CHAPTER V
FINDINGS AND DISCUSSION

5.1. Findings

1. Cognitive style influenced the academic achievement of adolescents. Adolescents having different levels (systematic, intuitive, integrated, undifferentiated and split) of cognitive style possessed different levels of academic achievement. Adolescents having integrated cognitive style possessed higher academic achievement than those having systematic, intuitive, undifferentiated and split cognitive style.

2. Systematic cognitive style influenced the academic achievement of adolescents. Adolescents having high systematic cognitive style possessed higher academic achievement than those having low, medium low and medium high systematic cognitive style. The trend showed that higher the systematic cognitive style higher was the academic achievement.

3. Intuitive cognitive style influenced the academic achievement of adolescents. Adolescents having high intuitive cognitive style possessed higher academic achievement than those having low, medium low and medium high intuitive cognitive style. The trend showed that higher the intuitive cognitive style higher was the academic achievement.

4. Personality factor A, C, D, E, F, G, I, J, O, Q2, Q3 and Q4 did not influence the academic achievement of adolescents, whereas personality factor B and H influenced the academic achievement of adolescents. Adolescent having average level of personality factor B possessed higher academic achievement than those having low and high level of personality factor B. Adolescent having high level of personality factor H possessed higher academic achievement than those having low and average level of personality factor H.

5. Home adjustment influenced the academic achievement of adolescents. Adolescents having good level of home adjustment possessed higher academic achievement than those having average, unsatisfactory and very unsatisfactory level of home adjustment.

6. Health adjustment influenced the academic achievement of adolescents. Adolescents having excellent level of health adjustment possessed higher academic achievement than those having good, average, unsatisfactory and very unsatisfactory level of health adjustment.

7. Social adjustment did not influence the academic achievement of adolescents.

8. Emotional adjustment influenced the academic achievement of adolescents. Adolescents having good level of emotional adjustment possessed higher academic achievement than
those having excellent, average, unsatisfactory and very unsatisfactory level of emotional adjustment.

9. Gender influenced the academic achievement of adolescents. Females had more academic achievement than male students.

10. Location influenced the academic achievement of adolescents. Students residing in urban area had more academic achievement than students residing in rural area.

11. Type of school did not influence the academic achievement of adolescents.

12. There was no influence of interaction between gender and cognitive style; gender and systematic cognitive style on academic achievement of adolescents.

13. There was influence of interaction between gender and intuitive cognitive style on academic achievement of adolescents. At low, medium low and high level of intuitive cognitive style the academic achievement of females was higher than male adolescents whereas at medium high level of intuitive cognitive style the academic achievement of males was higher than female adolescents.

14. There was no influence of interaction between gender and personality factor A, B, C, D, E, F, G, I, J, O, Q2, Q3 and Q4 on academic achievement of adolescents.

15. There was influence of interaction between gender and personality factor H on academic achievement of adolescents. At low, average and high level of personality factor H the academic achievement of females was higher than male adolescents.

16. There was no influence of interaction between gender and home adjustment, gender and health adjustment, gender and emotional adjustment on academic achievement of adolescents.

17. There was influence of interaction between gender and social adjustment on academic achievement of adolescents. At excellent, good and average level of social adjustment the academic achievement of adolescent females was higher than males but at unsatisfactory and very unsatisfactory level of social adjustment, the academic achievement of both (male and female adolescents) coincides.

18. There was no influence of interaction between location and cognitive style, location and systematic cognitive style, and location and intuitive cognitive style on academic achievement of adolescents.

19. There was no influence of interaction between location and personality factor A, B, C, D, E, F, G, H, I, J, Q3 and Q4 on academic achievement of adolescents.

20. There was influence of interaction between location and personality factor O on academic achievement of adolescents. At low and average level of personality factor O, academic
achievement of adolescents residing in urban area was higher than rural area, but at high level of personality factor O, the academic achievement of adolescents residing in rural area was higher than adolescents residing in urban area.

21. There was influence of interaction between location and personality factor Q2 on academic achievement of adolescents. At low level of personality factor Q2, academic achievement of adolescents residing in rural area was higher than urban area, but at average and high level of personality factor Q2, the academic achievement of adolescents residing in urban area was higher than adolescents residing in rural area.

22. There was no influence of interaction between location and home adjustment, location and health adjustment, location and social adjustment, and location and emotional adjustment on academic achievement of adolescents.

23. There was no influence of interaction between type of school and cognitive style, type of school and systematic cognitive style on academic achievement of adolescents.

24. There was influence of interaction between type of school and intuitive cognitive style on academic achievement of adolescents. At low level of intuitive cognitive style academic achievement of adolescents studying in aided school was higher than adolescents studying in government and private school but at high level of intuitive cognitive style academic achievement of adolescents studying in aided school was lower than adolescents studying in government and private school. Difference of academic achievement of adolescents at medium low and medium high level of intuitive cognitive style was lesser than extreme levels i.e. low and high.

25. There was no influence of interaction between type of school and personality factor A, C, D, E, F, G, H, I, J, O, Q3 and Q4 on academic achievement of adolescents.

26. There was influence of interaction between type of school and personality factor B. At low, average and high level of personality factor B, the academic achievement of adolescents studying in private school was higher than adolescents studying in government and aided school.

27. There was influence of interaction between type of school and personality factor Q2 on academic achievement of adolescents. At low level of personality factor Q2, academic achievement of adolescents studying in private school was higher than adolescents studying in government and private school, and at high level of personality factor Q2 academic achievement of adolescents studying in government school was higher and
academic achievement of adolescents studying in private and aided school was nearly coincides.

28. There was no influence of interaction between type of school and home adjustment, type of school and health adjustment, type of school and social adjustment, type of school and emotional adjustment on academic achievement of adolescents.

29. There was positive and low correlation between academic achievement and systematic cognitive style. For males, females, adolescents residing in urban area, adolescents studying in government school the correlation between academic achievement and systematic cognitive style was positive and low; whereas correlation for adolescents residing in rural area, studying in aided and private school was positive and negligible.

30. There was positive and negligible correlation between academic achievement and intuitive cognitive style. For adolescents studying in government school the correlation between academic achievement and intuitive cognitive style was positive and low; whereas correlation for males, females, adolescents residing in urban and rural area, adolescents studying in private and aided schools was positive and negligible. There was no correlation between academic achievement and intuitive cognitive style for adolescent studying in aided school.

