CHAPTER - 2

REVIEW OF RELATED LITERATURE
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Literature review is an essential aspect of research study. It is a systematic and explicit method for identifying, evaluating and interpreting the existing body of recorded works produced by researchers, scholars and practitioners. Literature review forms a focussed and carefully structured outline of what others have done in the area that has been shaped to set your own research agenda. Spending significant amount of time in reading literature relevant to the research topic prevent the researcher from repeating previous errors or redoing the work that has already been done (Johnson and Christensen, 2012). The objective of literature review is to identify the gap in the area. Further research is being done to fill this gap.

The present chapter is devoted to the review of research studies that bear direct or indirect relation with the present problem. In order to develop deep insight and to evaluate the methodological practices emerging, the researcher made survey of the available literature and reviewed the researches in the field of scientific temper, emotional intelligence, socio-economic status and scheduled tribes and selected those studies that were thought to be significantly related to the topic under investigation. All the studies have been arranged in chronological order.

Accordingly the chapter is divided into the following sections:

2.1) Studies on Scientific Temper.

2.2) Studies on Emotional Intelligence.

2.3) Studies on Socio-economic Status.

2.4) Studies on Scheduled Tribes.

2.5) Overview of the Related Literature.
2.1) Studies on Scientific Temper

Alexander (1990) determined the relationships among critical thinking, scientific aptitude and socio-economic status to achievement in science of students. Major Findings of the study were: (1) Students with high scores on critical thinking, scientific aptitude and socio-economic status, also showed good performance in science achievement. (2) Total variance in achievement contributed by the three predictors, namely, scientific aptitude, critical thinking and socio-economic status was 15.45%, 8.0% and 5.36% respectively. (3) Males performed better than girls in science.

Kar (1990) examined the relationship between scientific attitude and achievement in general science of Class IX students of Cuttack city. Major findings revealed that there was positive relationship between attitude and achievement and boys were found to be more favourably disposed towards science than girls.

Rao (1990) compared scientific attitude, scientific aptitude and achievement in biology at the secondary school level with the following objectives: (1) to find out the scientific attitude and scientific aptitude possessed by the secondary school pupils along with their achievement in biology. (2) To find out the association among scientific attitude, scientific aptitude and achievement in biology of secondary school pupils. (3) To compare scientific attitude, scientific aptitude and biology achievement of boys versus girls, English medium versus Telugu medium schools, private versus government schools, residential versus non-residential schools and rural versus urban schools. Major Findings: (1) there was a highly significant and positive association among scientific attitude, scientific aptitude and biology achievement. (2) The scientific aptitude in secondary school pupils was also average. The pupils of private schools, urban schools, English medium schools and residential schools held a bit more scientific aptitude. (3) The achievement in biology was average. The rural schools, government schools, English medium schools and residential schools were better in achievement. (4) It was observed that the scientific attitude in secondary school pupils was average. There was no influence of sex on scientific attitude. But the pupils studying in private schools, rural
schools, English medium schools, and residential schools held relatively better scientific attitudes than their counterparts.

**DharmBio (1991)** studied the attitude towards science and interest in science among school-going adolescents of Madhya Pradesh. Major Findings were: (1) A positive attitude towards science was observed among all the six groups of students (boys-girls, tribal school-government school, private school-government school, rural school-urban school, general castes-backward castes students, and high socio-economic status-low socio-economic status of students). (2) No significant difference between male and female students attitude towards science. (3) Obtained value of ‘F’ on the basis of one-way analysis of variance showed significant difference between the different groups of students in the attitude towards science.

**Dulal (1991)** made a cross-sectional study on the effect of academic motivation and scientific attitude on science aptitude of the adolescent students. Six hundred students of 24 schools (12 urban and 12 rural) were selected at random for the sample. The tools used included Scientific Aptitude Test, Scientific Attitude Questionnaire, and Academic Motivation Questionnaire. The statistical treatment included descriptive statistics, anova, and regression analysis. Major Finding revealed that on scientific aptitude urban students, particularly girls, were superior to rural students. Scientific aptitude could be predicted to a considerable extent from academic motivation and scientific attitude, both of which showed a highly significant positive relationship with it.

**Kumar (1991)** attempted to examine the teaching of general science and the development of science and the development of scientific attitude of secondary school adolescent students in Cuddalore educational district in relation to achievement in general science. Major Findings: (1) There was no significant difference between the mean scores of scientific attitude of secondary school students of boys and girls in the high effective group in respect of perception of teaching science. (2) There existed a relationship between urban boys and urban girls in scientific attitude test scores. (3) The scientific attitude test scores of boys and girls of the average group differed significantly. (4) The
mean scores of the scientific attitude test of the pupils of urban and rural areas in the high group differed significantly.

**Sinha (1991)** tried to analyse the achievement in science in relation to scientific attitude, motivation and self-concept with the following objectives: (1) to ascertain achievement of students in physical science, (2) to appraise the extent of self-concept in science, and (3) to find out the extent of motivation of the students in science and determine the relation among and between them. Major Findings were: (1) In physical science urban boys achieved higher than rural boys and urban girls, urban students achieved better than rural students. (2) There was no difference in the achievement of boys and girls in physical science. (3) There was no difference in the self-concept of science between urban and rural students.

**Singh (2002)** examined the effects of three school-related variables; motivation, attitude towards science and mathematics, and academic engagement of adolescent students’ attainment in mathematics and science. They employed structural equation models to assess and test the hypothesized associations of two motivation dimensions, one attitude, and other academic engagement, on accomplishment in mathematics and science. It was revealed that positive effects of the two motivation factors, attitude and academic time on mathematics and science achievement. The strongest effects were those of academic time spent on homework.

**Dhindsa and Chung (2003)** tried to assess attitudes towards and achievement in science of adolescent students studying in single-sex and coeducational schools in Brunei. The results showed significant differences in attitudes towards and achievement in science on the bases of gender in students attending single-sex schools and coeducational institutes. These differences were at moderate level. Girls achieved moderately better in science than the boys, in spite of their attitudes were slightly better than the boys, in single-sex institutes. There were no sex differences in attitudes towards and achievement in science of students in coeducational schools. The girls in single-sex schools showed fairly better attitudes towards and achievement in science than those of girls in coeducational schools.
Whereas the attitudes towards and achievement in science of boys in single-sex schools were only marginally better than the boys in coeducational schools.

Osborne (2003) offered a review of the major literature about attitudes toward science and its implications over the past 20 years highlighting the meaning of attitude towards science, problems in measuring attitude in science and pointing out some of its influencing factors (gender, teachers, curricula, cultural and other variables). The article suggested that there is a greater need of investigation to recognize those dimensions of science teaching that make school science attractive for students. It also suggested that there is need of research on motivation which will offer significant pointers to the type of classroom setting and activities that might elevate students’ interest in studying school science.

Elena and Michalinos (2004) investigated the ‘locality’ of the relationship between attitudes towards science, self-beliefs and science achievement for senior high school students in Australia, Cyprus and USA. Structural equation modelling was employed to study these relationships. The data for this investigation were gleaned from the Third International Mathematics and Science Study record. The study revealed that there were differential effects that science achievement and science attitudes can have on each other, depending on the type of the educational systems within each of country.

