII standard higher secondary students with respect to their home environment, (3) To find out whether there is any significant difference between rural and urban higher secondary students with respect to their home environment, (4) To find out the emotional maturity of higher secondary students high, (5) To find out level of emotional maturity among boys and girls students is high, (6) To find out whether there is any significant difference between boys and girls higher secondary students with respect to their emotional maturity, (7) To find out whether there is any significant difference between XI and XII standard higher secondary students with respect to their emotional maturity, (8) To find out whether there is any significant difference between rural and urban higher secondary students with respect to their emotional maturity, (9) To find out whether there is any significant difference between home environment and emotional maturity of higher secondary students with respect to background variables. The investigator has adopted the survey method of research. The investigator has used stratified random sampling technique.
to select a sample of 300 students (137 males and 163 females). The major findings were: (1) the level of home environment of higher secondary students with reference to sex is average. Among the average value, boys higher secondary students have high score compared to girls, (2) There is significant difference between boys and girls students with respect to their home environment, (3) There is no significant difference between the XI and XII standard students with respect to their home environment, (4) There is significant difference between rural and urban higher secondary students with respect to their home environment, (5) The level of emotional maturity of higher secondary students is average, (6) The level of emotional maturity of higher secondary students with reference to sex is average. Among the average value, boys higher secondary students have high score compared to girls, (7) There is no significant difference between boys and girls higher secondary students in their emotional instability. But there is significant difference between boys and girls students in their emotional regression, social adjustment, personality disintegration, lack of independence and total emotional maturity, (8) There is no significant difference between XI and XII standard higher secondary students with respect to their emotional maturity and its dimensions and (9) There is significant difference between rural and urban higher secondary students with respect to their emotional maturity.

Supreet Kaur and Karamjit Kaur (2012) studied the interest and study habits of class IX students in relation to their family environment. The major objectives of the study were: (1) To study the interests of class IX students, (2) To study the study habits of class IX students, (3) To study the family environment of class IX students, (4) To study whether there is any relationship between interest, study habits and family environment among class IX students. For the investigation descriptive survey method was employed. The investigator has taken 200 sample by
selecting every even roll number of government senior secondary schools of Chandigarh. The finding were: (1) No significant correlation between family environment and interest of class IX standard was found, (2) There will be no significant relationship between study habits and family environment and (3) This signifies only study habits contributed towards the prediction of family environment of total sample.

Murugan, K., and Thilagavathy, T. (2011) conducted a study on higher secondary students reasoning ability and home environment. The objectives of the study were: (1) To find out the reasoning ability of higher secondary students, (2) To find out the home environment of higher secondary students, (3) To find out if there exists any significant difference between boys and girls higher secondary students in their reasoning ability and home environment, (4) To find out if there exists any significant difference among different parents education group of higher secondary students in their reasoning ability and home environment, (5) To find out if there exists any significant difference among different parent monthly income group of higher secondary students in their reasoning ability and home environment, (6) To find out the significant relationship between reasoning ability and home environment. A sample of 800 first year higher secondary students was selected by using random sampling technique from 15 schools in Villupuram District. The major finding were:(1) First year higher secondary students have average reasoning ability, (2) The first year higher secondary students have favourable home environment, (3) Significant difference is found between boys and girls higher secondary students in respect of their reasoning ability and boys which shows better reasoning ability than girls students, (4) Significant difference is found among higher secondary
Jagpreet Kaur, J.S., Rana and Rupinder Kaur (2009) conducted a study on home environment and academic achievement as correlates of self-concept among adolescents. The objectives of the study were: (1) To study self-concept among adolescents in relation to academic achievement, (2) To study self-concept among adolescents in relation to home environment. The study was conducted through descriptive method of research. The study was conducted on a representative sample of 300 adolescents of ninth class selected on the basis of randomized technique of sampling from different government and private schools of Patiala District of Punjab. The major findings were: (1) There is no significant relationship between self-concept and academic achievement among school-going adolescents, (2) No significant relationship between self-concept and control, punishment and permissiveness components of home environment among adolescents, (3) There

students whose parents have different level of education in respect of their reasoning ability. School education parents higher secondary students show better in reasoning ability than their counter parts, (5) Significant difference is found among higher secondary students whose parents have different monthly income in respect of their reasoning ability. Above Rs.12,000 parents income group of students show better in reasoning ability than their counter parts, (6) Boys and girls do not differ significantly in their home environment, (7) No significant difference is found among higher secondary students whose parents have different level of education in respect of their home environment, (8) No significant difference is found among higher secondary students whose parents have different monthly income in respect of their home environment and (9) There is a positive significant relationship found between reasoning ability and home environment.
exists a positively significant relationship of self-concept with protectiveness, conformity, reward and nurturance components of home environment among adolescents, thereby meaning that use of rewards and nurturance from parents should be done for positive self-concept development among adolescents. (4) It reveals that there exists significantly negative relationship of social isolation, deprivation of privileges and rejection components of home environment with self-concept.

