Imagination is the beginning of creation. You imagine what you desire, you will what you imagine and at last you create what you will.

— George Bernard Shaw
CHAPTER – V

FINDINGS AND DISCUSSIONS

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CHAPTER – V
FINDINGS AND DISCUSSIONS

On the basis of the graphical representation, the statistical analysis and interpretation made in the previous chapter (Chapter – IV), the researcher tried to mention the findings of the study very clearly and to discuss these findings to ascertain the extent to which these results might be useful in shedding light on the research problems raised in the first chapter and also to link them with the empirical findings in the specific areas with which the present investigation was concerned.

In this chapter various findings were mentioned together, obtained by applying different statistical techniques viz.; ANOVA, t-test, correlation etc. and were discussed in the light of the objectives of the study under the headings of independent variables (Gender, Freedom, Socio-economic Status, Family Tension, Family Structure) considered in the study. Again, the researcher tried to discuss the relative contribution of the independent variables to the components of creativity. At last of this chapter, the researcher intended to discuss about the ideal family environment for developing creativity among the children regarding the aspects considered in the study.

5.1 Creativity and Gender Difference

The present study aimed at to determine, whether there was any gender difference in different components viz., fluency, flexibility and originality of both verbal and non-verbal creativity. For this purpose, the present study included 372 students of class VIII and class IX as a sample, out of which 179 students were boys and 193 students were girls (Table : 3.2).

There were three hypotheses considered regarding gender difference in creativity in this study. They were in the three dimensions of creativity viz., fluency, flexibility and originality for both verbal and non-verbal creativity. These three hypotheses were mentioned and discussed below:
Hypothesis – $H_1$: There would be no significant difference between boys and girls in Fluency scores of verbal and non-verbal creativity.

This hypothesis was totally accepted. That meant, there was no significant difference between boys and girls in Fluency scores of both verbal and non-verbal creativity as found in the section 4.6.1.1.

The comparison between boys and girls in verbal Fluency and non-verbal Fluency had been shown by plotting Ogives as in the Figure 4.4.1 and Figure 4.4.2 separately. It was found from these graphical representation that boys were not so different from girls in both verbal and non-verbal fluency.

Hypothesis – $H_2$: There would be no significant difference between boys and girls in Flexibility scores of verbal and non-verbal creativity.

This hypothesis was rejected. This indicated that significant difference existed between boys and girls in flexibility scores of verbal and non-verbal creativity. But, in flexibility of verbal creativity girls were superior to boys and in flexibility of non-verbal creativity boys were advanced to girls (Section – 4.6.1.2).

Graphical representations as shown in the figures 4.4.3 and 4.4.4 also indicated that there were significant difference existed between boys and girls in both verbal and non-verbal flexibility.

Hypothesis – $H_3$: There would be no significant difference between boys and girls in Originality scores of verbal and non-verbal creativity.

This null hypothesis was accepted. That meant, there was no significant difference between boys and girls in Originality scores of both verbal and non-verbal creativity (Section – 4.6.1.3).

Graphical representation as shown in the Figures 4.4.5 and 4.4.6 also demanded that there was no significant difference existed between boys and girls in originality of both verbal and non-verbal creativity.

The description of fluency, flexibility and originality of both verbal and non-verbal creativity had been shown in the Table : 4.2.1 and Table : 4.2.4 for boys group and girls group respectively.
Findings:

- There was no significant difference between boys and girls in Fluency and Originality components of both verbal and non-verbal creativity.
- In flexibility component of creativity, there were significant differences existed between boys and girls. Girls were superior to boys in verbal Flexibility but boys were advanced to girls in non-verbal Flexibility.

Discussion:

The present study revealed that gender was not a contributing factor to creativity and its components (except flexibility) for both verbal and non-verbal creativity. Boys did not differ from girls in fluency scores and originality scores of both verbal and non-verbal creativity. But in flexibility of verbal creativity, girls were advanced to boys and in flexibility of non-verbal creativity boys were more advanced to girls. Overall, the gender difference was found not to be significant in creativity.


Also, Mukherjee, M. (2007) mentioned findings in her Ph. D. Thesis submitted to the University of Kalyani that boys did not differ from girls on the fluency, flexibility, originality and elaboration of both verbal and figural creativity.

But Raina (1971) and Goyal (1974) found that females were significantly superior to males only on fluency and flexibility dimensions of creativity and Singh (1978) reported that female students were superior to male students in fluency and originality dimensions of creativity.

Again, male students were found to be significantly superior to their female counterparts on verbal creativity as stated by Prakash (1966), Gagneja (1972), Jain (1975), Rawat and Agarwal (1977) and Sharma (1979).

