CHAPTER VI
SUMMARY

Title
Emotional Intelligence, Academic Anxiety and Academic Achievement of High School Students in relation to their Styles of Learning and Thinking and Certain Demographic Variables

Introduction
Education, the foremost weapon for social reform, is now under the forces of change. In the modern world of technological innovations, all educational institutions are trying to improve their quality and laying more emphasis on academic excellence of the learners. In the present era of cut-throat competition, quality of performance has become the key factor for personal progress. Parents desire their children to climb the ladder of performance as high as possible. This desire for a high level of achievement puts a lot of pressure on students, teachers, and schools and in general, on the education system itself. Academic achievement is still given highest priority and intelligence is considered as the most effective predictor of academic achievement. However, researches have shown that other social and emotional factors like; emotional intelligence, anxiety, achievement motivation etc. also affect the achievement of students considerably. Interdisciplinary research clearly indicates the importance of emotional intelligence and emotional skills in students’ achievement, career success and personal well-being.

In the last three decades, extensive research studies have been conducted on various emotional, social and other psychological correlates of teaching-learning process. A considerable attention has been paid by the educationists and researchers to study the individual
differences in the learning and thinking styles of students at different levels of education. Solid and unique contribution of styles of learning and thinking may be seen in improving instructional methods, students’ performance, learning and learning strategies, broadening educational goals and outcomes for meeting the stylistic demands of the environment and developing human skills. The knowledge of how students prefer to learn and think may prove to be helpful in meeting the learning needs of the students so that best learning outcomes not only in cognitive but also in non-cognitive areas of their life can be produced. Some of the significant non-cognitive characteristics of individuals include emotional intelligence, academic anxiety etc.

Emotional intelligence is the ability to motivate oneself and persist in the face of frustrations; to control impulse and delay gratification, to regulate one’s moods and keep distress from swamping the ability to think; to empathize and hope. Goleman (1995) identified five characteristics of persons with high emotional intelligence. These are: (i) self-awareness, (ii) self-control, (iii) motivation, (iv) empathy and; (v) social skills. He considered the development of “emotional intelligence” as a main factor for success in life. Emotional intelligence plays major role in the academic success and emotional adjustment of students both at home and school.

Academic anxiety is a kind of state anxiety which is related to the impending danger from the environment of the academic institutions including teacher, certain subjects like Mathematics, English etc. Academic anxiety has four components - worry, emotionality, task generated interferences and study skill deficits. Academically anxious students face many emotional ups and downs in their schools as well as personal life. Today’s competitive zest makes students very anxious and eager to know of whether they can do well in their academic part. If their anxiety is not properly addressed, it can have many serious and lasting consequences, such as causing a student to procrastinate, perform poorly on school work,
fail in classes and withdraw from socializing with peers or pursuing activities that interest him. A higher level of anxiety can have detrimental effect on academic life of a student, the success or failure of which is measured in terms of academic achievement of students. Achievement may be defined as the range of abilities and skills which the pupil has acquired in academic field. The future success of each pupil is assessed, predicted and linked with the achievement in school grades. Academic achievement refers to the knowledge attained and skills developed in school subjects which are assessed by the educational authorities with the help of standardized or non-standardized tests. It is so far considered to be influenced in part by his/her ability to make adjustment to the environment, in part by special abilities viz. intelligence, aptitude, reasoning power etc. which are integral part of his personality and partly by the intensity of drives and motives which serve as the impelling force for his/her activities.

The modes of learning and thinking employed by students have a strong influence on their academic achievement as well as on their non-cognitive characteristics. Hence, it becomes vital to have a thorough understating about students’ preferred learning and thinking styles. Learning styles are relatively stable attributes or preferences or habitual strategies used by individual learner to organise and process the information for problem solving. These are student’s predispositions to adopt a particular learning strategy across the learning task. There is wide variety of learning styles. Individuals possess and employ different styles to learn a new concept and to perform any learning activity. The knowledge of students’ preferred styles of learning and thinking can help the teachers to capitalize on the opportunities for enhancing their learning on academic tasks. However, this process of learning is mediated by the process of thinking. The process of thinking involves use of abilities possessed by the individuals. In learning of a particular task, thinking styles are considered as determining factors. Thinking styles generally refer to the preferred ways of using one’s abilities. Just like different
learning styles, individuals possess different thinking styles. In nutshell, learning and thinking styles provide a basis to the teachers for tailoring the mode of presentation so as to develop, compensate for or to capitalize upon students’ characteristics for the optimization of subject matter learning and finally raising their academic performance.