Bibi and Sadananthan (2009) conducted a study on family relationship and academic achievement among higher secondary students. The major objectives of the study were: (i) To find out the level of family relationship among higher secondary students. (ii) To find out the level of academic achievement among higher secondary students. (iii) To find out the significant difference between higher secondary students with respect to family relationship based on gender, subject group, location of the school, type of school and type of family, and (iv) To find out the correlation between family relationship and academic achievement among the higher secondary students. The population consisted of the 12th standard students of higher secondary schools of Trivandrum District. Random sampling technique was used. The sample considered of 300 higher secondary level students. The major findings were: (i) The level of family relationship of higher secondary students is average. (ii) The level of academic achievement of higher secondary students is average. (iii) There is significant difference between family relationship and the variables location of the school, type of school and type of family. (iv) There is no significant correlation between family relationship and academic achievement among the higher secondary students.
Gireesh Kumar (2005) conducted a study on the effects of home environment and self-concept on achievement of higher secondary students. The study focused on the relationship between home environment and achievement with respect to background variables. Another main objective was to find out the significant relationship between self-concept and achievement of the children with respect to the background variables. In this study survey method was adopted. Significant relationship was found between home environment and achievement of higher secondary students with respect to background variable such as male and female students, urban students, students father whose education is above S.S.L.C, students mother who is qualified above S.S.L.C, students mother who is unemployed. Further, significant difference between home environment and achievement of higher secondary students, government, aided and private school students was also found. Students father who is illiterate and who has qualified up to S.S.L.C, students whose father is employed and unemployed, students parental income, there is significant relationship between self-concept and achievement of higher secondary students with respect to background variables such as male students, co-education school students, government school students, students whose mothers qualification is above S.S.L.C was found, but no significant relationship between self-concept and achievement of higher secondary students with respect to other background variables such as female students, rural and urban students, boys and girls school students, parents educational qualification, parents employment and parental income.

Devi, S., and Mayuri, K. (2003) studied on the effects of family and school on the achievement of residential school children. The objective of the study were:
To study the family factors contributing to the academic achievement of IX and X class residential school children; (ii) To study the school factors contributing to the academic achievement of IX and X class residential school children; (iii) To study the gender and age differences in family and school factors; and (iv) To study the relationship between family and school factors with academic achievement. The sample consisted of 120 children; 60 from IX, 60 from X and 40 teachers from 15 residential schools of Hyderabad City. The major findings were: (1) Family factors were not found to be critically important for the achievement of residential school children (2) School factors like qualified teachers, good physical facilities, and classroom organization, checking up of curriculum and subject matter on time, impressive method of teaching and teacher-student interaction contributed significantly to academic achievement.

Mohanty, A. K., (2002) conducted a study on gifted underachievers’ perception of family environment. The objectives of the study were: (i) To see whether components of family environment bear any relationship with academic achievement of gifted underachieves; (ii) To find out how does the family environment mould the gifted underachievers’ achievement pattern; (iii) To find out if a gender difference exists in gifted underachievers’ perception of the family; and (iv) To find out, to what extent do the components of family environment variable help in the prediction of academic achievement in case of gifted under achievers, singly or jointly. Initially a sample of 840 female and male students studying in tenth standard and in the age group of 15 and above was taken from government schools of Orissa. It was found that the mean score of boys was higher than that of girls. The boys scored higher on Cohesion, Intellectual Cultural Organization,
Active Recreational Orientation, Moral and Religious Emphasis and Control components, while the girls scored higher on conflict, achievement orientation and organization components. In totality, the underachievers’ academic achievement was significantly related with all components except Active Recreational Organisation. For underachieving boys, no correlation between the components of family environment and academic achievement was found to be significant. However, in the case of underachieving girls, Cohesion, Independence and Control components were found to be correlated significantly with academic achievement. Cohesion was related positively while Independence and Control were related negatively. Out of all the sub-scales only Independence was found to be a powerful predictor of academic achievement.

Manganlal, S. Molia (2000) conducted a comparative study on home environment of rural and urban students of secondary school. The objectives of the study were: (i) To study the home environment of the Class VIII students of the secondary schools; (ii) To compare the home environment of rural with urban students of the secondary schools; and (iii) To study the language stimulation, physical environment, encouragement of social maturity, variety of stimulation and maternal attitude and disciplining on home environment of rural and urban students. The sample consisted of 300 boys selected from Class VIII (150 rural and 150 urban) of secondary schools of Rajkot District. It was noticed that the urban students were found to be superior on home environment than the rural students. The urban students were also found superior on language stimulation, physical environment and encouragement of social maturity than the rural students, but in variety of stimulation and maternal attitude and disciplining the differences were not found significant between the two.
2.10 REVIEW OF INTERNATIONAL STUDIES ON HOME ENVIRONMENT

Review of international studies related to home environment and other related variables are given in this section.

Henrietta Leoma Alika and Ogboro Samson Edosa (2012) made a study on relationship between broken homes and academic achievement of secondary school students in Oredo local government area of Edo state, Nigeria. The study investigated the relationship between broken homes and academic achievement of students. Six senior secondary schools were randomly selected for the study. One hundred and fifty respondents from single parent homes were used for the study. 25 respondents were randomly selected from each school. Results showed a significant relationship between broken homes and academic achievement of students. It was also discovered that female students from broken homes perform better in their studies than the male students, moreover the result showed that low socio-economic status, also had an adverse effect on the academic performance of children from broken homes.

Margaret Brown, P.; Linda J. Byrnes; Bridie Raban and Linda Watson (2012) studied on young learners: The home literacy environments of Australian four- year-olds. This study investigated the Home Literacy Environments (HLEs) of 4-year-old children attending an early childhood program prior to school entry and the association between the HLE and children’s interests in and attitudes to literacy. One hundred and thirty-eight parents and 140 children participated in the study. Results showed that, generally, these parents created “somewhat rich” literacy environments, and that traditional literacy (as opposed to techno-literacy) materials
predominated. Frequency of the parents’ own reading was positively associated with the frequency with which parents read to their children. Richness of parents’ reading habits was positively associated with the frequency with which parents read to their children, but not necessarily associated with the children’s own interests in or orientation to literacy.

Elaine Carlson, Amy Bitterman and Frank Jenkins (2012) conducted a study on home literacy environment and its role in the achievement of preschoolers with disabilities. The purpose of this study was to examine the relationship between the home literacy environment of a nationally representative sample of preschoolers with disabilities and their subsequent receptive vocabulary and reading comprehension skills using data from the Pre-Elementary Education Longitudinal Study. Results from linear regressions indicated that only a small amount of the total variance in children’s receptive language and passage comprehension skills was explained by the home literacy environment. However, the home literacy environment of 3 to 5-year-olds with less severe disabilities was a significant predictor of scores on a test of receptive vocabulary and reading comprehension in later years. The home literacy environment was not a significant predictor of receptive vocabulary or reading comprehension for children with moderate to severe disabilities.

