CHAPTER - 5

SUMMARY AND CONCLUSIONS
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5.0 PROBLEM

The present study has been conducted to investigate the relationship of Emotional Intelligence with academic stress and achievement of the college students.

5.1 KEY CONCEPTS

Salovey and Mayer coined the term 'Emotional Intelligence' in 1990 and defined Emotional Intelligence as "a mental ability that consists of the ability to monitor one's own and others' feelings and emotions to discriminate among them and use one's information to guide one's thinking and actions."

Emotional Intelligence owes its psychological foundation in the Multiple Intelligence Theory of Gardner (Interpersonal and Intrapersonal intelligence) The present study has its conceptual root in the Salovey and Mayer's theoretical position.

5.1.2 STRESS

Stress is defined as a psychological state arising out of a condition that is characterized by excessive environmental demand against limited psycho-physiological resources. When an individual fails to cope with the environmental demands psychologically and physically, the resulting condition is said to be that of stress. In the case of students, the imbalance between one's response capabilities and educational environmental demands give rise to stress. This implies that the response capabilities of students to the academic and allied demands differ widely from student to student.
5.1.3 ACADEMIC ACHIEVEMENT

For any educational research, academic achievement is defined in terms of an end result after going through an academic programme. The Oxford Dictionary of Psychology, (Coleman, 2006), has defined academic achievement simply as 'scholastic attainment,' which supports the above mentioned statement. As the process of scholastic attainment is prolonged, complex and multidimensional, it is obvious that a student passes through a series of stress and strain ultimately to attain what has been called academic achievement.

5.2 RATIONALE OF THE STUDY

Many researchers have concluded that emotional intelligence helps coping with stress while some others did not find any such relationship between the two.

Other researchers noted a similar relation between academic achievement and emotional intelligence with some counter evidences also.

Thus, the relation among these three variables still remain inconclusive, along with some other inconclusive issues.

If stress is negatively correlated with both academic achievement and emotional intelligence, what may be the casual order of these three? This is a pertinent question because many psychologists believe that there is a set of personality correlates of stress. On the contrary, the proponents of emotional intelligence claim that it is independent of personality. This seems to be a bit paradoxical. Thus there is a lack of theoretical clarity about the relation of academic achievement with stress and emotional intelligence. This was the primary inspiration of this study.

5.3 OBJECTIVES

Objectives of the present study focused mainly on the variables of Emotional Intelligence and stress as predictors of academic achievement. The objectives of the present study are as follows:
1. To study whether course of study (Commerce and Arts), causes differences in Emotional Intelligence.
2. To study whether gender groups differ in emotional intelligence.
3. To study the interaction of gender and course of study on emotional intelligence.
4. To study the extent of academic achievement that can be predicted by Emotional Intelligence and stress.
5. To study the mutual predictability of Emotional Intelligence and stress scores.

5.4 METHOD

5.4.1 VARIABLES

Each of the variables of Emotional Intelligence and Stress has more than one subscale both conceptually as well as from the psychometric point of view. Considering all the dimensions of these variables, the following table depicts the comprehensive list of variables taken into consideration.

<table>
<thead>
<tr>
<th>TABLE 5.1: LIST OF VARIABLES</th>
<th>DIMENSIONS</th>
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<tbody>
<tr>
<td>STUDENTS STRESS</td>
<td>Stress due to:</td>
</tr>
<tr>
<td></td>
<td>1. Home Environment</td>
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<td></td>
<td>2. Parental Attitude</td>
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<td></td>
<td>3. Teacher and School</td>
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<td></td>
<td>4. Examination</td>
</tr>
<tr>
<td></td>
<td>5. Outer Environment</td>
</tr>
<tr>
<td></td>
<td>6. Personal Limitation</td>
</tr>
<tr>
<td>EMOTIONAL INTELLIGENCE</td>
<td>1. Self Awareness</td>
</tr>
<tr>
<td></td>
<td>2. Self Regulation</td>
</tr>
<tr>
<td></td>
<td>3. Motivation</td>
</tr>
<tr>
<td></td>
<td>4. Empathy</td>
</tr>
<tr>
<td></td>
<td>5. Social Skills</td>
</tr>
<tr>
<td>ACADEMIC ACHIEVEMENT</td>
<td>Marks obtained by students in:</td>
</tr>
<tr>
<td></td>
<td>1. School Final Examination</td>
</tr>
<tr>
<td></td>
<td>2. Higher Secondary Examination</td>
</tr>
<tr>
<td>SAMPLING VARIABLES</td>
<td>1. Age</td>
</tr>
<tr>
<td></td>
<td>2. Sex</td>
</tr>
<tr>
<td></td>
<td>3. Course of Study</td>
</tr>
</tbody>
</table>

5.4.2 TOOLS

2. Emotional Intelligence Scale—Developed by the researcher.
3. Academic Achievement—In order to get a uniform measure of academic achievement, Marks obtained in School Final Examination and Higher Secondary Examination were used.