The review of research studies made it evident that it is of vital significance to undertake research study on styles of learning and thinking of students and explore its influence on emotional intelligence, academic anxiety and academic achievement. It was revealed from the review of studies that different styles of learning and thinking are based on the functioning of brain hemispheres and these had a strong influence on different personality characteristics of children. The investigations on other variables such as; creativity, test-anxiety, intelligence, locus of control, academic performance, self-esteem etc. with regard to styles of learning and thinking have propelled varied results. The variable ‘academic achievement’ has been studied extensively by the previous researchers demonstrating varied results sometimes supporting and sometimes in conflict with other researches. The perusal of related literature makes it amply clear that styles of learning and thinking have a distinct impact on teaching-learning process. The identification of students’ preferred styles of learning and thinking and corresponding instructional interventions may lead to the development of emotionally intelligent, academically competent and well-adjusted students in any type of academically adverse situations. After visiting enormous literature, it comes to forefront that hardly any serious attempt has been made by the scholars to explore the impact of styles of learning and thinking on academic anxiety and separate aspects/dimensions/components of emotional intelligence. Moreover, contradictory findings have been reported in different studies related to impact of styles of learning and thinking on the variables under investigation. Even with regard to gender and social differentials in styles of learning and thinking,
emotional intelligence and academic anxiety, no consistency or pattern in results got emerged after making a thorough review of research literature. Looking at such gaps, the present investigation has been designed to explore the treasure of knowledge related to emotional intelligence, academic anxiety, academic achievement as related to styles of learning and thinking among high school students.

As emotional intelligence is considered as a predictor of success in a number of life domains, so this study has been undertaken which will help to identify the factors having a direct or indirect bearing on emotional intelligence of adolescents. On the basis of results, suggestions may be given to parents and teachers to improve emotional build up and the self-adaptation abilities among the students for solving personal problems and other pressures of life. The present investigation is an attempt to identify highly preferred learning and thinking styles of students in terms of functioning of their brain hemispheres. The identification of styles of learning and thinking through the present investigation may prove to be beneficial for educationists, curriculum framers and teachers in suggesting meaningful academic and occupational choices to the students. Necessary recommendations for making the existing curriculum more need based and vocational in nature may be laid down on the basis of findings of present investigation. In nut shell, the present investigation will provide new and meaningful information pertaining to styles of learning and thinking of students which may give new directions in the area of improvement of teaching-learning process and designing corresponding instructional strategies for students. The outcomes of present study may not only help the teachers to build up desirable instructional procedures to meet the learners’ needs in terms of their styles of learning and thinking but may also prove to be of great help to curriculum designers and textbook writers. Besides, it may provide new directions to educational planners and thinkers to develop strategies of education which may yield fruitful results for school going students. The results of present study will also throw
light on the impact of styles of learning and thinking on academic anxiety and academic achievement of the students. This may help the parents, guidance workers and all those who are concerned with the betterment of students in devising ways and means of reducing academic anxiety and enhancing academic achievement by employing appropriate styles of learning and thinking.

Against this backdrop, the present study was undertaken with following specific objectives:

**Objectives of the Study**

1. To study emotional intelligence level of high school students.
2. To study academic anxiety level of high school students.
3. To study academic achievement level of high school students.
4. To study the prevalent styles of learning and thinking among high school students.
5. To study the gender-wise difference among high school students with respect to overall emotional intelligence and it’s four components i.e. (i) intra-personal awareness, (ii) inter-personal awareness, (iii) intra-personal management and, (iv) inter-personal management.
6. To study the difference in overall emotional intelligence and it’s four components i.e. (i) intra-personal awareness, (ii) inter-personal awareness, (iii) intra-personal management and, (iv) inter-personal management among high school students having different styles of learning and thinking.
7. To study the interaction between gender and styles of learning and thinking of high school students with regard to their overall emotional intelligence and it’s four components i.e. (i) intra-personal awareness, (ii) inter-personal awareness, (iii) intra-personal management and, (iv) inter-personal management.
8. To study the social category-wise differences among high school students with respect to overall emotional intelligence and it’s four components i.e. (i) intra-personal awareness, (ii) inter-
To study the interaction between social category and styles of learning and thinking of high school students with regard to their overall emotional intelligence and its four components i.e. (i) intra-personal awareness, (ii) inter-personal awareness, (iii) intra-personal management and, (iv) inter-personal management.

To study the gender-wise difference in academic anxiety of high school students.

To study the differences in the academic anxiety of high school students possessing different styles of learning and thinking.

To study the interaction between gender and styles of learning and thinking with regard to academic anxiety of high school students.

To study the social category-wise differences in academic anxiety of high school students.

To study the interaction between social category and styles of learning and thinking with regard to academic anxiety of high school students.

To study the gender-wise difference in academic achievement of high school students.

To study the differences in the academic achievement of high school students possessing different styles of learning and thinking.

To study the interaction between gender and styles of learning and thinking with regard to academic achievement of high school students.

To study the social category-wise differences in the academic achievement of high school students.

To study the interaction between social category and styles of learning and thinking with regard to academic achievement of high school students.
Hypotheses of the Study

1. There exists no significant difference among high school boys and girls with respect to their overall emotional intelligence and it’s four components i.e. (i) intra-personal awareness, (ii) inter-personal awareness, (iii) intra-personal management and, (iv) inter-personal management.

2. There exist no significant differences among high school students in overall emotional intelligence and it’s four components i.e. (i) intra-personal awareness, (ii) inter-personal awareness, (iii) intra-personal management and, (iv) inter-personal management with respect to their styles of learning and thinking.

3. Gender and styles of learning and thinking of high school students do not interact significantly with regard to overall emotional intelligence and it’s four components i.e. (i) intra-personal awareness, (ii) inter-personal awareness, (iii) intra-personal management and, (iv) inter-personal management.