31. There was positive and negligible correlation between academic achievement and personality factor B, academic achievement and personality factor G for adolescents. The correlation between academic achievement and personality factor D for male adolescents; academic achievement and personality factor B, academic achievement and personality factor O for female adolescents; academic achievement and personality factor B, C, F and J for adolescents residing in urban area; academic achievement and personality factor E and O for adolescents residing in rural area; academic achievement and personality factor A, F, G and Q2 for adolescents studying in private school was positive and negligible but the correlation academic achievement and personality factor B for adolescents studying in aided school was positive and low.

32. There was no correlation between academic achievement and personality factor A, C, D, E, F, H, I, J, O, Q2, Q3 and Q4 for adolescents. The correlation between academic achievement and personality factor A, B, C, E, F, G, H, I, J, O, Q2, Q3 and Q4 for males; academic achievement and personality factor A, C, D, E, F, G, H, I, J, Q2, Q3 and Q4 for females; academic achievement and personality factor A, D, E, G, H, I, O, Q2, Q3 and Q4 for adolescents residing in urban area; academic achievement and personality factor A, B, C, D, F, G, H, I, J, Q2, Q3 and Q4 for adolescents residing in rural area; academic
achievement and personality factor A, B, C, D, E, F, G, H, I, J, O, Q2, Q3 and Q4 for adolescents studying in government school; academic achievement and personality factor A, C, D, E, F, G, H, I, J, O, Q2, Q3 and Q4 for adolescents studying in aided school; academic achievement and personality factor B, C, D, E, H, I, J, O, Q3 and Q4 for adolescents studying in private school was not significant.

33. There was positive and low correlation between academic achievement (AA) and home adjustment, and AA and health adjustment; and positive and negligible correlation between AA and social adjustment, and AA and emotional adjustment of adolescents. The correlation between AA and health adjustment for males; AA and home adjustment, and AA and health adjustment for females; AA and home adjustment, and AA and health adjustment for adolescents residing in urban area; AA and home adjustment, and AA and health adjustment for adolescents residing in rural area; AA and home adjustment, and AA and health adjustment for adolescents studying in government school; AA and home adjustment, and AA and health adjustment for adolescents studying in aided school; AA and health adjustment for adolescents studying in private school was positive and low. The correlation between AA and home adjustment, and AA and emotional adjustment for males; AA and social adjustment, and AA and emotional adjustment for females; AA and social adjustment, and AA and emotional adjustment for adolescents residing in urban area; AA and emotional adjustment for adolescents residing in rural area; AA and emotional adjustment for adolescents studying in government school; AA and home adjustment, AA and social adjustment, and AA and emotional adjustment for adolescents studying in private school was positive and negligible.

34. There was no correlation between academic achievement and social adjustment for males; academic achievement and social adjustment for adolescent residing in rural area; academic achievement and social adjustment for adolescents studying in government and aided school; academic achievement and emotional adjustment for adolescents studying in aided school.

35. There was no difference in correlation between academic achievement and systematic cognitive style, and academic achievement and intuitive cognitive style of adolescents on the basis of gender and location.

36. There was difference in correlation between academic achievement and cognitive style (systematic and intuitive) of adolescents on the basis of type of school (government and aided; and government and private), whereas the difference in correlation was not significant between academic achievement and cognitive style (systematic and intuitive)
of adolescents on the basis of type of school (aided and private). Further the degree of correlation between academic achievement and cognitive style (systematic and intuitive) for adolescents studying in government school was higher than adolescent studying in aided and private school.

37. There was no difference in correlation between academic achievement and cognitive style (systematic and intuitive) of adolescents on the basis of type of school (aided and private).

38. There was no difference in correlation between academic achievement and personality factor A, B, C, D, E, F, G, H, I, J, O, Q2, Q3 and Q4 of adolescents on the basis of gender and location.

39. There was difference in correlation between academic achievement and personality factor B of adolescent on the basis of type of school (government and aided, and aided and private) whereas the difference in correlation was not significant between academic achievement and personality factor B of adolescent on the basis of type of school (government and private). Further the degree of correlation between academic achievement and personality factor B of adolescents studying in aided school was higher than adolescents studying in government and private school.

40. There was no difference in correlation between academic achievement and personality factor A, C, D, E, F, G, H, I, J, O, Q2, Q3 and Q4 of adolescents on the basis of type of school (government and aided, government and private, and aided and private).

41. There was difference in correlation between academic achievement and social adjustment of adolescents on the basis of gender. The degree of correlation between academic achievement and social adjustment for females was higher than as compare to male adolescents.

42. There was no difference in correlation between academic achievement and home adjustment, academic achievement and health adjustment, and academic achievement and emotional adjustment on the basis of gender.

43. There was no difference in correlation between academic achievement and different (home, health, social and emotional) dimensions of adjustment on the basis of location and type of school (government and aided, government and private, and aided and private).

44. The regression equation for predicting academic achievement was as follows

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\text{Academic achievement} = 55.797 + \text{Gender} \times 1.248 - \text{Location} \times 1.958 - \text{Home adj.} \times 0.243 - \text{Health adj.} \times 0.394 + \text{Personality Factor E} \times 0.140 + \text{Sys. Cog. Style} \times 0.127.
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45. Seven factors were found as Factor I (Personality factor D, O and Q4); Factor II (home, health, social and emotional adjustment); Factor III (Personality factor A, C, G, I and Q3); Factor IV (Systematic and Intuitive cognitive style with academic achievement); Factor V (Personality factor Q2); Factor VI (Personality factor E and J); Factor VII (Personality factor B, F and J).

5.2. Discussion

Adolescents having different levels (systematic, intuitive, integrated, undifferentiated and split) of cognitive style possessed different levels of academic achievement. The academic achievement of adolescents having systematic and integrated, systematic and undifferentiated, integrated and undifferentiated, integrated and split, undifferentiated and split, and intuitive and undifferentiated levels of cognitive style differ significantly; and academic achievement of adolescents having systematic and intuitive, systematic and split, intuitive and integrated, and intuitive and split levels of cognitive style did not differ significantly. While comparing academic achievement of adolescent between each level of existing cognitive style (Jha, 2001), it was found that academic achievement of adolescents having integrated cognitive style was higher than systematic, intuitive, undifferentiated and split cognitive style. Academic achievement of adolescents having systematic cognitive style was higher than undifferentiated cognitive style. Academic achievement of adolescents having split cognitive style was higher than undifferentiated cognitive style. Academic achievement of adolescents having systematic cognitive style was higher than undifferentiated cognitive style. Academic achievement of adolescents having intuitive cognitive style was higher than undifferentiated cognitive style.