In the present study the two groups – boys and girls were different only in flexibility scores. But one of the two groups exceeded another in flexibility for verbal or non-verbal creativity. This indicated that one group (boys or girls) could not demand absolute superior to another in the dimension of flexibility.
It might be concluded from the discussions that for both verbal and non-verbal creativity, the boys group had not absolute superiority with respect to the girls group in the dimensions of fluency, flexibility and originality.

5.2 Creativity and Freedom

Freedom of thought and actions enjoyed by the student in the family had been determined by applying the Sarker’s Freedom Test on 179 boys and 193 girls of class VIII and IX. The present study revealed that freedom of thought and actions was an important aspect of family environment in relation to the creativity development. Graphical representations, correlation techniques, inferential statistics with gender difference and regression analysis had been applied to determine the relationship, to test the hypotheses and thereby to attain the objectives of the study. Regarding this aspect of family environment, six hypotheses were considered in this study. Besides these, Freedom of students was considered as a predictor of Total Fluency, Total Flexibility and Total Originality in regression analysis included in the last three hypotheses.

Hypothesis – H₄:

There would be significant difference between Freedom and Restriction group boys in Fluency, Flexibility and Originality scores of verbal and non-verbal creativity.

This hypothesis was totally accepted in this present study. That meant, there was a significant difference between ‘Freedom’ and ‘Restriction’ groups of boys in Fluency, Flexibility and Originality scores of both verbal and non-verbal creativity. Obviously, it was found that the ‘Freedom group’ of boys was always superior to the ‘Restriction group’ in mean scores of Fluency, Flexibility as well as in Originality of both verbal and non-verbal creativity (Section 4.6.2.1).

Graphical representations in the Figures 4.5.4.1 and 4.5.4.2 (For verbal and non-verbal Fluency), 4.5.5.1 and 4.5.5.2 (For verbal and non-verbal Flexibility), 4.5.6.1 and 4.5.6.2 (For verbal and non-verbal Originality) showed that mean scores of the components of creativity more or less gradually increased with the increase of
Freedom score for boys group. These graphical representations also indicated the interpretation.

**Hypothesis – H₅:**

There would be significant difference between Freedom and Restriction group girls in Fluency, Flexibility and Originality scores of verbal creativity.

The hypothesis – H₅ might be accepted in the study. The study revealed that the ‘Freedom group’ girls was advanced to the ‘Restriction group’ girls in Fluency, Flexibility and Originality components of verbal creativity. Hence, the differences between the two groups in mean scores of Fluency and Originality were significant but the difference between them in mean scores of Flexibility (V. C.) was not significant at 0.05 level of significance (significant at p = 0.059, little differed from p = 0.05) [Section 4.6.2.2.1].

Graphical Representation in the Figures 4.5.4.1 (For verbal Fluency), 4.5.5.1 (For verbal Flexibility) and 4.5.6.1 (For verbal Originality) indicated that mean scores of Fluency, Flexibility and Originality of verbal creativity for girls group increased haphazardly with the increase of Freedom score and thereby supported the interpretation.

**Hypothesis – H₆:**

There would be significant difference between Freedom and Restriction group girls in Fluency, Flexibility and Originality scores of non-verbal creativity.

The present study revealed that the above hypothesis was totally rejected. That meant, there was no significant difference between ‘Freedom’ group and ‘Restriction’ group in Fluency, Flexibility and Originality of non-verbal creativity (Section 4.6.2.2.2)

Graphical Representations in the Figures 4.5.4.2 (For non-verbal Fluency), 4.5.5.2 (For non-verbal Flexibility) and 4.5.6.2 (For non-verbal Originality) showed that for the girls group, the mean scores of the components of non-verbal creativity were changing non-uniformly with the increase of Freedom score. These figures supported the said interpretation.
**Hypothesis – H₁₄ :**

There would be significant relationship between Freedom of students and components of verbal creativity (Fluency, Flexibility, Originality) of both verbal and non-verbal creativity tests for boys.

Pearson’s Correlation Technique had been applied to find out the relationship between the Freedom score and the scores of Creativity components. The present study showed that there were positive significant relationships existed between Freedom and components of both verbal and non-verbal creativity (except non-verbal originality). Thus, the hypothesis – H₁₄ was accepted in this study (Section 4.7.1.1).

**Hypothesis – H₁₅ :**

There would be significant relationship between Freedom of students and components of verbal creativity (Fluency, Flexibility, Originality) for girls.

The study revealed that the Freedom of the girls in the families was significantly correlated with Fluency and Originality components of verbal creativity but insignificantly correlated with Flexibility component (p = 0.053, slightly differed from p = 0.05). Thus, the above hypothesis was mostly accepted in this study. (Section 4.7.1.2.1).