4. Students belonging to different social categories i.e. general, scheduled caste and other backward classes do not differ significantly with respect to their overall emotional intelligence and it’s four components i.e. (i) intra-personal awareness, (ii) inter-personal awareness, (iii) intra-personal management and, (iv) inter-personal management.

5. Social category and styles of learning and thinking of high school students do not interact significantly with regard to their overall emotional intelligence and it’s four components i.e. (i) intra-personal awareness, (ii) inter-personal awareness, (iii) intra-personal management and, (iv) inter-personal management.

6. There exists no significant difference in academic anxiety of high school boys and girls.
7. There exist no significant differences in academic anxiety of high school students possessing different styles of learning and thinking.

8. Gender and styles of learning and thinking do not interact significantly with regard to academic anxiety of high school students.

9. There exist no significant differences in academic anxiety of high school students belonging to different social categories.

10. Social category and styles of learning and thinking do not interact significantly with regard to academic anxiety of high school students.

11. There exists no significant difference in academic achievement of high school boys and girls.

12. There exist no significant differences in academic achievement of high school students possessing different styles of learning and thinking.

13. Gender and styles of learning and thinking do not interact significantly with regard to academic achievement of high school students.

14. There exist no significant differences in academic achievement of high school students belonging to different social categories.

15. Social category and styles of learning and thinking do not interact significantly with regard to academic achievement of high school students.

**DELIMITATIONS OF THE STUDY**

The delimitation is an essential part of any research study because the field of investigation is limitless. So, it is necessary to delimit its scope. The present study was delimited in terms of following aspects:

1) Out of twelve districts of Himachal Pradesh, only four districts i.e. Mandi, Hamirpur, Bilaspur and Kullu were selected by
adopting systematic random sampling technique for conducting the present investigation.

2) The study was delimited to a sample of 1259 students studying in 9th class in government high schools/senior secondary schools affiliated to Himachal Pradesh Board of School Education, Dharamshala.

3) The study was restricted to three dependent variables i.e. emotional intelligence, academic anxiety and academic achievement. Out of these, two variables were measured by employing following standardized tools respectively;
   (i) Emotional Intelligence Inventory developed by Mangal and Mangal (2009).

4) The study was delimited to the independent variable i.e. styles of learning and thinking which was measured with the help of standardized research tool i.e. Styles of Learning and Thinking (SOLAT) by Venkataraman (1994).

5) The marks obtained by selected 9th class students in their end-term examination in previous class (i.e. 8th) under continuous and comprehensive evaluation (CCE) pattern was considered as their academic achievement.

6) The study was delimited to only two demographic variables i.e. gender and social category.

OPERATIONAL DEFINITIONS OF THE KEY TERMS USED

To avoid ambiguity and give a clear picture of the problem, it is necessary to explain each term mentioned in the title of the problem. Certain terms with a specific meaning have been used in the present study. The operational definitions of the key terms are given as under:

**Emotional Intelligence**

Emotional intelligence is the ability to monitor one’s own and other people’s emotions, feelings, to discriminate among them and to
use this information to guide one’s own thinking and actions. Emotional intelligence is an umbrella phrase that captures a broad collection of inter-personal and intra-personal skills. In the present study, it was measured by Emotional Intelligence Inventory developed by Mangal and Mangal (2009). It measures emotional intelligence of high school students in terms of it’s following four components:

(i) Intra-personal awareness.
(ii) Inter-personal awareness.
(iii) Intra-personal management.
(iv) Inter-personal management.

Academic Anxiety

Generally, anxiety is classified as trait anxiety or state anxiety. The trait anxiety is a stable characteristic or trait of the person. A state anxiety is one which is aroused by some temporary conditions of the environment such as; examination, accident, punishment etc. Academic anxiety is a kind of state anxiety which is related to impending danger from the environment of the academic institutions including teachers, certain subjects like; Mathematics, English etc. In the present investigation, it was measured by Academic Anxiety Scale for Children developed by Singh and Sengupta (1984).

Academic Achievement

It refers to the marks obtained by class 9th students in their end-term examination in previous class (i.e. 8th) under continuous and comprehensive evaluation (CCE) pattern followed in government high/senior secondary schools affiliated to Himachal Pradesh Board of School Education, Dharamshala.

Styles of Learning and Thinking

Styles of learning and thinking depend upon the cerebral functioning of an individual in retaining and processing different modes of information. Styles of learning and thinking indicate the hemispheric functions of the brain. Student’s learning strategy and
information processing are based on the preferences of the brain area. In the present investigation, styles of learning and thinking indicate whether the high school students prefer to make use of right hemisphere or left hemisphere or make use of both hemispheres of their brain for processing various kinds of information. The preference of the students for using particular hemisphere of the brain is further responsible for particular styles of learning and thinking possessed by them. In the present investigation, it was measured by the tool entitled, “Style of Learning and Thinking (SOLAT)” developed by Venkataraman (1994).

**Demographic Variables**

In the present investigation, demographic variables include gender and social category of sampled high school students. The variable of social category was further classified in three categories viz. general, scheduled caste and other backward classes students.