Jodi Swanson, Carlos Valiente and Kathryu Lemery-Chalfant (2012) studied the predicting academic achievement from cumulative home risk: The mediating roles of effortful control, academic relationships, and school avoidance. Components of the home environment are associated with children’s academic
functioning. The accumulation of risks at home is expected to prove more detrimental to achievement than any one risk alone, but the processes accounting for this relation are unclear. Using an index of Cumulative Home Risk (CHR) inclusive of protective factors, as well as risks, the researchers examined child-level and school environment variables as potential mediators of the relation of CHR to academic achievement in a sample of 266 third-grade through fifth-grade children. Parents reported on the home environment, and school-issued report cards assessed achievement. Results from structural equation models indicated that children’s effortful control (parent-and child-reported), conflictual peer and student-teacher relationships (teacher-and child-reported), and school avoidance (teacher- and child-reported) significantly mediated the relation between CHR and achievement. Findings offer insights into specific mechanisms that like a negative home environment to academic functioning.

Ken, B. Hanscombe; Claire M. A., Haworth; Oliver S. P., Davis; Sara R. Jaffee and Robert Plomin (2011) studied on chaotic homes and school achievement: a twin study. Chaotic homes predict poor school performance. Given that it is known that genes affect both children’s experience of household chaos and their school achievement, to what extent is the relationship between high levels of noise and environmental confusion at home, and children’s school performance, mediated by heritable child effects? This is the first study to explore the genetic and environmental pathways between household chaos and academic performance. Children’s perceptions of family chaos at ages 9 and 12 and their school performance at age 12 were assessed in more than 2,300 twin pairs. The use of child-specific measures in a multivariate genetic analysis made it possible to
investigate the genetic and environmental origins of the co variation between children’s experience of chaos at home and their school achievement. Children’s experience of family chaos and their school environment were significantly correlated in the expected negative direction. As expected, shared environmental factors explained a large proportion (63%) of the association. However, genetic factors accounted for a significant proportion (37%) of the association between children’s experience of household chaos and their school performance.

Seung-Hee Son and Frederick J. Morrison (2010) studied on the nature and impact of changes in home learning environment on development of language and academic skills in preschool children. In this study, the investigators examined changes in the early home learning environment as children approached school entry and whether these changes predicted the development of children’s language and academic skills. Findings from a national sample of the National Institute of Child Health and Human Development Study of Early Child Care and Youth Development (N=1,018) revealed an overall improvement in the home learning environment from 36 to 54 months of children’s age, with 30.6% of parents of preschoolers displaying significant improvement at the home environment (i.e., changes greater than 1 SD) and with only 0.6% showing a decrease. More important, the degree of change uniquely contributed to the children’s language but not to their academic skills. Home changes were more likely to be observed from mothers with more education and work hours and with fewer symptoms of depression.

Zeynep Isik-Ercan (2010) studied on looking at school from the house window: Learning from Turkish-American parents’ experiences with early
elementary education in the United States. This retrospective study is an in-depth investigation of the perspective of Turkish immigrant parents on their children’s early schooling in the United States (Prek-3). It specifically explores how these parents connect with or are disconnected from school culture, and how their socio-cultural understanding of education and teachers influence their relationships with schools. Using a qualitative research design, data were collected through in-depth interviews with 18 parents from 10 families. Findings suggest that Turkish parents negotiated the ways curriculum and instruction is constructed in American schools—such as their assumptions about the lack of academic rigor—while they also embraced sound pedagogies the teachers practiced. Through their experiences with schooling in the United States, Turkish parents reconsidered their socio-cultural perspectives on their role of the teacher in their children’s lives based on their experiences with their children’s teachers. The parents also reported their challenges in understanding school culture and curriculum, and described how they negotiated their access of the school culture. The results indicate the need for a stronger partnership between home and school. Teachers could support parents in their struggle to access the culture of schooling by establishing an eagerness for communication and a reciprocal personal connection with families, who already socioculturally assume the teacher’s role as part of family.

Forget-Dubois Nadine et al. (2009) has studied on early child language and has mediated the relation between home environment and school readiness. This study tested two hypotheses: (a) child language mediates the association between home characteristics (socio-economic status and exposure to reading) and School Readiness (SR) and (b) genetic factors partly explain the association between
language and school readiness. Data were collected between 6 and 63 months in a large sample of twins. Results showed that home characteristics had direct effects on school readiness and indirect effects through child language. No genetic correlation was found between language and school readiness. These results suggest that home characteristics affect school readiness in part through their effect on early language skills, and show that this process is mainly environmental rather than genetic in nature.

Omolola Abiola Adedokun and Mark A. Balschweid (2008) conducted a study on the mediating effects of self-esteem and delinquency on the relationship between family social capital and adolescents’ educational achievement. Using a nationally representative data of rural adolescent boys and girls in 10\textsuperscript{th} grade through 12\textsuperscript{th} grade, this study explored the mediating effects of self-esteem and delinquency on the educational achievement of rural adolescents. Structural equation modeling analyses reveal that the combination of self-esteem and delinquency completely mediates the influence of family social capital on educational achievement. The findings of the models make a compelling case that the impact of family processes on educational achievement is indirect rather than direct.