**Hypothesis – H₁₆ :**

There would be significant relationship between Freedom of students and components of non-verbal creativity (Fluency, Flexibility, Originality) for girls.

In the present study, it was found that the Freedom of girl students was not significantly correlated with Fluency, Flexibility and Originality of non-verbal creativity. In other words, there was no significant relationship between Freedom of girl students and the components of non-verbal creativity. Hence, the hypothesis was totally rejected in the study.

**Hypothesis – H₂₂ :**

Freedom of students, Socio-economic status, Family Tension would be significant predictors of Total Fluency.
The present study revealed that Freedom was the first variable entered in the step-wise multiple regression analysis. Freedom was the relatively greater contributing factor (71.6%) in Total Fluency of creativity with respect to the other predictor variables – Socio-economic Status and Family Tension (Fig. 4.8.1).

**Hypothesis – H\textsubscript{23} :**

Freedom of students, Socio-economic Status, Family Tension would be significant predictors of Total Flexibility.

It was found in the present study that Freedom of students was the first predictor variable entered in the regression analysis. Here, also, Freedom of students had the greater contribution (56.7%) among the three predictor variables (Fig. 4.8.2).

**Hypothesis – H\textsubscript{24} :**

Freedom of students, Socio-economic Status, Family Tension would be significant predictors of Total Originality.

It was found in the present study that Freedom variable entered in the second step of multiple regression analysis. Here, Freedom had the second highest contributing factor (35%) to the Total Originality of Creativity.

**Findings :**

Regarding the variable ‘Freedom’, the obtained findings were as follows :

- For boys ‘Freedom group’ was always significantly superior to the ‘Restriction group’ in Fluency, Flexibility and Originality of both verbal and non-verbal creativity.
- For girls ‘Freedom group’ was significantly advanced to the ‘Restriction group’ in Fluency and Originality and merely advanced in Flexibility component of verbal creativity.
- For girls ‘Freedom group’ was not significantly differed from the ‘Restriction group’ in Fluency, Flexibility and Originality components of non-verbal creativity.
- For boys, there were positive significant relationships existed between Freedom and components of both verbal and non-verbal creativity.
• For girls, there were positive significant relationships existed between Freedom and Fluency and Originality (insignificant for Flexibility) components of Verbal creativity.

• Freedom of students was a great contributing predictor variable to Total Fluency among the three variables.

• Freedom of students was also a greater contributing predictor variable to Total Flexibility of creativity.

• Freedom of students was the second contributing predictor variable to Total Originality among the three variables.

Discussion:

Freedom of thought and actions enjoyed by the students in their families was considered as an important variable in the present study. Objectives of the present study were to determine, whether there was any relationship between Freedom and Creativity with its different components – Fluency, Flexibility, Originality. The present study revealed that Freedom was positive significantly correlated with creativity along with its three components – Fluency, Flexibility and Originality. For boys, ‘Freedom group’ was always significantly superior to the ‘Restriction group’ in both verbal and non-verbal creativity. Also for girls, ‘Freedom group’ was significantly advanced to the ‘Restriction group’, in verbal creativity. These findings indicated that the students who had got more freedom in thinking, in playing with different items in making models, games, in expressing ideas in their families had developed their creativity. These findings were in tune with the theoretical expectation. But in case of non-verbal creativity, the ‘Freedom group’ girls was not significantly differed from the ‘Restriction group’ girls. Also, for girls, the components of non-verbal creativity were not significantly correlated with freedom. These findings might get support from the views that by nature girls were verbally developed and free environment encouraged them to be more advanced but for non-verbal activities, not only freedom made them superior to the others, they needed extra ones in the development of creative potential in this society.
But in each the three Regression Equation Y (Total Fluency or Total Flexibility or Total Originality) contained a high value constant. It indicated when all the X (Freedom, Socio-economic Status, Family Tension) were zero, Y had that constant value. It implied that creativity was a multifaceted phenomenon and its development depended on so many factors.