Sharma (2007) studied problem solving ability and scientific attitude as determinant of academic achievement of higher secondary adolescent students, and found that there exist positive relationship between achievement, problem solving ability and scientific attitude, and high achievers had high problem solving ability in comparison to average and low achievers.

Akpinar, et al. (2009) examined the differences by gender and grade level in primary school adolescent students’ attitudes toward science and technology and the relationship between students’ attitudes toward science and technology and academic achievement. It was found that significant positive correlations were found between attitudes toward science and technology and academic achievement. There were significant differences between male and female students, and female showed high interest in science than
males. However, there were no significant sex differences in terms of other aspects like enjoyment of science, anxiety, and enjoyment of science experiments”.

Chiu (2010) investigated gender differences in the effects of science interest and environmental responsibility on science aspiration and achievement and also explored the relations between cultural aspects (macroeconomic and gender equality) and both boys’ and girls’ tendencies to integrate the aforesaid effects at the national level. The first part of the objective was achieved by employing structural equation modelling and data was taken from the Program for International Student Assessment (PISA) from 57 countries. The results showed that the effects of science interest on achievement are positive.

Machina and Gokhale (2010) studied attitude changes of 18-year-old first-year college adolescent students at a large state operated institution in the USA during their initial semester in college. Attitudes of 375 students enrolled in a non-science first-year student seminar during the Fall of 2004 were measured. It was revealed that students whose seminar included participate with science & technology (S & T) professionals, plus at least four weeks of context-based S & T content, showed moderately positive attitudes toward S & T. Students whose seminars comprised of the science content but no participation with professionals also showed moderately positive attitudes, but the females became less accommodating of female partaking in S & T. Females enrolled in seminars that did not include any of these interventions declined significantly in all five attitudes toward S & T, even though 95% of these students were simultaneously enrolled in required introductory natural science courses.

Odom, et al. (2011) examined the association of middle school adolescent students’ science achievement and attitudes toward science with student-reported frequency of using computers to learn science and other classroom practices. Baseline comparison data were collected on the frequency of student-centred teaching practices (e.g. the use of group experiments during science class) and traditional teaching practices (e.g. having students copy notes during science class) to learn science. Both attitudes toward science and student-centred teaching practices were positively related with science
accomplishment, and student-centred teaching practice was positively related with attitude toward science.

Chen, et al. (2012) studied whether the relationships among family resources, school climate, learning participation, science attitude, and science achievement are different between primary school students and junior high school students within one educational system. The data was analysed by employing structural equation modelling. The results indicated that family income had significant encouraging effects for both groups of learners. Additionally, a context effect for the structural relationship between school climate, learning participation, and science achievement was shown. In the primary school context, Grade 4 students who perceived positive school climate took part in school activities more enthusiastically, and had superior science achievement.

Ozel, et al. (2013) studied how affective factors like scientific attitude and motivation contribute to science achievement in PISA 2006 employing linear structural modelling technique. The data set of PISA 2006 collected from 4942 fifteen-year-old Turkish adolescent students (2290 females, 2652 males) was used for the statistical analyses. Furthermore, structural equation modelling was also used to examine the hypothesized model representing the association between affective factors and Turkish students' science achievement in PISA 2006. The results also indicated that, in general, scientific attitude and motivation contributed significantly either positively or negatively to 15 year-old students' science achievement. Further, scientific attitude and motivation were observed to be predictors of the science achievement, but they are not good predictors due to their lower predictive power.

Aezum and Wani (2013) compared the scientific temper and academic achievement of adolescents in Anantnag district of Jammu & Kashmir. A group of 180 adolescents (100 boys and 80 girls) was taken as sample from both government and private institutions in the study via a stratified random sampling technique. The data was analysed by using mean, standard deviation, and t-test. The findings of the study indicated that the scientific attitude and academic achievement of the boy and girl students as well as the students from rural and urban areas, and from government and private institutions differed
significantly. Boys were found to be more efficient scorer than girls. Adolescents from urban areas were found to be more efficient than rural ones. Adolescents belonging to Private colleges showed better mean score than government colleges.

Maqbool and Akbar (2013) compared the scientific temper and academic achievement of science and social science adolescents of eleventh standard from Baramulla district of Kashmir. Students from science and social science were selected by employing random sampling technique. Scientific temper scale by Showkat and Nadeem was used to collect data. Academic achievement of the selected sample has been taken as the percentage of aggregated marks in 9th and 10th standards. The two groups showed significant difference on curiosity and objectivity aspects of scientific temper scale. Further, it was found that two groups did not differ on open-mindedness, rationality, and aversion to superstition dimension of scientific temper scale. Study also indicated that two groups differ significantly on academic achievement.

Mudasir and Yatu (2013) compared the scientific temper and academic achievement of Kashmiri and Pakhtoon students. Data were collected on a sample of 120 students by administering Nadeem and Khalida’s Scientific Temper Scale. Mean, S.D and test of significance were employed. It was revealed, that there was no significant difference between Kashmiri and Paktoon students on the scientific temper variable. However, Kashmiri students showed better academic achievement than Pakhtoon students.

Pyari and Sharma (2013) investigated the effects of scientific attitude of secondary school adolescent students to promote their science interest, study habits, cognitive style, academic achievement, scientific creativity, academic achievement motivation, delay of gratification, Task persistence, Science Methodology, science achievement, socio-economic status, School environment and home environment. The research included a pre test post test research with a control group. The subjects of the research consisted of 1500 students reading at 10th grade of secondary schools of Agra, India. Result showed that scientific attitude depends upon different factors viz. psychological, social and biographical and it was also suggested that the psychological variables were more consistently related to scientific attitude than the socio-biographic variables.
**Bhat and Netragaonkar (2014)** conducted a study to compare the first and non-first generation learners on scientific temper and academic achievement. The sample for the present study consisted of 800 adolescent students in which 400 were first generation learners and 400 were non-first generation learners. The investigators used Showkat and Nadeem Scientific temper scale to assess the scientific temper of sample subjects. The previous two years academic achievement served as academic indicator of the students. Mean, S.D, t-test revealed that there is significant difference between first and non-first generation learners on scientific temper and academic achievement. Non-first generation learners were found to have better scientific temper and academic achievement as compared to their counterparts.

**2.2) Studies on Emotional Intelligence**

**Newsome, et al. (2000)** conducted a study in order to determine the relationship of emotional intelligence, cognitive ability, and personality with academic achievement. Emotional intelligence was measured by employing the emotional intelligence inventory. Neither of the emotional intelligence factor scores, nor the total emotional intelligence score, was significantly associated to academic accomplishment.

**Barchard (2003)** examined the ability of emotional intelligence to predict academic achievement in a sample of undergraduate psychology adolescents, using year-end grades as the criterion. The predictive validity of emotional intelligence was compared with the predictive validity of traditional cognitive abilities and the Big Five dimensions of personality. Further, the incremental predictive validity of each of these three dimensions was measured. For this purpose, only some dimensions of emotional intelligence contributed to academic achievement, and none of these dimensions showed incremental predictive validity for academic achievement over and above cognitive and personality factors. It may be that the overlap between many emotional intelligence factors and traditional factors of intelligence and personality decreased their incremental predictive strength in this context.
Raymond, et al. (2003) explored the relationship between emotional intelligence (EI) and academic achievement in adolescent students, using both self-report and ability-based measures of EI. Results revealed that EI is not a potential contributor of academic success in spite of the type of tool used to assess it.