Ibtesam Halawah (2006) studied on the effect of motivation, family environment, and student characteristics on academic achievement. This study is designed to know the effect of motivation, family environment, and student characteristics on academic achievement. The study was conducted on 388 high school students (193 males and 195 females) from Abu Dhabi District, United Arab Emirates (UAE). Students' mean level of motivation was less than the means of
parental influence and student's characteristics. No gender differences were observed on the variables measured by the instrument. Correlations between each of motivation, family environment, student characteristics and academic achievement were small and practically not significant. Remarkably high correlation value was observed between motivation and students characteristic. The highest correlation value was observed between family environment and students' characteristics.

2.11 SYNTHESIS OF STUDIES ON HOME ENVIRONMENT


2.12 REVIEW OF INDIAN STUDIES ON SCHOOL ENVIRONMENT

Review of literature related to school environment and other related variables with regard to Indian context are presented in this section.

Beulahbel Bency, P. B., and Krishna Prasad (2013) studied the effect of school environment on academic achievement of secondary school students. The objectives of the study were: (1) To study the mean difference if any, between male and female secondary school students on school environment and academic achievement, (2) To study the mean difference if any, between rural and urban secondary school students on school environment and academic achievement, (3) To study the mean difference if any, among different religious groups of secondary school students on school environment and academic achievement, (4) To study the mean difference if any, between the government and private secondary school students on school environment and academic achievement, (5) To study the relationship between the school environment and academic achievement of
secondary school students. The investigator adopted normative survey method for conducting the study. The study was conducted on a sample of 400 secondary school students. The findings of the study were: (1) The male and female students significantly differ in their school environment; (2) The rural and urban students significantly differ in their school environment. Rural students have healthier school environment than urban students; (3) The Hindu and Christian, Christian and Muslim, Hindu and Muslim students significantly differ in their school environment; (4) The government and private school students significantly differ in their school environment. Government school students have better school environment than private school students; (5) The male and female students significantly differ in their academic achievement. The female secondary school students showed higher level of academic achievement than the male students; (6) The rural and urban students did not differ significantly in their academic achievement; (7) The Hindu and Christian students significantly differ in their academic achievement. The secondary school students belonging to Hindu religion exhibited higher level of academic achievement than the Christian students. The Christian and Muslim students did not differ significantly in their academic achievement. The Hindu and Muslim students significantly differed in their academic achievement; (8) The government and private school students significantly differed in their academic achievement. Private school students had better academic achievement than government school students and (9) There is significant positive relationship between school environment and academic achievement of secondary school students.

Richa Sharma (2012) studied the effect of school and home environments on creativity of children. The objectives of the study were: (1) To find the creativity level of government and private secondary school children, (2) To find the creativity
level of boys and girls, (3) To find the difference in the creativity of children due to
creative stimulation dimension, cognitive dimension and permissive dimension of
school environment, (4) To find the creativity level of children with rich and poor
home environment. The study was conducted on a random sample of 200 ninth class
students of Chandigarh. The major findings were: (1) The school environment of
government and private schools of Chandigarh did differ with respect to Creative
Stimulation, Cognitive Encouragement and Permissiveness dimensions of school
environment, but did not differ significantly with respect to Rejection, Acceptance
and Controlled dimensions; (2) The government schools of Chandigarh provide
greater creative stimulation to their students as compared to those studying in the
private schools. Whereas students in the private schools feel greater rejection in their
schools as compared to those in government schools; (3) As regards the comparison
of creativity of the school students with their school environment, it can be
concluded that the government schools of Chandigarh have higher creativity
generating environment as compared to private schools of Chandigarh.

Gurumoorthi.G., and Mani, S. (2012) conducted a study on teaching style,
learning style and school environment in higher secondary schools. The major
objective of the study were: (1) To find out the level of school environment among
higher secondary school environment, (2) To find out the significant differences in
school environment of higher secondary students with respect to gender, (3) To find
out the significant differences in school environment of higher secondary students
with respect to the subject of the study, (4) To find out the significant differences in
school environment of higher secondary students with respect to the medium of
instruction, (5) To find out the significant differences in school environment of
higher secondary students with respect to communities, (6) To find out the
significant differences in school environment of higher secondary students with respect to religion, (7) To find out the association between learning style of higher secondary students and school environment of higher secondary schools, (8) To find out the relationship between teaching style of higher secondary school teachers and school environment of higher secondary schools. The sample population consisted of 300 higher secondary school students and teachers. The major findings of the study were: (1) It was found that the higher secondary school environment is good, (2) It was found that there is no significant difference in school environment of higher secondary school students with respect to gender, (3) It was found that there is significant difference in school environment of higher secondary school students with respect to the subject of the study, (4) It was found that there is no significant difference in school environment of higher secondary school students with respect to the medium of instruction, (5) It was found that there is no significant difference in school environment of higher secondary school students with respect to communities, (6) It was found that there is no significant difference in school environment of higher secondary school students with respect to religion, (7) It was found that there is association between learning style of higher secondary students and school environment of higher secondary schools and (8) It was found that there is no correlation between teaching style of higher secondary school teachers and school environment of higher secondary schools.

Arul Lawrence, A. S., and Vimala, A. (2012) conducted a study on school environment and academic achievement of standard IX students. The major objectives of the study were: (1) To find out the significance difference between standard IX boys and girls in their school environment, (2) To find out the significance difference between standard IX English and Tamil medium students in
their school environment, (3) To find out the significance difference between standard IX rural and urban school students in their school environment, (4) To find out the significance of difference between standard IX boys and girls in their academic achievement, (5) To find out the significance of difference between standard IX English and Tamil medium students in their academic achievement, (6) To find out the significance of difference between standard IX rural and urban school students in their academic achievement, and (7) To find out the significant relationship between the school environment and academic achievement of standard IX students. The investigators used stratified random sampling technique for selecting the sample. The sample consists of 400 standard IX students. The major findings of the study were: (1) There is no significance of difference between standard IX boys and girls in their school environment, (2) There is no significance of difference between standard IX English and Tamil medium students in their school environment, (3) There is significance of difference between standard IX rural and urban school students in their school environment, (4) There is no significance of difference between standard IX boys and girls in their academic achievement, (5) There is significance of difference between standard IX English and Tamil medium students in their academic achievement, (6) There is significance of difference between standard IX rural and urban school students in their academic achievement, and (7) There is no significant relationship between the school environment and academic achievement of standard IX students.