The following statements supported the above findings:

i) Tibetan spiritual leader the 14th Dalai Lama (17th March, 2010), stressed the need for individual freedom to ensure overall growth of human creativity in His address on “Human Rights Through Universal Responsibility” at the Assembly auditorium of Madhya Pradesh, India. According to him, “Without freedom, one’s creativity can not bloom. Right to freedom is pivotal for the progress of any society”.

ii) The problem of free will and the problem of creativity are, in some respects, one and the same. They can both be solved together (Philip N. Jhnson-Laird).

iii) Creativity encourages and demands complete freedom to accept and express the varied responses. A positive environment or situation that is open democratic and free may be said to contribute positively to the development of creative potential. On the other hand, a closed society, culture or situation may act as a strong deterrent to the development of initiative within the individual (Richa Sharma, 2011).

iv) True freedom is to be like the wind – coming with nothing and leaving with nothing. It is to allow all that has gone into anything we create to fully dissolve and dissipate back into its fundamental components so they can be available for the next creation.

v) Eric Barker (3rd August, 2011) mentioned his view in a new way. According to him, ‘A curvilinear effect of constraint on creativity was identified such that a moderate degree of constraint was more conducive to creativity than either a high or a low degree. While some amount of choice is important for encouraging creativity, too much can be counter productive, which runs counter to many popular theories of creativity.”
vi) “Paradoxically, creativity thrives on the tension between freedom and constraint”, says Brent Rosso (2011), an organizational psychology Professor at Montana State University who studies the balance between freedom and constraint in the product development process. “They are the yin and yang of creativity”.

5.3 Creativity and Socio-economic Status

Socio-economic Status (SES) of the families of the students considered as the sample of the present study had been determined by applying the Sarker’s Socio-economic Status Test on 179 boys and 193 girls of class VIII and IX. For family environment, Socio-economic Status was an important aspect in relation to the creativity development of the student. Graphical representations, correlation techniques, inferential statistics with gender difference and regression analysis had been applied to determine the relationship, to test the hypotheses and thereby to attain the objectives of the study. Regarding this aspect of family environment, five hypotheses were considered in this study. Besides these, Socio-economic Status was considered as a predictor of Total Fluency, Total Flexibility and Total Originality in regression analysis mentioned in the last three hypotheses.

Hypothesis – H₇:

There would be significant difference between High and Low Socio-economic Status group boys in Fluency, Flexibility and Originality scores of verbal and non-verbal creativity.

This hypothesis was rejected in the present study. There was no significant difference between High group SES boys and Low group SES boys in Fluency, Flexibility and Originality of both verbal and non-verbal creativity (except non-verbal Originality) [Section 4.6.3.1].

Graphical Representation in the Figures 4.5.7.1 and 4.5.7.2 (For verbal and non-verbal Fluency), 4.5.8.1 and 4.5.8.2 (For verbal and non-verbal Flexibility), 4.5.9.1 and 4.5.9.2 (For verbal and non-verbal Originality) showed that means scores of the components of creativity increased and suddenly fell down from the peak at higher score of Socio-economic Status. It indicated that there were no uniform
relationship between the components of creativity and Socio-economic status of the families.

**Hypothesis – H₈:**
There would be significant difference between High and Low Socio-economic Status group girls in Fluency, Flexibility and Originality scores of verbal and non-verbal creativity.

The hypothesis H₈ was accepted in the present study. The study revealed that the High group SES girls was significantly superior to the Low group SES girls in Fluency, Flexibility and Originality of both verbal and non-verbal creativity (except in case of non-verbal Fluency) [Section 4.6.3.2].

Graphical Representation in the Figures 4.5.7.1 and 4.5.7.2 (For verbal and non-verbal Fluency), 4.5.8.1 and 4.5.8.2 (For verbal and non-verbal Flexibility), 4.5.9.1 and 4.5.9.2 (For verbal and non-verbal Originality) showed that mean scores of the components of both verbal and non-verbal creativity for girls group haphazardly increased with increase of Socio-economic Status. But the mean score of non-verbal fluency more or less existed at the same point (26.00) with the increase of Socio-economic Status. Thus, the graphs supported the above interpretations.

**Hypothesis – H₁₇:**
There would be significant relationship between socio-economic status and components of verbal creativity (Fluency, Flexibility, Originality) for boys.

This hypothesis was totally rejected in the present study. That meant, there was no significant relationship between Socio-economic Status and components of verbal creativity for boys (Section 4.7.2.1.1).

**Hypothesis – H₁₈:**
There would be significant relationship between Socio-economic Status and components of non-verbal creativity (Fluency, Flexibility, Originality) for boys.

The present study revealed that the Socio-economic Status of the boys’ families was significantly correlated with Flexibility and Originality but not with Fluency
(significant at $p = 0.056$ slightly differed from $p = 0.05$). Thus, the hypothesis was accepted in this study (Section – 4.7.2.1.2).

**Hypothesis – $H_{19}$**

There would be significant relationship between Socio-economic Status and components of creativity (Fluency, Flexibility, Originality) of both verbal and non-verbal creativity tests for girls.

This hypothesis was accepted in this present study. This study showed that Socio-economic Status of the families of the girls was significantly correlated with Fluency. Flexibility and Originality components of both verbal and non-verbal creativity (Except non-verbal Fluency) [Section – 4.7.2.2].