The trend regarding this finding showed that adolescents with integrated cognitive style possessed highest level of academic achievement whereas adolescent with undifferentiated cognitive style possessed lowest level of academic achievement. According to Jha (2001) a person with an integrated cognitive style refer as problem seekers because they consistently attempt to identify potential problems as well as opportunities in order to find better ways of doing things but they change style quickly and easily, as this style seems to be unconscious and take place in a matter of seconds and always use proactive approach to problem solving. On the other hand adolescents with undifferentiated cognitive style tend to be withdrawn, passive, reflective and often look to others for problem solving strategies and need instructions from outside. While comparing the characteristics of integrated style and undifferentiated style, it was clear that the person with integrated style is positively related to achieve higher (scores) because the person with integrated style possessed proactive approach.
to solve a problem, whereas the characteristics of undifferentiated style are negative for achieving higher, as person with this type of cognitive style remain passive and looking to others for problem solving and having intention of withdrawal for solving the problem. There is hardly any study, which focused the cognitive style with these five dimensions viz. systematic, intuitive, integrated, undifferentiated and split cognitive style, for finding relationship with academic achievement of adolescent. But most of the studies with different cognitive styles revealed positive and significant relationship between cognitive style and academic achievement such as Gosnel (1983), Copeland (1983), Bowers (1984), Lestch (1984), Paul (1986), Lata (1986), Marx et al. (1987), Vaidya (1988), Canning (1993), Albert (2004), Bagchi (2004), Geetanjali (2006), Aruna et al. (2006) and Kenth (2009). Some studies reported significant differences or relationship between cognitive style and academic achievement without any direction such as Pandey (1992), Wolf (1992), Goswel (1993), Chiu (1997) and Debut (2005). Witkin (1977) have pointed that although cognitive style was not significantly related to overall school achievement but it was related to achievement in specialized areas but Yeatts et al. (1971), Zhang (1982), Fritz (1985) and Parikh (2004) revealed that there was no significant relationship between cognitive style and achievement of students. Further, investigator found that most of the studies conducted by previous researchers examined the field dependent and field independent type of cognitive style in relation to academic achievement. Most of these researches reported that field independent was positively related with academic achievement as Sharma et al. (1982), Saracho et al. (1982), Chatterjee et al. (1982), Roherge et al. (1983), Peterson (1984), Mrosla (1984), Saracho (1984), Crow et al. (1984), Rossler (1985), Jacoby (1985), Yore (1986), Post (1987), Arrington (1989), Verma et al. (1991), Dutt (1993), Naufal (2000), Panda (2005) and Geetanjali (2006). Only Aggarwal et al. (1984) concluded that high achievers were more field dependent than low achievers. Kiranmayi et al. (1996) also reported that field dependent cognitive style showed significant positive relationship with academic achievement. Whereas Parkinson et al. (2002) indicated that both field independent students and field dependent students were equally good with respect of their academic achievement. Atang (1985) reported that field dependence/independence was not a significant factor in the performance of post test. Sood (1998) also revealed that there was no significant difference in achievement scores of field dependent and field independent students.

Systematic cognitive style influenced the academic achievement of adolescents. Adolescents having high systematic cognitive style possessed higher academic achievement than those having low, medium low and medium high systematic cognitive style. The trend
showed that higher the systematic cognitive style higher was the academic achievement. According to Jha (2001) the systematic style is associated with logical, rational behaviour that uses a step by step sequential approach to thinking, learning, problem solving and decision making when solving a problem, they looks for an overall method or pragmatic approach and then makes an overall plan for solving the problem. Many researchers have reported that logical and rational thinking was positively related to academic achievement as Gakhar (2003) found that problem solving ability was significant and positively correlated with mathematical achievement. Oyesoji (2005) found that there existed a significant relationship between learning style and academic performance. Oyesoji (2005) found that 3 senses of learning (auditory, visual and kinesthetic) contributed most to academic performance. Nirmala et al. (2006) found that mathematics information processing skill, decision making skill had made a significant contribution towards the academic achievement in mathematics. Sharma (2007) reported that there existed positive relationship between achievement, problem solving ability and scientific attitude. Domenich (2007) reported that hierarchic thinking style contributed positively to achievement in social sciences. Gafoor et al. (2008) found that there was influence of thinking on achievement in physics. Only Gakhar (2006) reported that logical, fractional, divergent, convergent, creative, intellectual, optimistic view of problem solving and analytical thinking styles were not significantly associated with academic achievement of the students.

Intuitive cognitive style influenced the academic achievement of adolescents. Adolescents having high intuitive cognitive style possessed higher academic achievement than those having low, medium low and medium high intuitive cognitive style. The trend showed that higher the intuitive cognitive style the higher was the academic achievement. According to Jha (2001) the intuitive style is associated with a spontaneous holistic and visual approach i.e. uses unpredictable ordering of analytical steps for solving a problem, they relies on experience patterns. In the present study academic achievement of students were taken from the final examination of matriculation which basically involve subjective or descriptive nature of questions. This may be the reason of present finding in which high intuitive cognitive style result into higher academic achievement.