Karthikeyan, P., and Mani, S. (2010) conducted a study on school environment and values among high school students. The objectives of the study were: (1) To find out the level of high school environment and overall values of high school students, (2) To find out the significant difference among the high school
students in the perception of their school environment, overall values and its
dimension with respect to gender, (3) To find out the significant difference among
the high school students in the perception of their school environment with respect
to community, (4) To find out the significant difference among the high school
students in the perception of their school environment, overall values and its
dimension with respect to medium of instruction, (5) To find out the significant
difference among the high school students in the perception of their school
environment, overall values and its dimension with respect to pattern of schools,
(6) To find out the significant difference among the high school students in the
perception of their school environment with respect to nature of schools, (7) To find
out the significant difference among the high school students in the perception of
their school environment, overall values and its dimension with respect to type of
family. A sample of 300 students at high school level from three different types of
school was selected randomly by stratified random sampling technique. The major
findings of the study were: (1) It was found that the high school environment and
overall values of high school students are satisfactory in nature as perceived by high
school students, (2) No significant difference was found among the high school
students in the perception of their school environment with respect to gender, (3) No
significant difference was found among the high school students in the perception of
their school environment with respect to community, (4) No significant difference
was noticed among the high school students in the perception of their school
environment, overall values and its dimensions with respect to medium of
instruction, (5) Significant difference was observed among the high school students
in the perception of their school environment with respect to pattern of schools,
(6) No significant difference was noticed among the high school students in the
perception of their school environment with respect to nature of schools and
(7) No significant difference was observed among the high school students in the
perception of their school environment, overall values and its dimension with
respect to type of family.

Vishwakarma Ram Swaroop (2008) studied the impact of school
environment on learning behaviour and academic achievement of the students of
Chhatarpur District. The major objectives of the study were: (i) To get information
about urban government and non-government upper primary school environments.
(ii) To know about learning behaviour of urban government and non-government
upper primary school students. (iii) To get information on academic achievement of
urban government and non-government upper primary school students. (iv) To find
the impact of school environment of urban government upper primary school
students. (v) To find students' academic achievement under the impact of urban
government upper primary school environment. The study was conducted at 115
government and non-government upper primary schools students, boys and girls, in
all eight blocks of the revenue district of Chhatarpur in the State of Madhya Pradesh.
The schools were chosen in randomly and quota sampled from all eight blocks of the
district of Chhatarpur. Altogether 1500 boys and 1500 girls were selected randomly
from urban and rural areas maintain a balance between government and non-
government upper primary schools. Psychological survey method and documentary
survey method was taken up for the purpose of the present study. The major findings
were: (1) The impact of rural non-government upper primary school environment is
more on boys than on girls in comparison to the environment of rural government
upper primary schools. (2) The impact of rural non-government upper primary
schools' learning behaviour is higher on boys and girls in comparison to rural government upper primary schools' learning behaviour. (3) The impact of school environment on learning behaviour of the boys and girls of urban non-government upper primary schools is higher. (4) The impact of school environment on academic achievement of the boys and girls of the urban government upper primary schools is higher.

Gaiab, S. et al. (2008) conducted a study on child learning in Andhra Pradesh, the interplay between school and home. The major objectives of the study were: (i) To compare learning outcomes for children in private and public schools in consideration to sex, wealth, and caste; and (ii) To assess the influence of a caregiver's own education on their children's learning outcomes, in both private and public schools. The data were collected as part of the baseline survey for the young lives project. The respondents were 1,008 mothers and children aged 7.5-8.5 years at the time of the survey and sampled across the 3 district agro-climatic regions of Andhra Pradesh (Costal AP, Royalaseema and Telengana) from sentinel sites. The major findings were: (1) Children in private schools have better literacy and numeric skills regardless of wealth or caste than the children in public schools. (2) Children with uneducated parents (especially mothers) are at disadvantage. (3) This disadvantage is greater in public schools than private schools. (4) Girls have lower learning scores than boys. Furthermore, there is a clear interplay between school and home in every aspect.

Chamundeswari, S., and Ezhilarasi, A. (2006) conducted a study entitled an investigation on the levels of presence of factors related to home and school
environment among students at the secondary level in different types of schools. The objectives of the study were: (1) To investigate the possible difference between the levels of presence of factors related to home environment among boys and girls at the secondary level in different types of schools, (2) To investigate the difference between the levels of presence of factors related to home environment among students at the secondary level in different types of schools, (3) To investigate the difference between the levels of presence of factors related to school environment among boys and girls at the secondary level in different types of schools, (4) To investigate the difference between the levels of presence of factors related to school environment among students at the secondary level in different types of schools. A sample of 200 students (94 boys and 106 girls) at the secondary level from four different types of school was selected randomly by simple random sampling technique. The major findings of the study were: (1) There is no significant difference between the levels of presence of factors related to home environment among boys and girls at the secondary level in different types of schools, (2) There is a significant difference between the levels of presence of factors related to home environment among students at the secondary level in different types of schools, (3) There is a significant difference between the levels of presence of factors related to home environment among students at the secondary level in government and government-aided; government and private; government-aided and private; Corporation and Private schools and there is no significant difference between the levels of presence of factors related to home environment among students at the secondary level in government and corporation; government-aided and corporation schools, (4) girls have higher level of presence of factors related to school environment than boys at the secondary level in different types of schools, (5) There
is a significant difference between the levels of presence of factors related to school environment among students at the secondary level in different types of schools. (6) There is a significant difference between the levels of presence of factors related to school environment among students at the secondary level in government and government-aided; government-aided and corporation; government-aided and private schools; and there is no significant difference between the levels of presence of factors related to school environment among students at the secondary level in government and corporation; government and private schools.