Sharma (2009) compared emotional intelligence and creativity of adolescent students in three types of schools: Gurukuls, Public schools, and Government schools. The results indicated that Public school students scored higher on emotional intelligence scale.

Parker, et al. (2004) tried to examine the relationship between emotional intelligence and academic achievement in adolescents. Students in a high school in Huntsville, Alabama participated in the emotional quotient inventory test. At the end of the academic year the emotional quotient inventory scores was compared with respondents’ academic achievement. When emotional quotient inventory factors were matched in groups who had achieved very different levels of academic achievement (highly successful students, moderately successful, and less successful based on academic achievement for the year), academic achievement was strongly related with several domains of emotional intelligence.

Parker, et al. (2004) used the transition from high school to university as the context for examining the relationship between emotional intelligence and academic performance. During the first month of classes, 372 first-year full-time students at a small Ontario University completed the short form of the emotional quotient inventory. At the end of the academic year the emotional quotient inventory data was matched with the student’s academic record. Predicting academic success from emotional intelligence variables produced divergent results depending on how the former variable was operationalized. When emotional quotient inventory variables were compared in groups who had achieved very different levels of academic success academic success was strongly associated with several dimensions of emotional intelligence.

Petrides, Frederickson, and Furnham (2004) examined the role of trait emotional intelligence in academic performance and in deviant behaviour at school on a sample of 650 pupils in British secondary education. Trait emotional intelligence moderated the
relationship between cognitive ability and academic performance. It was concluded that
the constellation of emotion-related self-perceived abilities and dispositions that the
aspects of trait emotional intelligence effect academic performance.

**Austin, et al. (2005)** in a group of 156 first year medical students completed measures of
emotional intelligence and physician empathy, and a scale assessing their feelings about a
communication skills course component. Females scored significantly higher than males
on emotional intelligence. Exam performance in the autumn term on a course component
covering general issues in medicine was positively and significantly related to emotional
intelligence score but there was no association between emotional intelligence and exam
performance later in the year. These findings provide limited evidence for a link between
emotional intelligence and academic performance for this student group.

**Katyal and Awasthi (2005)** selected 150 adolescent students randomly of Xth class from
different Government Schools in Chandigarh for assessment of gender differences in
emotional intelligence. The data were collected through standardized emotional
intelligence test. Girls were found to have higher emotional intelligence than that of boys.

**Parker, et al. (2005)** examined the generalizability of the youth form of a widely used
self-report measure of emotional intelligence in a sample of 384 aboriginal youth from
several rural areas in Canada. This sample was matched (by age and gender) with a
second rural Canadian sample of non-aboriginal youth (N = 384). The aboriginal
respondents were found to score significantly lower on the interpersonal, adaptability and
stress management dimensions of emotional intelligence compared to the non-aboriginal
children.

**Mestre, et al. (2006)** investigated the discriminant, criterion and incremental validity of
an ability measure of emotional intelligence. Students’ academic grades were obtained
from official school records at the end of the school year. The emotional intelligence test
was moderately related to social competence and predicted students’ final grades.

**Parker, et al. (2006)** examined the relationship between emotional intelligence and
academic retention. Participants were recruited during the first week of classes in their
first year at the university and completed a measure of emotional intelligence. Participants’ academic progress was tracked over the course of the year and students were divided into two groups. The first group consisted of students who withdrew from the university before their second year of study (N = 213); the second group consisted of a matched sample (on the basis of age, gender and ethnicity) of students who remained at the university for a second year of study (N= 213). Results revealed that students who persisted in their studies were significantly higher than those who withdrew on a broad range of emotional intelligence.

Pamela and Kathryn (2007) critically reviewed the research field of emotional intelligence (EI) to examine the usefulness of the construct in the debate on educational policy and practice. By examining two approaches to the theory and measurement of emotional intelligence, they tried to summarize the evidence linking emotional intelligence to life success and academic achievement. In conclusion, while a distinct construct of emotional intelligence remains debatable; many of the attributes encompassed by this term do predict life success.

Sridevi and Parveen (2008) studied relationship of emotional intelligence, adjustment, self concept and scholastic achievement of higher secondary students and found that there was a positive relationship between emotional intelligence, adjustment, self concept and achievement of higher secondary students.

Subramanyam and Rao (2008) studied academic achievement and emotional intelligence of secondary school children and found that there was no relation between academic achievement and emotional intelligence. Besides there was no significant difference with regard to the impact of gender on emotional intelligence and academic achievement.

Fabib and Letizia (2009) took in-depth look at the role of fluid intelligence, personality traits and emotional intelligence in relation to scholastic success verifying the existence of incremental validity of emotional intelligence with respect to fluid intelligence and personality variables. One hundred twenty-four students attending the last two years of high school were administered the Advanced Progressive Matrices, the Eysenck
Personality Questionnaire Revised Short Form, the Mayer-Salovey-Caruso Emotional Intelligence Test, the Bar-On Emotional Quotient Inventory: Short. The results demonstrated that emotional intelligence influenced scholastic success.

**Hassan, Sulaiman and Ishak (2009)** conducted an investigation to identify the emotional intelligence level among students in rural areas, and to find out the relationship between emotional intelligence and anxiety, as well as relation between emotional intelligence and academic achievement. Results showed that Emotional intelligence was positively significantly correlated with academic achievement of all variables including students’ age and gender. There were significant differences for emotional intelligence level among all students between both genders. Mean score of emotional intelligence within female students appeared to be higher than Male students.

**Qualter, et al. (2009)** tried to find out whether emotional intelligence mediates dropout in a UK institution and whether an emotional intelligence-based intervention might improve retention rates. Study 1 considered the effects of emotional intelligence upon retention, revealing that students with higher levels of emotional intelligence were more likely to progress to Year 2 of study. Study 2 evaluated an emotional intelligence-based intervention programme, demonstrating that students who showed an increase in emotional intelligence were more likely to persist with their studies.

**Jordan, et al. (2010)** examined the relationship between components of emotional intelligence (interpersonal ability, intrapersonal ability, adaptability and stress management) and academic performance in English, Maths and Science in a sample of 86 children during the primary–secondary school transition period. Results indicated that for both males and females, intrapersonal ability had little relationship with academic achievement, while adaptability had the strongest relationship with achievement in all subjects. Gender differences were particularly pronounced for science, for which stronger relationships were observed with all emotional intelligence components for males.

**Laborde, et al. (2010)** explored the influence of trait emotional intelligence and of preference for intuition and deliberation on short-term academic performance (i.e. an experimental task involving learning and decision-making). It was revealed that trait
emotional intelligence predicted significantly positively the test score. Findings supported the idea that trait emotional intelligence plays a role in academic performance.

**Nandwana and Joshi (2010)** conducted a study on 60 tribal adolescents of 16 to 18 years studying in secondary schools of purposively selected Tidi village of Udipur. The level of emotional intelligence of the tribal adolescents was assessed by administering a standardised emotional intelligence inventory (MEII) by S.K Mangal and Shubhra Mangal. Findings revealed that majority of adolescents (55%) were found to have poor level of emotional intelligence. There was significant difference of emotional intelligence between tribal adolescent boys and girls; boys were comparatively higher than girls.