5.4.3 Development of the Emotional Intelligence Scale

*Item Writing:* The items for this test have been developed mainly by the researcher, taking cues from the contents and sometimes borrowing or rephrasing items from other similar tests of Emotional Intelligence. These items i.e., Self-Awareness, Self Regulation, Motivation, Empathy and social skills were then translated into Bengali, along with an English version. The test was constructed, keeping in mind the social set-up, culture and lifestyle of the region where it was administered. A set of 90 items were initially prepared, which was divided into five sections, according to the dimensions mentioned under variables.

*Response Format:* Response format for the first three sections (I, II, III), there were four response option in the order—strongly agree or strongly disagree, Always or Never and Highly true or Not true at all. For the remaining two sections (Sections IV and V), there were five or six graded alternative actions mentioned under the statement or situation in the given item (i.e. in ‘what do you do when....model).

*Pilot Testing:* The test was administered on a small sample of 20 college students for editing and initially examining the nature of response endorsement along the graded options. After scrutiny of the items, 13 items were dropped from the item pool and 77 items retained.

*Scoring:* Depending on the nature of statement given in the items, scoring was to be done either in the ascending or descending order. Steps were taken to avoid any bias in the response style.
**Try Out of the Test** The Emotional Intelligence Scale was administered on 100 college students (50 Males and 50 Females) from 4 colleges for estimating reliability and validity.

**Reliability** Item variances as well as total variance with regard to each sub-scale and that for the whole test were calculated. Reliability co-efficient for the sub-tests as well as for the whole test were determined using Kuder-Richardson Formula 20 and Cronbach & (alpha). The test of Emotional Intelligence was found to be quite reliable. (Range of reliability coefficient was 50)

**Validity** content validity of each item was ensured by comparing with the corresponding items in well known tests.

A Preliminary test of construct validity was done on the basis of dimensions selected from the theoretical model. Inter-correlations of these dimensions and the total emotional Intelligence score were worked out for the final sample (N = 400) and also separately for the gender groups.

For both the groups, the sub tests showed positive and significant correlations of the moderate magnitude. Again, all the sub-tests are correlated positively and significantly by the total Emotional Intelligence score, which shows that the sub-tests contribute significantly towards the measure of Emotional Intelligence.

**Range of Intercorrelations:** The range of Intercorrelations of Male (Arts) students, varies from 466 to .80, whereas intercorrelation range for Male 466. (commerce) student varies from .313 to .730.

Intercorrelations for sub-scales in Emotional Intelligence for female (Arts) students varies from a range of .230 to .808 and that of Female (Commerce) students varies from 367. 367 to .779.
Students Stress Questionnaire for Students Stress and Stress Reactions (Datta, 2002) was used. This is a questionnaire comprising of 72 items which measures students stress in six areas. It is a standardized questionnaire developed relatively on a larger sample of college students (N = 325). Item validity indices were determined by tetra choric correlations and phi-coefficients and also by expert ratings. Reliability was determined using the Kuder-Richardson Formula 21.

5.4.4 SAMPLE

Sample was drawn from 10 (Ten) Colleges, located in Kolkata, South 24 Parganas and North 24 Parganas. Colleges in these districts were under the jurisdiction of Calcutta University at the time of testing.

Sample size was of 400, as per details given below:

<table>
<thead>
<tr>
<th>Gender</th>
<th>Course of Study</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Arts</td>
<td>Commerce</td>
</tr>
<tr>
<td>Boys</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Girls</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
<td>200</td>
</tr>
</tbody>
</table>

5.4.5 DESIGN AND HYPOTHESIS

Although intergroup differences were tested for Emotional Intelligence in factorial design, primarily it rests upon Correlational design. The following hypotheses were formulated from this study.

NULL HYPOTHESES There was no significant difference in Emotional Intelligence scores due to gender, course of study and both gender and course of study together on Emotional Intelligence.

H₀₁ : There is no significant difference in the Emotional Intelligence scores due to the gender of the students, (Boys Vs Girls).

H₀₂ : There is no significant difference in the Emotional Intelligence scores due to course of study, (Arts and Commerce).