**Hypothesis – $H_{22}$**

Freedom of students, Socio-economic Status, Family Tension would be significant predictors of Total Fluency.

The present study revealed that Socio-economic Status was the second predictor variable entered in the step-wise multiple regression analysis. Socio-economic Status was the second highest (22.5%) contributing factor to Total Fluency of Creativity (Fig. 4.8.1).

**Hypothesis – $H_{23}$**

Freedom of students, Socio-economic Status, Family Tension would be significant predictors of Total Flexibility.

It was found in the present study that Socio-economic Status was the second variable entered in the step-wise multiple regression analysis. Socio-economic Status had 39% contribution in Total Flexibility of creativity among the three predictor variables (Fig. 4.8.2).

**Hypothesis – $H_{24}$**

Freedom of students, Socio-economic Status, Family Tension would be significant predictors of Total Originality.
The present study showed that Socio-economic Status was the first variable entered in the step-wise multiple regression analysis. Socio-economic Status had greater contribution (45%) to Total Originality of Creativity among the three predictor variables (Fig. 4.8.3).

**Findings:**

The following findings were found with respect to Socio-economic Status in the present study:

- For boys, there was no significant difference between High group SES and Low SES in Fluency, Flexibility and Originality of both verbal and non-verbal creativity.
- For girls, the High SES group was significantly superior to the Low SES group in Fluency, Flexibility and Originality of both verbal and non-verbal creativity.
- For boys, there was positive significant relationship between SES and components of non-verbal creativity.
- For girls, there was positive significant relationship between SES and components of both verbal and non-verbal creativity.
- Socio-economic Status (SES) was the second contributing factor to Total Fluency.
- Socio-economic Status (SES) was also the second contributing variable to Total Flexibility.
- Socio-economic Status was the greatest contributing variable to Total Originality among the three predictor variables.

**Discussion:**

One of the objectives of the present study was to determine the relationship between creativity and Socio-economic Status of the families of the students considered as sample of the study. The study revealed that there was a positive significant relationship existed between Socio-economic Status and the components of verbal and non-verbal creativity. But, for boys group, in case of verbal creativity, there was no significant relationship existed between Socio-economic Status and the components – Fluency, Flexibility and Originality.
The present study also showed that for boys High Socio-economic Status group was not significantly differed from the Low Socio-economic Status group. It indicated that Socio-economic Status was not a factor in the development of creativity among the boys.

In the above findings, the argument was that exposure to outward world was similar for the boys of both High Socio-economic Status family and Low Socio-economic Status family in this society and culture. As a result, the development of creativity among the boys of both High SES and Low SES was similar. Thus, the difference between the two groups in Fluency, Flexibility, Originality of both verbal and non-verbal creativity was not significant. This findings was also in agreement with some research findings. Nichols (1964), Lichtenwalner and Maxwell (1969), Keenan and Victoria (1973), had got the findings that there was no significant difference in creativity between High and Low SES groups children.

Again, Mankar, Ugale, Rothe (2011) mentioned in their research findings that ‘Socio-economic Status and Occupation of parents were showing insignificant correlation with the creativity of children. There was no impact of parent occupation on their children’s creativity.

It was also found in the present study that girls of High Socio-economic Status families were significantly superior to the girls of Low Socio-economic Status families in Fluency, Flexibility and Originality of both verbal and non-verbal creativity. In this regard, it might be said that the nature of upbringing in the case of girls, was so much different for High SES families and Low SES families in this society and culture. The girls of High Socio-economic Status families might have more freedom to express themselves, to get more materials to play and to come out in the outer world, whereas the girls of Low Socio-economic Status families had to go through strict rules and pressure of this society. This finding got supports from many research works.

The research works done by Ogletree and Ujlaki (1978), Niwas and Punia (2013), Saha (2012), Parsasirat, Foroughi et al. (2013), Rao and Satyapal (2011), got the findings as there were significant positive relationship between components of creativity and dimensions of Socio-economic Status.
It was also revealed in the present study that Socio-economic Status was an important contributing predictor variable in the three Regression Equations for Total Fluency, Total Flexibility and Total Originality. But, in each of the three Regression Equations, dependent variable Y (Total Fluency or Total Flexibility or Total Originality) contained a high value of constant. It indicated that when the predictor variables X (Freedom, Socio-economic Status and Family Tension) became zero, the Y had that constant value (interception of Y-axis). It implied that creativity and its components did not depend on the aspects of family environment only but also depended on the so many factors which were associated with the creativity development in the children.