**Olatoye, et al. (2010)** investigated the extent to which the level of creativity and emotional intelligence influenced the level of academic achievement of Higher National Diploma business Administration students of polytechnics in South-Western states of Nigeria. Findings of the study revealed that there was negative relationship between emotional intelligence and academic achievement and further, there was no significant difference between male and female students’ academic achievement, creativity and emotional intelligence.

**Reddy and Venu (2010)** made an attempt to study the effect of gender and locality on the emotional intelligence of secondary school students. Sample of the study consisted of 200 boys and girls collected from rural and urban schools in and around Tirupathi. Emotional intelligence scale developed by Natun Kumar Thingujah and Usha Ram was administered on the sample to assess the emotional intelligence. Findings revealed that girls were found to be higher in their emotional intelligence than boys. Further, it was found that students belonging to urban areas have higher emotional intelligence than the students of rural areas.

**Brackett, et al. (2011)** in an article presented an overview of the ability model of emotional intelligence and includes a discussion about how and why the concept became useful in both educational and workplace settings. With the review of four underlying emotional abilities comprising emotional intelligence they described what is known about...
how emotionally intelligent people function both intra- and interpersonally in both academic and workplace settings.

Chawla, et al. (2011) carried out an investigation to find out the correlation among general intelligence, emotional intelligence and scholastic achievement of students of senior secondary schools of Punjab district. It was observed that there was insignificant positive correlation between emotional intelligence and scholastic achievement.

Fallahzadeh (2011) surveyed emotional intelligence and its relation with academic performance of medical science students. The sample consisted of two hundred and twenty three (223) adolescent students, 70 males and 153 females. In order to analyze data, regression analysis, Pearson’s correlation and T-test were used. Pearson's correlation coefficient showed that there is a significant relationship between emotional intelligence and academic performance. There were significant differences in the emotional intelligence scores by location of students.

Jacqueline and Meirovich (2011) explored the role participative classroom environments play in the development of college students’ emotional intelligence, and whether emotional intelligence is related to academic achievement. Results showed that emotional intelligence was not related to academic achievement.

MacCann, et al. (2011) designed two studies to examine the relationships between performance measures of emotional intelligence, coping styles, and academic achievement. In each of these studies, both emotional intelligence and coping styles were significantly related to academic achievement. Collectively, these results suggested that better educational outcomes might be achieved by targeting skills relating to emotion management and problem-focused coping.

Joibaria and Niloufar (2011) investigated the relations between components of emotional intelligence and students’ academic achievement of high schools in Tehran. The sample included about 380 adolescents, 180 girls and 200 boys. Results showed significant correlation between main components of emotional intelligence including self-motivation, self-awareness, self-regulation, social consciousness, social skills and
students’ academic achievement. Also there was meaningful difference between male and female students’ emotional intelligence.

**Khajepour (2011)** investigated the relationship between emotional intelligence, parental involvement and academic performance of 300 high school adolescent students in Tehran, Iran of age ranging between 15 and 18 years. Results showed that both emotional intelligence and parental involvement could predict academic achievement in high school students. Similarly, there were significant positive relationship between emotional intelligence and academic achievement; and between parental involvement and academic achievement.

**Pope, Claire and Pamela (2011)** examined the relationship between overall emotional intelligence and specific emotional intelligence competencies in 10135 undergraduate students in the UK. Results showed that there were no differences in overall emotional intelligence or specific emotional intelligence competencies in those students who graduated compared to those who failed to graduate. Whilst global emotional intelligence did not significantly predict final academic success, specific EI competencies (conscientiousness, adaptability, empathy, organisational awareness, and building bonds) significantly predicted academic success after controlling for gender.

**Rani (2011)** proposed an investigation to offer an understanding of an important psychological factor, namely, emotional intelligence for visually disabled students studying in integrated and segregated school setting and find out its impact on their academic achievement. The sample was taken from integrated and segregated schools located in Delhi. Results of the study revealed that correlation between emotional intelligence and academic achievement was found significant in both the settings. Further, integrated visually disabled students were emotionally more intelligent than their counterparts in segregated schools. Similar results have been obtained for academic achievement.

**Rodeiro, et al. (2011)** investigated whether scores on a questionnaire of trait emotional intelligence were related to school performance in a sample of British pupils. Results showed that high performing students had higher trait emotional intelligence scores than
low performing students and that some aspects of trait emotional intelligence (motivation and low impulsivity) as well as total trait emotional intelligence were significant predictors of academic achievement.

**Yazifi, et al. (2011)** conducted a cross-sectional study in order to investigate the influence of emotional intelligence and self-efficacy beliefs on academic achievement of high school students. The sample consisted of 407 (Female= 236, Male= 171) participants recruited from high school students. The results indicated that age, gender and self-efficacy were the significant predictors of academic achievement but emotional intelligence was insignificant. On the other hand females’ academic achievement scores were found to be significantly higher than males.

**Sznitman, et al. (2011)** examined the role of adolescent emotional well-being (indicators of depression) as a mediator of the effects of poverty on differences in educational achievement. Results showed child poverty rates were related to both adolescent emotional well-being and educational achievement.

**Agnoli, et al. (2012)** conducted a study to offer an exploration of the predictive validity of cognitive ability and emotional intelligence (EI) on scholastic achievement in a sample of Italian school-aged children (8–11 years). The results demonstrated an interaction between trait EI and cognitive ability in predicting academic performance. In particular, trait EI was positively associated with better language performance in children characterised by low or medium cognitive ability, but not in pupils characterised by high cognitive ability. Moreover, results showed that trait EI had a unique power to predict math performance.

**Hansenne and Jessica (2012)** undertook a study to investigate the incremental validity of emotional intelligence and creativity in an elementary school setting. Seventy-three children aged from 9 to 12 years old were recruited to participate in the study. Verbal and figural creativity were assessed using Torrance’s test and EI with the Trait Emotional Intelligence Questionnaire- Child Form. Results showed that emotional intelligence had no influence on academic performance.
Khan and Hassan (2012) undertook an investigation to study the emotional intelligence of children of working and non-working mothers. Emotional intelligence scale by Hyde et al. was employed for collection of data and t-test was used for analysis of data. Results of the study highlighted that children of non-working mothers were more emotionally intelligent than children of working mothers. Children of working and non-working mother showed significant difference in self-awareness, empathy, self-motivation, self-stability, managing relations, integrity, self-development and altruistic behaviour.

Ratnaprabha, et al. (2013) in their study showed no association between paying attention to one's own emotions and experiencing feelings with clarity with the scholastic performance, while it showed significant association with the ability to recover from negative states of mind, which is the most important domain of EI as mentioned in several literatures.

Saklofske, et al. (2012) examined the associations of personality, affect, trait emotional intelligence (EI) and coping style measured at the start of the academic year with later academic performance in a group of undergraduate students at the University of Edinburgh. The associations of the dispositional and affect measures with concurrent stress and life satisfaction were also examined. The survey was completed by 238 students, of whom 163 gave permission for their end-of-year marks to be accessed. Complete data for modelling stress and academic success were available for 216 and 156 students respectively. Structural equation modelling showed that academic performance was predicted by few factors of emotional intelligence; conscientiousness, agreeableness.