Adolescent with personality factors A (Reserved/Warmhearted), C (Affected by feelings/Emotionally Stable), D (Undemonstrative/Excitable), E (Obedient/Assertive), F (Sober/Enthusiastic), G (Disregards rules/Conscientious), I (Tough Minded/Tender minded), J (Zestful/Circumspect individualism), O (Self Assured/Apprehensive), Q2 (Socially group dependent/self sufficient), Q3 (Uncontrolled/Controlled) and Q4 (Relaxed/Tense) did not
differ in the academic achievement. A few of the previous researches supported the present finding as Uudayshankar (1958) found that shy, recessive, aggressive, stubborn, restless, fearful and delinquent children were bound to be low in their scholastic achievement. Joshi (1990) found that overall achievement was not significantly correlated with personality. Sood (1993) found negative correlation between academic achievement and personality factors O and Q4 of law course students. Mishra (1997) found that personality factors (except self-sufficiency) were not significantly related to academic achievement. Verma et al. (1999) found that personality factors A, C, D, E, F, H, I, J, Q2, Q3 and Q4 do not contribute substantially towards academic achievement. Sood (2005) found that personality factors of group adherence, praxarnia practical and conservatism of temperament contributed negatively to academic achievement in engineering course; but personality factors of untroubled adequacy (O) and artlessness contributed negatively to academic achievement of medical students. Some studies showed no significant difference or relationship of academic achievement and personality factor in some specific subject as Khaiina (1978) reported that there was no significant relationship between personality and academic achievement in Mathematics. Chandra (1981) showed that there was no significant relationship between selected personality characteristics and academic achievement of home science. Gakhar (2003) found that in non-residential schools personality factors D, E, F, H, J, K, M, O, Q2, Q3 and Q4 was negatively correlated with mathematical achievement. Some studies do not support the present finding such as Rushton (1966), Ainsworth (1967), Cithatoon (1988), Santokey (1988), Verma (1994) and Suresh et al. (1998).

Adolescent with personality factor B (Less Intelligent/More Intelligent) and H (Shy/Adventurous) differ in their academic achievement. Adolescents with average personality factor B had more academic achievement than low and high personality factor B. In factor B of personality, general intelligence was assessed, in which abstract thinking, brightness, higher scholastic mental capacities are involved. Previous studies on relationship between intelligence and academic achievement reported the positive correlation between these two variables such as Malik (1977), Chaturvedi et al. (1992), Varma (2003), Panigrahi (2005), Paltasingh (2008) and Dhall et al. (2009). There are some studies which examined the personality factor especially with ‘high school personality questionnaire’ in relation to academic achievement and reported positive relationship between personality factor B and academic achievement as reported by Ainsworth (1967), Gupta (1978), Singh et al. (1988), Sood (1993), Suresh et al. (1998), Verma et al. (1999) and Sood (2005). Whereas Koul (1989) examined the relationship in some specific subject and found that high achievers in
Mathematics were more intelligent with high ego-strength. Jahan (2004) examined the relationship by taking into context the stream and found that the overachievers of science stream were more intelligent as compared to underachievers; the overachiever of arts stream were more intelligent as compared to underachievers; the over achievers of the commerce stream were more intelligent as compared to underachievers.

In factor H of personality, adventurous and socially bold behaviour of the learner was assessed, in which activeness, responsive, friendly, impulsive, emotional and artistic interests were involved. In the present finding, the adolescent with high personality factor H had more academic achievement than low and average personality factor H. Many studies as Reddy (1973), Gupta (1978), Cithatoon (1988) and Khatoon (2003) reported that high academic achievers were adventurous, active, socially bold and tough minded whereas low academic achievers were more shy, timid, threat sensitive and tender minded. Moreover, Reddy (1973) revealed that personality factor H significantly associated with achievement in one or the other subject. Barton et al. (1971) revealed that factor H (Adventurousness) was related to achievement in Mathematics.

Home adjustment influenced the academic achievement of adolescents. While comparing academic achievement of adolescent between each level of existing home adjustment, it was found that academic achievement of adolescents having good level of home adjustment was higher than all other levels of home adjustment. Academic achievement of adolescents having unsatisfactory level of home adjustment was lowest among all other levels of home adjustment. Almost all previous researches reported the results in tune with present finding such as Roy (1956), Sharma (1961), Kumar (1963), Dhaliwal (1971), Sharma (1972), Pandey (1977), Biiopra (1982), Chopra (1982), Goel (1986), Goel (1988), Singh (1988), Subudhi (1990), Giraudo (1990), Sharma (1999), Jagannadhan (2003), Prasad (2005) and Mohanty (2009), but Bajwa et al. (2006) reported a negative relationship between home adjustment and academic achievement. A few studies reported no significant relationship between adjustment and academic achievement such as Sood (1992), Chauhan (1995) and Ebenezer et al. (2009). Some studies reported positive relationship between home adjustment and academic achievement in some specific subject as Chen (2001) found that effectiveness of home environment as the more important and consistent predictor of mathematics achievement. Mehera (2004) found that achievement in mathematics was significantly related to major learning environment. Some studies examined the influence or relationship of home adjustment and academic achievement in relation to over and under achievers and reported that high achievers had positive home adjustment as
reported by Singh (1988) found that high achievers had positive adjustment with home area of adjustment; and intelligent students had positive relationship with academic achievement. Saxena (1979) revealed that under achievers had significantly poorer adjustment in home, health and school area.

Health adjustment influenced the academic achievement of adolescents. While comparing academic achievement of adolescent between each level of existing health adjustment, it was found that academic achievement of adolescents having excellent level of health adjustment was higher than all other levels of health adjustment. Academic achievement of adolescents having very unsatisfactory level of health adjustment was lowest among all other levels of health adjustment. Most of researches emphasised that better health adjustment lead to good academic scores, as Roy (1956) found that high achievers were well adjusted to their health life and had satisfactorily general adjusted status. Saxena (1979) revealed that under achievers had significantly poorer adjustment in health area. Kolwadkar (1980) found that the health status was significantly related to academic achievement. It is an obvious fact that a learner with more health problem will feel more problems during learning process as well as during giving examination. Health adjustment basically refers to the comforts regarding physical and psychological health and this discomfort is negatively correlated with achievement in any field of life. That is why, the present and previous researches found the same results.

Social adjustment did not influence the academic achievement of adolescents. Academic achievement of adolescents having different (excellent, good, average, unsatisfactory and very unsatisfactory) levels of social adjustment did not differ significantly. Some of the previous researches do not support the present finding as Dhaliwal (1971), Tiwari et al. (1976), Sharma et al. (1988) and Chauhan (1994) revealed that social adjustment had negative associations with academic achievement. Whereas, few studies reported positive relationship between social adjustment and academic achievement such as Roy (1956) found that high achievers were well adjusted to their social life. Aggarwal (2003) found that successful (passed) adolescents were significantly superior in their social adjustment in comparison to unsuccessful (failed) adolescents. Suresh (2007) indicates that increase in social adjustment was positively related to mathematics achievement.