Champa, P. (2005) conducted a study entitled school effectiveness and teachers profile: A study of elementary schools. The study was aimed at identifying the effectiveness of schools on the basis of perceptions of stakeholders of education at various levels of educational administration as well as teachers and parents. The effectiveness of these schools was measured through the criteria developed on the basis of input-process, output-framework. In the study both quantitative and qualitative methods, along with case study approach were used. The sample of this study has been selected from among the primary classes students in Delhi. The major findings were: (1) In an effective school the teachers are punctual, the HM has effective leadership, discipline is well maintained, basic infrastructure and facilities are available, all the students are treated equal, examination results are good and students achieve high levels of learning and develop good habits and manners. (2) The criteria for measuring school effectiveness are the various aspects of input process and output of the schools. (3) The teachers profile in the effective school includes high qualification, rich experience, high economic status, favorable attitude towards teaching professional, high job satisfaction, high motivation at their work place and high professional commitment.
Dwivedi, R. D. (2005) conducted a study on the influence of school environment and approval motive on academic achievement of students. The major objectives of the study were: (i) To compare educational attainments of students belonging to different categories of schools according to their environment and (ii) To observe variability of achievement of high approval seekers and low approval seekers, coming from different institutions. The sample consisted of 400 class X students drawn randomly from sixteen different institutions situated in Gorakhpur and Varanasi regions of Uttar Pradesh. The major findings were: (i) the students from schools with enriched environment had significantly better academic achievement than the students from poor school environments. (ii) The students who were high approval seekers had great academic achievement than the students who were low approval seekers. (iii) Academic achievement of students of the urban schools was significantly higher than that of students of the rural schools.

Saha, K. (2005) conducted a study on the influence of School Environment on cognitive development. The major objectives of the study were to study the influence of School Environment on cognitive development. The sample comprised of 160 children (Boys 20 Girls 80) of classes 1 to IV – 20 boys and 20 girls from each classes. The sample was selected from 7 different schools on the basis of the availability of children of both sexes in the same school. The findings of the study showed how the school environment exerted positive influence on cognitive development of children.

Arockiasamy, S., and Jebasheela (2001) studied then higher secondary students; perception of school environment and its impact on their academic achievement in matric and non – matric schools. The major objectives of the study
were: (1) To find out whether there is any significant difference in the school environment as per by higher secondary students in matric and non–matric schools, (2) To find out whether there is any significant difference in the academic achievement of higher secondary matric and non–matric students, (3) To study whether school environment has exerted significant impact on the academic achievement of higher secondary students in matric and non-matric schools. Survey method has been employed for collection of the required data. Students of various schools were used for study. 100 items were taken for this study. The findings of the study were the non-matric higher secondary student enjoy better school environment in total with regard to the dimensions, academic, activity, Psychosocial and administrative environments. As the Matric School is result oriented and much work is extracted from the students, they do not seem to enjoy the school environment. As far as academic achievement is concerned the matric school student are far better than their counterparts.

Ramesh (2000) conducted a study on the influence of School Environment and Approval motivation on academic achievement of students. The objective of the study were: (1) To compare education attainments of students belonging to different categories of schools according to their environment, (2) To observe variability of achievement of high approved seekers and low approval seekers, coming from different institution. The sample consisted of 400 classes X students drawn randomly from 16 different institutions situated in Gorakhpur and Varanasi religions of Uttarpradesh. The findings of the study were: (1) The students from schools with enriched environment have significantly better academic achievement than the students from poor environment, (2) The students who were high approved seekers
had significant greater achievement than the students who were low approval seekers,
(3) Academic achievement of students of the urban schools was significantly higher
than that of student of the rural schools.

2.13 REVIEW OF INTERNATIONAL STUDIES ON SCHOOL ENVIRONMENT

Review of literature related to school environment and other related variables with regard to international context are presented in this section.

Ida Frugard Strom; Siri Thoresen; Tore Wentzel-Larsen and Grete Dyb (2013) conducted a study on violence, bullying and academic achievement: A study of 15-year-old adolescents and their school environment. This study investigated academic achievement among adolescents exposed to violence, sexual abuse and bullying. Moreover, the researchers sought to determine the individual and contextual influence of the adolescents’ school environment in terms of bullying, classmate relationships and teacher support on academic achievement, in addition to assess whether school-level influence is different for the adolescents exposed to violence and sexual abuse versus the adolescents not exposed to these forms of abuse. This is a cross-sectional study of a sample of 7,343 adolescents between the ages of 15 and 16 from 56 schools in Oslo, Norway. The researchers investigated the associations between violence, sexual abuse, bullying, classmate relationships, teacher support and academic achievement. Linear regression was used to investigate associations on the individual level. Multilevel analyses were conducted to test for school level differences while controlling for both individual and contextual factors. On the individual level, all combinations of violence and sexual abuse categories were significantly associated with lower grade. This was also true for bullying, while teacher support resulted in better grades. At the school level, the
analysis showed that students in schools with higher levels of bullying performed worse academically. Each unit of increment in bullying in school corresponded to an average 0.98 point decrease in grades when we controlled for socio demographic characteristics. The association remained significant when the model was tested separately for the non bullied students, with a small reduction in the coefficient value. No overall significance was found for the interaction between the school environment and adolescent exposure to violence, indicating that the school environment affects all students.