Yahaya, et al. (2012) examined the impact of the five emotional intelligence elements identified as self-awareness, emotional management, self-motivation, empathy, interpersonal skills towards secondary school students’ academic achievement. This study also aimed to identify whether the five elements of emotional intelligence have been able to contribute to academic achievement. The results showed significant relationship between self-awareness, emotional management and empathy with academic achievement. Multiple regression analysis showed that only three
elements of emotional intelligence i.e. self-awareness, self motivation and empathy accounted for 8.7% of variation in academic achievement.

Zandi (2012) in an article tried to show the role of emotional intelligence in French language learning and academic success of the male students. For this purpose, 250 male students were asked to take the EQ questionnaire, the correlations between EQ and reading, listening, speaking, writing, and GPA were then computed. The results revealed significant, though little, correlations between emotional intelligence and academic success.

Lal (2014) studied emotional intelligence of scheduled caste students in relation to academic achievement with the objective to study relationship between emotional intelligence and academic achievement of male and female students of arts and science stream by taking a sample of 300 students from Meerut region through cluster random sampling technique and found that there was significant difference between mean achievement scores of male scheduled caste students of arts and science stream having high and low emotional intelligence; there was no significant difference between mean achievement scores of female scheduled caste students of arts stream having high and low emotional intelligence. Further, the male scheduled caste students had high emotional intelligence and academically superior to their counterparts.

2.3) Studies on Socio-Economic Status

Chopra (1967) studied the relationship of socio-economic status with academic achievement of the adolescent students. It was observed that there was positive relationship between the level of parental occupation and mean high-school marks. Analysis of variance showed that the differences in the mean achievement scores of the students belonging to different occupational groups were statistically significant.

Richard, Brewer and Mary (1986) analysed the way in which socio-economic disadvantage affects the educational performance of children from different ethnic
groups. Nationally representative data was provided by the 10 year follow-up survey of the Child Health and Education Study. The effects of nine indicators of socio-economic disadvantage on the intelligence, and reading test scores of United Kingdom, West Indian and Asian children were investigated. Differences were found between these groups of children in terms of the relationships between the disadvantage indicators and the test scores. The most striking result was the lack of sensitivity of the West Indian children's test scores to socio-economic conditions. Attention was focused on this phenomenon, the analysis being repeated using United Kingdom and Asian children who had been matched with the West Indian children on the basis of intelligence. Again it was found that, unlike Asian and United Kingdom children, the test scores of West Indian children did not show any statistically significant relationships between the nine criteria of socio-economic disadvantage. Subsequent analyses indicated a relationship between mother's social class and also mother's age and reading attainment in West Indian children.

**Ramaswamy (1988)** aimed at analysing factors that are responsible for the scholastic performance of adolescent students with the following main objectives: (i) to investigate the relationship between academic achievement and socio-economic status in high achievers, (ii) to investigate the relationship between academic achievement and socio-economic status in both high and low achievers combined, and (iii) to investigate the significance of difference between high and low achievers with regard to their personality, achievement-motivation, self-concept, study habits and socio-economic status. The main findings are as follows: (1) Academic achievement was found positively related to socio-economic status among high and low achieving boys and girls. (2) Significant difference was found between high and low achievers in socio-economic status.

**Webb (1988)** in his paper considered the importance of home background for the achievement of students in A-Level geography in Jamaica and England. The measurement of home background was discussed, and details were given concerning the instruction of a series of individual variables and a composite factor of home background. Evidence of the study suggested that home background, whether measured by a
composite factor or by a series of individual variables, has no important association with achievement which further suggested that achievement at the A-level stage may have more similarity (in terms of the importance of the home background of students) with achievement in higher education, than with the normal pattern of academic achievement in schooling up to the age of 15-16 years.

Ganguly (1989) tried to establish a relationship between socio-economic status (SES) and scholastic achievement of students in a particular setting with two main purposes: (i) to investigate whether there is any appreciable difference in the scholastic achievement of upper, middle and lower socio-economic group of students, and (ii) to enquire whether different SES groups of students in urban areas differ in their achievement scores from those in rural areas. The main findings of the study are as follows: (1) the mean achievement scores of the upper SES group of urban areas in all the three groups of subjects differed significantly from those of the lower groups. The upper SES groups had better in all the three groups of subjects. (2) In rural areas also the upper socio-economic status group differed significantly in its achievement scores from the lower socio-economic status in all three groups of subjects and all these were found to be significant. (3) The upper and lower socio-economic status groups of urban areas differed significantly in their mean scores in the three areas of achievement from those of upper socio-economic status and lower socio-economic status of rural areas. The difference between the means in all the areas of achievement was found to be significant.

Devanesan (1990) conducted a study on socio-economic status, achievement-motivation and scholastic achievement of higher secondary students in order to find out the relationship between socio-economic status, achievement-motivation and scholastic achievement of higher secondary students, and to find out the difference among various groups of higher secondary students in socio-economic status, achievement-motivation and scholastic achievement. The results showed that there was a significant relationship between socio-economic status and scholastic achievement.

Muthumanickam (1992) attempted to find out the relationship between the academic achievement of students and their reasoning ability, interest in commerce and socio-
economic status with the following objectives: (i) to study the reasoning ability, socio-economic status and interest in commerce of plus-two commerce students, (ii) to find out the relationship, if any, among commerce achievement, reasoning ability, socio-economic status and interest in commerce. Major findings of the study are as follows: (1) Boys and girls did not differ in their achievement in commerce. (2) There was a positive, significant correlation between achievement in commerce and reasoning ability, socio-economic status and interest in commerce.

Sammons (1995) examined the size and stability of gender, ethnic and socio-economic differences in students' educational achievement over a 9 year period. Both absolute differences in cognitive attainment and relative differences in progress were considered. The study, which is part of a follow up of an age cohort originally included in the 'School Matters' research, utilised multilevel modelling techniques. Attainment in reading and mathematics was reported at primary school (Year 3 and 5), secondary transfer (Year 6) and in the General Certificate of Secondary Education (GCSE) (Year 11). Whilst differences in achievement related to gender and socio-economic factors remained consistent and generally increased over time, greater change was found in patterns of ethnic differences.

Portes and Dag (1996) in an article reported the findings of a study of 5,266 second-generation high school adolescent students in Florida and California, who were children of Cuban and Vietnamese immigrants (representative of relatively advantaged groups) and of Haitian and Mexican immigrants (representative of relatively disadvantaged groups). The study found that parents' socioeconomic status (SES), length of U.S. residence, and hours spent on homework significantly affected the students' academic performance, but did not eliminate the effects of ethnic community. Attendance at higher-SES schools increased the average academic performance and the positive effect of parents' SES, whereas attendance at inner-city schools flattened the negative effect of ethnic disadvantage. However, school context had no appreciable effect on children from advantaged ethnic backgrounds.
Desimone (1999) used the data from the National Education Longitudinal Study of 1988 to examine the relationship between 12 types of parent involvement and 8th-grade mathematics and reading scores. Ordinary least-squares regression indicated that statistically significant differences existed in the relationship between parent involvement and student achievement according to the students' race-ethnicity (i.e., Asian, Black, Hispanic, and White) and family income (i.e., low and middle).