Emotional adjustment influenced the academic achievement of adolescents. While comparing academic achievement of adolescent between each level of existing emotional adjustment, it was found that academic achievement of adolescents having good level of emotional adjustment was higher than all other levels of emotional adjustment. Academic
achievement of adolescents having very unsatisfactory level of emotional adjustment was lowest than all other levels of emotional adjustment. Most of researches emphasised that better emotional adjustment lead to good academic scores, as Swansun (2000) found that achievement of a student gets affected by his emotional adjustment and had positive relation with it. In the same way many researches support that better emotional adjusted learners attain higher academic scores as Roy (1956), Anderson et al. (1963), Johnson (1970), Dhaliwal (1971), Tiwari et al. (1976), Dutt (1978), Singh (1988), School of Emotional Literacy (2003), Aggarwal (2003) and Usha (2007).

In the present study gender influenced the academic achievement of adolescents. Bagchi (2004) found a significant and positive relationship between scholastic achievement in life science among males and females. Most of the research studies emphasized that academic achievement of females was higher than male students as Devi (1990), Custer (1994), Mishra et al. (1998), Verma et al. (1999), Dixit (2002), Misra (2005), Usha (2007), Sarsani et al. (2010) and Prakash et al. (2010). Some research studies emphasized that academic achievement of males was higher than females as Abraham (1973), Gupta (1978), Lalithamma (1995), Dixit (2002), Singh et al. (2007) and Singh et al. (2010). Some research studies emphasized that there was no significant difference between males and females with regard to academic achievement as reported by Randolph (1984), Samal (1990), Dixit (2002), Mehera (2004), Varte et al. (2005), Panigrahi (2005), Sindhu (2005), Rajendran et al. (2007) and Pandey et al. (2008). Some studies reported significant differences or relationship of academic achievement in relation to gender without any direction as reported by Vamadevappa (2005), Bajwa et al. (2006), Meera et al. (2008), Dhall et al. (2009), Aruna et al. (2009) and Ponraj et al. (2010). Some research studies emphasized that there was no significant difference between male and female students with regard to academic achievement in specific subject as Obiedat (1992) found that there was no significant mean difference between male and female students in Mathematics achievement.

Location influenced the academic achievement of adolescents in the present study. Adolescents residing in urban area had more academic achievement than adolescent residing in rural area. Most of the studies emphasised that academic achievement of the rural students was lower than the achievement of urban students as reported by Rangappa (1992), Rajmal et al. (1995), Mishra et al. (1998), Mehera (2004), Misra (2005), Vijayalakshmi et al. (2006), Singh et al. (2007), Mittal (2008) and Choudhary (2009). Whereas some studies emphasised that academic achievement of the rural students was higher than the achievement of urban students as reported by Sheik (1995), Verma (1995), Gakhar et al. (2004), Ganguly (2004),
Rajendran et al. (2007) and Prakash et al. (2010). Some studies reported significant differences or relationship of academic achievement in relation to location without any direction as Ojoawo (1989) found that there was significant difference in performance between rural and urban schools. Rangappa (1992) found that location of school affected the achievement of the students in Mathematics. Balasubramaniam (1993) found that locality of residence influenced the level of achievement. Adepoju (2002) found a significant difference existed in the academic performance of students in urban and rural secondary schools particularly in English language and Mathematics. Gakhar et al. (2004) found that locality was affecting the reasoning ability of the students significantly. Aruna et al. (2009) found significant difference in achievement in social studies for rural and urban students. Ponraj et al. (2010) found that difference in the achievement of adolescents residing in rural and urban area was significant. Sarsani et al. (2010) found that locality influenced on the performance in Mathematics achievement test.

Type of school did not influence the academic achievement of adolescents. Some research studies supported the present finding and reported no significant influence of type of school on academic achievement as Wongoo (1991) found no significant difference in academic achievement between the students from government and private highly advanced and advanced schools. Mohan et al. (1998) reported that government schools did not represent any among the high academic achiever category. Srivastava et al. (2004) found no significant difference in the academic achievement in physics of XI class pupils between the familiar and open climate. Aruna et al. (2009) found that there was no significant difference in achievement of social studies for the students paired as government and private school. Some studies showed the influence of specific type of school on academic achievement of adolescent as Singh (1996) found that the achievement of students in government school was poor. Radha (1998) found that more English medium school students were high academic achievers than Malayam medium schools. Srivastava et al. (2004) found that closed vs paternal type of school climate had a significant difference in the achievement in physics of XI class pupils. Dwivedi (2005) found that students from schools with enriched environment had significantly better academic achievement than the students from poor school environment. Panda (2005) found that there was significant difference in academic achievement of students studying in different categories of school. Dwivedi (2005) found that academic achievement of students of the urban school was significantly higher than the students of the rural school. Surekha (2008) found that boys and girls from private schools were well adjusted and academically performed better than the boys and girls from...
Findings and Discussion
government schools. Few studies reported significant influence of type of school on academic achievement without any direction as Srivastava et al. (2004) found that closed vs paternal type of school climate had a significant difference in the achievement in physics of XI class pupils. Panda (2005) found that there was significant difference in academic achievement of students studying in different categories of school. Sarsani et al. (2010) found that type of school influenced the performance in Mathematics achievement test. Singh et al. (2010) academic achievement of adolescents studying in aided schools was better than adolescents studying in government schools; academic achievement of adolescents studying in unaided schools was better than adolescents studying in government schools; academic achievement of adolescents studying in aided schools was better than adolescents studying in unaided schools.