5.4 Creativity and Family Tension

Mental stress and tension existed between the parents of the student about various activities in the family had been considered as Family Tension. Family Tension scores had been determined by applying the Sarkers’ Family Questionnaire–III on 179 boys and 193 girls of class VIII and IX. Family Tension might affect the emotional climate of the family. Minimum level of Family Tension might be favourable for creative potential development of the student. Hence, it might be considered as a negative aspect of family environment regarding creativity development. Graphical representations, correlation techniques, inferential statistics with gender difference and regression analysis had been applied to determine the relationship, to test the hypotheses and thereby to attain the objectives of the study. Regarding this aspect of family environment, four hypotheses were considered in this study. Besides these, Family Tension was considered as a predictor of Total Fluency, Total Flexibility and Total Originality in regression analysis mentioned in the last three hypotheses.

Hypothesis – $H_9$ :

There would be significant difference between High Family Tension and Low Family Tension group boys in Fluency, Flexibility and Originality scores of verbal and non-verbal creativity.
The present study revealed that there was no significant difference between High Family Tension group and Low Family Tension group boys in Fluency, Flexibility and Originality of both verbal and non-verbal creativity. Hence, the hypothesis – $H_9$ was totally rejected (Section – 4.6.4.1).

Graphical Representation in the Figures 4.5.1.1 and 4.5.1.2 (For verbal and non-verbal Fluency), 4.5.2.1 and 4.5.2.2 (For verbal and non-verbal Flexibility), 4.5.3.1 and 4.5.3.2 (For verbal and non-verbal Originality) showed that mean scores of the components of verbal and non-verbal creativity for boys group more or less uniformly decreased with the increase of Family Tension scores. These inclinations were not so remarkable. Thus, the graphs supported the interpretations.

Hypothesis – $H_{10}$:

There would be significant difference between High Family Tension and Low Family Tension group girls in Fluency, Flexibility and Originality scores of verbal and non-verbal creativity.

This hypothesis was rejected in the present study. It was found in the study that there was no significant difference between the High Family Tension group girls and Low Family Tension group girls in Fluency, Flexibility of both verbal and non-verbal creativity and in Originality of only non-verbal creativity. In originality of verbal creativity, expectantly the Low Family Tension group girls was superior to the High Family Tension group girls (Section – 4.6.4.2).

Graphical Representation in the Figures 4.5.1.1 and 4.5.1.2 (For verbal and non-verbal Fluency), 4.5.2.1 and 4.5.2.2 (For verbal and non-verbal Flexibility) and 4.5.3.1 and 4.5.3.2 (For verbal and non-verbal Originality) showed that mean scores of the components non-uniformly decreased with the increase of Family Tension. But the components of non-verbal creativity for girls, it was seen that mean scores of the components were suddenly increased with the increase of Family Tension at higher scores. These graphical representation also supported the negative relationship between the components of creativity and Family Tension.
Hypothesis – H$_{20}$:

There would be significant negative relationship between Family Tension and components of creativity (Fluency, Flexibility, Originality) of both verbal and non-verbal creativity tests for boys.

In the present study, this hypothesis was rejected. For boys group, Family Tension was negatively correlated with all the components (Fluency, Flexibility, Originality) of both verbal and non-verbal creativity. But the relationships were not significant even at 0.05 level of significance (Except verbal Originality) [Section – 4.7.3.1].

Hypothesis – H$_{21}$:

There would be significant negative relationship between Family Tension and components of creativity (Fluency, Flexibility, Originality) of both verbal and non-verbal creativity tests for girls.

This hypothesis was also rejected in the present study. This study revealed that for the girls group, Family Tension was negatively correlated with all the components (Fluency, Flexibility, Originality) of both verbal and non-verbal creativity. But the relationships between Family Tension and components of creativity were not significant except Originality of verbal creativity (Section – 4.7.3.2).

Hypothesis – H$_{22}$:

Freedom of students, Socio-economic Status, Family Tension would be significant predictor of Total Fluency.

The present study revealed that Family Tension was the last variable entered in the step-wise multiple regression analysis. It was a negative contributor to Total Fluency of creativity. The relative contribution of Family Tension as an aspect of family environment was only 5.5% to Total Fluency (Fig. 4.8.1).

Hypothesis – H$_{23}$:

Freedom of students, Socio-economic Status, Family Tension would be significant predictors of Total Flexibility.
In the present study, it was found that Family Tension was the last variable entered in the regression analysis among the three predictor variables. Family Tension was a negative contributor to Total Flexibility. As an aspect of family environment Family Tension had 4.3% relative contribution to Total Flexibility of creativity.

**Hypothesis – H\textsubscript{24} :**

Freedom of students, Socio-economic Status, Family Tension would be significant predictors of Total Originality.