Laar and Jim (2001) in a paper sketched several mechanisms by which low social status is transformed into low academic performance. Using the perspective of social dominance theory, they reviewed three processes by which this transformation takes place. These processes include: (a) the effects of lower economic, cultural, and social capital; (b) the effects of personal and institutional discrimination; and (c) reactions to low social status by members of low status groups. It is argued that members of low status groups engage in various protective mechanisms in response to their low social status. Although these mechanisms have the benefit of protecting self-esteem, this benefit was purchased at a potential cost. This cost included reduced motivation to succeed which results in lower academic achievement and subsequent reinforcement of the status hierarchy.

Okpala, et al. (2001) examined the influence of parental involvement, socioeconomic status of parents, and instructional supplies expenditures on mathematics achievement scores of Grade 4 students in a low-income county in North Carolina. An educational production function framework was used to analyze the influence of educational resources on mathematics achievement scores. Results showed that the percentage of students in reduced-price lunch programs was related negatively to students’ academic performance in mathematics thereby supporting the notion that economic circumstances are correlated with academic achievement. Furthermore, results indicated that instructional supplies expenditures per pupil and parental volunteer hours were not statistically significant in explaining mathematics test scores.

Considine and Zappala (2002) in a paper presented new data on over 3,000 students from financially disadvantaged backgrounds to estimate the extent of socio-economic,
family, individual and contextual factors on school educational performance. The results from the logistic regression indicated that sex, ethnicity, parental educational attainment were all statistically significant variables and predictors of academic performance. In contrast, family structure, the main source of family income and geographical location did not significantly predict variation in school performance once other factors were controlled for.

Livaditis, et al. (2003) aimed at investigating the association between school performance and family and psychological factors. A sample of 1315 male and female secondary school adolescent students was recruited from 54 classes randomly selected out of a total of 534 classes in the Greek region of East Macedonia and Thrace. School performance was measured dichotomously according to the final school results (pass or fail). Family and socio-demographic data were collected and psychological problems were measured using the Youth Self Report (YSR). Male gender, low socioeconomic status, low parental education and parental separation were all positively associated with school failure. Those who failed scored higher on the YSR problem scales than those who passed, and boys were more affected by adverse circumstances than girls. The results indicated that students, especially boys, with psychological problems and those coming from families of low socioeconomic and educational status are at high risk of school failure.

Sirin (2005) in a meta-analysis reviewed the literature on socioeconomic status (SES) and academic achievement in journal articles published between 1990 and 2000. The sample included 101,157 students, 6,871 schools, and 128 school districts gathered from 74 independent samples. The results showed a medium to strong SES-achievement relation. This relation, however, was moderated by the type of SES-achievement measure. The relation was also contingent upon school level, minority status, and school location.

Hansen (2008) examined changes in the effect of socioeconomic status on reading achievement at individual and school levels between 1991 and 2001. Data from 9 countries that participated in both the International Association for the Evaluation of
Educational Achievement (IEA), Reading Literacy Study 1991 and, the Trend Study in the Progress in International Reading Literacy Study (PIRLS) 2001 were included in the analyses. The result showed that socioeconomic status effect achievement.

Tarumi (2008) in an article used the data from the Programme for International Student Assessment (PISA) 2000 to examine whether the influence of family background on educational achievement is sensitive to different measures of the family's socio-economic status (SES). The study found that, when a multidimensional measure of SES was used, the family background had a stronger influence on achievement across countries than if the simpler measure of SES was used.

Moon and Joohi (2009) used a structural equation model (SEM) and multiple indicators and multiple causes (MIMIC) model to test family factors, parent psychological well-being, parent–child home activity, and parent school involvement in relation to children’s school achievement. The results of this study are as follows: (1) Family factors, especially parental education levels and family income, were significantly associated with students’ school achievement. (2) Parent–child home activity was significantly related to students’ school achievement but in a negative direction. (3) Family income was significantly associated with parental psychological well-being, parental school involvement, and children’s school achievement.

Tomula and Kazim (2009) investigated the effects of familial variables (education of the parents and family income) on the academic achievement (in mathematics, reading skills and science) of 15-year-old students in Turkey with respect to regional diversity. The study was carried out on the data obtained from the PISA 2006 research in Turkey. The independent variables of the research were education level of the parents, and average annual income; the dependent variables were the students’ proficiency levels in science, mathematics and in reading skills. The general result of the research was that familial variables affect students’ academic achievement. Familial variables affect students academic achievement in mathematics most and their reading skills least. As regional
developmental level decreases, effects of familial variables on academic achievement decrease as well.

**Albrecht and Don (2010)** utilized data from the National Longitudinal Study of Adolescent Health (Add Health) to better understand the relationship between social advantage, high school educational achievements, adolescent behaviour, and educational attainment. It was found that individuals from socially advantaged backgrounds had greater high school educational achievements and was less likely to engage in problematic adolescent behaviour. The socially advantaged did have greater levels of educational attainment.

**McConney and Laura (2010)** used a large international dataset to examine how student SES, school SES and self-efficacy are associated with mathematics performance. Findings also showed that the association of school SES with maths achievement persisted even when subject-specific self-efficacy was taken into account. In particular, the association between maths achievement and school SES appeared moderately stronger for students with higher levels of self-efficacy compared with their peers with lower self-efficacy. Furthermore, among students with similar levels of self-efficacy, the association between maths achievement and school SES tends to be stronger for lower SES students than for their more privileged peers.

**Baird (2011)** in a paper investigated achievement gaps between low and high socio-economic students in 19 high-income countries. On average, math scores of students with indicators of high socio-economic status (SES) were over one standard deviation above those with low SES indicators. The paper estimated the extent to which these achievement gaps can be attributed to differences in classroom and school-level resources available to students from different SES backgrounds. In some countries, achievement gaps can be largely explained by differences in the characteristics of schools attended. However, in many other countries, the gap appears more closely related to differences in the characteristics of the students. The results pointed out the importance of institutional difference among countries in explaining international differences in the quality of education received by different groups within a nation.
**Farooq, et al. (2011)** conducted a study to examine different factors influencing the academic performance of secondary school students in a city of Pakistan. The respondents for this study were 10th grade students (300 male & 300 female). The results of the study revealed that socio-economic status (SES) and parents’ education have a significant effect on students’ overall academic achievement as well as achievement in the subjects of Mathematics and English. The high and average socio-economic level affected the performance more than the lower level. It was very interesting that parents’ education means more than their occupation in relation to their children’s academic performance at school. It was also found that girls perform better than the male students.

**Kumar and Vellymalay (2012)** studied the relationship between parent’s socioeconomic status and parental involvement in their child’s education at home. The findings of this study indicated that most parents, regardless of their socio-economic background showed a high degree of involvement in most of the involvement strategies at home to ensure their child’s educational success. However, the parent’s education level, employment status, and income among the parents from the lower socioeconomic class affect their understanding and knowledge on the actual values that need to be placed on their child’s education. As a result, the higher the parent’s socio-economic status, greater is the parent’s involvement in their child’s education.