There was no influence of interaction between gender and cognitive style; gender and systematic cognitive style; gender and personality factor A, B, C, D, E, F, G, I, J, O, Q2, Q3 and Q4; gender and home adjustment; gender and health adjustment; gender and emotional adjustment; location and cognitive style; location and systematic cognitive style; location and intuitive cognitive style; location and personality factor A, B, C, D, E, F, G, H, I, J, Q3 and Q4; location and home adjustment; location and health adjustment; location and social adjustment; location and emotional adjustment; type of school and cognitive style; type of school and systematic cognitive style; type of school and personality factor A, C, D, E, F, G, H, I, J, O, Q3 and Q4; type of school and home adjustment; type of school and health adjustment; type of school and social adjustment; type of school and emotional adjustment on academic achievement of adolescents. It means that male and female adolescents having different levels of cognitive style; male and female adolescents having different levels of systematic cognitive style; male and female adolescents having different levels of personality factor; male and female adolescents having different levels of home, health and emotional adjustment; adolescents residing in urban and rural area having different levels of cognitive style; adolescents residing in urban and rural area having different levels of systematic cognitive style; adolescents residing in urban and rural area having different levels of intuitive cognitive style; adolescents residing in urban and rural area having different levels of personality factor A, B, C, D, E, F, G, H, I, J, Q3 and Q4; adolescents residing in urban and rural area having different levels of home, health, social and emotional dimensions of adjustment; adolescents studying in government, aided and private school having different levels of cognitive style; adolescents studying in government, aided and private school having different levels of systematic cognitive style; adolescents studying in government,
aided and private school having different levels of personality factor A, C, D, E, F, G, H, I, J, O, Q3 and Q4; adolescents studying in government, aided and private school having different levels of home, health, social and emotional dimensions of adjustment possessed same level of academic achievement. In the same way Mrosla (1984) reported no interaction between cognitive style and type of school for academic achievement. Mishra (1997) reported that correlation between intelligence and academic achievement was higher in case of girls. Cithatoon (1988) found that achievement and locality interaction did not affect the personality traits significantly; interaction between achievement and gender significantly affect the personality factors C, Q2 and Q4; on factors E, F, G and Q3 the interaction effect of locality and gender was significant; interaction of achievement, gender and locality did not had any significant effect on personality factor. Khatoon (2003) found that interaction between achievement and gender significantly affect the personality factors C, Q2 and Q4; on factors E, F, G and Q3 the interaction effect of locality and gender was significant. Mohan et al. (1983) found that there was an interaction between adjustment and academic achievement.

There was significant influence of interaction between gender and intuitive cognitive style, gender and personality factor H, and gender and social adjustment. Male and female adolescents having different levels of intuitive cognitive style, personality factor H, and social adjustment possessed different levels of academic achievement. At low level of intuitive cognitive style the academic achievement of male adolescents was lower than females; at medium low intuitive cognitive style there was sharp increase in the academic achievement of females as compared to male adolescents; at medium high intuitive cognitive style there was stagnation in the academic scores of male adolescents; at high intuitive cognitive style the academic achievement of females was more than male adolescents. Difference of academic achievement of adolescents at medium low level of intuitive cognitive style was more than extreme levels i.e. low and high.

At low personality factor H, academic achievement of adolescent females was more than male adolescents; at average personality factor H there was decrease in academic achievement of adolescent females but there was slight increase in the academic achievement of male adolescents; at high personality factor H there was increase in the academic achievement of females as compare to male adolescents. Difference of academic achievement of adolescents at average level of personality factor H was lesser than extreme levels i.e. low and high.

At excellent level of social adjustment the academic achievement of adolescent
females was higher than males; at good level of social adjustment there was increase in academic achievement of adolescent males as compare to females; at average level of social adjustment there was decrease in the academic achievement of adolescent females whereas there was stagnation in the academic achievement of adolescent males. At further levels (unsatisfactory and very unsatisfactory) of adjustment there was coincide and stagnation in the academic achievement of both male and female adolescents. Difference of academic achievement of adolescents at excellent level of social adjustment was more than other levels of social adjustment.

There was influence of interaction between location and personality factor O; location and personality factor Q2. Adolescents residing in urban and rural area having different levels of personality factor O and Q2 possessed different levels of academic achievement. At low level of personality factor O, academic achievement of adolescents residing in urban area was higher than adolescents residing in rural area; at average personality factor O there was decrease in the academic achievement of adolescents residing in rural area but slight increase in the academic achievement of adolescents residing in urban area; at high personality factor O, there was decrease in the academic achievement of adolescents residing in urban area whereas there was increase in the academic achievement of adolescents residing in rural area. Difference of academic achievement of adolescents at average level of personality factor O was more than extreme levels i.e. low and high.

At low level of personality factor Q2, academic achievement of adolescents residing in rural area was higher than academic achievement of adolescents residing in urban area; at average level of personality factor Q2 there was decrease in the academic achievement of adolescent residing in rural area and slight increase in the academic achievement of adolescents residing in urban area, at high level of personality factor Q2, there was increase in the academic achievement of adolescents residing in urban and rural areas. Difference of academic achievement of adolescents at low level of personality factor Q2 was more than average and high level of personality factor Q2.

There was influence of interaction between type of school and intuitive cognitive style, type of school and personality factor B, and type of school and personality factor Q2. Adolescents studying in government, aided and private school having different levels of intuitive cognitive style, personality factor B and personality factor Q2 possessed different level of academic achievement. At low level of intuitive cognitive style adolescents studying in government school possessed lowest academic achievement than adolescents studying in aided and private school whereas at high level of intuitive cognitive style adolescents
studying in government school possessed highest academic achievement than adolescents studying in private school and adolescents studying in private school had more academic achievement than adolescents studying in aided school. Difference of academic achievement of adolescents at medium low and medium high level of intuitive cognitive style was lesser than extreme levels i.e. low and high.

At low level of personality factor B, academic achievement of adolescents studying in private school was higher than adolescents studying in government and aided school. At average personality factor B the academic achievement of adolescents studying in private school was slightly higher than adolescents studying in government and aided school. At high level of personality factor B, there was increase in the academic achievement of adolescents studying in aided school than adolescents studying in government and private schools and also there was decrease in the academic achievement of adolescents studying in government and private school. Difference of academic achievement of adolescents at average level of personality factor B was lesser than extreme levels i.e. low and high.

At low level of personality factor Q2, adolescents studying in government school possessed lowest academic achievement than adolescents studying in aided school followed by private school, whereas at high level of personality factor Q2, adolescents studying in government school possessed highest academic achievement than adolescents studying in private and aided school. At average level of personality factor Q2, the academic achievement of adolescents studying in government, private and aided school was nearly coincide i.e. there was no much difference in the academic achievement of adolescents studying in either government, private or aided schools. Difference of academic achievement of adolescents at average level of personality factor Q2 was lesser than extreme levels i.e. low and high. There was significant, positive and low correlation between academic achievement and systematic cognitive style. Further, at different level of classifying variable such as gender, location and type of school, the degree of correlation between academic achievement and systematic cognitive style was not same. When the significant difference in relationship between academic achievement and systematic cognitive style was examined, it was found that there existed a significant difference in correlation of academic achievement and systematic cognitive style for adolescent studying in government and aided; and government and private school. The correlation between academic achievement and systematic cognitive style for adolescents studying in government school was significant, positive and low, and for adolescent studying in aided and private school was significant, positive and negligible. The degree of correlation between academic achievement and
systematic cognitive style for adolescents studying in government school was higher than as compare to adolescents studying in aided and private school.