**General Category:** All those individuals (except those belonging to SC, ST, OBC and other minority groups) who are not provided with any kind of reservation in accordance with the Constitution of India.

**Scheduled Caste (SC):** The individuals belonging to that section of the society which in the past were deprived of basic amenities and currently provided reservation under ‘Article 15 and 16’ of Indian Constitution are referred to as scheduled caste.

**Other Backward Classes (OBC):** The individuals who in the Indian Constitution are enlisted as belonging to socially and economically backward section of society under ‘Article 340’ and are provided with reservation benefits.

**High School Students**

The students who were studying in 9th class in government high schools/senior secondary schools affiliated to Himachal Pradesh Board of School Education, Dharamshala.
Research Method Employed

‘Survey’ technique under ‘Descriptive Methods of Research’ was employed for conducting present investigation.

Sampling

In the present investigation, a combination of different sampling techniques was applied. All the twelve districts of Himachal Pradesh constituted the universe of the study. Out of these 12 districts, four districts were selected by adopting systematic random sampling technique. For this, all the twelve districts were arranged in a descending order on the basis of their literacy rate as per Census-2011. Then, first district from top three districts in the literacy ladder was selected randomly and remaining three districts were selected in a sequential manner with a gap of three. Thus, by adopting systematic random sampling procedure, four districts namely; Hamirpur, Bilaspur, Mandi and Kullu were selected. After the selection of the districts, the lists of high/senior secondary schools located in these four districts were procured and about 10% of schools from each sampled district were selected by the investigator by adopting random sampling procedure (using random numbers table). Thus, a total of 71 high /senior secondary schools were selected from four districts. At the last stage, all 9th class students who were available on the day of data collection were selected by the investigator. In all, a total of 1259 9th class students constituted the overall sample in the present investigation. Out of these 1259 students, 491 were boys and remaining 768 were girls.

Research Tools Used

Relevant data were collected from sampled students by making use of following tools:

• Mangal Emotional Intelligence Inventory by Mangal and Mangal (2009).
• Academic Anxiety Scale for Children by Singh and Sengupta (1984).
• Style of Learning and Thinking by Venkataraman (1994).

The academic achievement scores obtained by sampled 9th class students in their end-term examination in previous class (i.e. 8th) under Continuous and Comprehensive Evaluation pattern followed by schools were recorded from school records by the researcher herself with the assistance of concerned teacher incharge.

The data were collected during the period w.e.f June, 2012 to December, 2012.

Data Tabulation

Data collected were scored by employing the scoring procedure as mentioned in the manuals of respective research tools. On the basis of scores obtained on SOLAT tool, the sampled high school students were categorized into three groups i.e. having right hemispheric dominance, left hemispheric dominance and integrated hemispheric functioning. The scores obtained by sampled students on dependent variables i.e. emotional intelligence, academic anxiety and academic achievement were tabulated separately for independent variables namely; gender and social category.

Research Designs

1. For studying the main and interactional effects of gender and styles of learning and thinking on emotional intelligence, academic anxiety and academic achievement, 2x3 factorial design involving two types of gender i.e. boys and girls and three levels of styles of learning and thinking i.e. right hemispheric dominance, left hemispheric dominance and integrated hemispheric functioning was applied.

2. For studying the main and interactional effects of social category and styles of learning and thinking on emotional intelligence, academic anxiety and academic achievement, 3x3
factorial design involving three levels of social category i.e. general, SC and OBC and three levels of styles of learning and thinking i.e. right hemispheric dominance, left hemispheric dominance and integrated hemispheric functioning was applied.

**Statistical Treatment of Data**

In order to achieve the objectives of the present investigation, different statistical techniques were applied. First of all, for checking the normality of data and to study the level of emotional intelligence, academic anxiety and academic achievement of high school students, descriptive statistics like mean, median, mode, standard deviation, skewness and kurtosis were computed. In order to study hemispheric dominance among selected high school students (for studying the styles of learning and thinking), percentage analysis was carried out. The significant difference in hemispheric dominance (or styles of learning and thinking) was studied by employing chi-square test against null hypotheses. Further, in order to study the main effects of gender, social category and styles of learning and thinking as well as their interactional effects with respect to emotional intelligence, academic anxiety and academic achievement of high school students, two way analysis of variance with unequal and disproportionate group size (number of students in each group) was applied. The Tukey’s test of Honestly Significant Difference (HSD) was further applied to test the significance of mean differences in dependent variables where F-value came out to be significant. It is important to mention here that the computed value of HSD was compared with respective differences in weighted means of dependent variable. The data were analyzed by using computer software i.e. Statistical Package for Social Sciences (SPSS) ‘18.0 version’.
General Conclusions

On the basis of analysis of data and interpretation of results, following conclusions were drawn:

1. Almost negligible (0.397%) high school students and very few (7.23%) students possessed very high and high level of emotional intelligence respectively. About one half (47.74%) high school students possessed moderate level of emotional intelligence. On the other extreme, nearly 41.78% and few high school students (2.86%) possessed low and very low level of emotional intelligence respectively.