H₀₃ : There is no significant interaction effect of gender and course of study on Emotional Intelligence.
$H_0^4$: There is no significant difference in stress scores due to gender (Boys vs Girls).

$H_0^5$: There is no significant difference in stress scores due to course of study (Arts vs Commerce).

$H_0^6$: There is no significant difference between Boys and Girls in H.S marks.

$H_0^7$: There is no significant difference between Arts and Commerce groups in H.S marks.

$H_0^8$: There is no significant difference between Boys and Girls in S.F marks.

$H_0^9$: There is no significant difference between Arts and Commerce groups on S.F marks.

CORRELATIONAL HYPOTHESES

1. Emotional Intelligence, stress and Academic Achievement are significantly correlated.

2. Emotional Intelligence is positively correlated with Academic Achievement but negatively with stress.

3. Stress is negatively correlated with Academic Achievement.

4. Academic Achievement as dependent variable can be predicted by Emotional Intelligence and Stress scores.

5. Stress and Emotional Scores are mutually predictable by each other.

5.4.6 ANALYSIS

Descriptive, Analysis of Variance and t-test were done. The steps followed are as follows:

1. Mean and Standard Deviation of the scores were computed for all the variables in different sample groups.

2. ANOVA was conducted separately for all the sub-tests and the total Emotional Intelligence scores.
3. t-test was done to examine the intergroup differences in stress scores.

4. Intercorrelation of the subscales in Emotional Intelligence were computed for Male students as well as Female students.

5. Regression Analysis of Data was conducted for the whole sample as well as for gender and course subgroups as described below:
   a. SF Marks as Dependent variable and EI, stress and H.S. Marks as predictor variables.
   b) HS Marks as Dependent variable and EI, Stress and SF Marks as predictor variables.
   c) EI as Dependent variable and stress as predictor variable.
   d) Stress as Dependent variable and EI as predictor variable.

Regression Analysis as in (c) and (d) were done only with the whole sample group.

5.5 RESULT AND DISCUSSION

5.5.1 Analysis of variance of Emotional Intelligence Score

Intergroup differences and the interaction effect of gender and course of study were tested by ANOVA.

**Self Awareness** - Results for the subtest conducted, indicate that self-awareness varies both due to sex and course of study. Also the arts group has a higher mean score than the Commerce group and again, Females show a higher mean score than Male students, particularly the commerce Male group which has the lowest Mean Score in self-Awareness. It is significant that females are more self-aware than males. Perhaps this is a general characteristic of women who are relatively more aware of their personal feelings. (Ref. Figure No.4.3).

**Self Regulation** Results indicate that self regulation varies both due to sex and course of study. Arts group has a higher self-regulation than commerce group and Females show a higher Mean score than male students. Similarly, it
appears that females have a general tendency to control their emotional feelings due to their sex role typing as well as their role in the family. (Ref. Figure No.4.4).

**Motivation** Results show that Motivation varies only due to sex. Mean score of both Arts and Commerce are almost the same but that of Arts female is highest and commerce Male is the lowest (Ref. Figure No.4.5).

**Empathy** It is apparent from the results of ANOVA which indicate that Mean score of the Arts group is higher than the commerce group and Females show a higher mean score than Male students, though these differences are not statistically significant. It is accepted fact that empathy is the primary determinant of altruistic behaviour (Eisenberg and Fabes, 1998) which reaches its peak during adolescence. Therefore, the absence of difference between the sample groups in empathy indicate that all adolescents, irrespective of their sex and course of study are likely to behave identically in situations where one has to understand others needs and emotions. (Refer to Figure No.4.6).

**Social Skills** Results shows that social skills varies due to sex and interaction effect of sex and course of study. But difference of mean score in social skill due to course of study is not significant. Females show a higher mean score than the Male students, particularly the commerce Male group which has the lowest mean. In congruence with self awareness and self regulation females appear to be more skilled to handle social-emotional feelings of others (Refer to Figure No.4.7).

**Total Emotional Intelligence Scores** Results of ANOVA indicate that in most of the subtests of Emotional Intelligence and Emotional Intelligence as a whole, there are sex differences among the students belonging to the Arts and Commerce group. While sex difference in Emotional Intelligence is not unexpected, difference between the two course groups probably is due to the amount of stress experienced by them (Refer to Figure No.4.8).
Are the young adolescent females more emotionally intelligent than the males? The results of this study resolve this question confidently. Although the proponents of Emotional Intelligence suggest that its development continues even during the adulthood, it is reasonable to assume that a more or less stable emotional make up for each individual is achieved towards the late adolescent stage. Again females acquire that stability earlier to the males because their role in the society and family is more characterised by accepting social responsibility in comparison to the males. Brenner and Salovey (1997) concluded that adolescents use internal strategies to manage emotions because of their improved ability to reflect on their thoughts and feelings.