There was hardly any study which assessed the correlation of academic achievement with systematic cognitive style. As the nature of systematic cognitive style is rational, it was indirectly supported by many previous researches, as they reported positive correlation between academic achievement and cognitive style namely Annis (1979); Van Duyne (1980); Chhatterji et al. (1982), Chatterji et al. (1983), Graffin (1983), Lestch (1984), Peterson (1984), Yore (1986), Nelson (1986), Lata (1986), Marx et al. (1987), Post (1987), Vaidya (1988), Rogers (1990), Behal (1992), Pandey (1992), Canning (1993), Wey (1993) Repman (1993), Parkinson (2002), Bagchi (2004) and Kenth (2009). A few studies recorded a low but significant correlation between cognitive style and academic achievement as Sandhu (1992), Ganihar (1993), Nander et al. (1994), Gupta (1995) and Albert (2004). Many researchers studied academic achievement in relation to cognitive style with field dependent and field independent. Most of them reported that field independent was positively related with academic achievement whereas few reported that academic achievement was positively related with field dependent. As Kagan et al. (1975) found a significant correlation of field independent with reading and Math’s achievement. Utley (1983) found that scores of field independence was significantly related to scores of intelligence and reading achievement. Randolph (1983) found significant relationship between field independence and achievement. Randolph (1984) revealed that there was significant correlation between field independence and science achievement. Bieri et al. (1988) reported significant correlation between field independence and mathematical ability among students. Arrington (1989) found that problem solving ability was positively correlated to cognitive style and concluded that field independent subject were more proficient problem solvers than field dependent subjects. Kirk (2000) indicated that field independence was significantly correlated with problem solving ability, academic and laboratory achievement. Swarson (1979), Wolf (1992) and Engemann (2000) found positive correlation between field dependence-independence and achievement in different subjects but Altan et al. (2006) found no significant relationship between cognitive style and academic achievement.

There was no significant difference in correlation of academic achievement and systematic cognitive style on the basis of gender, location and type of school (aided and private). The reason of no significant difference in correlation between academic achievement and cognitive style on the basis of gender may be due to no significant gender difference in correlation as reported by Therakan (1996), Dani (2004), Parikh (2004), Bagchi
Findings and Discussion

(2004) and Mohan et al. (2005). The reason of no significant difference in correlation between academic achievement and cognitive style on the basis of location may be due to no significant location difference in correlation as Aruna et al. (2006) found that urban and rural school students were not significant at 0.05 level with regard to cognitive style and the high mean score was associated with urban subjects.

There was significant, positive and negligible correlation between academic achievement and intuitive cognitive style. Further, at different levels of classifying variable such as gender, location and type of school, the degree of correlation between academic achievement and intuitive cognitive style was not same. When the significant difference in relationship between academic achievement and intuitive cognitive style was examined, it was found that there was significant difference in correlation between academic achievement and intuitive cognitive style for adolescent studying in government and aided; and government and private school. The correlation between academic achievement and intuitive cognitive style for adolescents studying in government school was significant, positive and low, and for adolescent studying in private school was significant, positive and negligible. There existed no significant difference in correlation of academic achievement and intuitive cognitive style on the basis of gender, location and type of school (aided and private). The degree of correlation between academic achievement and intuitive cognitive style for adolescents studying in government school was higher than as compare to adolescents studying in aided and private school.

There was significant, positive and negligible correlation between academic achievement and personality factor B, and academic achievement and personality factor G for adolescents. Further, at different level of classifying variable such as gender, location and type of school, the degree of correlation between academic achievement and different personality factors was not same. When the significant difference in relationship between academic achievement and different personality factors was examined and it was found that there exist significant difference in correlation of academic achievement and personality factor B on the basis of type of school (government and aided, and aided and private). The correlation between academic achievement and personality factor B for adolescents studying in aided school was significant, positive and low. The degree of correlation between AA and personality factor B for adolescents studying in aided school was higher than as compare to adolescents studying in government and private school. There was no significant difference in correlation between AA and personality factor A, B, C, D, E, F, G, H, I, J, O, Q2, Q3 and Q4 on the basis of gender and location; and AA and personality factor B on the basis of type
of school (government and private). There were very few studies which examined the relation
of academic achievement and various personality factors on the basis of gender. In these
studies gender difference regarding these variable was reported such as Gupta (1978) found
that personality factor B was specifically related to achievement of a particular sex. Gupta
(1978) reported that over achievers boys as well as girls differ significantly from under
achievers on personality factor G (conscientiousness). A few studies examined the
relationship of academic achievement and various personality factors on the basis of location.
Sheikh (1995) found that female adolescents belonging to rural and urban residential
background do not differ significantly on personality factors viz. A (reserved/warm hearted),
B (less intelligent/more intelligent), C (affected by feelings/emotionally stable), D
(undemonstrative/excitable), E (obedient/assertive), F (sober/enthusiastic), G (disregards
rules/conscientious), H (shy/adventurous), I (tough minded/tender minded), J
(zestful/circumspect individualism), O (self assured/apprehensive), Q2 (socially group
dependent/self sufficient), Q3 (uncontrolled/controlled) and Q4 (relaxed/tense).

There was significant, positive and low correlation between academic achievement
and home adjustment, academic achievement and health adjustment; and significant, positive
and negligible correlation between academic achievement and social adjustment, academic
achievement and emotional adjustment of adolescents. Further, at different levels of
classifying variables such as gender, location and type of school, the degree of correlation
between academic achievement and adjustment was not same. When the significant
difference in relationship between academic achievement and adjustment was examined it
was found that there existed a significant difference in correlation of academic achievement
and social adjustment on the basis of gender. The correlation between academic achievement
and social adjustment for females was significant, positive and negligible, whereas there was
no correlation between social adjustment and academic achievement for males. The degree of
correlation between academic achievement and social adjustment for adolescent females was
higher than male adolescents. There was no significant difference in correlation between
academic achievement and home, health and emotional dimension of adjustment on the basis
of gender, and no significant difference in correlation between academic achievement and
different (home, health, social and emotional) dimensions of adjustment on the basis of
location and type of school. A large number of studies have been conducted to examine the
relationship between various types of adjustment and academic achievement. Almost all
research studies showed positive relationship between these two variables as Anderson et al.