This study revealed that Family Tension was the last variable entered in the step-wise multiple regression analysis among the three predictor variables. As an aspect of family environment Family Tension had only 25% relative contribution to Total Originality.

**Findings :**

The findings related with the independent variable ‘Family Tension’ were as follows:

- For boys, there was no significant difference between High Family Tension group and Low Family Tension group in Fluency, Flexibility and Originality of both verbal and non-verbal creativity.
- For girls, there was no significant difference between High Family Tension group and Low Family Tension group in Fluency, Flexibility and Originality of both verbal and non-verbal creativity (except verbal Originality).
- Family Tension was negatively correlated with the components of creativity.
- For boys, there was no significant relationship between Family Tension and components of both verbal and non-verbal creativity (except verbal Originality).
- For girls, there was no significant relationship between Family Tension and the components of both verbal and non-verbal creativity (except verbal Originality).
- Family Tension had only 5.5% relative contribution to Total Fluency.
- Family Tension had only 4.3% relative contribution to Total Flexibility.
- Family Tension had 20% relative contribution to Total Originality.
Discussion:

Another objective of the present study was considered to determine the relationship between Family Tension and components of Creativity of both verbal and non-verbal creativity. Family Tension aroused in the family from the disagreements of opinions among the parents of the children. When more stress and tension existed in the family, development of creativity in the children might be affected negatively.

In the present study, it was found that Family Tension was negatively correlated with the components of both verbal and non-verbal creativity. Though, for both boys and girls groups, those negative relationships were not significant (except verbal originality), the trend of the results accepted the theoretical concept.

Again, for both boys and girls groups, there were no significant difference existed between the High Family Tension group and the Low Family Tension groups in Fluency, Flexibility, Originality of both verbal and non-verbal creativity.

In this regard, Olszewski-Kubilius (2001) mentioned their views, “Research studies of creative eminent adults yield retrospective accounts of family environments characterized by stress, trauma, conflict and dysfunction. Research on high-IQ individuals – most of whom do not end up being eminent, but are highly productive, competent, well-adjusted individuals – find families that are intact and happy with normal and moderate levels of stress.

Again, Shanteau and Dino (1993) showed that stress or tension had negative effects on creativity. Ochse (1993) mentioned that a stressful setting become the catalyst for potentially talented individuals to meet their deficiency needs for attention, love and approval.

Also the present study revealed that Family Tension was one of the predictor variables in the three Regression Equation for Total Fluency, Total Flexibility and Total Originality. Among the three predictor variables, Family Tension had comparatively less contribution to each of the dependent outcomes. Not only that, its contribution was negative also (Figures : 4.8.1; 4.8.2; 4.8.3).
5.5 Creativity and Family Structure

Family Structure of each student of 179 boys and 193 girls had been determined by applying the Sarker’s Family Questionnaire – I and II on them. To analyze the influence of Family Structure on creativity only two groups – students of Autonomic Family and students of Syncratic Co-operative Family had been considered in the present study. Because out of five (5) categories of family structure, only two categories – Autonomic and Syncratic “Co-operative families had contained maximum frequencies (Table : 4.3.1).

Hypothesis – H\textsubscript{11}:

There would be significant difference between the boys groups of Autonomic Family and Syncratic Co-operative Family in Fluency, Flexibility and Originality scores of verbal creativity.

This hypothesis was accepted in the present study. The boys groups of Syncratic Co-operative Family was always superior to the boys group of Autonomic Family in the components of verbal creativity.

Hypothesis – H\textsubscript{12}:

There would be significant difference between the boys group of Autonomic Family and Syncratic Co-operative Family in Fluency, Flexibility and Originality scores of non-verbal creativity.

This hypothesis was rejected in the present study. This study revealed that there was no significant difference between the boys group of Syncratic Co-operative Family and the boys group of Autonomic Family in Flexibility and Originality of non-verbal creativity (except non-verbal Fluency).

Hypothesis – H\textsubscript{13}:

There would be significant difference between the girls groups of Syncratic Co-operative Family and Autonomic Family in Fluency, Flexibility and Originality scores of both verbal and non-verbal creativity.
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The present study showed that there was no significant difference between the girls group of Syncratic Co-operative Family and the girls of Autonomic Family in mean scores of Fluency, Flexibility and Originality of both verbal and non-verbal creativity. So the hypothesis – \( H_{13} \) was totally rejected in the present study.

Findings:

Regarding Family Structure the following findings were found in the study:

- For boys, Syncratic Co-operative Family was always superior to the Autonomic Family in Fluency, Flexibility and Originality scores of verbal creativity.
- For boys, there was no significant difference between Syncratic Co-operative Family and Autonomic Family in Flexibility and Originality scores of non-verbal creativity.
- For girls, there was no significant difference between Syncratic Co-operative Family and Autonomic Family in Fluency. Flexibility and Originality scores of both verbal and non-verbal creativity.