5.5.2 Intergroup Differences in Students Stress

Datta (2002) studied intergroup differences in students' stress on a sample drawn from those studying in the degree colleges. The sample of the present study has much similarity with her sample. She obtained intergroup differences in students stress and therefore, it was decided from the very beginning that no detail analysis of the differences in stress score will be done. However, just to examine whether the results are also similar, t-test was conducted (Table 4.10B).

The results show that female students experience higher stress due to home environment and parental attitude than the male students. Probably this is conducive to the social status of girls who are reared in a restrictive home environment and under negative parental attitude towards their freedom. Boys, particularly the college going late adolescents enjoy relatively greater freedom and positive parental attitude. Also girl students experience higher stress due to personal limitations. This indicate that females are more selfaware not only in the emotional feelings but also about their personal short-comings. Therefore, as a whole, females experience greater stress in their student life. If one recalls that female students showed higher emotional intelligence in comparison to males, the two results may appear to be paradoxical. But considering the general characteristics of late adolescents in colleges, the only
conclusion which becomes imperative that for the specific age group stress prevails over emotional intelligence. It becomes further evident from the fact that examination appeared to be equally stressful for both the groups. So it is not academic achievement that matters much as the determinant of the relationship between stress and emotional intelligence.

Comparison of Arts and Commerce groups depict a completely different picture. Not only the commerce group show higher stress but also examination seems to be the greatest stressor for them. The differences in other factors are the reflection of those due to the gender. This indicate that different courses of study exert different levels of stress which may, however, have been mediated by many other unobserved factors like career planning, anxiety for securing competition positions or the like.

Both the gender groups and subject groups (course of study) varied in H.S. and S.F. marks which was not unexpected.

5.5.3 Regression Analysis

Regression Analysis was done for the total as well as for each separate sample groups.

Regression analysis of S.F. Marks as dependent variable and E.I., stress and H.S. Marks as predictor variables showed very poor relationship. Academic Achievement in terms of school Final Marks could be predicted in small proportion retrospectively. It also indicates indirectly, that E.I. may change with age because had it been static, it could well predict the examination marks scored earlier.

Results of Regression analysis with H.S. Marks as dependent variable and the others as predictor variables indicates that the magnitude of variances in H.S. Marks that can be predicted by EI and stress increased to 16.3% ($R^2 = .163$). Also, the stress due to home environment as a whole seems to be the most important predictor of academic achievement in terms of Higher
Secondary marks indicating that when stress due to home environment is less there is increased probability of higher achievement.

Regression analysis of EI upon H.S. Marks and S.F. Marks indicates that stress is relatively a more stable attribute like trait anxiety. Results indicate that only stress, due to personal limitations, is a negative predictor of emotional intelligence, which in turn indicates that those who have relatively lower emotional intelligence develop a negative self-perception and vice-versa.

Results of Regression analysis with stress as dependent variable and EI as predictor variables indicates that those who have higher self-awareness, can motivate oneself and others emotionally and have higher ability of self-regulation and hence, experience less stress.

When the results of regression analysis are examined carefully a distinct trend can be noticed not only for the whole sample group but also for the subgroups based on gender and course of study about the nature of prediction.

- Emotional Intelligence as Predictor -

As a whole emotional intelligence is a positive predictor of academic achievement indicating that emotional intelligence may help better achievement in general. In specific, empathy appear to be the most common positive predictor of academic achievement. But the results pertaining to other factors are to some extent anomalous. For stress as dependent variable, all the factors except social skill are negative predictors, the strongest one being self regulation. As a whole emotional intelligence is a weaker predictor of stress. This implies that those who are poor in self regulation (and also in self awareness) experience greater stress in student life. Students with low motivation also have higher stress.
Stress as a predictor of academic achievement has already been discussed. As a whole stress is a negative predictor of academic achievement meaning that higher the stress lower is the academic achievement. In specific, stress due to home environment and parental attitudes are negative predictors, and so also due to personal limitations. But stress due to teachers and school, outer environment are positive predictors of academic achievement showing that the pressure given by the school and those by the social expectations have a positive effect upon academic achievement.

Stress as a whole is a negative predictor of emotional intelligence and so also due to parental attitude, examination and personal limitations. On the other hand stress due to teacher and school and that due to outer environment are positive predictor of emotional intelligence.