Ivory, A., Toldson and Brianna, P., Lemmons (2013) conducted a study on social demographics, the school environment, and parenting practices associated with parents’ participation in schools and academic success among Black, Hispanic, and White students. This study explored social demographic factors, school environmental factors, and parenting practices that are associated with child academic success and school-based involvement among the parents of Black, Hispanic, and White students. Analysis of 12,426 parents who completed the national household education surveys-parent and family involvement survey revealed that parent's participation in school is linked to better grades and is associated with supportive schools and positive parenting practices. The study also revealed that parents who were Black and Hispanic, non-native English speakers, lived in unsafe neighborhoods, and had less than a high school education were less likely to visit the school.

Leonidas Kyriakides and Bert P. M., Creemers (2012) studied the school policy on teaching and school learning environment: Direct and indirect effects upon student outcome measures. It is a longitudinal study in which 50 primary schools,
108 classes, and 2369 students participated and generated evidence supporting the validity of the dynamic model. This study reports the results of a re-analysis of the data of this study in order to search for direct and indirect effects of school factors included in the model. Using multilevel structural equation modeling techniques, indirect effects of school policy on teaching and school learning environment upon achievement in mathematics and Greek language are demonstrated.

Ming – Te wang and Rebecca Holcombe (2010) studied the adolescents Perceptions of School Environment, Engagement, and Academic Achievement in Middle school. This short – term longitudinal research examined the relationships among middle school student’s Perceptions of school environment, school engagement, and academic achievement. Participants were from a representation ethnically diverse, urban sample of 1,046 students. The findings supported the theoretical conceptualization of three different – but related dimensions of school engagement school participations sense of identification with school, and use of self – regulation strategies. The result also indicated that students’ perceptions of the district dimensions differentially to the three types of school environment in seventh grade contribute differentially to the three types of school engagement eighth grade. Finally the authors found that students’ perceptions of school environment influenced their academic achievement directly and indirectly through the three types of school engagement specifically. Student’s perceptions of school characteristics in seventh grade influenced their school participation identification with school, and use of self-regulation strategies in eighth grade that occur therein and, in turn, influenced students academic achievement in eighth grade.
Cynthia, L. Uline; Thomas De Vere Wolsey; Megan Tschan nen-Moran and Chii-Dean Lin (2010) studied on improving the physical and social environment of school: A question of Equity. This study explored the interplay between quality facilities and school climate, charting the effects of facility conditions on student and teacher attitudes, behaviors, and performance within schools slated for renovations in a large metropolitan school district. The research applied a school leadership-building design model to explore how six characteristics of facility quality—movement, aesthetics, play of light, flexible and responsive classrooms, elbow room, and security—interact with four aspects of school climate: academic press, community engagement, teacher professionalism, and collegial leadership. Because the schools were older and participants in the research perceived them as being in great need of maintenance and repair, the school building characteristics were often described as absent qualities. The survey data revealed moderate to strong relationships between the quality of school facilities and school climate.

Theo. G.M. Sandfort (2010) studied on school environment and the mental Health of sexual minority young. A study among Dutch young adolescents, the researcher examined whether structural elements of the school environment, in particular cultural pluralism and consistency and clarity of school rules and expectations of students could mitigate the risk for mental health problems among young sexual minority adolescents. Data were collected in 2008 by means of a computer – based questionnaire completed at school by 513 young adolescents (12-15 years old) during regular class times. Eleven percent of these students who were enrolled in 8 different schools reported having at least some feelings of same – sex attraction. The findings of the study were adolescents with same – sex
attractions in schools where rules and expectations were experienced as less consistent and clear reported significantly more mental health problems than their peers with no same-sex attractions in the same schools. Such differences were absent in schools where rules and expectations were experienced as more consistent and clear. There were no such effects of cultural Pluralism.

Rodriguez Diane et al. (2009) conducted a study on English language learner’s perceptions of school environment in North Carolina. The number of students who spoke languages other than English continued to grow in both rural and urban public schools in the United States. This study investigated the perceptions of 123 students (57 monolingual and 66 English language learners (ELLs) from a rural public elementary school in North Carolina with respect to school climate, curriculum and instruction, extracurricular activities, self-efficacy, and self-esteem. All of these indicators contributed to an overall perception of schools and affect learning experiences of monolingual students and ELLs. Results indicated that the perceptions of monolingual learners and ELLs in this particular elementary school were similar.

Shwu-Yong et al. (2009) conducted a study on the association of school environment to student teachers' satisfaction and teaching commitment in Taiwan. This study assesses student teachers' perceptions of secondary school environments, and then relates the perceptions to their satisfaction with school experiences and teaching commitment. The results show that considerable disparities between student teachers' perceptions of actual and preferred school environments and suggest certain directions for improvement. Student teachers' perceptions about their school environments, especially in the areas of professional interest and staff
freedom, were positively associated with their satisfaction. Several school environmental aspects influenced the total years they planned to teach and their intention to teach at the placement schools.

Huy P. Phan (2008) conducted a study on achievement goals, the classroom environment, and reflective thinking: a conceptual framework. This research tested a structural model that included three theoretical frameworks: the classroom environment, achievement goals and reflective thinking practice were postulated to act as mediators between the classroom environment and academic performance. The sample included 298 (142 boys, 156 girls) year 12 students from four different secondary schools. Causal modeling procedures were used to test and evaluate the mediating and direct influences between the three theoretical frameworks motioned and academic performance. Path analysis indicated the predictive effects of different facets of the classroom learning environment on mastery and performance (approach, avoidance) goals also exerted direct effects on the four phases of reflection. The antecedents of academic performance included students’ involvement and performance-approach goals. A one way “ANOVA” showed no statistically significance between boys and girls. The evidence ascertained accentuates the important argument that psychosocial milieu of the classroom contributed to students’ achievement goal orientations and their engagement in reflective thinking practice.