2. Few high school students (11.52%) possessed extremely high academic anxiety and 22.64% high school students were found to have high level of academic anxiety. About one fourth (24.78%) high school students possessed moderate academic anxiety level. On the other hand, 24.31% and 16.76% high school students possessed low and very low level of academic anxiety respectively.

3. Almost negligible high school students (1.91%) have shown very high academic achievement and only few students (13.89%) reflected high academic achievement. Large majority of high school students (68.38%) possessed average academic achievement. On the other extreme, few high school students (15.56%) and almost negligible number of students (0.32%) have shown low and very low academic achievement respectively.

4. There existed significant difference among high school students in terms of their brain hemispheric functioning. It was concluded that large majority of high school students (74.42%) used right hemisphere of their brain to a greater extent for processing different sorts of information and only few students made greater use of left hemisphere of their brain (14.85%). Integrated hemispheric functioning for processing different types of information was possessed by 10.73% students.
5. There existed no significant gender difference in intra-personal awareness, inter-personal awareness, intra-personal management and inter-personal management components of emotional intelligence as well as on overall emotional intelligence.

6(i). High school students possessing different styles of learning and thinking differed significantly from each other on intra-personal awareness component of emotional intelligence. The weighted mean scores for intra-personal awareness component of emotional intelligence of high school students with right hemispheric dominance or integrated hemispheric functioning were found to be 14.94 and 14.64 respectively which were significantly higher than the weighted mean of intra-personal awareness score (14.08) of students possessing left hemispheric dominance. However, no significant difference in intra-personal awareness component of emotional intelligence was witnessed among high school students possessing right hemispheric dominance and integrated hemispheric functioning.

6(ii). High school students possessing different styles of learning and thinking i.e. right hemispheric dominance, left hemispheric dominance and integrated hemispheric functioning did not differ significantly on inter-personal awareness, intra-personal management and inter-personal management components of emotional intelligence.

6(iii). High school students possessing different styles of learning and thinking differed significantly from each other with respect to overall emotional intelligence. The weighted mean scores of overall emotional intelligence of high school students possessing right hemispheric dominance or integrated hemispheric functioning were found to be 61.85 and 62.79 respectively which were significantly higher than the overall weighted mean of emotional intelligence of students with left hemispheric
dominance (60.03). However, no significant difference was observed in overall emotional intelligence among high school students possessing right hemispheric dominance and integrated hemispheric functioning.

7. Gender and styles of learning and thinking did not interact significantly with regard to intra-personal awareness, inter-personal awareness, intra-personal management and inter-personal management components of emotional intelligence as well as on overall emotional intelligence.

8. High school students belonging to different social categories i.e. general, scheduled caste and other backward classes did not differ significantly on intra-personal awareness, inter-personal awareness, intra-personal management and inter-personal management components of emotional intelligence as well as on overall emotional intelligence.

9. Social category and styles of learning and thinking did not interact significantly with regard to intra-personal awareness, inter-personal awareness, intra-personal management and inter-personal management components of emotional intelligence as well as on overall emotional intelligence.

10. There existed no significant difference in academic anxiety of high school boys and girls.

11. There existed no significant differences in academic anxiety of high school students possessing different styles of learning and thinking i.e. right hemispheric dominance, left hemispheric dominance and integrated hemispheric functioning.

12. Gender and styles of learning and thinking did not interact significantly with regard to academic anxiety of high school students.
13. There existed no significant differences in academic anxiety of high school students belonging to different social categories i.e. general, scheduled caste and other backward classes.

14. Social category and styles of learning and thinking did not interact significantly with regard to academic anxiety of high school students.

15. High school boys and girls differed significantly from each other with respect to their academic achievement. Girls were found to have significantly higher mean of academic achievement scores (435.79) than boys (414.65).

16. There existed no significant differences in academic achievement of high school students possessing different styles of learning and thinking i.e. right hemispheric dominance, left hemispheric dominance and integrated hemispheric functioning.

17. Gender and styles of learning and thinking did not interact significantly with regard to academic achievement of high school students.

18. High school students belonging to different social categories i.e. general, scheduled caste and other backward classes do not differ significantly from each other with respect to their academic achievement and they possessed almost similar level of academic achievement.

19. Social category and styles of learning and thinking did not interact significantly with regard to academic achievement of high school students.

**Educational Implications**

Every study has its utility or implications in some or other areas of education. The findings of present study have following implications for teachers, curriculum designers, educational administrators and policy making organizations:
1) The findings of the study revealed that about one half (47.74%) high school students were of moderate emotional intelligence level and 44.64% students possessed low emotional intelligence level. So, in order to improve the emotional intelligence of high school students, it is required that the students should be provided with adequate opportunities to interact with their fellows during various curricular and co-curricular activities in school campus. It may help them in understanding their own as well as others’ emotions and develop the ability to express their feelings. To improve the level of emotional intelligence of students, teachers as well as parents should try to promote feelings of belongingness, sharing, co-operation, adjustment and team spirit by organizing various group activities and providing opportunities to take their own responsibilities. Workshops, seminars, games, discussions, debates, NSS camps, NCC programmes, special classes of meditation and yoga should be organized by concerned school authorities as these activities serve as gateway for flourishing of emotions and energies of the individuals.