### 2.4) Studies on Scheduled Tribes

**Avannindra and Rai (1994)** undertook a comparative study of some personality variables in Oraon tribal and non-tribal students of Sagar University. The objective was to compare the Oraon tribal students with their non-tribal counterparts, residing in the University hostel on four personality variables, i.e. authoritarianism, dogmatism, rigidity and intolerance of ambiguity. Major findings were: (1) the tribal and non-tribal boys differed significantly on authoritarianism and intolerance of ambiguity in favour of tribal boys. But they did not differ significantly on dogmatism and rigidity. (2) The tribal and non-tribal girls differed significantly on authoritarianism and rigidity factors in favour of non-tribal girls. But they did not differ on dogmatism and intolerance of ambiguity. (3) The tribal boys differed significantly from tribal girls on authoritarianism, rigidity and
tolerance of ambiguity in favour of tribal boys. (4) Non-tribal boys and girls differed significantly on authoritarianism, rigidity and intolerance of ambiguity in favour of non-tribal girls.

**Raju and Gafoor (1994)** studied some socio-personal factors of tribal and non-tribal pupils in relation to achievement in biology. Results revealed that for the non-tribal and tribal pupils with below average SES and below average socio-personal adjustment, and below average SES and average socio-personal adjustment did not differ significantly in their achievement in biology. The non-tribals had significant advantage over the tribal pupils with respect to their achievement in biology. Socio-personal adjustment also exerted its own effect on the achievement in biology. Non-tribal pupils had significant superiority over the tribals in their achievement in biology. In most of the cases, the non-tribal pupils possess a significant or even slight advantage over the tribals in their achievement in biology of the different levels of socio-personal adjustment and socio-economic status.

**Verma and Nagi (1995)** undertook a cross-cultural study to examine academic motivation among tribal and non-tribal adolescents. The objectives of this study were to study the differences in academic motivation of tribal male and non-tribal male, tribal female and non-tribal female adolescent students and explore the sex difference in the academic motivation of tribal adolescent students and non-tribal adolescent students. It was found that non-tribal adolescent students had significantly higher level of academic motivation as compared to tribal adolescent students. In both subgroups male and female non-tribal adolescents superseded their tribal adolescent counterparts. In tribal and non-tribal groups, sex difference did not come out to be significant differentiating factor with reference to the academic motivation.

**Latchanna (1996)** took a comparative study of grade-repeaters and dropouts in tribal and non-tribal primary schools. The objectives were: (i) to undertake a comparative study of grade repeaters and dropouts in tribal and non-tribal area; (ii) to examine the cause of wastage and stagnation; (iii) to estimate unit cost for tribal and non-tribal pupils and work out the monetary value of wastage; and (iv) suggest measures for improving enrolment
and retention rates to be maintained at hundred percent. The findings were: (1) the average size of the primary schools in the tribal areas was smaller than that of non-tribal primary schools though the facilities were same in both the schools and also it did not make any difference in the estimate of the unit cost of primary education. (2) The smaller size of the tribal primary school caused greater wastage of expenditure than the non-tribal primary school. (3) The ratio of wastage in the form of grade-repeaters and dropouts was high in the tribal primary schools than the non-tribal primary schools because of various sociological and economic factors. (4) Given, the same pattern of administrative arrangements and infrastructure facilities, the cost per pupil in the tribal primary school was found to be Rs. 2.51 times more than that of non-tribal primary schools.

Jain (1998) studied social competence among tribal and non-tribal pupils. The aim was to assess the relative status of social competence among tribal and non-tribal pupils on account of their sex, locale and grade. Social tolerance of tribal pupils was found much higher than non-tribal pupils. Under cultural group and sex categories, non-tribal people showed much clear superiority. However under locale and grade categories the difference was less clear for both the groups. Non-tribal pupils were significantly higher on social competition, social leadership and composite social competence.

Kusuma (1998) studied factors influencing creativity and cognitive styles in tribal and non-tribal children. The aim was to study how demographic (ethnicity, age and sex), psychological (personality and locus of control) and home environment contribute to the expression of creativity and cognitive styles in Sugali tribal and non-tribal children. Major findings revealed that non-tribal children excelled the tribal children in verbal components of creativity. However, there was no significant difference between tribal and non-tribal children with regard to non-verbal creativity. The higher percentage (51%) of tribal children was field dependents and higher percentage (55%) of non-tribal children were field independents. There was significant correlation between creativity and field independents cognitive style. In the tribal group, the verbal and non-verbal creativity was not significantly correlated with reflection/impulsivity cognitive style. On the other hand,
in the non-tribal group, only verbal creativity was significantly and positively related with reflection/impulsivity cognitive style.

Atasi (2003) studied reading and achievement behaviour patterns of tribal and non-tribal children in order to investigate the performance characteristics of difference between tribal and non-tribal subculture groups on reading, meta-linguistic and classroom achievement. The findings revealed that non-tribal children performed better than their tribal counterparts in reading comprehension but the tribal did better on meta-linguistic tasks. The difference in the performance was attributed to differences in the home environment and exposure to various opportunities for both the groups.

Jayaswal, et al. (2003) examined the role of parental support and academic achievement of 300 tribal school students selected by multistage sampling technique. The study revealed that parents of high achievers were more supportive in the studies of their children, had higher aspiration for their educational success, and high prestigious occupation with attractive financial return, prefer counselling for behaviour modification, were liberal and allow peer mixing whereas parents of low achievers were less supportive in their children’s studies, less ambitious for their upward mobility, believe in physical punishment for correct behaviour, were authoritarian and did not allow peer mixing.

Bhat (2007) in his study dealt with access to education for Gujjars and Bakarwals of Kashmir. The main findings of the study were: (1) only 60.65% children of Gujjar and Bakarwal population of the below 15 year of age. (2) The schools being run on mobile names were found non-migratory. (3) There was lack of infrastructure of every type in existing schools. (4) Maximum teachers were found low qualified and less experienced. (5) Most of the Gujjar and Bakarwal students were first generation learners.

Rani, et al. (2011) attempted to highlight the situation of tribal women education by analysing present status of educational facilities availed by tribal girls and women and suggested that there should be organisation of skill and vocational training programmes for tribal women living in rural areas.
Malyadri (2010) presented a paper with an attempt to analyze the problems in the field of tribal children education and suggested measures for the development of education among the tribals in Khammam District of Andhra Pradesh state in India. The study revealed that people of the remote area are superstitious and addicted to blind beliefs. Hence, they do not understand the value of education.

Erigala (2012) presented a paper emphasizing the existence of social exclusion which acted as an impediment in the development of education of the Scheduled Tribes and revealed that lack of relevant social policy resulted in prevalence of social exclusion and slow growth of education among Scheduled tribes.

Suri (2014) presented a paper highlighting the role played by seasonal education camps in the education of nomadic children in Jammu and Kashmir. It also tried to explore the attempts made by the Jammu and Kashmir government to provide education to nomads during their seasonal migratory practices and suggested few measures for providing better education to pastoral nomads.

2.5) Overview of Related Literature

The studies that were reviewed in the above subsections help the investigator to sort out the domains that require further investigation and to decide the methodology and design of the present study. Studies whether conducted in India or abroad, support multiple results and tried to associate a number of variables with academic achievement producing contrary and mixed results.