The above nature of predictability indicate to some extent that the effect of emotional intelligence upon academic achievement is mediated by students' stress which could be further ascertained if the effect of stress was partialled out from the relationship.

**5.6 CONCLUSIONS**

The conclusions drawn on the basis of the Results and Discussion are as follows:—

1. Female students have higher emotional intelligence in comparison to Male students.
2. Female students are better in self-awareness, self-regulation and social skills.
3. Arts students in general have better self-awareness and self-regulation.
4. Female Arts students have highest self-awareness and social skills.
5. Academic achievement cannot be predicted retrospectively by the contemporary measures of emotional intelligence and stress.
6. Predictability of academic achievement increases as the gap between the assessment of academic achievement and emotional intelligence and stress is decreased.

7. Parental attitude vis-a-vis home environment as stressor is the most important determinant of academic achievement.

8. Those who have a lower emotional intelligence are likely to develop more negative self-perception.

9. Students with higher self awareness, ability to motivate oneself and others emotionally and self-regulation, experience lesser degree of stress.

10. Emotional Intelligence is not as stable an attribute as it is claimed to be nor a totally unstable attribute.

5.7 IMPLICATIONS OF THE FINDINGS

The present research may help parents, teachers and other concerned people to some extent, as for example:

1. Self-awareness, self-regulation and emotional motivation can be included both at home and school or college, so that students can better cope with their stressful life experiences.

2. Demanding parental attitudes can be changed to a supporting and helping, totally involved home environment, which will be more helpful for better academic achievement.

3. In today's demanding environment, students, mostly college students, who are on the threshold of starting a new career, face more stressful situations than others. Qualities like empathy can help them to overcome stressful situations when they try to identify themselves with the emotional feelings of others, and thereby better academic achievement.
5.8 LIMITATIONS OF THE STUDY

No study can claim to cover completely all the issues related to the topic or even the problem chosen. In this study also, many things could not be considered due to obvious reasons. Some of these are being mentioned below.

Generalization of the results of this study can be made with some restrictions. Primarily, the sample, universe and size was not broad enough to include more varieties of students by extending the geographical area as well as other course of study.

Secondly, even though the H.S. Marks could be predicted to some extent, in terms of emotional intelligence and stress, academic achievement and the predictor variables could not be assessed simultaneously due to wide heterogeneity in the subjects chosen, even in the same course of study.

Thirdly, more indepth analysis could not be done to establish a casual relationship among the variables. Mere directionality does not explain the casual relationship.

Lastly, like Saha (2009), personality variables as intervening variables between Emotional intelligence and Academic Achievement were not taken into consideration.

5.9 ORIGINALITY OF THE STUDY

All the research studies are expected to contribute at least a drop of new information to the ocean of knowledge. This humble research work does not claim to be something novel in every respect, particularly because Emotional Intelligence is now a much trodden area. However, as it will be revealed from the review of literature presented in this dissertation and those which could not be cited, it may be noticed that it is a toddler's step forward to the further study of Emotional Intelligence.

Firstly, many studies have been reported correlating Emotional Intelligence with stress and Academic Achievement separately. But this study
has brought together the two and showed how the two opposing sets of variables predict academic achievement retrospectively.

Secondly, this study shows indirectly the developing nature of Emotional Intelligence because with Emotional Intelligence increasingly crystallized, its predictability for Academic Achievement increases.

Thirdly, the question which one predicts what, was addressed in this study. Emotional Intelligence was found to be a better predictor of stress than stress as predictor of E.I. Significance of this finding is two-fold—one, Emotional Intelligence and stress are mutually related which double assured and two, inculcation of emotional intelligence may help in stress management.

Lastly, since both Stress and EI could predict academic achievement, this study poses a fundamental question whether both emotional intelligence and stress could be interpreted from the cognitive perspective.

5.10 INVESTIGATOR'S FUTURE PLAN FOR FURTHER STUDY

In continuation with this study, the researcher in future may try to cover the points mentioned in limitations of the study. Also others may come forward to extend the work further. Some specific points are,

1. Sample Universe may be extended by including other courses of study beyond general streams like professional and technical.
2. The Emotional Intelligence scale will be re-standardized. Particularly, the validity will be determined against suitable external criteria.
3. Academic Achievement and EI can be measured simultaneously.
4. Other dimensions of stress and other forms of stressors may be measured in relation to EI.
5. Stress, personality and EI can be studied together to throw further light on the problem.
6. More indepth analysis like path analysis may be taken up to establish confidently the casual relationship.