John Stephen Missouri (2001) studied on the relationship between student socio-economic status, perception of school environment, academic achievement and school attendance. The objectives of the study were to study the
relationship between student socio-economic status, perception of school environment, academic achievement and school attendance. Fifth grade students were selected. Sample school students from high and low SES schools in a mid Western City. 108 fifth grade students in 14 schools were selected. Significant findings were present with respect to perceptions of the school environment and academic achievement. Academic achievement would be higher in schools with high SES students.

2.14 SYNTHESIS OF STUDIES ON SCHOOL ENVIRONMENT

Beulahbel Bency, P. B., & Krishna Prasad (2013) found significant difference in school environment between the boys and girls. On contrary, Gurumoorthy, G., & Mani, S. (2012); Arul Lawrence, A. S., & Vimala, A. (2012); and Karthikeyan, P., & Mani, S. (2010) found that there was no significant difference in school environment of higher secondary students with respect to the gender. Beulahbel Bency, P. B., & Krishna Prasad (2013); Arul Lawrence, A. S., & Vimala, A. (2012); and Vishwakarma Ram Swaroop (2008) stated that rural and urban students significantly differ in school environment. Beulahbel Bency, P. B., & Krishna Prasad (2013) noted that rural students have healthier school environment than the urban students. Beulahbel Bency, P. B., & Krishna Prasad (2013); Richa Sharma (2012); Chamundeswari, S., & Ezhilarasi, A. (2006); and Dwivedi, R. D. (2005) observed the significant difference in school environment with respect to the type (management) of school. Karthikeyan, P., & Mani, S. (2010) found that no significant difference in school environment of higher secondary students with respect to the nature of school. Beulahbel Bency, P. B., & Krishna Prasad (2013) found significant difference in school environment of higher secondary students with respect to the religion. But, Gurumoorthy, G., & Mani, S. (2012) found no

2.15 SYNTHESIS OF STUDIES ON ACHIEVEMENT IN CHEMISTRY, EMOTIONAL INTELLIGENCE, HOME ENVIRONMENT AND SCHOOL ENVIRONMENT

Significant gender difference is found in achievement in chemistry (Nityagopal Mondal & Birbal Saha, 2013; Rajendran, S., 2012; Harkirat Dhindsa, S. & Shahrizal-Emran, 2011; Murugan, R., 2010; Shivakumar, P., 2006; and James, A., & Marice, P. V., 2004); emotional intelligence (Annakodi, R., 2013; and Darsana, M., 2007); home environment (Rajkumari Kalra Preeti Manani, 2012; Umme Kulsum, 2012; Arati Chakra, 2012; and Sivakumar, D., 2012); and school
environment (Beulahbel Bency, P. B., & Krishna Prasad, 2013). However, no significant gender difference is observed in achievement in chemistry (Nataraj, P. N., & Manjula, G., 2012; Kalaivani, S., & Babu, R., 2011 and Jeba & Annaraja, 2008); emotional intelligence (Portia, R., 2013; Muyeen Maqbool Mir, 2013; Shalini Yadav, 2012; Ademola Olatoye, Akintunde, S. O., & Yakasai, M. I., 2010; Umadevi, 2009; Mukti Shah & Nutankumar, S. Thingujam, 2008; Ujwala Madhukar Done, 2007; and Tiwari, P. S. N., & Srivastava, N., 2004); home environment (Mahadevan, P., & Muthumanickam, R., 2013; and Murugan, K., & Thilagavathy, T., 2011); and school environment (Gurumoorthi, G., & Mani, S., 2012; Arul Lawrence, A. S., & Vimala, A., 2012; and Karthikeyan, P., & Mani, S., 2010). Between the boys and girls, girls are better than boys in achievement in chemistry (Rajendran, S., 2012; Murugan, R., 2010; Shivakumar, P. 2006; and James, A., & Marice, P. V., 2004); emotional intelligence (Satish Kumar Kalhotra, 2012; and Sridevi & Lisha Parveen, 2010); home environment (Henrietta Leoma Alika & Ogboro Samson Edosa, 2012). Significant difference is noted between the rural and urban students in achievement in chemistry (Nityagopal Mondal & Birbal Saha, 2013; Nataraj, P. N., & Manjula, G., 2012; Kalaivani, S., & Babu, R., 2011; Murugan, R., 2010; and Shivakumar, P., 2006); emotional intelligence (Muyeen Maqbool Mir, 2013; and Annakodi, R., 2013); home environment (Umme Kulsum, 2012; Sivakumar, D., 2012; Bibi & Sadananthan, 2009; and Manganlal, S., Molia, 2000); and school environment (Beulahbel Bency, P. B., & Krishna Prasad, 2013; Arul Lawrence, A. S., & Vimala, A., 2012; and Vishwakarma Ram Swaroop, 2008). Significant difference is noted among the students of different (management) type of school in achievement in chemistry (Rajendran, S., 2012; Kalaivani, S., & Babu, R., 2011; Kalaivani, S., Jayanthi, C., & Babu, R., 2010; and James, A., & Marice, P. V.,
2.16 CONCLUSION

The overall synthesis of review of related literature reflects contradictory research findings among the researchers with respect to the variables achievement in chemistry, emotional intelligence, home environment and school environment. Further the studies also not focused on different strata of students with respect to the sub categories of variables. There were very few studies on identifying the
predictive efficiency of the variables. Many of the studies focused on descriptive, differential and association analysis with respect to the role of demographic factors on the influence of the criterion variables. There are research gaps like, focusing on the role of demographic factors on the variables achievement in chemistry, emotional intelligence, home environment, school environment at different levels of the students, with respect to the influence on the independent variables and their sub categories, and a detailed predictive and explorative analysis of the variables emotional intelligence, home environment, school environment on achievement in chemistry. These research gaps were identified. The methodology of the research was designed to fill up the research gaps identified from the review of the studies.