With regard to scientific temper, very few researches have been conducted (Showket, 2008; Qadir, 2011; Aezum & Wani, 2013; Maqbool & Akbar, 2013; Mudasir & Yatu, 2013; Bhat, & Netragaonkar, 2014; DeSouza, 2014). Different researches focused on the relationship between scientific temper and scientific attitude with academic achievement of the students (Darching puri, 1989; Alexander, Benny, 1990; Kar, 1990; Rao, 1990; Kumar, 1991; Singh, et al., 2002; Sharma, 2007; Akpınar, et al., 2009; Mei-Shiu Chiu, 2010; Odom, et al., 2011; Shin-Feng Chen, et al., 2012; Jindal, 2013; Bhat & Netragaonkar, 2014). Darching puri, (1989) examined the relationship in science,
attitudes towards science and found significant relationships between scores on scientific attitude and achievement in science and sex difference in achievement in science favouring males existed. Similar results were reported by Kar (1990). In the same year, Rao (1990) reported highly significant and positive association among scientific attitude, scientific aptitude and biology achievement. However, there was no influence of sex on scientific attitude. Similarly, Alexander (1990) concluded that high scores on critical thinking, scientific attitude and socio-economic status favoured achievement in science. Gupta (2007) in a study concluded that, Hindu students possess higher level of scientific temper than Muslim students. Further, it was indicated that there is no difference in the level of scientific temper of male and female students. It was also revealed that urban students had higher level of scientific temper than rural students. Later, Qadir (2011) in a comparative study among rural and urban adolescent girls of Kashmir on scientific temper measure concluded that the two groups of students do not differ significantly on scientific temper scale but, urban girls were found to have higher academic achievement than their counter parts. In a similar study, no significant difference was found between Kashmiri and Pakhtoon students on the scientific temper variable. However, Kashmiri students showed better academic achievement than Pakhtoon students (Mudasir & Yatu, 2013). More recently, Aezum & Wani (2013) concluded urban students scored higher than rural students on scientific temper. Maqbool & Akbar (2013) reported significant difference on curiosity and objectivity aspects of scientific temper scale, and academic achievement between science and social science adolescents.

Efforts have been made by many researchers to relate academic achievement of the students with emotional intelligence. Parker, et al (2004) tried to examine the relationship between emotional intelligence and academic achievement in high school and found academic success was strongly associated with several dimensions of emotional intelligence. Same results were reported by Azita Joibaria & Niloufar Mohammad Taheri (2011); and Carolyn MacCann, et al. (2011); in each of these studies, emotional intelligence was significantly related to academic achievement. Further, Parker, et al (2006) examined the relationship between emotional intelligence and academic retention. Results revealed that students who persisted in their studies were
significantly higher than those who withdrew on a broad range of emotional and social competencies. The study conducted by Massoumeh Zandi (2012) attempted to show the role of emotional intelligence in French language learning and academic success of the male students. The results revealed significant, though little, correlations between EQ, certain and some skills, and academic success. Pamela Qualter, et al (2012) examined the long term effects of ability- and trait EI on academic performance for British adolescents. Trait EI has a direct effect on Year 11 performance for boys only.

However, there are studies which indicated no relationship between emotional intelligence and academic achievement. Shaun Newsome, et al (2000) conducted study in order to determine the relationship of emotional intelligence, cognitive ability, and personality with academic achievement and concluded neither of the EQ-i factor scores, nor the total EQ-i score, was significantly related to academic achievement. Similarly, Raymond, et al (2003) examined the relationship between emotional intelligence (EI) and academic achievement. Results indicated that EI is not a strong predictor of academic achievement regardless of the type of instrument used to measure it. Later, Debbie Pope (2011) concluded that whilst global emotional intelligence did not significantly predict academic achievement, specific EI competencies (conscientiousness, adaptability, empathy, organisational awareness, and building bonds) significantly predicted after controlling for gender. Further Shipley, Jackson, & Segrest, (2010) concluded that global trait emotional intelligence was not significantly associated with academic achievement. Similar result was reported by Hikmet Yazifi, et al (2011). Recently, Michel Hansenne & Jessica Legrand (2012) reported that children school performances were predicted by creativity. However emotional intelligence had no influence on performance.

Studies in the area of socio-economic status are in plenty of number but only most relevant studies are included in the review section. Ganguly (1989) tried to establish a relationship between socio-economic status and scholastic achievement of students and concluded that the mean achievement scores of the upper socio-economic status group of urban areas differed significantly from those of the lower groups. Further Devanesan (1990) conducted a study on socio-economic status, achievement-motivation and
scholastic achievement of higher secondary students and found that there was a significant relationship between socio-economic status and scholastic achievement. Same results were reported by Hari karishnan (1992); Alam (2001). Alejandro Portes & Dag MacLeod (1996) in an article reported the findings of a study of 5,266 second-generation high school students in Florida and California. The study found that parents' socioeconomic status (SES), length of U.S. residence, and hours spent on homework significantly affected the students' academic performance. Smith, Brooks-Gunn & Klebanov (1997) reported that family income contributed to children's academic achievement. Holmquist (2003) revealed that a significant and positive relationship exists between socio-economic status and academic achievement of the students. Jennifer (2006) indicated that the strongest predictor of students’ performance is their socio-economic status.

However, Webb (1988) in his paper considered the importance of home background for the achievement of students in A-Level geography in Jamaica and England. Evidence of the study suggested that home background has no important association with achievement. Garg & Chaturvedi (1992) attempted to measure the contribution of intelligence (IQ) and socio-economic status (SES) in determining academic achievement and found no relationship between SES and Achievement.

Different research studies have been conducted on tribal students. Dana Dunn (1993); Kaushik, Avanindra & Rai (1994); Santhamma & Gafoor (1994); Verma, & Nagi (1995); Latchanna (1996); Panda (1996); Jain (1998); Kusuma (1998); Mohanty (2003); Jayaswal, et al. (2003); Abusaleh Shariff, et al.(2009); Bhat, (2007); Sandhya Rani, et al. (2011); Malyadri, (2012); Erigala (2012); Suri (2014). Dana Dunn (1993) focusing on the situation of women in scheduled castes and tribes – groups. Findings indicated that relative to men, women in these groups have far more limited access to both educational and employment resources. Raju, Santhamma & Abdul Gafoor (1994) studied some socio-personal factors of tribal and non-tribal pupils in relation to achievement in biology. Results revealed that Non-tribal pupils had significant superiority over the tribals in their achievement in biology. Verma & Nagi (1995) undertook a cross-cultural study to
examine academic motivation among tribal and non-tribal adolescents. It was found that non-tribal adolescent students had significantly higher level of academic motivation as compared to tribal adolescent students. Mohanty (2003) studied reading and achievement behaviour patterns of tribal and non-tribal children. The findings revealed that non-tribal children performed better than their tribal counterparts in reading comprehension but the tribal did better on meta-linguistic tasks. Bhat (2007) in the study related to educational access to Gujjars and Bakarwals of Kashmir indicated that, there was lack of infrastructure of every type in existing schools and maximum teachers were found low qualified and less experienced.

The variation of results and contrary findings obtained with different variables as mentioned above indicated that there is a need of more in depth studies to clarify the role of scientific temper, emotional intelligence and socio-economic status on adolescent students. There has been hardly any single attempt to study the scientific temper, emotional intelligence and socio-economic status as impacting factors of academic achievement of tribal and non-tribal adolescent students of Kashmir. Since these variables are supposed to influence the academic achievement of students, the present research study which has been taken up by the investigator was a humble attempt to fill this research gap.