Discussion:

The present study considered ‘Family Structure’ as one of the independent variables to find out the relationship of it with the components of creativity. Syncratic Co-operative type and Autonomic type families got maximum frequencies out of five categories. In this study, it was found that boys of Syncratic Co-operative family were always superior to the boys of Autonomic family in Fluency, Flexibility and Originality of verbal creativity but not of non-verbal creativity. In non-verbal creativity for fluency and flexibility mean difference might be significant at 0.017 and 0.076 level of significance (slightly more than \( p = 0.01 \) and \( p = 0.05 \)) respectively. For these findings, it might be said that Syncratic Co-operative Family was always better than Autonomic Family. Because, Syncratic Co-operative Family created favourable emotional climate, parents always resolved the tension or stress if whenever aroused in that family. On the contrary, in Autonomic family, both parents were independent in taking decisions and doing the household activities. So, emotional climate was not favourable to creativity development.
Again, girls of Syncratic Co-operative Family were not differed from the girls of Autonomic Family in Fluency, Flexibility and Originality of both verbal and non-verbal creativity. In this case, for girls, family structure had no influence on their creativity.

The following statements might be the supportive for the above findings:

- Family structure has an impact on development of creativity, because it determines family processes. Albert & Runco (1989) reported that the autonomy within a family could dramatically influence creativity.
- Schneider, B. (2012) mentioned that parents who partake in holy matrimony were role model for their children and when not so, the children began to experience the negative side effects.
- Storm et al. showed that no significant differences in Originality, Fluency, Flexibility and elaboration were found between the child groups from different family structures.
- Vandewater and Lansford (1998) mentioned that parental conflict influences children’s well-being regardless of family structure. Children in high conflict families showed lower levels of well-being on all outcomes, but no well-being differences were found between family structure groups.

5.6 Ideal Family Environment

In this section, the present researcher tried to establish an ideal family environment for the development of creativity in the children on the basis of findings and discussions regarding the aspects of family environment. This was the last objective of the present study. There were four aspects of family environment, namely; Freedom of thought and actions, Socio-economic Status, Family Tension, Family Structure, had been considered in the present study.

Family environment refers to all sorts of moral and ethical values and emotional, social and intellectual climate set up by the family members to contribute to the wholesome development of an individual. Family with its physical, intellectual and emotional aspects shape a child’s life in his journey towards self-fulfilment. A powerful home environment may be created for the child with the presentation of
concepts such as; the encouragement of incidental learning, freedom to reactions of the environment, scopes of the physical materials, attention from adults and the close relationship between parents and the child.

Creativity is a complex and multi-faceted phenomenon. It has much areas and so many factors are associated to its development. In this study, a few of such factors are included in the family environment, but not all of them. For that reason, the researcher found out a high value of constant in the three Regression Equations for Total Fluency, Total Flexibility and Total Originality considering Freedom, Socio-economic Status and Family Tension as the predictor variables. However, in the present study, the following situations might be considered to create an ideal family environment for the development of creativity:

1) **Freedom of Thought and Actions**: The child should get complete freedom to accept and express the varied responses. Unrestricted, open and democratic situations are favourable to creativity development. The child should be encouraged to create games with spontaneity and provided materials and items, toys to make something or to play.

2) **High Socio-economic Status**: Socio-economic Status of the family should be high so far as possible. High economic condition is always helpful to provide materials and learning experiences to the child in the family. This is specially essential for the girl students. This may be limited with the providing play-materials, equipments and physical components.

3) **Low Family Tension and Stress**: Family Tension is a negative factor for fostering creativity in the child. Minimum level of parental tension is favourable for creativity development. A healthy emotional climate may be created when the parents resolve the disagreements among them. But a moderate stressful setting may be favourable for creative productions. Sometimes, it makes the child to be more powerful, effective and challenged.

4) **Syncratic Co-operative Family Structure**: Syncratic Co-operative family is always better than any other family structure. In this type of family, both the parents
take decisions in any matter of the family and both of them take necessary actions to resolve the problems. Therefore, a low tension exists among the parents and a good emotional environment is found in the family which is conducive for creativity development in the child.

5) Establishment of Parental Bonds with Children: A good parental bond with children allows them autonomy, independence, psychological and emotional space. Parents can support to get the experience of tensions and stress that arise from challenging ideas and high expectations to live up to one’s potential. They may help their child to cope with the strategies for stress.
A man may die, nations may rise and fall, but an idea lives on.

— John F. Kennedy

CHAPTER – VI

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