2) Although, there existed no significant gender-wise and social category-wise differences among high school students in different components of emotional intelligence, yet the parents and teachers can employ following strategies for creating a healthy environment at home and school for cultivating emotional intelligence among children:

- Productive activities like NSS camps, project work, NCC programmes, social awareness campaign etc. should be organized at school and home to develop sense of responsibility among students so that they can improve their capabilities in understanding their own as well as others’ emotions.
- The parents should keep a balanced check on television and movie viewing of their children. Media stories, movies, TV
shows etc. containing lot of violence and cruelty should be avoided and parents and teachers should encourage children to read and view emotionally literate books, films etc. This will assist the children in developing positive attitude which will be beneficial for them to correctly perceive the feelings of both, in one self and others.

• In order to promote intra-personal management among students, school administrators and teachers should organize such programmes where students could work cooperatively to accomplish the assigned task and where maximum opportunities could be made available for improving inter-personal relationships. Such activities may include project works, campus beautification, public awareness programmes, celebration of days of national and international importance and socially useful productive work for the welfare of society etc.

• Group activities emphasizing team work should be encouraged that can help children to develop control over their emotions and to handle their relationships in an effective and efficient manner.

• Through observation, children acquire many characteristics of their role models. The teachers, parents and elders are role models to imitate for children during the initial stages of schooling. Hence, parents and teachers should behave in a good manner and reflect those behaviours in their daily routine activities that may be easily and willingly accepted and imbibed by the children.

• There should be provision of special classes and lectures on human relations in the school. A child psychologist or counsellor should be appointed in every school so that regular assessment of students’ socio-emotional behaviours and skills could be made. It will be helpful in gaining an
insight into child’s emotional issues and delineating the strategies for resolving the same.

• For preventing emotional imbalance and maladjustment among students, praise, reinforcement and encouragement should be provided for good works of students publically. The students should be encouraged to develop the qualities of a good listener for understanding their own and others’ feelings. Criticism and punishment should be avoided as far as possible.

• Teachers and parents should adopt measures for proper development of social skills, communication skills and interpersonal relationships. They should devote more time and efforts for developing affective skills among students so that they can specifically learn the art of managing their own as well as others’ feelings and emotions.

• Teachers and parents must show recognition, affection, protection and devotion in hearing the child. They should help the children to have habits of regularity which may assist them to develop a positive attitude towards self.

• For improving emotional intelligence among students, it is of vital significance that teacher should also be emotionally intelligent. An emotionally intelligent teacher can emphasize on responsible behaviour on the part of his/her students by placing himself/herself as a role model and through generalizing the classroom activities in a proper way. For this, emotional intelligence training workshops, orientation classes, career upliftment programmes and virtual classes can be organized to provide in-depth information about emotional intelligence skills which can make the teachers more effective in understanding their pupils’ concerns, needs, abilities and feelings.

• The schools should emphasize on organization of those curricular, co-curricular and outreach activities which focus
on various issues of social, national and international importance such as; social discrimination, child rights, human rights, women empowerment, environmental degradation, value crisis, extinction of animal species, conservation of natural resources etc. Such activities may help the students in becoming sensitive to other people and their needs and in imbibing an element of ‘humanity’ which is currently lacking in youngsters and youths of today.

3) Although, it was found that there existed no significant gender-wise and social category-wise differences in academic anxiety among high school students. However, the findings of the present study also pointed out that approximately one third (34.16%) high school students possessed high level of academic anxiety. In order to reduce the academic anxiety among students, the teachers should act as a guide and helper during the course of their studies. Moreover, the courses should be divided into smaller units and at the end of each unit, formative tests should be administered. This may prove to be helpful in reducing anxiety among students in various learning situations. The phobia about some subjects like Mathematics, Science, English etc. can be removed by developing positive attitude among students by sympathetic and friendly attitude of teachers. The teachers should employ interesting and innovative methods and strategies by ensuring active participation of students for reducing anxiety among the students. Such efforts of teachers can have motivating effects on the students and can be helpful in providing feedback as well as reinforcement to reduce anxiety among students in particular academic subjects. The continuous and comprehensive evaluation system adopted at elementary stage of education has largely contributed towards reducing academic anxiety among children. Such evaluation procedure may also be followed at secondary and
senior secondary stages of education. Following steps may be undertaken to reduce academic anxiety among students:

- The curriculum designers and examination authorities should bring necessary modifications in the existing secondary school curriculum and loading the curriculum with student-oriented activities.
- The teachers should try to create democratic and interactive environment in the classroom to reduce anxiety among students. Teachers should be impartial, polite and democratic so that students can easily share their academic queries/worries with teachers and find the solutions.
- Excessive home-work and extra academic burden should not be imposed on the students.
- Students should not be compared unnecessarily with other students. Rather, they should be compared with certain set criterion determined on the basis of individual student’s abilities.
- Before examinations, school authorities should orient the students and organize the workshops so as to acquaint them with ways and means of coping up with anxiety during examination time. The students must be imparted necessary suggestions for better preparation for examinations, improving study habits and developing self-confidence.
- The role of family in reducing academic anxiety among high school students is equally important. Parents should encourage and motivate their children to carry forward their studies with ease and confidence. Encouraging words of parents may give them confidence to excel in their studies. Home coaching by parents may also prove to be helpful in reducing academic anxiety among students.