The regression equation for predicting academic achievement was

\[ \text{Academic achievement} = 55.797 + \text{Gender} \times 1.248 - \text{Location} \times 1.958 - \text{Home Adj.} \times 0.243 - \text{Health Adj.} \times 0.394 + \text{Personality factor E} \times 0.140 + \text{Sys. Cog. Style} \times 0.127. \]

In previous literature, almost all studies reported gender, location, home adjustment, health adjustment, and personality factor E as correlates of academic achievement. Many studies have been conducted on academic achievement in relation to gender as Bagchi (2004) found a significant and positive relationship between scholastic achievement in life science among males and females. Most of the research studies emphasized that academic achievement of females was higher than males as reported by Devi (1990), Custer (1994), Mishra (1997), Verma et al. (1999), Dixit (2002), Misra (2005) and Usha (2007). Some research studies emphasized that academic achievement of males was higher than females as reported by Abraham (1973), Gupta (1978), Lalithamma (1995), Dixit (2002) and Singh et al. (2007). Some research studies emphasized that there was no significant difference between males and females with regard to academic achievement as reported by Randolph (1984), Samal (1990), Dixit (2002), Mehera (2004), Varte et al. (2005), Panigrahi (2005), Sindhu (2005), Rajendran et al. (2007) and Pandey et al. (2008). Some studies reported significant difference or relationship of academic achievement in relation to gender without any direction as reported by Vamadevappa (2005), Bajwa et al. (2006), Meera et al. (2008) and Aruna et al. (2009).

Adolescent residing in urban area had more academic achievement than adolescents residing in rural area. As most of the studies emphasised that academic achievement of the rural students was lower than the achievement of the urban students as reported by Rangappa (1992), Rajmal et al. (1995), Mishra (1997), Mehera (2004), Misra (2005), Vijayalakshmi et al. (2006), Singh et al. (2007), Mittal (2008) and Choudhary (2009). Whereas some studies emphasised that academic achievement of rural students was higher than the achievement of the urban students as reported by Sheikh (1995), Verma (1995), Ganguly (2004), Gakhar et al. (2004) and Rajendran et al. (2007). Some studies reported significant difference or relationship of academic achievement in relation to location without any direction as Ojoawo (1989), Rangappa (1992), Balasubramanian (1993), Adepoju (2002), Gakhar et al. (2004)
Almost all previous researches reported positive relationship between academic achievement and home adjustment such as Roy (1956), Sharma (1961), Kumar (1963), Dhaliwal (1971), Sharma (1972), Pandey (1977), Biiopra (1982), Chopra (1982), Goel (1986), Goel (1988), Singh (1988), Subudhi (1990), Giraudo (1990), Sharma (1999), Jagannadhan (2003), Prasad (2005) and Mohanty (2009). Some studies reported positive relationship between home adjustment and academic achievement in some specific subject as (Mathematics and Home Science) Chen (2001) and Mehera (2004). Some studies examined the influence or relationship of home adjustment and academic achievement in relation to under and over achievers and reported that high achievers had positive adjustment as reported by Saxena (1979) and Singh (1988). Most of researches emphasised that better health adjustment lead to good academic scores, as Roy (1956), Saxena (1979) and Kolwadkar (1980) found that the health status was significantly related to academic achievement.

Few research studies emphasised that personality factor assertive vs obedient lead to good academic scores, as Lohithakshan (1961) found that educationally backward children were inferior with regard to assertive attitude towards school work. Asthana (2005) found that warm hearted and assertive individuals performed better if they worked under intrinsic motivation; those who were warm hearted, assertive, adventurous and tensed performed well academically irrespective of conditions of control. Verman et al. (1979) found that the personality pattern of talented students were socially well adjusted, assertive and independent while low achievers and backward students were dependent, attention seeking, emotionally unstable and unsocial. Jahan (2004) found that overachievers of science stream were intelligent, excitable, obedient, sober as compared to the underachievers; the overachiever of the arts stream were more warm hearted, intelligent, affected by feelings, assertive, apprehensive and tense as compared to underachievers. Dhaliwal (1971) revealed that insecurity feelings and reserved-outgoing, obedient-assertive, placid-apprehensive, sober-happy-go-lucky and relaxed–tense dimensions of personality had negative association with academic over-under achievement. Systematic cognitive style is rational in nature that is why it is one of the factor of predicting academic achievement.

5.3. Limitations of the Study

1. Academic achievement of students was measured as per result of PSEB matriculation examination.
2. Few randomly selected schools refused for collection of data.
5.4. Educational Implications
1. As study revealed logical, step by step sequential approach to thinking, learning, problem solving and decision making which helps to attain more academic scores. Teacher should follow the same.
2. Holistic and visual approach for learning of the concepts should be followed.
3. Adventurous activities may be initiated in the school curriculum to enhance academic achievement of the adolescents.
4. Activities related to mental capacities as quiz, extempore may be initiated in school activities.
5. Focus on the educational aspect in the areas of home, health and emotional adjustment for enhancing academic achievement.
6. Develop the ability to receive information from the environment, transform and uses that information to respond to the environment in own characteristic way.
7. Provide real life experience patterns to the learner.
8. Develop the ability of self assurance and self sufficiency among adolescents.
9. Involve the activities which develop higher mental capacities, reflective thinking, enthusiasm among the students to enhance academic achievement.
10. Involve the students in the tasks related to reasoning, logical, perceptual and observational abilities.

5.5. Suggestions for further Research
1. Standardized tool may be developed to measure academic achievement of students.
2. Different schools as Kendriya Vidalayas, Navodaya Vidalayas can be taken for comparative study with same variables.
3. Other correlates of achievement can also be studied.
4. Experimental work may be conducted by taking these variables to enhance academic achievement.