4) The findings of the study indicated that about 85% high school students had shown either average or below average academic
achievement level. This is not a healthy sign of any effective educational system. This calls for initiating immediate steps by the concerned authorities for improving academic outcomes of students. Hence, in order to do so and to meet out every student’s instructional requirements, the teacher should be acquainted in use of various audio-visual teaching aids, making practical demonstrations, employing innovative teaching strategies namely, mastery learning, personalized system of instruction, use of computers in teaching-learning process etc. In this context, it is essential that special seminars and workshops should be organized to make the teachers well-acquainted with latest teaching-learning technologies and pedagogical practices. Teachers should orient the students in the art of taking examinations with the emphasis on writing best qualitative material in the examination.

5) It was also observed that girls have exhibited higher academic achievement as compared to boys. Various examinations as well as previous researches also substantiate this result. This indicates that different schemes and policies of government for raising the level of girls’ education are achieving their aims. Contrary to this, low academic achievement of boys is a point of concern which needs to be addressed urgently. The need is to continue the programmes of girls’ education with more zeal and energy in future and initiate speedy measures to bring the achievement level of boys at par with their female counterparts so as to realize the aim of inclusive growth. Following steps can be initiated to raise the level of academic achievement of high school students:

- Remedial instruction should be provided to low achievers by paying individual attention.
- Low achievers should not be criticized and punished but special tutorial services should be provided by the teachers
to such students for removing the difficulties faced by them in various academic courses. Teachers and parents should set realistic targets for these children and necessary assistance should be provided to them during the course of achievement of targets.

- Proper infrastructure facilities as well as library facilities should be provided for students. The teachers should make efforts to develop proper habits among students to use library facilities and inculcate proper reading habits among them. The parents should earmark separate place at home for undertaking studies by the child. This place should look like study place exclusively which may help in developing positive attitude among child towards studies.

- Teachers should be provided with appropriate training in use of various teaching-learning strategies and equipments so that they can employ these in school situations. This can contribute towards improving academic achievement of students. Hence, the need is to design in-service teacher training programmes in a way that focus on such modern innovative teaching-learning strategies and use of modern technological devices in classroom situations.

6) It was revealed that large majority of high school students (74.42%) used right hemisphere of their brain to a greater extent for processing different sort of information and only a few students (14.85%) either used left hemisphere. Only 10.73% students possessed integrated hemispheric functioning. Moreover, students possessing left hemispheric dominance were significantly poor in terms of intra-personal awareness and overall emotional intelligence as compared to the students with right hemispheric dominance or integrated hemispheric functioning. Hence, it is required that the student should be encouraged and trained in making use of both hemispheres of
their brain. This will not only be helpful in the improvement of their cognitive abilities but may also lead to sound affective development in terms of better emotional intelligence and social skills. For improving the functioning of left hemisphere of the brain or stressing on integrated hemispheric functioning, teacher should provide opportunities to the students to learn through observations and apply their reasoning power to analyse the learning situations. Teachers should employ inductive learning approaches, assign project works, organize field trips and provide various problematic situations to teach the instructional material and to foster the use of left hemisphere of brain among students. The teachers should make efforts to eliminate the barriers to learning by working with the hemispheric preference of the learners as well as providing opportunities for activating the functioning of non-dominant hemisphere. This may help the students to become more integrated learners with better processing skills employing both hemispheres of their brain. Following instructional procedures or strategies can be undertaken in schools to activate right hemisphere of students’ brain:

- Films, charts, maps, diagrams, graphs and cartoons etc., may be used in teaching. Incomplete stories based on the pictures shown to students can be completed as exercises.
- Learning by doing may be encouraged at all levels in schools and colleges. Students should be given opportunities to work on simple projects and should be assisted in taking them to completion.
- Role playing should form a technique in teaching of history, language and also in science subjects. In the classrooms, divergent questions may be asked, so that students can think and answer in different ways.
• Problems on specific issues may be given to students and they may be asked to solve problems in different ways. Students may be encouraged to record their ideas and write stories, essays, plays, dialogues, stage talk etc.

• Children may be encouraged to play with words, numbers and interest can be created among them for preparing models and construction of buildings using cubes and blocks.

• Besides arts and music, games and sports should be organized specifically for the purpose to develop concept of causal-relationship, the power to discriminate, to make judgements, to analyze and synthesize and to imagine. This will give opportunities to the students to use imagination, make believe, fantasy and creativity to activate the right hemispheric functioning of their brain.

• Excursions and field trips can be arranged to encourage and satisfy pupil’s curiosity and sense of observation.

Following strategies can be adopted in schools to improve the left hemispheric functioning of students’ brain:

• In the classroom, new concepts should be introduced in an analytical manner with verbal emphasis and importance can be given to the expression through the language.

• Students may be asked to recall and repeat abstract speeches heard on radios, televisions, public meetings and symposium.

• Students may be given training in analyzing and identifying different speech sounds and encouraged to give logical reasoning and examples for unknown activities or functions without experimenting in general.

• Discussions may be arranged on general problems, world affairs and socially raised issues from the reading of daily newspapers and magazines. The students can be encouraged
in writing non-fiction essays and scientific explanations in plain language.

- Teachers should write an outline of the lesson on the board, discuss vocabulary words and make cross puzzle on various learned concept.
- Teachers should assign individual assignments to the students.
- Mental health exercises, brain storming exercises, brain training exercises, workout exercises, concentration, meditation and physical exercises should be included in their daily routine work.

7) The findings of the study revealed that high school boys with integrated hemispheric functioning possessed somewhat higher level of intra-personal awareness, intra-personal management and overall emotional intelligence. Similarly, high school girls with integrated hemispheric functioning have shown higher level of inter-personal awareness, intra-personal management and overall emotional intelligence. Hence, to improve the emotional intelligence level of high school students with right or left hemispheric dominance, the teachers and parents should make efforts to involve them in such activities which require the use of both hemispheres of their brain. These activities may include; seminars, group discussions, workshops, symposia, special classes of meditation and yoga etc.

8) It was observed that scheduled caste students with integrated hemispheric functioning possessed better intra-personal awareness, inter-personal awareness, intra-personal management and overall emotional intelligence as compared to general and other backward classes category students possessing integrated hemispheric functioning. Similarly, other backward classes category students with left hemispheric dominance have shown comparatively higher intra-personal management. These findings indicate that high school students
belonging to deprived sections of society are better on certain dimensions of emotional intelligence as compared to general category students. This is a healthy sign reflecting mainstreaming of such students. This must be further strengthened by the school teachers and there is an additional need to provide more curricular and co-curricular opportunities to general category students so that their emotional intelligence can be enhanced. For this, the teachers should arrange those academic and co-academic activities that call for the use of both hemispheres of their brain.

9) Girls with left hemispheric dominance possessed somewhat higher level of academic anxiety. Apart from this, girls as well as general category students with right or integrated hemispheric functioning have witnessed comparatively higher academic achievement as compared to their respective counterparts with left hemispheric dominance. Therefore, it is essential that teachers should employ those teaching-learning methods in the classrooms which emphasize on employment of both right as well as left hemisphere of students’ brain. This will assist in reducing the academic anxiety among students with left hemispheric dominance and improving their academic achievement. These teaching-learning methods may include the use of films, charts, maps, models, learning by doing, assigning individuals projects, symposium, individual assignments, mental health exercises, brain storming exercises and physical exercises etc.

At last, it can be concluded that if proper education, opportunities and efforts are made by parents and teachers for the training of emotions, social skills and morals among the students right from their childhood, only then it is possible to cultivate a child into a fully developed and well-balanced personality. The aforesaid ways, means and strategies put a great responsibility on the teachers. Hence, it is of crucial significance that teachers must be provided with
adequate opportunities for their professional development and they should not be involved in other non-academic tasks by the government authorities.

**Suggestions for Further Research**

Research in any branch of human knowledge is never a closed chapter. There is always a need of finding solution to new problems and testing a veracity of the solution to the older problems. In the light of delimitations and findings of present study, following suggestions may be laid down for undertaking future research studies:

1. The present study was conducted on high school students. Similar research studies may be carried out by taking larger sample of students as well as replicating such studies at other levels of education.

2. A comparative study may be designed to investigate the differences in emotional intelligence, academic anxiety and academic achievement of high school students studying in government and private schools or pursuing vocational and non-vocational courses.

3. The present study was conducted to assess the emotional intelligence, academic anxiety and academic achievement of high school students in relation to their styles of learning and thinking. Similar researches may be carried out by taking other dependent or independent variables viz. creativity, locus of control, mental health, aggression, self-concept, achievement motivation, certain family-related and school-related factors etc.

4. An investigation may be carried out to ascertain the relationship between styles of learning and thinking of students with teaching styles, competence and self-efficacy level of teachers.

5. A comparative investigation of styles of learning and thinking of intellectually gifted, creatively gifted, academically gifted, musically/artistically and scientifically gifted students may be taken up.
6. Investigations may be carried out to identify the factors associated with emotional intelligence and academic anxiety of students so as to chalk out the strategies for improving the emotional intelligence and reducing academic anxiety among students.

7. Researches may be carried out to find out the reasons for less use of left hemisphere of brain by the students and delineating the ways and means to improve the functioning of left hemisphere of brain. In this regard, experimental studies may be undertaken to ascertain the effect of traditional and innovative teaching-learning strategies for improving left hemispheric functioning among the adolescents.

8. Investigations may be carried out to find out the impact of curricular and co-curricular programmes on the learning and thinking styles and other psychological characteristics of the students.

9. The effect of latest teaching technologies on student’s styles of learning and thinking, emotional intelligence and academic anxiety may be studied through experimental studies.

10. Case studies may be conducted to reveal some significant personality characteristics which uniquely and specially contributed towards cognitive and non-cognitive development of students using right or left hemisphere of their brain.

11. Research studies may be designed to ascertain the psychogenic needs of students possessing different styles of learning and thinking. Such studies may prove to be useful in identifying the ways and means to activate the functioning of non-dominant hemisphere of child’s brain.